

## IPO Underpricing, Accounting Conservatism, and Herd Behavior

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**Abstract.** *IPO underpricing is an example of anomalous behavior in the capital market. Stock price in the primary market tends to very low and then increases significantly in the adjacent secondary market. If we believe that the stock issuer would not leave the money on the table, this anomaly must come from investors' irrational behavior or lack of information in the secondary market. Accounting conservatism plays an essential role in reporting a fair financial condition essential for investors to set fair stock prices. Accounting conservatism gives a strong signal to market participants that the company continually exposes real and honest financial performance, giving no room for speculation of its stock price in the market. However, mispricing in the secondary market is affected by speculative behavior and herding behavior, where uninformed retail investors tend to follow the market leader and create a speculative stock price wave. This study shows that accounting conservatism and herding behavior are crucial in understanding contradicting behavior in the primary and secondary market in Indonesia Stock Exchanges.*

**Keywords:** *IPO, Underpricing, accounting conservatism; accrual quality; herd behavior*

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### INTRODUCTION

Price jump at initial date in secondary market is still hardly understood. It is a puzzle because there is no logical explanation for this phenomenon. We must state irrational behavior exists, whether in primary market, secondary market, or both (Y. Chen et al., 2015). If stock issuers are rational, they would leave the money on the table by setting low price in the primary market (IPO). On the other hand, if investors in the secondary market are rational, they would bid stock price higher than its fair value. With the various level of initial returns, most research show a significant stock price increase in the initial period in many stock market in the world (e.g., Green & Hwang, 2012; Adjasi, Osei, & Fiawoyife, 2011; Dimovski, Philavanh, & Brooks, 2011; Loughran & Ritter, 2004). Some researchers propose a set of factors that may influence this high positive initial return, e.g., allocation proportion between retails and institutional investor in IPO (Y. Chen et al., 2015), risk of litigation expose by underwriter because of negative initial return (Hanley & Hoberg, 2012), foreign and local investor interaction (Neupane et al., 2016), ownership structure (Hearn, 2014), or earnings management (Gao

et al., 2017). There is no widely accepted explanation of this anomaly until now, so we call it IPO Puzzle.

Previous research show *IPO underpricing* always were followed by long-run underperformance. The sequence of low price in IPO, price jump in the initial period in the secondary market, and then price plunge in long term period still need solid and logical explanation (Su & Bangassa, 2011). Long-run underperformance of stock return is a strong indication that the initial return in the early period of the stock is traded in the market due to of irrational behaviors. The market always corrects stock price back to its fair value. Price jumps always result from not entirely rational behavior such as psychological bias, sentiment, and herding behavior (Loughran & Ritter, 1995).

Drastic price jump in the initial period of secondary market and price decline, in the long run, attract a serious question: are most investors irrational, so they swing stock price all around without any reason? Or they make a severe mistake in estimating the stock's intrinsic value because of low-quality financial reports? Research in the accounting field

proposes an alternative argumentation on this anomaly.

Accounting information quality, accounting conservatism, and income smoothing are among alleged factor which drives stock valuation disagreement among investors (Lin & Tian, 2012). Besides investor subjectivity and capability to grasp information from accounting reports, how that accounting report is presented or arranged is an influential factor that may drive investors' divergent position on the company stock value and trigger speculation in the stock market.

Accounting conservatism produces more realistic accounting reports and reveals proper financial performance (Watts, 2003). Accounting conservatism restrains opportunistic behavior from reporting over-optimistic revenue and over-pessimistic cost (Bushman & Piotroski, 2006). Accounting conservatism minimizes asymmetric information and disagreement about stock value among investors and induces more stable price movement (Gao et al., 2017). Accounting conservatism causes a more normal initial return in IPO and hinders wild speculation around the IPO period. Accounting conservatism drives down the IPO underpricing.

On the other hand, many studies show that stock price movements are influenced by herd behavior (Litimi et al., 2016). Herd behavior is retail and uninformed investor's following behavior to mimic market leader investment position. Herd behaviors create a stylized stock price movement because giant price bids and offers may pour in the market in a short period as retail investors try to follow their leader or investment guru (Wang & Hu, 2021). Many studies show IPO Waves in the IPO context- a phenomenon in which the number of issued stocks increases and decreases in a sequential period. IPO waves reflect retail investment swing following market leaders' investment position (e.g. Boeh & Dunbar, 2014; Güçbilmez, 2015).

The measurement of herd behavior intensity, a latent or unobservable variable, is a classical problem for empirical research in the stock market. Some experts propose various methods in identifying and measuring herd behavior intensity in a given period. For example, Christie and Huang (1995) suggest cross-sectional standard deviation of returns in order to detect investor herding behavior, or Kizys et al. (2021) propose cross-sectional absolute deviation (CSAD).

This study empirically test relationship between initial return around IPO, accounting conservatism, and herd behavior. For robustness check, this study uses two measure of initial return, 1 day return after listing date in secondary market and 30 days after listing date. a yaitu satu hari setelah hari IPO, hari pertama pencatatan di pasar sekunder, dan 30 hari setelah saham *listed* di bursa. Accounting conservatism also measured by using two method proposed by (Chen, Hope, Li, & Wang (2011).

## LITERATURE REVIEW

Theoretical models which try to explain IPO underpricing phenomenon. We may classify all models in two streams: firstly, conventional theories which based on efficient market hypothesis and, secondly, theories based on behavioral finance (Y. Chen et al., 2015). Conventional theories assume market is efficient so price increase in early period secondary market because of significant price discount in primary market. Price jumps in secondary market reflect automatic adjustment to intrinsic value because market equilibrium always persists. However, these conventional theories fail to explain long-run underperformance where price stock tend to decrease in the long run after IPO, even lower than IPO price.

Some theories suggest IPO *underpricing* exists because underwriter always states low stock price in IPO, much lower than stock intrinsic value in order to guarantee all issued stock are fully subscribed in IPO market. Underwriters who make full commitment underwriting

contracts with stock issuer tend to play safe to get sufficient demand in IPO market (Corwin & Schultz, 2005). However, considering high initial returns, it does not make sense to believe price discount in primary market is only caused by underwriter interest. Underwriter's reputation will be seriously damaged if price discount affects significantly amount of capital raised from IPO and threatens sustainability of underwriting business. (Su & Bangassa, 2011; Dimovski et al., 2011). Companies which issue their stock must not leave potential to get higher amount of capital from IPO, especially if they know surely their firm intrinsic value are higher than price proposed by underwriter (Adjasi et al., 2011).

From accounting point of view, significant market price changes around IPO is a matter of accounting information quality which is basic information for investor to value a stock. Accounting conservatism produces prudent accounting report which is so strict in accruing revenue and cost that disclosed information will direct to conservative valuation (Watts, 2003). Accounting conservatism produce a responsible accounting practice in reporting financial performance (Bushman & Piotroski, 2006). If majority investor have strong trust in accounting number of company's financial report, asymmetric information among investor will be low and create wide agreement on stock value which bear a low price (Gao et al., 2017). Changes of price are relatively small because of liquidity trader which short term cash (Baldauf & Mollner, 2021).

Accounting conservatism restrains excessive speculation which usually caused by doubtful accounting reports. Konservatisme akuntansi mendorong tindakan spekulatif para investor menjadi minim. Efficient market hypothesis which states: "price always reflect all available information" have a necessary condition: credible accounting reports as main source of information to estimate fair value of stock (Fama & French, 2015).

Extreme stock price movement usually caused by investor psychological bias and natural correction from excessive market price deviation from intrinsic value (Kizys et al., 2021). As logical creature or homo sapiens, man always try to keep rational but at some level an at some time, individual psychological bias and social pressure may drive man to irrationality. Herd behavior is a reflection of irrational behavior and come from combination of individual psychological bias and social pressure which raise mimicking behavior among investors. When irrationality create an extreme deviation from reality, man try to correct it and get back to an equilibrium between market price of stock and its intrinsic value. This such a behavior cycle drives stock price to swing to one extreme position to another extreme.

Empirical method used to identify and measure herd behavior intensity in stock market is quite challenging because it is a latent variable, unobservable but every market participant can feel it. Some experts propose methodology to identify herd behavior in stock market, such as CSSD by Christie and Huang (1995) and CSAD proposed Kizys et al. (2021)

## **METHOD**

This study uses data from all companies that conducted initial public offerings for 12 years of observation from January 2008 to December 2018. Transaction data were obtained from Datastream Thomson Reuters. The company's financial statement data is obtained from the Indonesia Stock Exchange website.

This research is an event study research, which the data used are all data at the point in time of the occurrence of an event for each individual company that is observed. The observed event was the initial listing of shares on the stock exchange, where the event was spread unevenly throughout the 10 years of observation. This study analyzes the factors that influence the size of the price changes during the early period of time the company's stocks are listed in the stock exchange

IPO underpricing which shows a price discount in the primary market is measured by

comparing the IPO price with the closing price on the first day of listing on the stock exchange. The price spike in the secondary market indicates the amount of price discount at IPO. To get robust analysis of results, apart from measuring the price spike on the first day of listing on the stock exchange, this study also measures IPO underpricing after 30 days of listing. This robustness test is needed to see if the price spike occurs only in the short term because investor sentiment has not been channeled to the primary market due to the stock allocation policy by the underwriter or general market conditions (Corwin & Schultz, 2005)

The company's accounting conservatism is measured by the amount of accruals in its financial statements. The smaller the accruals recognized by the company in its financial statements, the more conservative the company's accounting policies. Lin & Tian (2012) measure total accruals by subtracting cash flows from operating activities, which shows the company's financial capacity in real terms, from the sum of net income and depreciation costs. Total accruals are divided by the total assets of the company to measure the level of conservatism of each company.

To sharpen the analysis, this study also measures the quality of accruals developed by (Chen, Hope, Li, & Wang (2011). *Quality of Accrual* measured using the following equation:

$$WCA_{i,t} = \alpha + \beta_1 CFO_{i,t-1} + \beta_2 CFO_{i,t} + \beta_3 CFO_{i,t+1} + \varepsilon_{i,t} \quad (1)$$

$WCA_{i,t}$  is accrual working capital which consists of not liquid current asset substrated by current liability plus short term bank liability.  $CFO_{i,t}$  is cash flow from operationa activity. All variables are adjusted by total asset at previous period. Accrual quality is abolute value of equation (1) error term,  $\varepsilon_{i,t}$ .

Herd behavior measured by using Cross Sectional Absolute Deviation (CSAD) method proposed by Kizys et al. (2021).

$$CSAD_{i,t} = \frac{1}{\tau} \sum_s^{\tau-1} |R_{i,j-s} - R_{m,j-s}|$$

CSAD is a dynamic measure of herding behavior in country I with 22-day rolling window.  $R_{i,j}$  is individual stock return and  $R_{m,j}$  is stock market return

To examine the relationship between the amount of IPO underpricing with the level of accounting conservatism and herd behavior, this study use an empirical model as follows:

$$Und_i = \alpha + \beta Conservatism_i + \gamma AccrQuality_i + \delta Sentiment_i + \lambda Market_i + \varepsilon_i \quad (2)$$

Equation (2) above is estimated twice, first for IPO Underpricing as measured by the percentage change in price on the first day of listing on the stock exchange compared to the IPO price and second, IPO Underpricing measured by the percentage change in price on the 30th day after listed in the exchange compared to the IPO price.

In the first estimate from equation (2) above, investor sentiment is turnover on the first day of listing on the stock exchange and market condition is the IHSG yield on the first day of listing.

In the second estimate of equation (2) above, investor sentiment is the average turnover for 30 days since the listing of shares on the stock exchange and market condition is the average IHSG yield for the first 30 days of the listing.

The level of accounting conservatism and accrual quality for the two estimates above have the same magnitude, which is measured from the company's financial statements before the IPO and is estimated through equation (1) above.

Sign of variables that support hypothesis are  $\beta < 0$ , where *IPO underpricing* are lower for company practice accounting conservatism;  $\gamma < 0$ , where company with better accrual quality has lower IPO Underpricing;  $\delta > 0$ ,

where IPO *Underpricing* are higher in high period of herd behavior intensity;  $\lambda > 0$ .

## RESULT AND DISCUSSION

Data shows that initial public offerings on the Indonesian stock exchange yield relatively high initial return (Table 1). If investors buy in the primary market and immediately sell their shares on the first day the shares are traded in the stock exchange, the average return earned by investors is more than 20%. If investors hold the stock up to 30 days after listing, the average yield even more than doubles compared to selling it immediately on the first day of listing, which is 51%.

The highest return on shares with a holding period of 30 days reached more than 15 times the investment in the Initial IPO market, while the highest yield on shares with a holding period strategy of 1 day reached almost 2 times. However, the risk of a 30-day holding period strategy is much higher than that of a 1-day holding period, as seen from the standard deviation of yields for a 30-day holding period of nearly 4 times the standard deviation of returns for a 1-day holding period.

Of all the companies that conducted IPOs during the period 2008 to 2017 as many as 205 companies, the shares of companies that experienced an increase in price or positive stock returns on the first day of listing and trading on the stock exchange were 156 sentiment around the IPO period and market returns. Almost all research variables have a low correlation except the correlation between accrual quality and investor sentiment. The quality of accruals in the company's financial statements has a strong relationship with investor sentiment.

companies, which reached 76% of the total companies that conducted IPOs in 2017. that period (Table 2). A total of 49 companies scored negative returns (23.9%).

If investors hold the IPO shares for up to 30 trading days, the number of shares experiencing a price decline (negative yield) increases to 71 companies, but companies that experience a price increase of more than 100% compared to the IPO price jump to 37 companies from only 4 companies if the holding period is only 1 day. Stocks that provide yields higher than 20% are almost as numerous between the 1-day and 30-day holding periods of around 80 companies.

The descriptive data in Tables 1 and 2 show a significant increase in the price of stock trading transactions on the stock exchange compared to the IPO price. This evidence shows that there is a strong indication of an IPO underpricing policy in the initial public offering process on the Indonesian stock exchange. Enormous average price increase for most companies that conduct IPOs raises the question: why are so many issuing companies willing to discount their share prices so heavily and miss out on the opportunity to get the funds they could have gotten from the stock exchange.

Table 3 shows the correlation between the research variables: financial statement conservatism, accrual quality, investor This data show that investors have a strong positive reaction to the quality of accruals in the company's financial statements. Investors interpret the quality of accruals in financial statements as a reflection of the integrity of the company's management so that investors are more confident about the prospects for the company's shares in the future.

Table 1. IPO Returns in Indonesia Stock Exchanges

	<b>1 day</b>	<b>30 days</b>
Average	20,17%	51,15%
maximum	196,15%	1596%
minimum	-89,05%	-93,90%
Std Deviationi	40,12%	159,26%
	1 Hari	30 Hari

Source: Bursa Efek Indonesia (2018)

Table 2. Detail Descriptive Statistics of Initial Return In Indonesia Stock Exchanges

	<b>1 day</b>		<b>30 days</b>	
	Number of Firm	Percentage	Number of firm	Percentage
Negative Initial return	49	23,90%	71	34,63%
Positive Initial Return	156	76,09%	134	65,36%
Positive Initial Return above 100%	4	1,95%	37	18,04%
Positive Initial Return above 20%	81	39,51%	78	38,04%
Total Number of IPO	205		205	

Source: Bursa Efek Indonesia (2018)

Table 3. Correlation of variables

	<b>Conservatism</b>	<b>Accrual Quality</b>	<b>Investor Sentiment</b>	<b>Market return</b>
Conservatism	1	0,56	0,43	0,25
Accrual Quality		1	0,83	0,17
Herd Behavior			1	0,42
Market				1

Source: Bursa Efek Indonesia (2018)

Table 4. Estimation Result of Model 1 (1 day *Initial Return* )

<b>Variable</b>	<b>Coefficient</b>
<i>Conservatism</i> ( $\beta$ )	-2,31*** (3,62)
<i>Accrual Quality</i> ( $\gamma$ )	-3,47** (2,05)
<i>Herd Behavior</i> ( $\delta$ )	5,74* (1,98)
<i>Market</i> ( $\lambda$ )	4,87 (1,27)
R squared	0,87
Durbin Watson Test	2,16

Number in parantheses is t value. \* means significant in 10% level of error, \*\* means significant in 5% level of error , \*\*\* means significant in 1% level of error

Table 5. Estimation Result of Model 1 (30 day *Initial Return* )

<b>Variabel</b>	<b>Koefisien</b>
<i>Conservatism</i>	-2,39*** (3,06)
<i>Accrual Quality</i>	-3,99** (2,24)
<i>Herd Behavior</i>	6,33*** (3,77)
<i>Market Condition</i>	3,99** (2,18)
R squared	0,94
Durbin Watson Test	2,02

Number in parantheses is t value. \* means significant in 10% level of error, \*\* means significant in 5% level of error , \*\*\* means significant in 1% level of error

Table 4 shows the estimation results of model (2) with IPO Underpricing as measured by the price increase on the first day the shares are traded on the stock exchange. The sign of the companies with better accrual quality will score lower IPO underpricing;  $>0$ , i.e. IPO Underpricing will be higher when herd behavior is strong;  $>0$ , which means IPO Underpricing will be higher when market conditions are experiencing an increasing price trend.

From Table 4 we can conclude that the amount of IPO underpricing is proven to be significantly influenced by the level of

variable that is in accordance with the hypothesis is  $0, <0$ , ie IPO underpricing is smaller in companies that prepare their financial statements conservatively;  $<0$ , i.e. conservatism in its financial statements. Likewise, the quality of accruals from financial statements significantly affects the magnitude of the spike in stock prices on the first day of listing and trading on the stock exchange. The influence of these two variables on IPO Underpricing is negative.

The more conservative the preparation of financial statements and the better the quality of the accruals, the smaller the IPO

underpricing. This finding provides empirical support for the asymmetric information theory which states that the spike in stock prices on the first day of trading on the stock exchange is driven by asymmetric information mastery between public investors and company insiders because the information available in financial statements is less reliable in reflecting the real value of the business. company. In a market with a low level of information asymmetry where almost all investors can agree on a fair price, the pattern of stock price movements becomes more stable. (Gao et al., 2017).

Poor quality financial reports cause the information obtained by each investor to be of different quality and depth depending on the ability of each investor to explore private information or take advantage of insider information so as to give rise to wide disagreements between investors. This investor disagreement drives prices to fluctuate and often go wild because of speculation from some investors. The quality of information that can be extracted from conservatively prepared financial statements and the reliable presentation of accruals causes the gap in information mastery between investors to be smaller. This is because financial statement information is public information that can be obtained by all investors to obtain it almost at no cost.

In the context of the IPO, low information asymmetry due to accounting conservatism causes the initial returns to be less extreme. Investors can agree more on the fair price level of shares both in the primary market stage of the IPO and on the secondary market on the stock exchange. Companies that choose conservative accounting policies also have a tendency to set a higher IPO price so that the price increase is relatively smaller. Companies that have conservative accounting policies and better accrual quality tend to be more transparent and have nothing to hide so that their IPO prices are in line with their intrinsic value. The findings of this study are similar to those found by Green & Hwang (2012) dan (Derrien, 2005).

Table 4 also shows that herd behavior has a significant influences on the size of IPO underpricing. The more intense herd behavior, the higher the price increase on the first day of trading on the stock exchange. The price increase caused by high positive investor sentiment is limited to certain individual stocks so that general market conditions do not affect the price increase on the first day on the stock exchange. This can be seen from the insignificance of the market condition variable. Investor sentiment is also closely related to the quality of accruals from the company's financial statements with a fairly high correlation coefficient of 0.85 (see Table 3). Improved accrual quality is strongly correlated with herd behavior.

The estimation of the research model with initial returns holding period of 30 days as a measure of IPO underpricing produces almost the same results, namely accounting conservatism and accrual quality significantly affect the size of IPO underpricing (see Table 5). However, both the magnitude of the coefficient (magnitude) and the level of significance (t value) in the estimation of initial returns after holding shares for 30 days experienced a strong increase compared to using the first day of initial returns. The magnitude of the increase in stock prices after 30 days of being listed on the stock exchange is much stronger influenced by the level of accounting conservatism and quality of accruals due to the poor quality of financial statement information, the greater the speculation on stock prices which causes higher price fluctuations. Price speculation is momentum, that is, it gets higher if the price movement in the short term increases according to speculators' expectations. The descriptive data in Table 2 shows this, namely although the percentage of the number of shares experiencing price increases has decreased from 76% if the initial return is calculated by the holding period 1 day after the IPO to 65% if the holding period is 30 days, the total percentage of shares that recorded a return yield of more than 100% experienced a drastic increase from 1.95% to 18%.



Herd behavior also experienced an increase in the magnitude of the coefficient and the level of significance when using initial returns with a holding period of 30 years. Investor sentiment factors strongly influence the amount of yield after holding shares for 30 days after the IPO. However, in contrast to the results in Table 4 where the market condition variable does not significantly affect IPO Underpricing, with a longer holding period of 30 days, the market factor becomes very significant. The price increase 30 days after the IPO was much more strongly influenced by the current trend of market yields at that time. This kind of result was also found by (Derrien, 2005) dan (Da et al., 2011)

### **Discussion**

This study shows that companies that implement conservative financial reporting policies have low initial returns. This finding shows disagreement among investors is relatively much lower on the intrinsic value of shares of companies that apply conservative accounting compared to shares of companies that are not conservative. This finding supports the general theory in the stock market, namely the Efficient Market Hypothesis where stock prices always reflect the company's intrinsic value. Difficulties in intrinsic value valuation due to the questionable quality of financial statements accuracy, causing high price volatility during the IPO process to listing on the secondary market because investors speculate on the company's intrinsic value. IPO underpricing tends to occur in companies that do not apply accounting conservatism because these companies generally have low corporate governance and can only sell their shares at a discount in the IPO market. (Green & Hwang (2012) dan (Derrien, 2005)).

Herd behavior intensity in the stock market has a strong correlation with the quality of accruals

### **CONCLUSION**

Accounting Conservatism has a significant influence on the magnitude of IPO underpricing. The increase in stock prices in

from accounting reports because the quality of accruals reflects the integrity of the company's management in the eyes of investors. High intensity herd behavior drives price increases on the first day of trading on the stock exchange. Confidence among investors about the company's prospects stems from a rational analysis of the integrity of the company's management based on its accounting policies that are accountable, conservative, and responsible. This is further strengthened by the finding that market returns have no significant effect on initial returns 1 day after listing date. Herd behavior occurs at the individual stock level and is not related to the general condition of the stock exchange as measured by market returns.

The robustness check by analyzing yields 30 days after listing on the stock exchange shows interesting results, namely that the increase in stock prices after 30 days is more strongly influenced by the level of accounting conservatism and accrual quality. However, the reason behind this finding is different from the interpretation of the results of the initial return 1 day after recording, speculation on stock prices is getting bigger due to the poor quality of financial statement information. This speculation is momentum, which is getting higher if the price movement in the short term increases according to the expectations of speculators. Speculation on the intrinsic value of shares over a longer period has proven to be strongly influenced by the herd behavior intensity in the stock exchange towards the overall market conditions, no longer being specific to each company. The longer holding period, which is 30 days after the IPO, is much more strongly influenced by the current market yield trend. This finding is in line with the findings of previous researchers such as (Derrien, 2005) dan (Da et al., 2011).

the early days of listing in the stock exchange is influenced by the quality of information that can be obtained from the company's financial statements. Accounting conservatism produces conservative financial statements and better

accrual quality which restrains wide disagreement among investors and hinder price fluctuation because of wild speculation in the secondary market. The influence of accounting conservatism and accrual quality gets stronger if the holding period are 30 days after the IPO because the longer the investment period,

more difficult to speculate on financial statement information

Herd behavior has a significant effect on IPO Underpricing. The increase in stock prices after the IPO is also influenced by herd behavior, both 1 day holding period and 30 day holding period.

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