INEFFICIENT MARKETS, ANOMALIES, AND INVESTOR BEHAVIOR: A LITERATURE REVIEW

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Abstract: This study aims to observe and analyze the accounting literature which examines the phenomena that occur in inefficient markets. This article analyzes the effect of anomalies on investor behavior and stock returns. This study begins by identifying the effects of anomalies: 1) seasonal anomalies, 2) momentum anomalies. This article identifies investor behavior; 1) overreaction/ underreaction, 2) loss aversion, and 3) overconfidence. This study primarily evaluates how anomalous effects affect investor behavior towards stock returns. Within each category, this article analyzes the findings of previous research. Evidence from inefficient market research tends to help investors to reduce excessive behavior towards the effects of anomalies and help make investment decisions. This study examines opportunities for future research and research implications in capital markets.

Keywords: *Inefficient Market, Anomalies, Investor Behavior, Stock Returns.*

1. Introduction
Investors behave and act differently in response to information, which is one of the factors that underlie the deviation of efficient market theory. Investors behave irrationally (Bouteska, 2018) which causes prices to diverge and form predictable patterns from time to time and even last for a certain period (Malkiel, 2003).

De Bondt and Thaler's (1985) study contradicts the Efficient Markets Hypothesis (EMH). and highlights the emergence of behavioral finance theory. Research by De Bondt and Thaler (1985) shows that the stock market is inefficient because investors' emotions and behavior tend

to be exaggerated, such as pride, doubt, fear, and hope. Investor reactions create movements in the market that result in the evolution of the prices of various assets above or below their fair value. According to Reilly and Edgar (2006), basically, the presence of overreaction and underreaction market anomalies is due to three reasons, namely: (1) imperfect market structure, when perfect market conditions cannot be found; (2) deviant behavior or bias in the behavior of investors in the market; and (3) the inaccuracy of the capital market theory which is used as a reference allows the occurrence of deviations in assessing the capital market.

Research on this overreaction anomaly has been carried out by Julio (2019) in America, Ansari and Khan (2012), Maheshwariand Dhankar (2017) in India. Adopting a risk and behavior-based model, Ansari and Khan (2012) and Maheshwari and Dhankar (2017) found profit momentum in India during the 1995-2006 and 1997-2013 periods. Sumiyana (2009) and Andriansyah (2017) examined the overreaction in the Indonesian capital market.

Seasonal anomaly refers to the tendency of a financial asset's return that displays a systematic pattern at a specific time of day, week, month, or year. January effect (Rozeff and Kinney, 1976; Haugen and Jorion, 1996), which occurs when stock returns in January are significantly higher than other months. The lucky number anomaly occurs in the Chinese stock market. The effect of lucky numbers on home addresses (Bourassa and Peng,1999), grouping stock prices on lucky numbers and avoiding unlucky numbers (Brown and Mitchell, 2008) Jegadeesh and Titman (1993) are the first to report that, over for between three to twelve months, a portfolio buying winners and selling losses in the past is statistically and economically significant. This investment strategy is described as momentum. The implication of this strategy is that past winner stocks will continue to be winners, and losses will still lose in the short term.

This study aims to find and analyze various phenomena that occur in inefficient markets. This article divides two categories, namely seasonal anomalies and momentum anomalies. Investors respond to anomalous information with various behaviors: overreaction, loss aversion, overconfidence. This study primarily evaluates how anomalies affect investor behavior towards stock returns.

The previous literature review of several seasonal effects on the market for American depository receipts (ADR) (Julio, 2019), examines the presence of momentum gains in the American stock market (De Bondt and Thaler, 1985) and the Indian stock market (Ansari, 2012l), and tests the impact of stock returns from "lucky" numbered days in a market dominated by Chinese participants (Haggard, 2015). This article differs from previous studies of inefficient markets, as it presents evidence of various anomalies and various investor behaviors that can influence stock returns.

Overall, this article contributes to enriching the literature on phenomena in inefficient markets and provides investors with information on various anomalies that are useful in predicting stock returns.

This study is structured as follows: Section 2 explains the anomaly. Section 3 discusses investor behavior. Section 4 discusses the effect of anomalies on investor behavior in predicting stock returns. Section 5 discusses the conclusions.
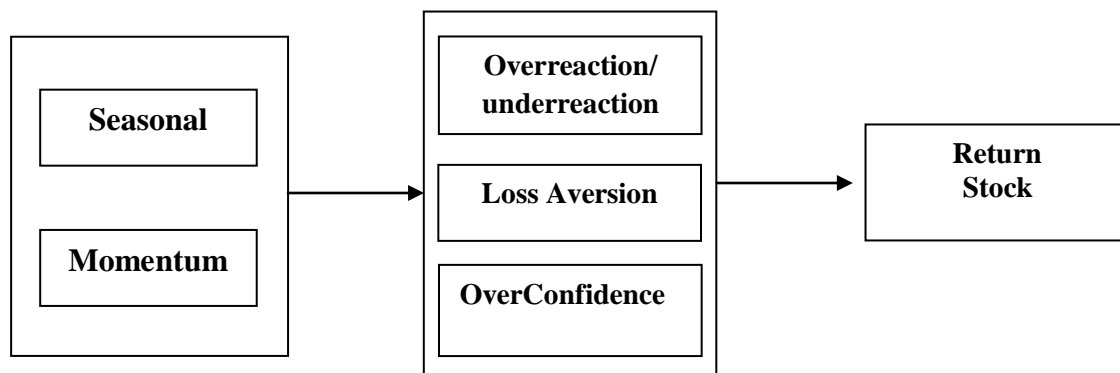

Figure 1. Research Framework

2. Research Methods

The method used in this study is the "Charting the Field" method developed by Hesford et al. (2007). In this approach, the researcher tries to select several research articles about inefficient markets, anomalies, and investor behavior published in eight (8) journals, then grouped by topic, research method, and scientific discipline. The journals are Managerial Finance, Journal of Economics, Finance and Administrative Science. Journal of Banking & Finance, Journal of Banking and Finance, Journal of Advances in Management Research, Journal of Economics, Finance and Administrative Science, International Journal of Ethics and Systems, International Review of Financial Analysis. The selection of journals is by following per under the following criteria: first, accredited international journals in the last ten years (2010-2020). Second, journals can be accessed online. Researchers select in a structured and systematic manner all articles published in each of these journals. Third, only select articles related to inefficient markets, anomalies, and investor behavior.

3. Anomaly
Seasonal Anomalies

Traders are eagerly awaiting seasonal/ calendar anomaly information as a basis for strategizing to generate abnormal returns. Investors can also select portfolios by combining various indices as well as individual stocks. The strategy described here can be developed for trading in other asset classes that display similar calendar anomalies (Jaisinghani, 2016).

Effect Monday

The literature studies are extensive that workday returns vary with the day of the week (day-of-the-week-effect). One of the most documented is the trend toward negative asset returns on Monday, which was first documented by market practitioners and academics. Maberly (1995) points out that financial practitioners were aware of the Monday effects of the early late 1920s, with the first findings documented by Kelly (1930) who found Monday was the worst day to buy stocks from a three-year statistical study.

Cross (1973), who studied the S&P 500 from 1953 to 1970. During this period, the index was up 62% from Friday and had an average on Friday of 0.12%. But on Monday, the index advanced only 39.5% of the time, and the average was - 0.18%. Cross also found that the performance on Monday depends on the performance of the previous Friday.

Effect of the day of the week

One of the most frequently investigated seasonal patterns is the difference in returns across the days of the week. Since French (1980) initially observed that stock returns in the US were higher than average on Friday and lower than average on Monday, many researchers have tried to test what has come to be known as the day-of-week effect. Dicle and Levendis (2014) recently conducted a worldwide study covering 51 markets in 33 countries for the period 2000-2007. The results reveal that the day-of-week effect persists for a significant proportion of the equity market and for the majority of individual stocks in nearly all of the markets included in the study.

January effect

The January effect states that returns in January appear to be higher than in other months. This was first documented by Rozeff and Kinney (1976) and has received much attention from academics as well as practitioners. Rozeff and Kinney (1976) studied the NYSE for the period 1904 to 1974 and found that the median return for January was 3.48% compared to only 0.42% for the other months. Gultekin and Gultekin (1983) used data from about 17 countries including the UK and Japan for the sample period from 1959 to 1970 using the Capital International International Perspective (CIP). This Index provides a monthly stock market return based on the share price of 1,110 and accounts for approximately 60% of the total value of all shares traded in the country studied. They found that the returns in January and April were significantly high for the UK, but only in January in Japan. The January effects are clear for all countries and they attribute abnormal returns to changes in tax years.

Jacobsen and Zhang (2013) examined more than 300 years of British stock returnsthat the January effect only appeared around 1830, which coincided with Christmas being a public holiday but was no longer significant from 1951 to 2009.

Monthly Effect

Rozeff and Kinney (1976) were the first to document the existence of monthly seasonal patterns. This phenomenon was studied in the New York Stock Exchange (NYSE) stock index for the period 1904-1974. The authors conclude that January presents significantly higher returns (3.48 percent on average compared with 0.42 percent in the remaining 2008 months of the year). Easterday et al. (2009) concluded that the January effect remains in the long term (1946-2007). and found no evidence that the January premium decreased as expected in an efficient market.

Change of the moon effect

Lakonishok and Smidt (1988) appear to be the first to detect a turnover in securities in stock returns, with a month change starting on the last trading day of the month and ending on the third trading day of the following month. Using the Dow Jones index, they found that only four days accounted for all indexes of positive returns in the period 1897-1986 and found a change of month effect in 11 countries in the 1970s but in only seven countries in the 1980s. Urquhart and McGroarty (2014) analyzed US data from 1900-2013 and showed that anomalies existed under all market conditions during that period, although they were more intense during bear markets and crashes.

Halloween effect

In their seminal article, Bouman and Jacobsen (2002) analyzed 37 major stock markets from January 1970 to August 1998. They found that returns were significantly higher during winter (November-April) than (May-October) in 36 American markets. The authors conclude that this Halloween effect is difficult to reconcile with the efficient market paradigm. Dzhabarov et al. (2018) show that the Halloween strategy is performing strongly in international equity futures markets other than the US.

The Pre-Holiday Effect

Cadsby and Ratner (1992) found significant pre-holiday effects in Canada, Japan, Hong Kong, and Australia. However, they did not find significant effects in some European markets. Bouges et al. (2009) investigated the presence of seasonal anomalies in the American depository receipts (ADR) market. They used six years of data to investigate the presence of day of week effect, January effect, change of month effect and pre-holiday effect in the sample. Of all these anomalies, they found only evidence that a turn of the moon effect is in the market for ADR.

Turn-Of-The-Month (TOTM)

The effect of TOTM on stock returns was first discovered by Ariel (1987) in the US stock market. Ariel used daily equal-weighted and value-weighted stocks from the NYSE over the

period 1963 to 1981 and found that daily stock returns were positive at the start of the month and continued into the first half of the month. However, the returns after this point were mostly negative.

Khaled and Keef (2012) examined the effects of TOTM on 50 international stock indices over the period 1994-2006 and found evidence of the effects of TOTM, even after controlling for several factors. Sharma and Narayan (2014) tested the TOTM effect on 560 firms listed on the NYSE and found that the effect is different for different firms depending on the firm's sector and firm size, implying that TOTM has a heterogeneous effect on firm returns and volatility.

Momentum

An anomaly that often occurs in the Chinese stock market is a market dominated by Chinese participants, lucky numbers have an impact on asset prices, including house prices based on their address numbers and stock prices based on their trading code. The Chinese-dominated market also shows a preference for stock prices that end in lucky numbers, and an aversion to prices that end in unlucky numbers. Research by Haggard (2015) provides evidence that "lucky" numbered dates affect stock returns in the Chinese market and suggests a "lucky" date trading strategy for the Shenzhen market that results in risk-adjusted returns exceeding market returns.

De Bondt and Thaler's (1985) research on market efficiency investigates how this behavior affects stock prices. Empirical evidence, based on CRSP monthly return data. Consistent with the prediction of the overreaction hypothesis, previous "losses" portfolios were found to outperform "winners." Thirty-six months after the formation of the portfolio, losses stocks have gained about 25% more than winners, although the latter is significantly riskier.

Sloan (1996) finds that the market fails to price the appropriate components of accrual income. He points out that markets misjudge the persistence of the accrual component of annual income while underestimating the persistence of the cash component. Besides, accruals indicate negative serial correlations or average reversal tendencies. As a result, the market responds as if surprised, when a seemingly predictable reversal in profit occurs in the following year.

Collins and Hribar (2000), investigate whether the accrual pricing anomaly documented by Sloan (1996) for annual data applies to quarterly data and whether this form of market mismatch differs from the post-announcement earnings drift anomaly. They find that the market appears to be overestimating the persistence of the accrual component of quarterly earnings. Therefore, accrual pricing tends to be excessive. Besides, accrual pricing errors appear to be different from post- earnings announcements drift. Hedging portfolio trading strategies that exploit both forms of market mispricing generate more abnormal returns than those based on unexpected earnings or accrual information alone.

4. Investor Behavior

Overreaction / underreaction

Investors often show overreaction in the stock market. Recent studies argue that overconfidence can explain various phenomena in the stock market and corporate decisions. In particular, Daniel, Leifer, and Subrahmanyam (DHS) (1998) suggest that over-confident investors and biased self-attributions can explain both underreactions and overreactions in the stock market. In other words, past returns predict future returns, as high (low) past returns indicate that investors are becoming more confident in positive (negative) personal information, leading to further reactions to their positive (negative) personal information. .

Suk et al. (2016), examining the relationship between trading volume and autocorrelation of stock returns, present evidence that sustained overreaction leads to predictability of returns by introducing a new measure that captures sustained overreaction and directly relates it to future stock returns. To predict future returns, the researcher first identifies the direction of the investor's overreaction. High trading volume accompanied by an increase in stock prices indicates that investors are overconfident about their positive personal signals. The overreaction continues to positive personal information on future share prices.

Transfer of income information occurs when a company's earnings announcement provides information that is relevant to an assessment of another company's earnings. Previous empirical research has suggested that earnings announcements provide information not only about company announcements but also about other companies in the same industry (eg, Ramnath, 2002). Thomas and Zhang (2008, hereinafter TZ), TZ also found that investors' overreaction to intra-industry information transfer is surrounded by a positive relationship between the company itself and across companies, which implies negative investor reaction to all other earnings news.

Several recent studies (eg, Barber, Odean, and Zhu, 2009a; Hvidkjaer, 2006, 2008; Malmendier and Shanthikumar, 2007) show that small trades effectively represent the trades of retail investors. Lee and Radhakrishna (2000) suggest that trade measures can be used to separate individual and institutional trafficking. Barber, Odean, and Zhu (2009a) found a high correlation between order imbalances based on small trades and those based on retail brokerage data. Kumar and Lee (2006) find that retail investor order imbalance correlates with changes in discounted closed funds, another widely used proxy for investor sentiment (cf., Lee, Shleifer, and Thaler, 1991; Baker and Wurgler, 2006, 2007.); However, it has greater explanatory power for returns than for closed-ended variable funds.

Qian's research (2014) reflects a great interest in the trading behavior of small investors. Barber, Odean, and Zhu (2009a) argue that trading by small investors keeps stock prices away from their fundamental value. However, they acknowledge that the evidence is also consistent with an alternative explanation that individual investors buy overvalued stocks from institutional investors and that future negative returns reflect the pending arbitrage of the latter. This research

supports alternative explanations and shows that although small investors do not encourage price errors, they do hinder price discovery. In particular, small trade imbalances are negatively associated with future returns only onmispriced stocks. For mispriced stocks that are unlikely to occur, the negative correlation between small trading imbalances and future returns is absent.

This study combines the literature on dissent and retail investor sentiment to reveal that overvaluation is only present in stocks with high minor trade imbalances and high divergences of opinion. In the price optimism model, differences of opinion lead to stock overvaluation, because optimistic investors hold shares and pessimistic investors stay away from the market due to short-sale constraints, but stocks with low differences of opinion are not systematically mispriced. Minor trading imbalances are negatively associated with overvalued returns on shares due to high dissent, but that is not the case for stocks with low dissent. Therefore, small investors do not necessarily encourage mispricing. However, retail investor sentiment plays an important role in the overvaluation of stocks with high differences of opinion. In particular, an overvaluation of stocks with high holdout is greater for stocks with a high minor trading imbalance, but not significant for stocks with a low minor trade imbalance. Thus, the sentimental trading of small investors hinders the realization of bad news.

The CAR around the earnings announcements also supports the argument that retail investors are deterring price discovery rather than making price mistakes. First, stocks with low opinion divergences do not have negative CARs even though their small trade imbalances are high, indicating that investors are not negatively surprised by the share earnings announcement. Conversely, there is a negative CAR for portfolios with high opinion divergences, indicating that these stocks are overvalued and investors are negatively surprised by the earnings announcements. Negative CAR occurs before portfolio formation, so fundamental changes and stocks are overvalued before small investors trade. However, stocks with high opinion divergences and low small trade imbalances did not have negative CARs in the portfolio formation quarter and beyond, possibly as selling pressure and low sentiment from retail investors helped to materialize negative information. In contrast, stocks with high opinion divergences and high small trade imbalances have negative CARs lasting one or two quarters since portfolio formation, which suggests that retail investor buying pressure hinders the realization of negative information and supports the argument that small investor sentiment hinders arbitrage and discovery. price.

According to Zaj, Nikoomaram, Saeedi (2017) Investors are faced with various behavioral biases that are different from the efficient market hypothesis (EMH). Investor overreaction and overreaction are some of the behavioral phenomena in financial markets. In this article, the short-term and long-term simultaneous reactions and overreactions of investors on the Tehran Stock Exchange are evaluated. Dash and Mahakud (2015) apply an investment strategy based on a portfolio of winners and losers in a variety of short and long- term periods. The short-term and

long-term winning portfolio returns more than the loser's portfolio so that the phenomenon of low reaction is confirmed in the short and long term, while overreaction is not confirmed.

This study applies a strategy based on firm-specific variables, including value, the highest measure in 52 weeks. The results show that higher value returns and small stocks and higher portfolio returns based on the higher value of the current price for the 52-week high ratio in the short and long term are confirmed indicating momentum and low reaction phenomena in the market. The speed of adjustment of investment strategy information to market information was assessed using the Dimson Beta regression and some evidence of underreaction in the short term and overreaction in the long term was confirmed. Finally the formation and hold month effect of the winning and loser portfolios have been examined and the evidence shows the differences in the 11, 4, 12, and 5-month portfolios. As a result, investors are advised to implement a momentum investment strategy on the TSE.

Loss aversion
Loss aversion: psychological bias that reflects pessimism
The loss-aversion bias is explored by prospect theory (Kahneman and Tversky, 1979). Investors don't value profits and losses in the same way. The investor under this bias uses the profit to make decisions rather than losses because he tries to avoid the risks associated with losses. The investor wants to make a quick profit from his profit by selling securities because the price is evolving very quickly,he sells an asset that is worthless in the market at the price he bought it. The importance of this bias is due to its influence on investors' decision- making in buying and selling securities. Shiller (1998) states that there is a human tendency to feel the pain of remorse when it has done something wrong, even for small mistakes, and a desire to avoid the pain of regret. Hoffmann et al. (2013), by combining monthly data withmatching trading records, found that investors' perceptions fluctuate on a basissignificantly during the 2008-2009 financial crisis, with risk tolerance and risk perceptions more volatile than restoring expectations. During the worst months of the crisis, investor expectations of return and risk tolerance decreased, while risk perceptions increased. Towards the end of the crisis, investor perceptions recovered.

Overconfidence
Venkata and Venkata (2018) empirically tested the overconfidence hypothesis on the Bombay Stock Exchange (BSE) by applying bivariate vector autoregression to perform impulse-response analysis and the EGARCH model to understand whether there is self-attribution bias and overconfidence behavior among investors. Overly confident investors overreact to personal information and underreact to public information. Based on the EGARCH specification, it is observed that self-attribution bias, conditioned by right forecasts, increases investors' over-confidence and trading volume. Analysis of the relationship between return volatility and trading

volume shows that over-trading of overly confident investors contributes to the observed excessive volatility.

5. The Effect of Anomalies on Investor Behavior in Predicting Stock Returns

Seasonal anomaly refers to the tendency of stock returns or financial asset returns to be displayed with a systematic pattern at certain times of the day, week, month, or year (Julio, 2019). The existence of a seasonal effect may be problematic for the efficient market hypothesis because it might be assumed that investors can develop trading strategies that generate systematic abnormal returns based on these patterns. Julio (2019) provides extensive evidence for seasonality in stock market returns but has almost no effect on American depository receipts (ADR). This article examines the efficiency of ADR information by examining eight seasonal patterns in the market, namely (1) Moon effect; (2) Quarterly effects; (3) Half-year effects; (4) Halloween effect; (5) Day of the week effect; (6) Half month effect; (7) Change of year effect; (8) Pre-holiday effect. The sample of this study examined four ADRs for the period from April 1999 to March 2017. The result was a very significant pre-holiday effect across all return series. Besides, the month-changing effect, the monthly effect, and the day of the week effect, were detectable in some ADRs.

Meanwhile in the Indian stock market, Ansari and Khan (2012).The test investigates the existence of momentum earnings, makes use of the four-momentum strategies, and attempts to find explanations of phenomena in rational risk-based models such as CAPM andFama and French (FF) three-factor models. Because these models turned out to be insufficient, we turned them into behavioral models using R2 and idiosyncratic volatility (IVOL) as proxies for firm-specific information to explain momentum as a behavioral phenomenon. The Capital Asset Pricing Model (CAPM) fails to capture the continuation of short-term returns. The failure of CAPM to take into account momentum has led researchers to seek alternative explanations such as a behavioral model that links momentum to cognitive errors committed by investors in entering information. The data used consists of monthly price data from companies included in the BSE 500 index for the period January 1994-December 2006. This study found a strong profit momentum in India during 1995-2006. Risk-based models such as the CAPM and Fama-French fail to explain this phenomenon. Idiosyncratic risk shows a positive relationship with momentum, providing support for behavioral factors as the source of the momentum phenomenon.

Urquhart and McGroarty (2014) examined the Adaptive Market Hypothesis (AMH) model through four-calendar anomalies (Monday effect, January effect, turn-of-the-month effect (TOTM), and Halloween effect) in the Dow Jones Industrial Average from 1900, to 2013. The research sample is the closing daily data for the Dow Jones Industrial Aver- (DJIA) stock price index from January 1, 1900 to December 31, 2013. This index is the average of 30 blue-chip

stocks and is about 25% - 30% of the total US stocks (Kim et al, 2011). This study shows that the four calendar anomalies vary over time and that certain market conditions are more favorable for their performance, thus providing evidence consistent with AMH.

Harshita, Singh, Yadav (2018) findings with monthly closing price data from the Nifty 500 Index which represents the top 500 companies from 73 Indian industries. shows that over the sixteen years (1999 to 2015), returns in November were the highest among all months. Cultural factors such as the Diwali celebration, the positive frame of mind of investors, and the higher cash holdings explain this phenomenon.

The Easterday study (2015) also examines January seasonal anomalies using the analytical framework of Ohlson (1995) and Feltham and Ohlson (1995), which explain returns as a function of current and future accounting income. Regression analysis was performed using a modified Fama-MacBeth (1973) methodology. Quarterly earnings and return data are taken from Compustat and CRSP. But the resultIn contrast to what the model predicts, the relationship between January returns and first-quarter earnings is unexpectedly negative and significantly negative.

Vikash and Sinclair (2007) use data from the Australian Stock Exchange, describing the interaction between noise traders and information traders. The researcher does not assume that information traders are error-free. Conversely, informed traders make mistakes leading to underreaction and overreaction. Informed traders can even add to pricing errors in the market. Interaction of the information matched to the noise model is captured. This study provides evidence consistent with the notion that markets are often informally inefficient. Another finding is that Australian traders tend to underreact rather than overreact, implying that markets are slow to play to adjustments to new information

Dennis et al. (2015) retested the overreaction anomaly documented by Thomas and Zhang (2008) or TZ. Dennis et al (2015) replicated TZ for the same period 1973-2005 and confirmed that price movements from late announcements in response to earnings reported by early broadcasters were significantly negatively related to price responses to the newer sample. Researchers extended the TZ analysis to a more recent sample period in 1993-2010, for which intraday trade and quote (TAQ) trading data were available. The use of the TAQ sample provides data and a basis for obtaining Short-Horizon Return Predictability (SHRP) as an empirical measure of market efficiency.

The findings of Dennis et al. (2015) illustrate an economically intuitive picture of the strong link between information transfer and market efficiency and challenge the existence of overreaction anomalies during the post-decentralization period. The results provide evidence that in recent years trading activity is very high and market efficiency, the intra-industry transfer of information implied by the initial earnings announcement report is well incorporated into the share price of the final announcer when the final announcements report their earnings.

In the context of the Indonesian stock market, a study on the overreaction anomaly conducted by Said et al. (2018) empirically investigates the overreaction and underreaction behavior of investors across sectoral stock indices in the Indonesian stock market. They empirically investigate the overreaction and underreaction behavior of investors in all sectoral stock indices in the Indonesian stock market. Nine weekly sectoral stock indices, consisting of agriculture; mining; basic industry and chemicals; miscellaneous industries; consumer goods industry; property and real estate; infrastructure, utilities and transportation; finance; and trade, services, and investment for the period 2009-2012 were analyzed using the paired dependent sample t-test. To provide more in-depth empirical evidence, the presence of market anomalies from investor overreaction and underreaction is examined on five observations with different vulnerable times. This research refers to the study proposed by De Bondt and Thaler (1985), which states that investors tend to overreact and react less to new information and extraordinary phenomena.

Fortin and Hlouskova (2011) studied the asset allocation of losers and investorscomparing it linearly with the more traditional mean-variance and conditional value on investor risk. They found that under asymmetric dependence, the loss-averse portfolio outperformed the average portfolio difference, provided the investor was losing enough and the dependency was large. Then, using 13 EU and US assets, they show that a portfolio that rejects losses clearly outperforms the mean-variance and conditional values of the risky portfolio and that incorporates dynamic updating of the loss-averse parameter significantly improves the performance of the loss-averse portfolio.

Bouteska and Regaieg (2018) investigated the impact of two behavioral biases, namely loss aversion and overconfidence on the performance of US firms. First, the impact of loss aversion on the company's economic performance is assessed. Second, the impact of excessive trust on market performance is discussed. This study used approximately 6,777 quarterly observations of the population of US-insured industrial and service companies during the period 2006-2016. Ordinary least squares (OLS) regression in two-panel data models was used to test the hypotheses formulated for this study. The result is that the loss-aversion bias negatively affects the economic performance of the company and this is achieved for both sectors. In contrast, this finding suggests that overconfidence positively affects the market performance of industrial firms, but negatively affects market performance in service firms. Further strong evidence finds that an overconfidence bias appears to be dominant, and therefore, investors may tend to be more self-confident rather than out-loser.

BathkeJr, Mason, Morton (2019) analyzed a sample of companies whose seasonal income changes showed no correlation. Intentionally focusing on this pool of companies, BathkeJr et al. provides a more complete understanding of how market price-earnings correlate. The main findings of this study include: (i) investors seem to mistakenly assume that changes in income

are seasonal inadjacent quarters are positively correlated when in fact they are uncorrelated; (ii) consistent with investors overvaluing the correlation, stock returns reversed, rather than continued to drift, in the following quarter; (iii) financial analysts overestimate the autocorrelation of these firms, albeit to a lesser extent; (iv) Investors overestimate the correlation inversely with the wealth of environmental information; and (v) the magnitude of subsequent stock price corrections is inversely related to the wealth of the information environment. These findings provide additional evidence of market reaction after the earnings announcement, suggesting that stock prices do not confiscate the fundamental properties of earnings in a timely and unbiased manner. However, unlike previous studies that documented underreaction to information income, this study provides evidence to suggest that investors also systematically overreact to earnings. Investors overreact to earnings in some companies and underreacting to others, BathkeJr et al. link the two behaviors with the income correlation. That is, this study shows that investors overestimate correlation when it is lacking but underestimate it when it exists.

The results support the view that in recent years the securities market has had a general picture. awareness of autocorrelation in seasonal changes in income. However, failing to fully appreciate the differences in correlations between firms appears to be more contextual than previously documented and, depending on the nature of the firms, can result in different market anomalies (i.e., shifts or reversals in prices). The results of this study provide a new perspective on the inability of prices to fully reflect the implications of current income for future income.

Dash and Mahakud's (2015) research investigates whether alternative unconditional and conditional Asset Pricing Models (APM) capture the role of market anomalies in the context of an emerging stock market such as India. The results show that by considering the three alternative APMs in the unconditional specifications, the book-to-market price ratio (BP) and liquidity effects can be fully explained by market risk factors. However, the conditional factors model does not necessarily outperform the unconditional model. When the risk factors for the NER are allowed to vary over time using business cycle conditioning information such as TS, the importance of the effects of medium- and long-term momentum has been more broadly captured. The results are strong for the use of alternative approaches. Our finding is that there is no significant effect size it is by following per under the asset pricing literature which argues that size effects disappear in advanced stock markets because practitioners use them as an investment strategy and try to exploit these anomalies (van Dijk, 2011). Consistent with recent findings byMoor and Sercu (2013) and Dash and Mahakud (2013) for a strong effect size on the Indian stock market, the findings suggest that effect size remains important as a profitable investment strategy. To improve the performance of long-term investment portfolios, the observed small size effect pattern requires a closed mutual fund investment strategy. This study recommends a closed mutual fund strategy related to side effects because small stocks are generally associated with

high liquidity and transaction costs. Considering short-term investment scenarios, investment managers can look at large stocks. This study hopes that large-size stocks with high liquidity may be more suitable for momentum strategy implementation because of their lower risk of liquidity. However, high transaction costs due to frequent portfolio rebalancing in short-term investments need to be considered with the momentum investment strategy.

The results also reveal that the effect of market leverage is still present in the Indian stock market. Recent findings by Avramov et al. (2013) are also intuitive to examine evidence of the risk of distress in the context of the Indian stock market and the implications of financial distress on the profitability of anomaly-based trading strategies. These findings can be used for further research by including some market anomalies that have been excluded from the sample. This will lead to a better understanding of the presence of market anomalies in the Indian stock market. One reason for the limited anomaly effect associated with stock price synchronicity is also to provide an intuitive opportunity to examine the relationship between stock price synchronization and the cross-sectional behavior of stock returns.

Table 5.1. Inefficient Market Research

Researcher Name	Type of Phenomenon	Research purposes	Research result
Julio Lobao(2019)	Seasonal Anomalies	tested several seasonal effects in the market for ADR	There is a very significant pre-vacation effect on all series returns. lunar effects, monthly effects, and day of week effects were detected in multiple ADRs.
Ansari dan Khan(2012)	Seasonal Anomalies	to examine the presence of gain momentum in the Indian stock market and seek to explore its sources of profit momentum using both risk- based and behavioral models. R2, idiosyncratic volatility, and delay measures are used to	There was strong profit momentum in India during 1995-2006. Risk-based models such as the CAPM and Fama-French fail to explain this phenomenon. Idiosyncratic risk shows a positive relationship with

Researcher Name	Type of Phenomenon	Research purposes	Research result
		test the behavioral model	momentum, providing support for behavioral factors as the source of the phenomenon's momentum.
Urquhart, McGroarty (2014)	Seasonal Anomalies	extends the literature on Adaptive Market Hypothesis (AMH) by examining changes in well-known calendar anomalous behavior over time	the behavior of calendar anomalies varies over time and that certain market conditions are more favorable for their performance, thus providing evidence consistent with AMH.
Harshita., Shveta Singh, Surendra S Yadav,	Seasonal Anomalies	Ensuring the seasonal seasonality in the after Indian stock market taking into account the features of the leptokurtosis market, volatility clustering, and leverage effects.	Ensuring the seasonal seasonality in the after Indian stock market taking into account the market features of leptokurtosis, volatility and grouping leverage effect.
Easterday(2015)	Seasonal Anomalies	Testing the January effect, the stock market has a well-documented pricing anomaly in which the January return premium is observed to be higher on average than other months of the year.	The relationship between January returns and first-quarter earnings was unexpectedly significant negative, not positive as predicted by the model.

Researcher Name	Type of Phenomenon	Research purposes	Research result
Vikash Ramiah dan Sinclair Davidson(2007)	*underreaction*	Describes the interaction between information traders and noise traders.	Australian traders tend to underreact rather than overreact, implying that the market is slow to play to the adjustments for new information
Dennis Y. Chung , Karel Hrazdil, Kim Trottier (2015)	Momentum Anomaly	Examining the stock market anomalies documented by Thomas and Zhang (2008) and showing that misinformation transfer of information has worsened over time, as the US market experienced a rapid increase in the efficiency of the underlying price formation process	The efficiency of intra-industrial information transfer prices has improved in recent years with increased liquidity and much higher trading activity.
Researcher Name	**Type of Phenomenon**	**Research purposes**	**Research result**
Said Musnadi, Faisal, M. Sabhri A. Majid (2018)	*Overreaction* and *underreaction*	Investigating empirically investors about overreaction and underreaction behavior across sectoral stock indices in the Indonesian stock market.	Overreaction anomalies exist among winning portfolios across sectoral indices. Except for the basic industry sectoral indexes and chemicals in the loser portfolio, this study documents an anomaly of underreaction among all other sectoral indices in Indonesia.
Fortin dan Hlouskova	Momentum anomaly	Study the asset	Portfolios that

(2011)		allocation of linear loss-averse (LA) investors and compare them to more traditional ones mean-variance (MV) and conditional investor value-at-risk (CVaR).	reject losses outperform mean-variance and conditional values on risky portfolios and which incorporate dynamic updating of the loss-averse parameter significantly improve the performance of the loss-averse portfolio.
Bouteska dan Regaieg (2018)	Overconfidence and Loss aversion	Investigates the impact of two behavioral biases, loss aversion and overconfidence on US corporate performance.	Loss aversion bias negatively affects a company's economic performance. And shows that overconfidence positively affects the market performance of industrial companies but negatively affects market performance in the company's services

6. Conclusion

The findings of several studies indicate that excessive confidence bias (overreaction, overconfidence, loss aversion) is useful in explaining many asset pricing anomalies. Personal information reacts more than public information.

De Bondt and Thaler (1985) stated that investor pessimism that reflects loss aversion is shown to negatively affect the economic performance of US companies, while investor optimism that reflects excessive trust positively affects the company's stock market performance. This is evidenced by the results of research by De Bondt and Thaler (1985) showing that consistent with the prediction of the overreaction hypothesis, previous "losses" portfolios were found to

outperform the "winners" by about 25% more than winners. stocks through higher stock returns, greater profitability, and lower risk, when the rejection of losses can have the opposite effect.

Seasonal effects and momentum in several capital markets, particularly developing countries, have led to inefficient markets, as they encourage investors to overreact to information on the capital market. Behavior (investor reaction) can affect stock prices. A profitable investment strategy of buying new winners and selling losses is an outright rejection of the efficient market theory that returns are unpredictable. Risk-based models such as CAPM and Fama and French (1996) fail to explain momentum returns. Fama and French (1996) acknowledge the inability of models to explain phenomena. Research on the phenomenon of investor overreaction in the capital market is interesting for further investigation. The findings of this phenomenon can be used as a basis for predicting stock returns.

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