

The Effect of Corona Outbreak on the Indonesian Stock Market

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ABSTRACT: This research examined (1) the risk and return received by the investor comprehensively on the Indonesian capital market, (2) the effect of the market return, size and book-to-market factors in explaining excess returns on the Indonesian stock market during the COVID-19 outbreak. The expected benefit is that capital market players, especially investment managers, can take advantage of this research to make investment decisions in the Indonesian capital market amid the rise of the issue. Methodology of the research used the Fama French Three Model's that calculates excess returns from the portfolio of SH, SM, SB, BH, BM and BL based on average daily prices. The Kompas 100 index consists of 100 listed companies, had been classified by size and its value during research period. Data analysis of this research was carried out by panel data regression simultaneously and partially on the portfolio using E-Views 9 software. The research founde that the market return factor, size and value variables mutually affect the ER during the observation period and market returns are more dominant affecting than other. This research found that the independent variable is only able 39,58% (partially) and 24,68% (simultaneously) to influence the dependent variable. In line with previous research, the market return factor, size factor and value factor, as independent variables, are influenced excess return that received by investor except for BM portfolios. Large size but have a medium value (BM) issuers has chosen by short traders to gains abnormal return, because it have large volatility prices. This research concludes that now is an opportunity owned by short traders to take advantage of the sharp fluctuation in stock prices. Large - sized stocks but have medium and low value are stocks that have relatively little risk. Another alternative of portfolio that can be taken is to combine other stocks outside the research sample in the opposite direction. The banking and consumer sectors can be an alternative portfolio for long-term investment. Research will give better results if the entire population in the Kompas 100 Index has realese the annual report so that more research samples are. Large quantities of samples will result in more resemblance to their population.

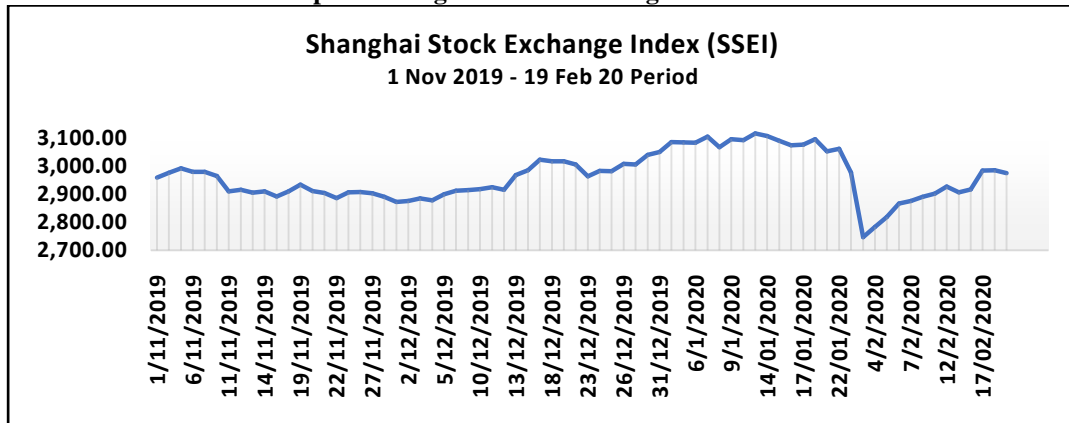
KEYWORDS: *Corona-Virus, COVID-19, Indonesian Stock Market, Fama French, Excess Return, Size Factor, Value Factor*

I. INTRODUCTION

Corona Virus (COVID-19) has shaken the world economy caused by its aggressive spread and no cure vaccine has yet been found. The first patient appeared in Wuhan China on December 8th, 2019 and continued to spread in various directions. China even isolated three cities in Hubei Province namely Wuhan, Huanggang, and Ezhou since January 23, 2020. The World Health Organization (WHO) mentions the Corona Virus Novel (nCoV) is a new type that has not been previously identified in humans. Detailed investigations found that viruses were transmitted from civet cats or other mammals to humans. The number of patients infected until February 18th, 2020 was recorded as many as 73.439 people consisting of 1.875 people have died, managed to recover as many as 13.169 people and the rest are still struggling against the virulence of the virus. Huang et.al. (2019) reported on January 2nd, 2020, 41 patients had been hospitalized and confirmed the laboratory had been infected with COVID-19 where 66% were exposed to the virus after visiting the Huanan seafood market. The virus is not only harmful to health but has an impact on the economy.

China's economy has been significantly impacted by a decline in the stock Index of the Shanghai Stock Exchange (SSEI) since January 2nd, 2020 and closed on January 24 in the framework of the Lunar New Year holiday. On February 3rd, 2020 when the market was re-opened, the trade closed with the lowest value since Black Monday in August 2015 which amounted to 2,746.61 points or corrected at 7,72% (Graph 1). The correction followed by the Shenzhen Composite Index (SZSC) which records stocks on the second exchange of China has been closed by -8,45% on the same date. Bloomberg's projection Data estimates that in the first quarter China's economy will only grow 4,5% and is the lowest number since the year 1992. This is due to the breaking up of manufacturing industry production chains in the Wuhan area, a decline in the tourism sector and the region of capital market investors in the country.

Graph 1. Shanghai Stock Exchange Index Chart



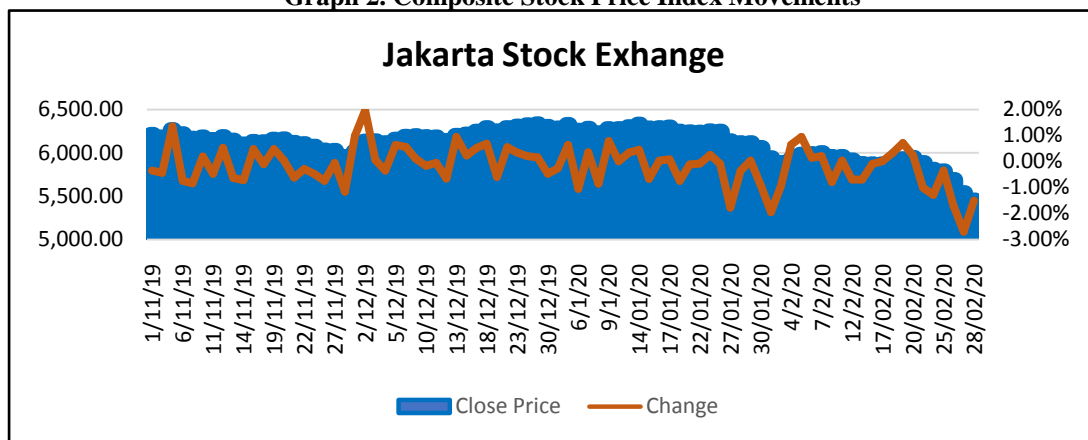
Source : finance.yahoo.com

The surge in the Chinese economic market which is considered as the world's second superpower will have a negative effect on the economies of other countries, especially countries that have bilateral and multilateral trade relations. Chiang (2019) explains that in a highly integrated financial market system, collisions in one market will have an impact on other markets. The world has become a smaller and more integrated market because all countries are interdependent so that each country responds and influences the movements of other countries (Khanum et al. 2019).

Indonesia as part of the world market and countries that have close trade relations with China were affected by this incident. Some sectors that are directly affected are tourism, import and export and investment. Restrictions on tourist arrivals from China and temporary closure of China flights, potentially lowering the foreign exchange of 54,8 trillion rupiah from tourism. The second blow was experienced by the import-export sector, the Central Statistic Agency (CSA) noted in January 2020 non-oil and gas exports to China recorded US \$211,9 million, down 3,08% compared to the previous month and dropped 9,15% compared to the same period in the year 2019. Imports from China to Indonesia also suffered a reduction in mainly fruits that fell by 78,88% (MTM), machinery and mechanical aircraft that dropped 11,24% (MTM), iron and steel down 10,97% (MTM) as well as a variety of other commodities. The negative effect is also felt in the investment sector as China has planted its investments amounting to 64,4 trillion rupiah or 16,8% of all Indonesian foreign investments.

Tandelilin (2010) states that the volatility in capital markets in developing countries is higher when compared to developed countries which is around 30% - 70%. This risk is compensated with a higher return. The COVID-19 outbreak was interesting to observe as it would cause volatility on the stock price and received return. The Indonesian stock market is also still classified into weak-form market efficiency according to Andrianto and Mirza (2016); Malhotra et.al.(2015); Chye and Kendall (1992). Current prices on weak type markets are not reflected in the price of the past but are thrust by rumors of markets and speculation of market participants. The statement is in line with the movement of the Composite Stock Price Index (CSPI) over the past three months.

Graph 2. Composite Stock Price Index Movements



Source : Yahoo Finance, 2019 - 2020

Graph 2 shows that in November 2019, IDX was still undergoing correction but the December 2019 market experienced a bullish trend to increase by approximately 4,79%. This is due to the improved trade relations between America and China, which indicate the easing of the issue of trade war, even on December

27th, 2019, the JCI was able to reach the highest value of 6.329,31. But the widespread issue of spread of COVID-19 to the world, making investors especially foreigners choose to withdraw and transfer investments into a safer form (safe heaven Investment). In January 2020, the IDX continued to decline even on January 27th – 31st, 2020 there was a decline of 4,87% and 8,52% on February 21st – 28th, 2020 . Graph 2. Also shows that the IDX had touched the number 5.452,7 on February 28th, 2020 which is the lowest number in the last three months. Although the government has stated that Indonesia is free from corona, because no infected patients were found, investors prefer to take action in the market. This causes a decrease in capitalization of Rp. 6.800,65 trillion in the previous week to Rp 6.304,21.

The Asset Pricing Model Theory states that the determination of stock prices is influenced by risk and return. Sharpe (1964), Lintner (1965) and Black (1972) explain the equilibrium asset pricing model related to systematic (beta) risk and positive expected return on risk assets known as the Capital Asset Pricing Model (CAPM) theory. The theory states that expectations of a certain security return is a positive linear function of security sensitivity to the return change of its market portfolio. Risk and return relations are also explained by other theories expressed by Fama and French (1996, 1998), Liew and Vassalou (2000) and Griffin and Lemmon (2002). They explained that the risk (beta) is also influenced by market factors, company size and book-to-market ratio or what is known as the Fama-French Three Factors Model (3FF) theory. The three-factor theory was developed by Hou et. al. (2012), Fama-French (2015) and Chiah, et al. (2015) became the Fama French Five Factors Model (5FF) by adding profitability and investment factors. The calculation of the asset pricing model through 3FF is feasible to prove the impact of the corona virus on the return received and the risk that must be borne by investors in the Indonesian capital market.

This research will investigate the risk and return received by the investor comprehensively on the Indonesian capital market using the Fama French three Model method during the COVID-19 outbreak. Stock returns - shares incorporated in the Kompas 100 Index can be expressed close to or most equal to the returns given by the IHSIG according to Mulyono (2015). In line with previous research, this research will also examine the effect of market return, size and book-to-market factors in explaining excess returns on the Indonesian stock market in the case of the corona outbreak. The expected benefit is that capital market players, especially investment managers, can take advantage of this research to make investment decisions in the Indonesian capital market amid the rise of the issue.

II. LITERATURE REVIEW

Corona Virus (COVID-19)

Huang et.al. (2019) described the corona virus as a non-segmented positive RNA virus which is a family of Coronaviridae and the order of Nidovirales. Epidemiological evidence suggests that most patients were infected after visiting the local seafood market in Wuhan. This virus is transmitted from mammals to humans or other mammals. Symptoms that appear in patients are identified such as runny nose, headache, cough, sore throat, fever, cough with phlegm and even bleeding, shortness of breath, and chest pain. Symptoms will appear for 2 - 14 days according to research by Huang et al. (2019) and Xu et al. (2020). The development of the virus further proved the occurrence of transmission from human to human and showed the possibility of spreading the virus between cities. Xu et.al. (2020) in the research explained that COVID-19 is caused by the SARS-Cov-2 virus because it is similar to the corona virus which is responsible for severe acute respiratory syndrome (SARS-CoV) and Middle Eastern respiratory syndrome (MERS-CoV). Some researchers have found that SARS-Cov-2 has a strong affinity for human respiratory receptors and shows a potential threat to global public health. Data from the World Health Organization (WHO) on 18 February 2020 showed the number of infected patients was 73,439 people and 1,875 people had died. Countries that reported Corona cases developed into more than two dozen countries including Singapore (81 cases), Japan (76 cases), Hong Kong (62 cases), North Korea (46 cases), Thailand (35 cases) and America (29 cases).

Chinese authorities have taken various steps to prevent this virus, including quarantining Hubei Province, limiting people's trips and activities to go out of the house and socializing the use of masks. Airports and train stations implement body temperature checks, health statements, and information placards to identify virus carriers. The government also extended the new year's holiday (Lunar) to February 10th and ordered most workplaces not to open until that date in 24 of 31 provinces. However, it has spread to 64 countries in the world and caused global fears which triggered economic slowdown in various parts of the world, including the Indonesian stock market.

Fama French Three Model Factor

Since investors in the stock market expect a total yield consisting of capital gains plus dividends. The market requires a high level of return on equities that provide high dividends (Litzenberger and Ramaswamy, 1979). The expectation of return (expected return) will be directly proportional to the risk faced. The portfolio theory proposed by Markowitz (1952) explains how a group of assets is able to optimize returns and minimize risk. The relationship will have implications for the stock price in the market known as the Asset Model Pricing

theory. The emphasis of risks (beta) on systematic risk as a variable expected return was found by Sharpe (1964) and supported by Lintner's research, 1965; Mossin, 1966; Black, 1972). This method determines beta is the volatility of portfolio returns or certain securities to market returns. Investors will invest only if the assets with high systematic risk give a high return. Banz (1981) tested the CAPM theory and found that firm size assumed by the value of stock capitalization also enters a risk (beta) that affects expected return. Companies with a small capitalization value tend to have higher expected returns as compensation for investors and vice versa. Beta is also influenced by the ratio book to market which is the ratio of the company's book equity to the Market equity (Rosenberg et al., 1985; Irawan and Murhadi, 2012; Ismanto, 2011). Companies that have a high ratio book to market have a higher expected return than companies that have a low ratio book to market.

Fama and French (1996, 1998) developed the theories and concluded that the beta, firm size, and book-to-market ratio (B/M) had a significant connection to the return of shares known as the Fama French Three Model Factors (3FF). These results are in line with Aldarmi et al. (2015) and Taha and Elgiziry (2016) which concluded that 3FF delivers better expected return measurements than other models. 3FF theory research on various markets in several countries conducted by Charitou and Constantinidis (2004), Hamid et.al. (2012), Osamwonyi and Ajao (2014), and Ceylan et al. (2015) concluded a significant relationship between expected return and beta represented by market risk premium, company size and equity factors, namely B/M. This model has the following equation:

$$(R_i - R_f) = \alpha + \beta_i(R_m - R_f) + s_i(SMB) + h_i(HML) + e_{it}$$

Expected return (ER) is considered as a risk premium or risk that must be borne by investors over the risk-free investment return and will be compensated with the return that will be obtained. ER is calculated as the difference between the actual return actual return (R_i) and the risk free rate (R_f). Whereas the premium market return is calculated as the difference between market return (R_m) and the risk free rate (R_f). The size of the company is symbolized by SMB (Small Minus Big) which measures the size of a company based on its market value. SMB is the difference between the average return of small companies (small) with the average return of large companies. Then the results are classified into two groups, small and big. B / M is symbolized as HML obtained by comparing the price of the book (book value) of the company's shares with the price of the stock (B / M). The results are then classified into three categories namely low, medium and high. Portfolios included in the low classification consist of companies with a low B / M ratio and have better performance companies that have a high B / M ratio (Eraslan, 2013). High-classification portfolios have higher risks and expected returns, but result in lower earning compared to other categories

III. RESEARCH METHOD

Data

This research was conducted using secondary data obtained from the Indonesia Stock Exchange website (www.idx.co.id) and the Bank Indonesia website (www.bi.go.id). The data source used is secondary data with time series data type which is a collection of observations of data collected in a continuous time interval starting from November 1st, 2019 - February 29th, 2020. The data used refers to the research of Fama, et. al (2000) includes the daily closing price of shares, number of shares outstanding, stock price index, book value of equity, Bank Indonesia interest rates (as risk free rate). Risk free rates are obtained from monthly data of 90 days Bank Indonesia Certificates (BIC) and the currency used is IDR. Shares selected as population are 100 shares listed in the Kompas 100 Index. The research period was conducted from November 1st, 2019 before the corona virus became epidemic until February 28th, 2020, when its spread began to spread to various parts of the world including Indonesia. The sample criteria followed the research of Fama French (1993, 1994, 2014, 2015) and Wijaya et al. (2017) namely:

- Recorded in the Kompas 100 Index in a row in the period November 2019 - February 2020.
- Using stocks – stocks that have a year T-1 equity book value and positive value.
- Do not have other events such as merger, dividend Division etc.
- Issuer has no negative book to market ratio value.

Research Variable

The variables in this research followed the research of Fama French (2014) which consisted of the dependent variable namely excess return and the independent variable was asset pricing factors. These factors consist of market factors, size factors and value factors. Factor measurement can be seen in table 1 while sorting portfolio-forming factors can be seen in Table 2

Table 1. Variables and Measurement Methods of Research

Factor	Variable	Measurement	Explanation
Excess	E(R)	$AR = R_i - R_f$	The daily return difference from each issuer

Return			minus the BI daily interest rate.
Return	MP	$MP = R_m - R_f$	The Daily return market difference is deducted from the BI daily interest rate.
Market Premium			
Size	SMB	$SMB = \frac{1}{3}(SL + SM + SH) - \frac{1}{3}(BL + BM + BH)$	Measured from the market capitalization of the company (market capitalization) which is a product of the daily stock price of the issuer with the number of shares outstanding (outstanding shares). Difference from the daily average return of small-size issuers to the daily average returns of big firms.
Value	HML	$HML = \frac{(SH + BH) - (SL + BL)}{2}$	Measured from the quotient between book value (book value equity) and market value (market value equity). Difference from the daily average return of issuers in the high book-to-market equity category with the issuer's daily average return in the low book-to-market equity category.

Source : Fama et.al (1992, 1995, 2000)

The factors in Table 1 were formed from the portfolio sorting made by Fama et.al (1993, 2000) in six portfolios as in Table 2 below:

Table 2. Research Portfolio

Size	Value		
	High	Neutral	Low
Small	SH	SN _B	SL
Big	BH	BN _B	BL

Source : Fama et.al (1992, 1995, 2000)

Data Processing and Analysis Techniques

This research calculates excess returns from the portfolio of SH, SM, SB, BH, BM and BL formed by the 3FF method in Fama et.al (2000) based on average daily returns. The Kompas 100 index consists of 100 listed companies, but only 22 listed companies meet the research criteria. This is due to the large number of issuers that have not yet realized their financial statements in the fourth quarter of 2019. Size is the multiplication of the daily share price multiplied by the number of outstanding shares. These factors are divided into two categories: big for issuers that have sizes above the median and small for the opposite. The number of issuers included in each category is 11 issuers. The value factor is obtained by dividing book equity (BE) and market equity (ME). BE is a division of the total fourth quarter equity of 2019 with its outstanding share, being a share price on day -d. The Sample is divided into three categories: 7 issuers that are categorized as low, 8 issuers that are categorized as medium and 7 issuers that are in the high category. The SH portfolio is formed from issuers of the small-high category. SM portfolio is formed from issuers of the small-medium category while SH is formed from issuers categorized as small-high. BH's portfolio is formed from the big-high category issuers. The BM portfolio is formed from the issuers of the big-medium category while BH is formed from the issuers of the big-high category. Data analysis of this research was carried out by panel data regression simultaneously and partially on the portfolio using E-Views 9 software. Model selection tests and classic assumptions were carried out on the data then the research model used was stated as follows:

$$(R_i - R_f) = \alpha + \beta_i(R_m - R_f) + s_i(SMB) + h_i(HML) + e_{it}$$

IV. RESULTS AND DISCUSSIONS

Result

The choice of model which is done partially or simultaneously shows that the common-constant or CEM model is the most appropriate model according to the characteristics of the data. This model assumes that each individual unit has the same intercept and slope (there is no difference in the dimension of time). The classical assumption test shows that there is no data deviation so that the data is classified as having a normal distribution, non autocorrelation, non multicollinity and non heteroscedasticity. Descriptive analysts during the observation period carried out on each portfolio showed the following results:

Table 3. Descriptive Analysis of Research Portfolios

Portfolio	Descriptive	N	Ri-Rf	Rm-Rf	SMB	HML
SL	Mean	82	-0.0064	-0.0057	-0.0014	-0.0004
	Median		-0.0042	-0.0047	-0.0023	-0.0002
	Max		0.0563	0.0155	0.0297	0.0419
	Min		-0.0612	-0.0309	-0.0261	-0.0409
	Std Dev		0.0205	0.0076	0.0124	0.0163
SM	Mean	328	-0.0071	-0.0057	-0.0014	-0.0004
	Median		-0.0068	-0.0047	-0.0023	-0.0002
	Max		0.0917	0.0155	0.0297	0.0419
	Min		-0.0917	-0.0309	-0.0261	-0.0409
	Std Dev		0.0230	0.0075	0.0123	0.0162
SH	Mean	492	-0.0079	-0.0057	-0.0014	-0.0004
	Median		-0.0097	-0.0047	-0.0023	-0.0002
	Max		0.0666	0.0155	0.0297	0.0419
	Min		-0.0971	-0.0309	-0.0261	-0.0409
	Std Dev		0.0226	0.0075	0.0123	0.0162
BL	Mean	492	-0.0055	-0.0057	-0.0014	-0.0004
	Median		-0.0042	-0.0047	-0.0023	-0.0002
	Max		0.0489	0.0155	0.0297	0.0419
	Min		-0.0821	-0.0309	-0.0261	-0.0409
	Std Dev		0.0161	0.0075	0.0123	0.0162
BM	Mean	328	-0.0067	-0.0057	-0.0014	-0.0004
	Median		-0.0067	-0.0047	-0.0023	-0.0002
	Max		0.0967	0.0155	0.0297	0.0419
	Min		-0.1274	-0.0309	-0.0261	-0.0409
	Std Dev		0.0226	0.0075	0.0123	0.0162
BH	Mean	82	-0.0049	-0.0057	-0.0014	-0.0004
	Median		-0.0057	-0.0047	-0.0023	-0.0002
	Max		0.0738	0.0155	0.0297	0.0419
	Min		-0.0720	-0.0309	-0.0261	-0.0409
	Std Dev		0.0295	0.0076	0.0124	0.0163

Source : Eviews 9. Data Processed

Table 3. shows that all portfolios have almost the same risk value except for the BL portfolio, meaning that the issuers that are performing well and are large have smaller risks. The smallest ER is in the BM portfolio on November 7th, 2019 before corona outbreaks while the highest ER occurred on December 6th, 2019 in the same portfolio. The market offers a smaller risk compared to the portfolio formed means that there are other portfolio combinations in the market that are better at reducing risk.

The test results on each portfolio are shown in Table 4. below shows that all prob stat values in the intercept (C) show values > from 0,05 which means that ER is absolutely explained by market, size and value. These results are in line with research by Fama (1992, 1995, 2000), Eraslan (2013) and Ceylan et al. (2015) which concluded that the 3FF model is correct if the intercept value is zero and not significant. Prob Stat value on market variables in all portfolios < 0,05 which shows a significant effect on ER. A coefficient on market > 1 means that ER is strongly influenced by market return. A positive value on market factors indicates that additional market returns will result in an increase in ER. This result is in line with the research of Eraslan (2013), Ceylan et al. (2015), Taha (2016), Fama French (1992, 1995, 2000) and CAPM theory and not in line with Drew et al. (2003) and Osamwonyi and Ajao (2014).

Table 4. Partial Portfolio Test Results

Portfolio	N	Coeff	Market	SMB	HML	Adj R-Squared
SL	82	0.0006	1.2153	0.8884	0.5980	0.4270
SM	328	0.0018	1.3209	0.8143	0.6256	0.3409
SH	492	0.0006	1.2153	0.8884	0.5980	0.3218

BL	492	0.0015	1.2768	-0.1382	-0.1443	0.3457
BM	328	-0.0001	1.1978	-0.1326	0.1103	0.2019
BH	82	0.0040	1.6020	-0.4776	0.9188	0.7373

Source :Eviews 9 Data Processed

Prob stat variables of SMB and HML in all portfolios are $< 0,05$ except for BM portfolios which show the significant influence of both variables on ER. These results are in line with research conducted by Nia (2017), Fama (1992, 1995, 2000), Taha (2016), Acaravci and Karaomer (2017), Sutrisno Ekaputra ((2018) and Wijaya et.al (2017). In small companies that have medium value, SMB and HML do not affect the expected return expected by market participants. SMB and HML coefficients on SL, SM and SH portfolios are positive, meaning that increasing the size and value will increase ER. Low BE/ME companies have been given higher returns as risk competition. On the other hand, in BL and BH portfolios that have large BE / ME, the corona virus outbreak actually makes the stock price corrected quite deeply because market participants consider the current stock price to be overvalued. Decline in stock prices will affect its expected return.

This research also supports all independent variables on the dependent variable in the same period. Ghozali (2007) quotes that if R^2 value is opened 1 then the independent ability variable in predicting the dependent variable is getting better (*goodness of fit*). The results of partial data testing (in Table 4) and simultaneously (in Table 5.) indicate if the independent variable produces a positive value or can explain the ER variable. The average R^2 is 39,58% (partially) and 24,68% (simultaneously), meaning that the independent variable is only able to influence the dependent variable as much as the rest is influenced by other factors such as company performance or market information. These results reinforce the notion that the issue of the spread of corona outbreaks greatly influenced ER in the observation period. The simultaneous relationship between market factors, size and BE / ME to ER is shown by the results of the analysis below.

Table 5. Simultaneous Results of Portfolio Testing

Variable	Coefficien t	Std. Error	t-Statistic	Prob.
C	0.001215	0.000563	2.156848	0.0311
MARKET	1.280452	0.060580	21.13671	0.0000
SMB	0.331790	0.046065	7.202642	0.0000
HML	0.283883	0.035529	7.990223	0.0000

Source : Eviews 9 Data Processed

The market return, size and value variables mutually affect the ER during the observation period. Increased market returns are more dominant affecting increase in return compared to size and value factors. This is in accordance with the concept of CAPM stating that stocks of high risk tend to provide greater return as compensation to investors. Risk averse investors will pay more attention to the size factor and value of the company in investment retrieval.

Discussion

Portfolio returns are considered as compensation given to investors for the risks they bear and are measured as the difference between the actual returns obtained reduced by the risk free rate. The same concept applies to a market called market risk (market risk premium). The CAPM theory explains that market risk is a major factor affecting the return expected by market participants, the greater the risk that the expected return will be greater. The results of this research showed coefficient more dominant market factors in influencing ER. Market participants tend to follow the market direction in determining their investments. The sharp correction experienced by the IDX, especially at the end of January and February 2020 will cause negative abnormal return. But on the other hand, the available stock prices become undervalued and create opportunities for capital market players to start investing. Research by Fama (1992) explains that small-scale and high-value issuers will compensate for the high risk they have by providing high returns.

Market fear of corona virus outbreaks can be seen from the negative value in the expected return of the portfolio and market during the observation period. Market participants tend to choose to do safe heaven investment. However, short traders take advantage of this situation to seek profits, especially for issuers who have a large size but have a medium value (BM). Bank Permata as one part of BM's portfolio, is an issuer whose share prices are very volatile. During the observation period, this issuer has the lowest rate of Rp. 950 due to market issues. But the issuer's fundamentals due to the take over plan to be carried out by Bangkok Bank Public Company Limited have caused the price to touch the value of Rp. 1.425. A change of 15% raises the chance of an abnormal return.

The 3FF model in this research found that the size and value of the company also affected the risks and returns borne except for the BM portfolio. Nia (2017) explains that BM / ME reflects the ability of issuers to generate profits and will increase the value of the company and influence market participants in making investment decisions. Issuers that have large size with low value (BL) are still the choice of investors in preparing their portfolio. However, in February 2020, issuers in the BL portfolio experienced significant price corrections because they were considered to be over-valued at current conditions. The correction experienced by most portfolio members is an opportunity for risk takers to start buying these stocks. Another alternative that can be taken is to combine other stocks outside the research sample in the opposite direction.

MANAGERIAL IMPLICATIONS IN THE SOUTH EAST ASIAN CONTEXT

News releases by the government regarding the number of citizens affected by the corona outbreak have had a significant impact on the market. The selling and buying actions carried out massively in the last period made the actual return received by investors experience a negative value. Large - sized stocks but have medium and low value are stocks that have relatively little risk. The banking and consumer sectors can be an alternative portfolio for long-term investment. Whereas for short-term investors, fixed income equity is an investment alternative that can be chosen because it provides fixed income and low risk.

Risk takers will take advantage of this moment for profit seeking, otherwise risk averse will choose safe heaven investment. This research concludes that now is an opportunity owned by short traders to take advantage of the sharp fluctuation in stock prices. Risk averse investors can read this situation as a signal to invest especially in issuers of BL and BM, because the price of their shares has been corrected now and in the long run the investment will be profitable.

Research will give better results if the entire population in the Kompas 100 Index has release the annual report so that more research samples are. Large quantities of samples will result in more resemblance to their population. The research Roadmap can be continued with the 5FF model which includes the profitability and investment factors as well as the comparator so that it can be clearly depicted factors that affect the risk and return of investment.

THEORETICAL IMPLICATIONS

Expected return in this research sample is strongly influenced by market risk premium linier with previous research by (1992, 1995, 2000), Eraslan (2013) and Ceylan et al. (2015). Market issues are the dominant thing that is a consideration for market participants to invest. Stock price corrections during the observation period lead to negative abnormal returns, but on the other hand cause signals for investors to start entering the market because stock prices become undervalued, especially for BL shares. The size and BE / ME of the issuer have an influence in determining the expected returns. The market prefers large-scale issuers but has medium value (BH) to get profits, because the level of risk they have is low but has a share price that is not overvalued. This result is in line with the research of Eraslan (2013), Ceylan et al. (2015), Taha (2016), Fama French (1992, 1995, 2000) and CAPM theory and not in line with Drew et al. (2003) and Osamwonyi and Ajao (2014).

V. CONCLUSION

This research found that all independent variables influenced the dependent variable during the period. But they are only able 39,58% (partially) and 24,68% (simultaneously) to influence the dependent variable. Other factors such as company performance or market information have influenced bigger than them. The market fear of corona virus outbreaks can be seen from the negative value in the expected return of the portfolio and market during the observation period. Most stocks prices have under value prices, especially the big size with low value issuer. The correction experienced by most portfolio members is an opportunity for risk taker investors to start buying these stocks. Another alternative that can be taken is to combine other stocks outside the research sample in the opposite direction. The banking and consumer sectors can be an alternative portfolio for long-term investment

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Appendix

Table 1. Analysis result

Portfolio SL

Dependent Variable: ER
 Method: Least Squares
 Date: 03/07/20 Time: 11:21
 Sample: 11/01/2019 2/28/2020
 Included observations: 82

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.003010	0.002213	1.360251	0.1777
MARKET	1.540522	0.237947	6.474211	0.0000
SMB	0.548915	0.180937	3.033738	0.0033
HML	-0.338848	0.139552	-2.428118	0.0175
R-squared	0.448207	Mean dependent var		-0.006412
Adjusted R-squared	0.426984	S.D. dependent var		0.020540
S.E. of regression	0.015548	Akaike info criterion		-5.442200
Sum squared resid	0.018856	Schwarz criterion		-5.324799
Log likelihood	227.1302	Hannan-Quinn criter.		-5.395066
F-statistic	21.11911	Durbin-Watson stat		1.955801
Prob(F-statistic)	0.000000			

Portfolio SH

Dependent Variable: ER
 Method: Panel Least Squares
 Date: 03/07/20 Time: 17:11
 Sample: 11/01/2019 2/28/2020
 Periods included: 82
 Cross-sections included: 6
 Total panel (balanced) observations: 492

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000582	0.001082	0.538188	0.5907
MARKET	1.215300	0.116339	10.44620	0.0000
SMB	0.888362	0.088465	10.04197	0.0000
HML	0.597983	0.068231	8.764144	0.0000
R-squared	0.325897	Mean dependent var		-0.007868
Adjusted R-squared	0.321753	S.D. dependent var		0.022610
S.E. of regression	0.018621	Akaike info criterion		-5.120978
Sum squared resid	0.169206	Schwarz criterion		-5.086845
Log likelihood	1263.761	Hannan-Quinn criter.		-5.107575
F-statistic	78.64152	Durbin-Watson stat		2.035395
Prob(F-statistic)	0.000000			

Portfolio SM

Dependent Variable: ER
 Method: Panel Least Squares
 Date: 03/07/20 Time: 10:59
 Sample: 11/01/2019 2/28/2020
 Periods included: 82
 Cross-sections included: 4
 Total panel (balanced) observations: 328

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001834	0.001331	1.378299	0.1691

MARKET	1.320854	0.143112	9.229521	0.0000
SMB	0.814337	0.108823	7.483115	0.0000
HML	0.625625	0.083932	7.453917	0.0000
R-squared	0.346938	Mean dependent var		-0.007124
Adjusted R-squared	0.340891	S.D. dependent var		0.023037
S.E. of regression	0.018703	Akaike info criterion		-5.108183
Sum squared resid	0.113332	Schwarz criterion		-5.061926
Log likelihood	841.7419	Hannan-Quinn criter.		-5.089728
F-statistic	57.37483	Durbin-Watson stat		2.018340
Prob(F-statistic)	0.000000			

Portfolio BH

Dependent Variable: ER

Method: Least Squares

Date: 03/07/20 Time: 14:25

Sample: 11/01/2019 2/28/2020

Included observations: 82

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.003960	0.002154	1.838577	0.0698
MARKET	1.602049	0.231603	6.917211	0.0000
SMB	-0.477607	0.176113	-2.711939	0.0082
HML	0.918830	0.135831	6.764513	0.0000
R-squared	0.747061	Mean dependent var		-0.004877
Adjusted R-squared	0.737333	S.D. dependent var		0.029528
S.E. of regression	0.015134	Akaike info criterion		-5.496248
Sum squared resid	0.017864	Schwarz criterion		-5.378847
Log likelihood	229.3462	Hannan-Quinn criter.		-5.449113
F-statistic	76.79167	Durbin-Watson stat		1.932591
Prob(F-statistic)	0.000000			

Portfolio BM

Dependent Variable: ER

Method: Panel Least Squares

Date: 03/07/20 Time: 14:07

Sample: 11/01/2019 2/28/2020

Periods included: 82

Cross-sections included: 4

Total panel (balanced) observations: 328

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.56E-05	0.001435	-0.045692	0.9636
MARKET	1.197801	0.154374	7.759098	0.0000
SMB	-0.132619	0.117387	-1.129760	0.2594
HML	0.110269	0.090537	1.217942	0.2241
R-squared	0.209187	Mean dependent var		-0.006749
Adjusted R-squared	0.201864	S.D. dependent var		0.022582
S.E. of regression	0.020174	Akaike info criterion		-4.956683
Sum squared resid	0.131870	Schwarz criterion		-4.910427
Log likelihood	816.8961	Hannan-Quinn criter.		-4.938228
F-statistic	28.56825	Durbin-Watson stat		1.918153
Prob(F-statistic)	0.000000			

Portfolio BL

Dependent Variable: ER
 Method: Panel Least Squares
 Date: 03/07/20 Time: 13:38
 Sample: 11/01/2019 2/28/2020
 Periods included: 82
 Cross-sections included: 6
 Total panel (balanced) observations: 492

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001532	0.000757	2.023598	0.0436
MARKET	1.276826	0.081422	15.68167	0.0000
SMB	-0.138160	0.061914	-2.231502	0.0261
HML	-0.144339	0.047752	-3.022675	0.0026
R-squared	0.349733	Mean dependent var		-0.005486
Adjusted R-squared	0.345735	S.D. dependent var		0.016112
S.E. of regression	0.013032	Akaike info criterion		-5.834713
Sum squared resid	0.082879	Schwarz criterion		-5.800579
Log likelihood	1439.339	Hannan-Quinn criter.		-5.821310
F-statistic	87.48697	Durbin-Watson stat		2.090201
Prob(F-statistic)	0.000000			

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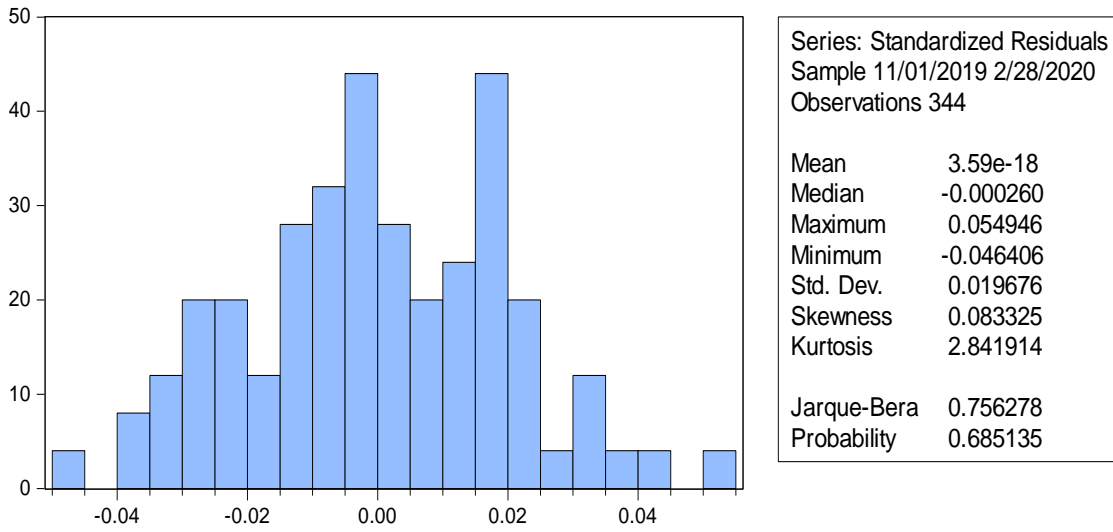
Dependent Variable: ER
 Method: Panel Least Squares
 Date: 03/07/20 Time: 21:03
 Sample: 11/01/2019 2/28/2020
 Periods included: 82
 Cross-sections included: 22
 Total panel (balanced) observations: 1804

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001215	0.000563	2.156848	0.0311
MARKET	1.280452	0.060580	21.13671	0.0000
SMB	0.331790	0.046065	7.202642	0.0000
HML	0.283883	0.035529	7.990223	0.0000
R-squared	0.248140	Mean dependent var		-0.006678
Adjusted R-squared	0.246887	S.D. dependent var		0.021395
S.E. of regression	0.018567	Akaike info criterion		-5.132679
Sum squared resid	0.620501	Schwarz criterion		-5.120488
Log likelihood	4633.676	Hannan-Quinn criter.		-5.128179
F-statistic	198.0209	Durbin-Watson stat		2.004558
Prob(F-statistic)	0.000000			

Table .Classical Asumse Test
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.262	.183		-1.434	.171
Rm - Rf	-9.248	21.541	-.116	-.429	.673
SMB	6.639	16.907	.173	.393	.700
HML	17.251	14.283	.522	1.208	.245

a. Dependent Variable: Ln_Res5



	MARKET	SMB	HML
MARKET	1	-0.2631665447420859	0.2736579543567043
SMB	-0.2631665447420859	1	-0.617977279850584
HML	0.2736579543567043	-0.617977279850584	1