

Behavioral Finance-IPO- in Indonesia

Hari Sulistiyo^{1*}, Nugraha², Disman², MW Zarkasyi¹

¹Universitas Singaperbangsa Karawang, Indonesia.

²Universitas Pendidikan Indonesia, Indonesia.

Corresponding author e-mail: hari.sulistiyo@fe.unsika.ac.id

ABSTRACT

Market Efficiency has been experiencing conflicts since the introduction of the elements of psychology in economic and financial literature. This has led to the diversion of the focus of financial studies from fundamental analysis to investor sentiment due to psychological bias. These two studies complement each other in understanding investors' patterns or in predicting stock prices. Several studies have been conducted to determine the application of the two theories. This research therefore used the Ordinary Least Square Model (OLS) on 270 companies with IPO on the Stock Exchange during the 1980-2015 period. The purpose was to test investor sentiment using NIPO and RIPO proxies while the fundamental factors used the proxy LEV, LIA, and ROE in predicting stock prices in Indonesia. The results indicated fundamental factors are considered in assessing stock prices during an IPO. In addition, this research proved that the Efficient Market Hypothesis is included in the semi-strong form which means it is better to value stock prices through the use of a combination of fundamental factors and financial behavior.

Keywords: Market Efficiency, Financial Behavior, Investor Sentiment Function, Stock Prices

INTRODUCTION

Anomalies can occur in the market when the Composite Stock Price Index (CSPI), as a trading indicator, moves up or down significantly for no apparent reason. This unusual market indicator movement occurs at certain times, for example, before the long holiday known as holiday effect, towards the end of the year which is also known as the window dressing, and early January which is popularly known as the January Effect. However, holiday effects, window dressing, and January Effect are terms describing abnormal conditions in the capital market.

From a closer perspective, apart from the fundamental factors, some other irrational events such as the ones previously stated are also considered by market participants. The basic framework of standard/traditional finance is the modern portfolio theory and the efficient market hypothesis. The dominant asset valuation theory from the early to mid-1960s is the efficient market hypothesis theory which was developed through the contribution of famous journal articles such as Malkiel (1962), Fama (1965) and Malkiel & Fama (1970). According to Malkiel (1962) and Fama (1965), the efficient market hypothesis is the price of assets describing basic information about the assets.

The inability of traditional finance to explain anomalies in financial markets and capital markets encourages financial researchers to link existing phenomena with psychological or behavioral aspects called behavioral finance. This

was proposed as a way of assessing stock prices through the use of elements of psychology founded on the assumption that human action is basically rational or irrational. Shiller (1984), through a psychological and social science approach, tried to explain market irregularities and the paper in its development became the standard paradigm of behavioral finance.

Shiller's opinion (1984) became a debate and attracted criticism from fundamentalists that in every stock market movement there is nothing irrational. According to these critics, Shiller's opinion (1984) is one of the biggest mistakes in the history of economic thought. However, Shiller (1984) was not alone, Richard H. Thaler (1999), also became famous for providing anomalous hypotheses that deviated from neoclassical economic thought and became the main reference at that time. These two scholars are known as defectors for developing *behavioral finance* in the end.

To understand and solve anomalous problems, several researchers have tried to incorporate financial behavior into financial standard models. Previous research has shown there is no consensus on the exact definition of investor sentiment, however, the concept of noise traders by Black (1986) produced a definition from which several behavior-based models such as De Long, Shleifer, Summers & Waldman (1990) and Campbell & Kyle (1993) emerged. De Long et al. (1990, p. 703) presented a generation of simple models intersecting with the capital

market when irrational noise traders with erroneous stochastic beliefs affect prices and obtain higher expected returns. Moreover, B. Barberis, et al (1998) presented a parsimonious model of investor sentiment on the consistency of investors form beliefs with empirical findings while Brown and Cliff (2005) identified two basic types of sentiment actions to be direct and indirect. However, a measure of direct and indirect combined sentiments includes the combination of several indicators and techniques such as those used by Brown and Cliff (2005) and Baker and Wurgler (2006).

Baker and Wurgler (2007) used the Top-Down Approach to study the theoretical effects of investor sentiment on several types of stocks and, as a result, created a Seesaw Sentiment with shares on the x-axis which corresponds to how difficult stocks are valued and arbitrated, and the prices showing the fundamental values on the y-axis. Seesaw sentiment showed high sentiment needs be associated with high stock valuation, especially for stocks that are the most difficult to value and arbitrate while low sentiment works in the opposite direction (Baker and Wurgler 2007, p. 133). Moreover, Baker and Wurgler (2006, 2007) also developed a sentiment index of six monthly components including Closed-end fund discount (CEFD), the New York Stock Exchange (NYSE) share turnover (TURN), the number of Initial Public Offering (IPO) and average first-day return, equity share in new issues, and premium dividends. The use of proxies sparked by Baker is widely used by other researchers, although so many others are using other proxies, especially measurements with Meta Measure. The results obtained by Baker and Wurgler (2006; 2007) and Brown and Cliff (2005) have motivated other researchers to observe the role of investor sentiment in the capital market.

The purpose of this research was to investigate the basic theories of stock prices - both neoclassical and behavioral - to understand the relationship between investor sentiment and stock prices. This is due to the different implications of neoclassical financial and financial behavior in valuing stock prices. The research was based on experimental psychology literature to explain investor behavior. Previous studies have shown

much evidence contradicting the notion of market efficiency and acknowledged the influence of psychological biases on investor behavior and asset prices. As previously described, some researchers have made several models to predict asset returns on the market, for example, Paudel & Laux (2010) combined a standard and a behavioral financial model and found that financial behavior was not significant in influencing stock prices. With respect to the conditions and different times of research from Paudel and Laux, this study is expected to discover something new that fits the scope of the research.

This paper provided the framework needed to understand the asset pricing behavior model with human sentiment and the standard financial model without human sentiment to discover a better model to explain asset prices. This research used 270 samples of companies with IPO from 1980 to 2015 and empirical analysis was conducted on the effects of investor sentiment in measuring stock prices.

The first part of this paper presents a summary of the literature relating to relevant theories, especially the Efficient Market Hypothesis (EMH) which is an empirical measurement of investor sentiment functions. The second part discusses the character of the constructed econometric model, reviews a comprehensive methodology to test the model and analyze the results, and determine the effect of the standard financial models of investors on stock prices.

REVIEW OF LITERATURE

Efficient Market Hypothesis (EMH) has been one of the main theories in financial science for almost forty years. It emerged for the first time when Milton Friedman (1953) argued that "prices are right, there is no free lunch". Samuelson (1965) wrote a very influential article to further propel the random walk theory, "Proof that Properly Anticipated Prices Fluctuate randomly". According to Samuelson, in an information-efficient market, price changes cannot be forecast if they fully incorporate corporate expectations and information of all market participants. Mandelbrot (1966) had a similar opinion after the price of securities was discovered to be moving in

a random pattern and that returns cannot be predicted.

It is impossible to separate the history of EMH from the name of Louis Bachelier, a stock analyst from France. In 1900, Louis Bachelier researched to determine whether random stock prices and commodity markets fluctuated randomly (Sewell 2011) and this serves as the basis for Fama in developing the concept of market efficiency. For the first time, Fama (1965) defined market efficiency as follows:

“A market where there are large numbers of rational profit maximizers actively competing, with each trying to predict future market values of individual securities, and where important current information is almost freely available to all participants”.

The dominant asset valuation theory from the early to mid-1960s is the Efficient Market Hypothesis, developed through contributions from well-known articles such as Malkiel (1962), Fama (1965), and Malkiel & Fama (1970). As proposed by Malkiel (1962) and Fama (1965), the Efficient Market Hypothesis argues that the price of any asset needs to immediately describe the basic information about the assets.

According to Fama (1965), in a situation when information has just been published, the actual price (intrinsic value) would soon change and move towards a new level of intellectual value because of investors' rational behavior. Moreover, market efficiency, which was reviewed in detail in several previous studies, eventually became one of the bodies of knowledge of financial theory and was known as EMH. According to Fama (1970),

"A market in which prices always fully reflect all available information is called efficient. In an efficient market, on the average, the competition will cause the full effects of new information on intrinsic values to be reflected "instantaneously" in actual prices".

Fama argued that an efficient market is a place where investors behave rationally, making maximum profit as a goal through the estimation of future market values, and where important information is currently free for all investors. Therefore, this means the movement of stock prices reflects all information in the market.

Furthermore, efficient markets cover the possibility of gaining profits through abnormal returns due to the use of freely available information as the price base (Bodie et al. 2008). The efficient market theory states that the price of security formed is a reflection of all available and relevant information about the security. This further indicates that the market is efficient if all available information quickly spreads and describes the stock price.

This hypothesis was criticized by opponents as observed in the phenomenon of stock volatility being far greater than the volatility of dividends or earnings (Shiller, 1981). According to Black, (1986) and De Long et al., (1990), the presence of noise traders that made stock prices move away from their fundamental values was also the reason for the opposition to EMH. Moreover, the hypothesis was also reported to be powerless in explaining the phenomenon of stock prices moving against the random walk pattern, as evidenced by De Bondt & Thaler (1985) in the long term, and Bernard & Thomas (1989) and Jegadeesh & Titman (1993) in the short term.

However, traditional finance was observed to no longer have the ability to explain anomalies occurring in the money and capital markets, and this made researchers turn to psychological or behavioral aspects. In further research, behavioral finance was able to provide a solution to existing anomalies.

Another important argument is that an efficient market hypothesis is not enough to explain anomalies, for example, the internet bubble (see Blanchard & Watson, 1982; Hong & Stein, 1999; De Bondt, 2000; Abreu & Brunnermeier 2003). Therefore, it was necessary to study the psychology of market participants as suggested by De Bondt et al. (2008) and Kourtidis et al. (2011) leading to the use of financial behavior theory.

In essence, human psychology states that under normal conditions, each market participant will interpret the information provided about different financial assets. However, the nature of financial crises like information is becoming increasingly asymmetrical and news has been discovered to be having a greater impact than fundamentals. Therefore, as illustrated in this

research, some pieces of evidence showed financial markets are governed by market reactions (De Bondt et al., 2008), Kourtidis et al., 2011 and Dan Lee et al., 2002). According to De Bondt (2000), most overreactions are caused by prediction errors of market participants such as showing optimism when the market is bullish and being gloomy when bearish as reflected in their perspectives regarding asset prices. Another problem is the overpricing of information on assets during the Initial Public Offering.

In essence, this research studied the theories influencing stock prices on global financial markets and this requires understanding the factors underlying stock price movements, efficient hypothetical markets, and financial behavior theories. According to Malkiel (1962) and Fama (1965), the efficient market hypothesis holds that the price of any asset must immediately describe the basic information about the asset. Meanwhile, the theory of financial behavior, as argued by Statman (2008) and Subrahmanyam (2007), states that in order to know asset price movements, there is a need to understand the psychology of market participants.

In classical financial theory, investor sentiment has no role in stock prices, realized stock returns, or expected returns. Several pieces of academic literature that reviewed the concept came up with different views. Klemola, Nikkinen's, Peltomäki (2016) revealed it is "the hypothesis that information reflects investors' optimistic and pessimistic anticipation". In another study, Baker and Wurgler (2006) stated that "beliefs about the future of cash flow and investment risk that are not supported by facts are investor sentiment". Meanwhile, Mehrani et al (2016) suggested the concept is an individual's feeling of optimism or excessive pessimism about a situation. However, Baker (2006, 2007) discussed some of the common problems and proxies involved in measuring sentiment as well as the sentiment index combining some of the proxies.

Therefore, for the purpose of this research, a top-down or indirect measure approach was used to measure investor sentiment based on the proxies proposed by Baker (2006) and Baker (2007) which include "the closed-end fund discount, NYSE share turnover, the number and

average first-day returns on IPOs, the equity share in new issues, and the dividend premium" (Baker, 2006) as well as "surveys, mood proxies, retail investor trades, mutual fund flows, trading volume, premia on dividend-paying stocks, closed-end fund discounts, option implied volatility, first-day returns on initial public offerings (IPOs), volume of initial public offerings, new equity issues, and insider trading (Baker, 2007).

The use of Baker's Proxy Investor sentiment in this study was related to the IPO, such as the RIPO and NIPO, due to the argument that IPOs sometimes obtain extraordinary results on the first day of trading. It is, however, hard to obtain an explanation without investor enthusiasm. Moreover, the volume (NIPO) which is the demand underlying the initial public offering can be very sensitive to investor sentiment and this was used to explain the wild fluctuations and deviations observed in the NIPO.

The last literature referenced is a research conducted by Paudel and Laux (2010) using a behavioral approach to determine stock prices. The researchers explored the fundamental theory in price-fixing to further understand investor sentiment with stock prices. Using this background, this research aimed determine the results of empirical investor sentiment functions calculated by the traditional neoclassical asset pricing model through the use of five variables including Investor Sentiment Index (SI) such as RIPO and NIPO, Current Ratio (LIA), Debt Ratio (LEV), Return on Equity (ROE).

DATA

The dependent variable was the stock price (PRI) while the independent ones include RIPO, NIPO, LEV, LIA, and ROE. The sample used in this research consisted of 270 companies with IPOs in Indonesia between 1980 and 2015. Several key financial variables were used with the main independent one being the Investor Sentiment (SI) indicated by RIPO and NIPO (Baker and Wurgler 2006) which was selected to study how IPO, one of the financial behaviors proxied by Baker, can be used to predict stock price movements. This IPO factor is, however, a behavioral variable due to its ability to show "irrational investors in the market".

Other variables used such as the Current

Ratio (LIA), Debt Ratio (LEV), and Return on Equity (ROE) were adopted from Louis Navellier (2007) and the model developed by Paudel and Laux (2010).

METHODOLOGY

Several methods are used in estimating the regression model with panel data and they include Fixed Effect and Random Effect approaches. However, the simplest technique involves combining time-series data and cross-sections using OLS (Ordinary Least Square) method with several assumptions required to be met for authenticity and effectiveness and to avoid outliers.

The empirical model used in this study is as follows:

$$PRI = f(SI, LIA, LEV, ROE)$$

After the development of the model, the following equation was obtained:

$$PRI_{it} = \beta_0 + \beta_1RIPO_{it} + \beta_2NIPO_{it} + \beta_3LEV_{it} + \beta_4LIA_{it} + \beta_5ROE_{it} + e_i$$

Explanation:

- PRI = Share Price
- RIPO = Initial return
- NIPO = Total volume of IPO shares
- LEV = Debt Ratio
- LIA = Current Ratio
- ROE = Return on Equity
- β_0 = Constant
- $\beta_{1,2,3,4,5}$ = Regression coefficient

RESULTS AND DISCUSSION

The data feasibility tests conducted with the regression analysis include the normality, heteroskedasticity, and multicollinearity tests. The results of the comparison between the initial and final normality for the outlier is shown in the following table.

Table 1. Comparison between Initial and After Normality Test Data from Outlier Processes

	First Data	After removal of outlier data
n	272	270
Jarque-Bera	14.08471	4.886986
Probabilty	0.000874	0.086857

Table 1 shows the magnitude of the Jarque-Bera Normality test statistic was 4.886986 with a probability value of 0.086857. This means the empirical model used has a normally distributed residual or confounding factor due to the probability value with $\alpha = 5\%$ of $0.086857 > 0.05$. Therefore, the data after the outlier process was feasible for further testing.

Moreover, heteroscedasticity was conducted using the White test which involved measuring the value of $n * R^2$ (observation * R-Square) and the result is provided in the following table.

Table 2. White Test Results

n	270
R-squared	0.002686
Chi-Square (df=2)	5.991

The probability of $Obs * R^2$ was found to be 0.725 which is smaller than the chi-square table value of 5.991 to indicate no heteroscedasticity problem in the model.

In general, multicollinearity checks for the existence of correlations between independent variables in a model such that a higher value of R^2 indicates the problem of multicollinearity. The following table shows the value of the coefficient obtained using the Pairwise Correlation Matrix is not greater than 0.8 and this indicates the absence of multicollinearity problems.

Table 3. Table of Pairwise Correlation Matrix

VARIABLE	RIPO	NIPO
RIPO	1	-0.024
NIPO	-0.024	1

Furthermore, after the required tests have been passed, the results of the regression analysis for the comparison of coefficients and t-statistics

for each independent variable in the model are shown in Table 1. Model 1 includes RIPO and NIPO without neoclassical financial variables while Model 2 involves all variables, both representative of behavioral and neoclassical finances. T-statistics estimated the role of the

investor sentiment index in determining the price of a stock (PRI) to be statistically significant for the entire sample. The following table compares the two models:

Table 4. Comparison between Regression Results with OLS- With Two Models

Variables	MODEL 1			MODEL 2		
	Coeffisient	t statistic	Probabilty	Coeffisient	t statistic	Probabilty
C	3.817722	15.1773	0.0008	5.969241	14.8552	0.0000
RIPO	-0.17826	4.113779	0.5525	0.447138	4.217008	0.0000
NIPO	-0.04546	-2.256593	0.0248	-0.05964	-2.29309	0.0226
LEV				-0.00927	-0.789308	0.4306
LIA				0.067445	1.587337	0.1136
ROE				0.042535	1.672933	0.0955
R-squared	0.077645			0.099975		
Adjusted R-squared	0.070736			0.08293		
F-statistic	5.865065			5.865065		
Prob(F-statistic)	0.000021			0.000037		

In Model 1, the prob value (R-squared statistic) of 0.000021 obtained is far smaller than the 5% error rate proposed by the researcher, therefore, the H0 is accepted and this means RIPO and NIPO together have a significant effect on the Stock Price (PRI). The results of Model 2 showed the effect of the independent variable on PRI of 9.99% was increased by 0.223 times for unit increase in neoclassical finance, as measured by LEV, LIA, and ROE. Meanwhile, RIPO and NIPO were only able to explain the variable Share Price (PRI) of 7.76%. Based on this output, the Prob value (R-squared statistic) in Model 2 is 0.000037, a value less than 0.05 ($\alpha = 5\%$), therefore, H0 is accepted and this means RIPO, NIPO, LEV, LIA, and ROE together have a significant effect on stock prices (PRI).

Moreover, all the R-squared statistics are below 0.1 for each model and this shows Models 1 and 2 only explain about less than 10% of the variation in stock prices for the entire sample. The F-statistic value is also above the critical value for both models at 5% significant level. This research showed there is a significant difference between the R-squared statistics in the two models. Therefore,

The results indicated the traditional

neoclassical asset pricing model in Indonesia has a significant role in predicting stock prices when a company conducts an Initial Public Offering (IPO). It also proved that when the Efficient Market Hypothesis in the semi-strong form, the valuation of stock prices is best conducted using a combination of variables between the traditional neoclassical and behavioral finance asset pricing models.

This result is consistent with the findings of Paudel and Laux (2010) that investor sentiment was not significant in predicting stock prices. It is important to state that the stock price (PRI) is defined as a function of the independent variables, investor sentiment index (SI), gross profit growth rate (GPGR), current ratio (LIA), debt ratio (LEV), return on equity (ROE), dividend per share (DIV), free cash flow to equity (FCF), dummy variables for the first 55 years (D 1950-2004) and also for the aerospace industry and financial services (D aero, fin).

There are, however, some differences and similarities between the results of this study and the findings of Paudel. First, Paudel used two models, Model 1 combined Behavioral Finance with neo-classical financial models while Model 2 ignored Behavioral Finance in the regression analysis. Meanwhile, this study also made use of two models, Model 1 tested the regression using

only behavior variables without including the proxy of neo-classical financial models while Model 2 combined behavior and neo-classical models. Second, the Paudel Model was tested on Strong Efficient Market conditions while this research model was tested on a Semi Strong Efficient market. Third, Paudel used only three sectors in the stock market while this research made use of all the sectors. Fourth, the variables used in the test model are different and, fifth, even though the number of years studied is the same, the research periods are different.

Moreover, the result is different from Tsuji's findings which examined the characteristics of investor sentiment in Japan and reported "positive investor sentiment towards the stock market in the future succeeded in predicting the dynamics of stock prices in the coming month" (Tsuji 2006, p. 356). The major difference is observed in the variables used in measuring investor sentiment which include Δ NKF, SD +, SD-, STANCE, Δ STANCE, and EQ ALL.

This difference is attached to the variations in the conditions and variables used for analysis in the two research works. Even though there are market conditions between Japan and Indonesia, the differences in the variants also led to the changes in the result. Why IPO? IPO, in the proxy stated by Baker (2007), is one of the Investor Sentiments used in examining Behavioral Finance and vulnerable to the factors triggering the emergence of asymmetry of information and issuers. Rao (1993), In the Rock model (1986) showed there are two groups of investors, the informed and uninformed. Informed investors know more information about the prospect of companies and the issuers buy IPO shares if the expected after-market price exceeds the initial price while the uninformed group lacks information about the company and the issuer makes arbitrary bids on both underpricing and overpricing IPO shares. However, financial behavior is evident in the conditions of the IPO, for example, Herding's behavior tends to occur during an IPO on an Emerging Market as shown by Chang, Cheng, and Khorana (1999). Moreover, in relation to the IPO, Febriana (2014) revealed management of earnings is a form of financial behavior that shapes the value of shares at the

time of an IPO and Sumarni, et al (2013) revealed that individual investors in Indonesia tend to be irrational in investing.

Furthermore, the empirical findings derived from different studies on the development of stock markets support a weak form of EMH. Some of these studies include Dockery and Vergari (1997) which showed a weak market efficiency in Budapest Stock Exchange, Karemera et al. (2009) in Turkey Stock market, Dickinson and Muragu (1994) and Mikailu and Sanda (2007) in Nairobi and Nigeria stock exchanges respectively. However, Wheeler et al. 2002 showed a different result by not supporting the efficient hypothesis of a weak form for the Warsaw Stock Exchange of Poland. Ali Saeedi (2014) also found fundamental changes and reforms occurring in the Tehran Stock Exchange mechanism during the research period with the expectation that the market efficiency would shift to a weak form of efficiency. Moreover, Sri Utami, et al. (2017) showed that the Indonesia Stock Exchange is efficiently in a half strong form.

CONCLUSION

The results indicated that in Emerging Market conditions, especially in Indonesia, the neo-classical model shown by LIA, LEV, and ROA has the ability to be a good predictor of stock prices in comparison with a model with Behavioral Finance as the only variable. However, this finding also encourages criticism by including only RIPO and NIPO as indicators of Investor Sentiment in the proxy made by Baker (2006), and three variables of LIA, LEV, and ROA adapted from Paudel's research for neo-classical models. It is recommended that future research add some variables in the form of Behavioral Finance or neoclassical as predictors of stock prices.

REFERENCES

1. Abreu, D. & Brunnermeier, M.K. (2003). Bubbles and Crashes. *Econometrica*, 71(1), 173-204, doi. 10.1111/1468-0262.00393
2. Ali Saeedi, et. all. (2014). The Investigation of the Efficient Market Hypothesis: Evidence from an Emerging Market.

- Taylor's Business Review, Vol. 4 Issue 2, August 2014. DOI 10.7603/s40932-014-0001-1
3. B.Barberis, Nicholas & Shleifer, Andre & Vishny, Robert. (1998). A Model of Investor Sentiment. *Journal of Financial Management* 49
 4. Baker, M. and J. Wurgler, (2000). The Equity Share in New Issues and Aggregate Stock Returns. *Journal of Finance*, 55, 2219-2257.
 5. Baker, M. and J. Wurgler,(2006). Investor Sentiment and the Cross-Section of Stock Returns. *The Journal of Finance*, LXI, no. 4, 1645-1680.
 6. Baker, M. and J. Wurgler,(2007). Investor Sentiment in the Stock Market. *Journal of Economic Perspectives*, 21, no. 2, 129-151.
 7. Bernard, V. L., & Thomas, J. K.(1989). Post-Earnings-Announcement Drift: Delayed Price Response or Risk Premium? *Journal of Accounting Research*,27, 1-36.
 8. Black, F. (1986): Noise. *The Journal of Finance*, 41(3), 529-543.
 9. Blanchard, O.J. & Watson, M.W. (1982). Bubbles, Rational Expectations and Financial Markets. *National Bureau of Economic Research, Working Paper No. 945*. doi. 10.3386/w0945
 10. Brown, G. and M, Cliff. (2005). Investor Sentiment and Asset Valuation. *Journal of Business* 78:2, 405-440.
 11. Campbell, John Y., and Albert S. Kyle. (1993). Smart money, noise trading and stock price behaviour. *Review of Economic Studies* 60,no. 1: 1-34.
 12. Chang,E.C.,Cheng,J.W., & Khorana, A. (1999). An Examination of Herd Behavior in Equity Market: An International Perspective, *Journal of Banking & Finance* 24,1651-1679
 13. De Bondt, W. (2000). The Psychology of Underreaction and Overreaction in World Equity Markets. in D.B. Keim and W.T. Ziemba (ed.) *Security Market Imperfections in World Wide Equity Markets*, Cambridge: Cambridge University Press), 65-69.
 14. De Bondt, W. F. M., Thaler, R.(1985). Does the Stock Market Overreact? *The Journal of Finance*, 40(3), 793-805.
 15. De Bondt, W., Muradoglu, G., Shefrin, H. & Staikouras, S. K. (2008). Behavioral Finance: Quo Vadis? *Journal of Applied Finance*, 19(2), 7-21.
 16. De Long, J., A. Shleifer, L. Summers, and R. Waldmann, (1990). "Noise Trader Risk in Financial Markets,"*Journal of Political Economy*, 98, no. 4, 703-738
 17. Dickinson, and K. Muragu, (1994). "Market Efficiency in Developing Countries: A Case study of the Nairobi Stock Exchange". *Journal of Business Finance and Accounting*, 21 133- 150.
 18. Dockery,E and F Vergari.(1997). "Testing the Random Walk Hypothesis: Evidence for the Budapest Stock Exchange. *Applied Economics letters* 4:627-629.
 19. Fama, E. (1970). Efficient capital markets: a review of theory and empirical work, *The Journal of Finance*, 25, 383-417. doi:10.2307/2325486
 20. Fama, E.(1965) The behavior of stock-market prices, *The Journal of Business*, 38, 34 -105. doi:10.1086/ 294743
 21. Fama, E.F. (1965). Random Walks in Stock Market Prices. *Financial Analyst Journal*, 21(5), 55-59, doi. 10.2469/faj.v51.n1.1861
 22. Febriana, A.(2014).Manajemen Laba (Earnings Management) Terhadap Return Saham Perusahaan Initial Public Offerings (Ipo) Non Keuangan Dan Non Jasa Di Bursa Efek Jakarta).*Balance Economics,Bussines, Management And Accounting Journal*. Volume X/ No.19/ Juli 2014. Published By Faculty Of Economic Muhammadiyah Surabaya Issn 1693-9352
 23. Friedman, M. (1953). The case for flexible exchange rates. *Essays in Positive Economics*
 24. Gray, Wesley & Kern, Andrew, 2008. "Fundamental Value Investors: Characteristics and Performance," MPRA Paper 12620, University Library of Munich, Germany.

25. Hong, H. & Stein, J.C. (1999). A Unified Theory of Underreaction Momentum Trading and Overreaction in Asset Markets. *The Journal of Finance*, 54(6), 2143-2184. doi. 10.1111/00221082.00184
26. Jegadeesh, N. and S. Titman, (1993). Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency. *The Journal of Finance*, Vol. XLVIII, no. 1, 65-91.
27. Karemera,D, Ojah, K and Cole, J. A.(2009). " Random Walks and Market Efficiency Tests: evidence from Emerging Equity Markets". *Review of Quantitative Finance and Accounting* 13:171-188
28. King, Emmet and Banderet, Luca, IPO Stock Performance and the Financial Crisis (June 30, 2014). Available at SSRN: <https://ssrn.com/abstract=2456220> or <http://dx.doi.org/10.2139/ssrn.2456220>
29. Klemola, A., Nikkinen, J., & Peltomäki, J. (2016). Changes in Investors' Market Attention and Near-Term Stock Market Returns. *Journal of Behavioral Finance*, 17(1), 18–30. doi:10.1080/15427560.2016.1133620
30. Kourtidis, D., Sevic, Z. & Chatzoglou, P. (2011). Investors' Trading Activity: A Behavioural Perspective and Empirical Results. *The Journal of Socio-Economics*, 4(5), 548-557. doi. 10.1016/j.socec.2011.04.008
31. Lee, W. Y., Jiang, C. X., & Indro, D. C. (2002). Stock market volatility, excess returns, and the role of investor sentiment. *Journal of Banking & Finance*, 26(12), 2277–2299. doi:10.1016/s0378-4266(01)00202-3
32. Malkiel, B. G. & Fama, E. F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance*, 25(2), 383-417. doi. 10.1111/j.1540-6261.1970.tb00518.x
33. Malkiel, B.G. (1962). Expectations, Bond Prices, and the Term Structure of Interest Rates. *The Quarterly Journal of Economics*, 76(2), 197-218. doi. 10.2307/1880816
34. Mandelbrot, B. (1966), Forecasts of future prices, unbiased markets, and "martingale" Models,*Journal of Business*39(S1), 242–255.
35. Mehrani, K, Roodposhti, F.R, Nekomaram, H., and Saedi, A. 2016. Behavioral trading strategies and investor sentiment: Empirical research in Tehran Stock Exchange (TSE). *Indonesian Capital Market Review*, 8, 94-109
36. Mikailu, A.& Sanda U. A.(2007). Are stock returns randomly distributed? New evidence from the Nigerian stock exchange. *Journal of Accounting and Finance* Vol.2.
37. Paudel, J. and Judy Laux. (2010). A Behavioral Approach to Asset Pricing, *The Journal of Applied Business Research*, 26, 99-106.
38. Rao, Gita, R . (1993). The Relation Between Stock Return and Earning: A Study of Newly-Public Firm. Working Paper. Kidder Peabody and Co. New York. Dalam Teoh, Slew Hong, Ivo Welch dan T . J Wong, 1998a, Eaming Management and The Long Run Market Performance of Initial Public Offering. *Journal of Finance*, Vol. L I I I . No. 6 Desember,pp. 1935-1974
39. Rock. K . (1986). Why New Issues Are Underpriced, *Journal of Financial Economics*, 15 January/February), pp. 187-212.
40. Samuelson, P. (1965). Proof that properly anticipated prices fluctuate randomly. *Industrial Management Review* 6, 41–9.
41. Sewel.(2011). History of the Efficient Market Hypothesis. Research Note RN/11/04. UCL Department Of Computer Science
42. Shiller, R.J.(1981). The Use of Volatility Measures in Assessing Market Efficiency. *The Journal of Finance*, 36(2), 291-304, doi. 10.1111/j.1540-6261.1981.tb00441.x
43. Shiller, Robert J..(1984).Stock Prices and Social Dinamics. *Brookings Papers on Economic Activity*. Yale University
44. Sri Utami Ady, Alvy Mulyaningtyas.(2017). Eksplorasi Tingkat Efisiensi Pasar Modal Indonesia Studi Kasus Di Bursa Efek Indonesia.

- Ekspektra: Jurnal Bisnis dan Manajemen, Volume 1, Nomor 2, Hal. 103-123.e-ISSN: 2549-3604, p-ISSN: 2549-6972.DOI: <http://dx.doi.org/10.25139/ekt.v0i0.184>
45. Statman, Meir. (2008). Countries and Culture in Behavioral Finance. CFA Institute Conference Proceedings Quarterly 25(3):38-44
 46. Subrahmanyam, Avanidhar. (2007). Behavioural Finance: A Review and Synthesis. European Financial Management, Vol. 14, No. 1, 2007, 12–29doi: 10.1111/j.1468-036X.2007.00415.x
 47. Sumani, Dkk. (2013). Perilaku Investor Di Pasar Modal Indonesia. Ekuitas: Jurnal Ekonomi dan Keuangan, Volume 17, Nomor 2, Juni 2013 : 211 - 233 ISSN 1411-0393
 48. Thaler, Richard H., (1999). Mental Accounting Matters. Journal of Behavioral Decision Making, 12(3), 183{206.
 49. Tsuji, C., (2006). “Does Investor’s Sentiment Predict Stock Price Changes? With Analyses of Naïve Extrapolation and the Salience Hypothesis in Japan,” Applied Financial Economics Letters, 2, 353-359.
 50. Wheeler, F, P, Bill K. Tadeusz, F, and Steve, R,L. (2002). ‘The Efficiency of the Warsaw Stock Exchange: the First few Years 1991-1996. The Poznan University of Economics Review (2):2 37-56.