

The Effect of Weekend Information to Monday's Banking Index Return in Jakarta Stock Exchange

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Capital gain from stock market does not always provide abnormal return to the investor. The level of abnormal return analysis can use Efficient Market Hypothesis to measure the efficiency of the stock market by using event study. The analysis also will use behavioral finance theory to elaborate more on how investors react to the weekend period news and arbitrage theory to know if there is an arbitrage profit that can be captured. The information on the weekend holidays should reflect in the Monday price if the market is efficient. The research will use banking index as the main study because banking index is sensitive to the news especially from financial crisis contagious. The weekend period news will be grouped into the regional and the internal Indonesia news. The results indicate that the banking index of Jakarta Stock Exchange supports the semi-strong efficient market hypothesis in the presence of Indonesia economic, fiscal policy and monetary policy news. The return of the banking index and Jakarta Composite Index on Monday may face overconfidence and anchoring and adjustment bias that can distort the price on Monday. The research shows that banking index underperforms the Jakarta Composite Index. This shows that the existence of Monday Effect anomaly is rejected. The Jakarta Composite Index is affected by the availability of the news from Japan, world news and Indonesia economy news. News that may affect each index can be specified into the exposure of the industry.

Field of Research: Finance

1. Introduction

Capital gain is one of the main objectives that every investor wants to achieve. To achieve a big capital gain or an abnormal return, investors try to seek for the best strategy. Analysts have developed many strategies. The strategies, however not all can achieve abnormal return consistently. Abnormal return is a condition when an investor can get high return when the other investors cannot. In some case, abnormal return gain can be achieved but not consistently. This condition is formulated in Efficient Market Hypothesis that stated no one can beat the market.

In the study that of anomalies (Gary Karz, 2010), researchers that discover these potential style that can produce abnormal return has two choices. The first is to seek the recognition of the discovery and the second is to earn excess return by going to the public market. There is numerous market anomalies study. One of the anomalies is the calendar anomalies.

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One of the major examples of Monday effect is the Black Monday in October 19th, 1987 in US. Black Monday started with the previous week of decline. The weekend prior to the Monday October 19th, 1987 US Treasury Jim Barker announce that the Treasury will let dollar fall to improve the trade balance.

Due to this information, investors began to consider the investment because the inflation rate was going to increase and the bonds rate return was just slightly below the stock market return. The interest rate that was increased to let the dollar to depreciated to reduce the strong demand.

The investors then started to concern about the investment and the exodus from stock market caused the Dow Jones Industrial Average to drop 508 points (22.4%) in the next day. The panic also caused become more severe because of the program trading mechanism and intense condition on the Middle East between US and Iran. Although there isother, reasons for this crash but the information by Jim Barker led the panic over the market.

The current example that has happened is the Greek parliament election that was held in Sunday June 17th, 2012 and the mass downgrade of Euro zone countries by S&P that happened in the January 13th, 2012. The event was taken place 14 hours after the Jakarta Stock Exchange the trading session closed.

The information and news that happen in the weekend holidays usually not as much as the trading days but sometimes contain valuable information that can affect the price change in the Monday trading activity. In a research of Public Information Arrival (Thomas D. Berry, 1994), the information rate per hour on trading hours have a rate that is greater than in non-trading periods.

The research by Victor Neiderhoffer (1971) on the Analysis of World Events and Stock Price said that the world event has a strong influence on stock price and microscopic analysis on event can give more accuracy. World events and other events can happen in the weekend period where there is no trading activity in the stock exchange. The influence from the news can also affect the stock price although it is not as big as the impact on trading period. So align with that, this research is focused on the weekend information that can affect the price in the next trading day.

Jakarta Stock Exchange trading activity starts in Monday and ended in Friday. Jakarta Stock Exchange is on the time zone of Universal Time Coordinate (UTC) +7. Jakarta Stock Exchange trading hour is from 9.30 to 16.00 from Monday to Friday. After the trading session close, respond to the news that came after, can be reacted in the next trading day. Therefore, there is an accumulation of news in the weekend period because after the Friday trading session close, the next trading day is Monday.

In this research, the data that will be used is the banking index. Banking index is sensitive to the news especially financial crisis news. Banking index in Jakarta Composite Index makes 22% of the total market capitalization. Financial crisis contagious places a great concern on financial system and affects the financial and banking stocks in the first place. Development of the crisis information become the important information outside the internal view of the company because bank need to maintain the stability of financial system.

2. Literature Review

In this literature review, this research will explain about the Efficient Market Hypothesis (EMH) and the market anomalies. Focus on this research will be the informational efficiency that is explained by the Efficient Market Hypothesis.

2.1 Efficient Market Hypothesis

Efficient market hypothesis said that the current market price of a security fully reflects all public and nonpublic information about the security and the company. Because of that all information are reflected in the current price, there is no way that investors can seek abnormal return above the market return consistently. Efficient market hypothesis are based on the assumption that the investors are rational, react quickly to the information and no transaction cost. Then, Fama (1970) classified the proposition of EMH into three notions: weak form, semi-strong form and strong form.

- ***Weak Form Efficient Market Hypothesis***

Weak form stated that all past information are reflected in the current price. The past information includes the all information about the historical price and volume of the trading activities. Technical analysis provides the strategy of trading based on the past performance of the stocks. The statistical data include the stock price, volatility, and many others. In accordance with the weak form efficient market hypothesis, trading with the technical analysis cannot provide abnormal return.

- ***Semi-Strong Form Efficient Market Hypothesis***

In this form of efficiency, the price of a security reflects all of the information available in the public. Public information provides the information about the company financial statement and the market data. The hypothesis said that when information comes to the investors, the price of a security quickly adjusts to the information.

The analysis of semi-strong efficient market hypothesis uses the event study. Event study is a statistic tool to analyze the return of a security in the influence of an event. Event study empirically search for abnormal return based on the movement of the security price before and after the period of the event. The following figure provides sample for the event study analysis.

- ***Strong Form Efficient Market Hypothesis***

Strong form efficient market hypothesis stated that the price of securities fully reflect all information including the private information. Private information is the inside information that is only available to the management about the future of the company although it has not been announced to the public. With this form of efficiency, the insider trading cannot achieve abnormal return only from the basis of private information.

2.2 Market Pricing Anomalies

Since the beginning of Efficient Market Hypothesis (EMH) was publicized, some researchers have found facts that violate the theory. The violation of the EMH is called the market pricing anomaly. Market anomaly is the state that a market price cannot be related to the current information. G.W. Schwert (2003) stated that anomalies are empirical results that seem to be inconsistent with the asset pricing theory. The market anomalies can indicate of inefficiency in the market or fallacy in the asset-pricing

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model. Gary Karz (2010) divided the anomalies into four types: fundamental anomalies, technical anomalies, calendar anomalies, and other anomalies. This research will focus on calendar anomaly that is Monday Effect.

Calendar anomalies are the anomalies that related to the day or month or the year. The famous anomalies for this are January effect, turn of the month effect, Monday effect, and years ending in five. Monday effect is the condition when Monday tends to be providing the lowest return. With the other day in the weeks return performs better than Monday, then rise question on what is the reason for this anomaly and that become the focus of this research.

Fama (1998), the developer of EMH also respond the EMH view of anomalies. Fama said that if anomalies split randomly between the under reaction and overreaction, it can be categorized as consistent with the efficient market. It is suggested that market efficiency should not be abandoned to the fact of the long-term anomalies. The long-term anomalies are easily broken and tend to disappear with reasonable changes.

2.3 Arbitrage Pricing Theory

In the presence of anomaly or inefficiency of securities or markets, there will be abnormal return that can be gained by the investors. In the process to find the way to get the arbitrage profit, Ross (1976) made Arbitrage Pricing Theory (APT). APT is the alternative method to measure the capital asset pricing other than the mean variance model such as Capital Pricing Model (CAPM) and Portfolio Theory. APT provides the model that the expected return of a security have a linear relationship with other multi factors such as risks and macroeconomic factors.

2.4 Behavioral Finance

In making the decision of investment, investors consider many things before they perform the investment. The factors that are considered are affects the behavior of the investors in selecting the investment decision. One of the factors is the news of the asset or portfolio. In the contrast of traditional finance, the behavioral finance arises with the basic assumptions of exhibit loss aversion, hold biases expectations, and practice asset segregation. In behavioral finance, investors are assumed to avoid the losses from the investment in the term of uncertainty.

In behavioral finance, as it is shown above, several biases and effects can affect the investment decision-making process. The effects and biases that will discuss here are overconfidence, disposition effect, representativeness bias, availability bias, anchoring, and adjustment and contamination bias.

Overconfidence is the condition that someone belief that his qualities are better than the reality. The overconfidence can lead to the decision that is not the most optimum. Overconfidence can happen in the regulation, which that is good for the regulator but not good for the communities. Overconfidence is also influenced by the other factor such as gender, culture, and information.

The disposition effect is the part of the loss aversion assumption that talks about the psychology of loss. Disposition effect shows that investors view loss as more severe pain than the pleasure for getting profit. This effect can cause the return of investment

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is reduced and increasing capital gain tax because investors tend to capture the gain and reduce the realization of the losses.

Representativeness or similarity bias is the condition when decision makers or investors judge two different things with the same measurement. This can happen when investors assign the measurement for the first one and then managed to assign the second with the relative value to the first one even it is not a same thing. This bias can happen because the complexity of the market environment and part of the human common sense.

Availability bias is the condition that people can recall the condition of salient events that they involved in the past. This can give a resonance of memories of bad condition that can affect the process of decision-making. The memories that come up may cause the error of the judgment.

Anchoring bias makes people to anchor their judgment and decision to one condition that becomes the base of the other decision or valuation. When there is a change in the condition of the problems, they will adjust the decision but not far away from the anchored decision. The decision with anchoring bias can cause contamination in the decision, as it is not based on the objectives process. With these biases, the decision making of investment process is full of the potential that

2.5 Sharpe Ratio

Sharpe Ratio is a common measure the performance of the portfolio based on the portfolio risk premium to the total risk in the portfolio. The ratio can be shown as follows:

$$S_i = \frac{R_i - R_f}{\sigma_i} \quad (1)$$

Where:

R_i = the average rate of return for portfolio I over a specified period.

R_f = the average rate of return for risk free asset over a specified period.

Σ_i = the standard deviation of the portfolio I over a specified period.

The ratio measures how the portfolio manages the total risk to get the risk premium. In other word, the ratio want to know the risk premium earned per unit of total risk. Total risk consists of all risks, both diversifiable and non-diversifiable risk. The ratio will be used to measure if there is an excess return between the banking index and the Jakarta Stock Exchange. The existence of excess return shows that there is a potential of inefficiency in the pricing of banking index that can be an advantage.

2.6 Treynor Ratio

Treynor Ratio is another measure for portfolio performance. The ratio can be stated as follows:

$$T_i = \frac{R_i - R_f}{\beta_i} \quad (2)$$

Where:

R_i = the average rate of return for portfolio i over a specified period.

R_f = the average rate of return for risk free asset over a specified period.

β_i = portion of systematic risk / beta of the portfolio i over a specified period.

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Treynor ratio wants to know how much the risk premium that can be achieved per unit of systematic risk. Systematic risk only consists of non-diversifiable risk. Treynor ratio along with the Sharpe ratio will be used to analyze the potential of excess return from banking index and the Jakarta Stock Exchange. The Treynor ratio will emphasize on the effect of diversification in the portfolio.

3. Methodology

3.1 Data

- **Price Data**

The prices are collected from finance.yahoo.com. For the data collection, if there is holiday in Monday so the Tuesday's price will be used as a proxy of Monday and the data is added with the information in the Monday. The period of study is from January 3rd, 2011 - May 31st, 2012. The daily price for banking sector stocks and Jakarta Composite Index (JCI) will be collected for the research.

- **Information in Weekend**

The second source is the information gathered in the weekend. In this research, the information is gathered from two main sources: Reuters and Detik.com. Reuters are chosen because it can provide data on the International and Financial news. Reuters can provide the data more reliably for the international news compare to the news provider in Indonesia. Detik.com is chosen to provide data about Indonesian politic, economic, and social news. Information that is collected has general principles. The principles are shown below:

- All of the information is displayed on Universal Time Coordinate (UTC) + 7.
- Data is taken from period Friday evening after 16.00 until Monday before 9.30
- Data that is taken is in the form of events that is not updated news because update from event can be considered as a pack in the events.
- If there is news available, the value of dummy variable will be 1, otherwise 0.

3.2 Dummy Variable Categorization

News for this research is divided into two main parts: regional and Indonesian news. Regional news consists of the European, USA, Japan, world and commodity news. Commodity news is part of the regional news because the news comes from the international trade and commodity futures exchanges that are traded globally. The Indonesian news will be divided into the politic, social, economy, fiscal policy and monetary policy news.

- **USA News**

USA news is the news that related or sourced from United States of America. The data contain of information of USA economy that is announced after the Friday trading close in Indonesia, the economic information.

- **European News**

European news comes from the condition of economy in Europe. The category also takes news from the policies and actions that are taken by the European countries to solve the current financial crisis.

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- **Japan News**

News that comes from the Japan is the news that comes from the Japanese company and economy. The news from Japan was considered significant because Japan is one of the leading countries in Asia-Pacific.

- **World News**

World news category is the group of news that source from the other countries outside USA, European Union, Japan and Indonesia. The news that qualified for the research is such as world trade news, international currency news, and news from group of economy.

- **Commodity News**

Commodity news here is the news from the commodities futures, like gold, oil, and precious metals. The commodity news may give significant impact because it some countries economics relies on commodity based industry.

- **Indonesian Politic News**

Politic as one of the forces in a country control the regulations of the business process in the country. Indonesian politic with its democracy may show changes in the regulation and decision from the government and the parliament.

- **Indonesian Social News**

Social news provides the information about the stability of the current social condition in Indonesia. Stability of social condition is important because it gives safety of investors to invest in Indonesia. Indonesia with a diverse resources and cultures may create conflict that can make chaos in the economy.

- **Indonesian Economy News**

The economy news included here are the macro-economy condition of Indonesia. Macro-economy condition includes factor like inflation, unemployment rate, infrastructure, and gross domestic product (GDP).

- **Indonesian Fiscal Policy News**

Fiscal policy as one of the macro-economic tools shows the health of the country fiscal condition. With a good fiscal condition, the country can maintain growth and expand the business.

- **Indonesian Monetary Policy News**

Indonesian monetary policy is held by the central bank of Indonesia, Bank Indonesia. Bank Indonesia also maintains the regulation and supervision of the banking industry. The news contain about the benchmark interest rate (Certificate of Bank Indonesia), money indicator, foreign reserves and currency.

3.3 Data Processing

In processing the data that have been collected, There are several steps that must be done. First is to make the banking index. Second is to calculate the return and then calculate the data.

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- **Index Construction**

The data of banking sector stocks then will be constructed as an index of banking sector. This index will be used in both analyzing the information data and the portfolio performance evaluation. The index will use market capitalization index weighting method. In the making of the index, several stocks are not included in the index because they have high standard deviation above 6% that could distort the data of the banking index.

Therefore, after excluding the potential stock that can distort data, the index of banking sector will be built by using market capitalization weighted index from 20 bank stocks. The index will use inception date January 3rd, 2011 as the base of index at price of 1,000.

- **Return Calculation**

The return from each index will be calculated with the following equation:

$$R_t = \ln \frac{P_t}{P_{t-1}} \quad (3)$$

Where:

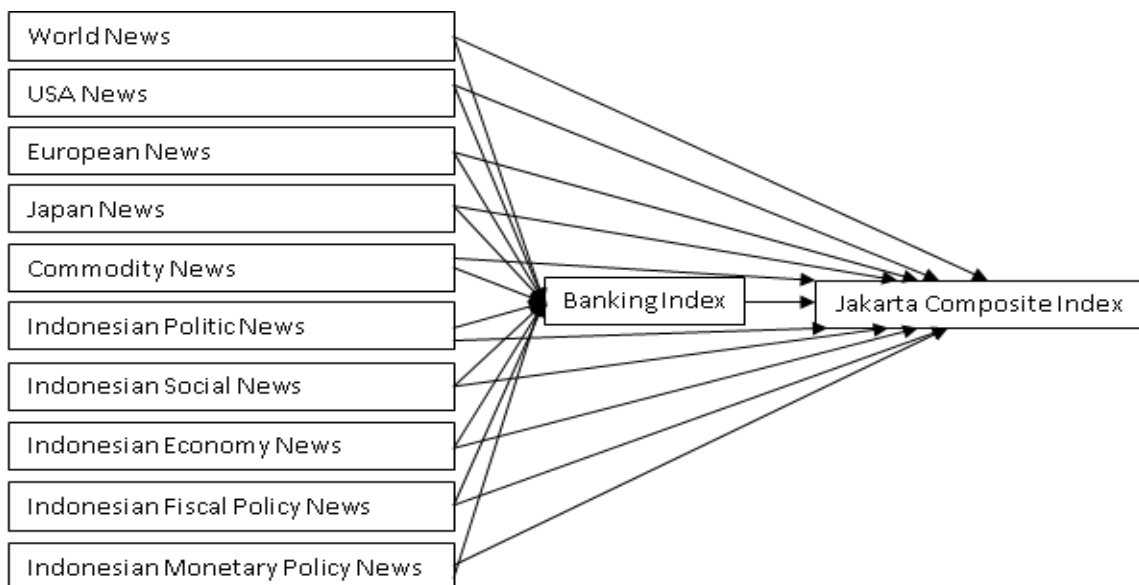
P_t = the closing price at time t

P_{t-1} = the closing price at time t-1

- **Model Building**

This research will use the model below to analyze the weekend information relation to banking index and to Jakarta Composite Index.

Figure 1: Research Model



The first model will use ten types of weekend information as an independent variable to the Monday's return of banking index. The types of news will use dummy variable to indicate the availability of the data. The second model also will use the ten types of weekend information and the Monday's return of banking index to explain the Monday's return of Jakarta Composite Index. This model wants to compare between the banking index return and Jakarta Composite Index in terms of information availability. In addition, the probability if banking index can be used as an indicator for

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Jakarta Composite Index movement. The second model also will use the dummy regression model. To simplify the naming of the variable, the following code will be used.

Table 1: Dummy Variable Coding System

Type of news	Variable name	Type of news	Variable name
USA news	USA	Indonesian Politic News	POL
European news	EUR	Indonesian Social News	SOC
Japan news	JPN	Indonesian Economy News	ECO
World news	WLD	Indonesian Fiscal Policy News	FIS
Commodity news	COM	Indonesian Monetary News	MON

- **Portfolio Performance Evaluation**

The banking index also will be evaluated on how the performance of the index in comparison with the Jakarta Composite Index (JCI). To measure the performance, it is used Sharpe and Treynor ratio for both of the index.

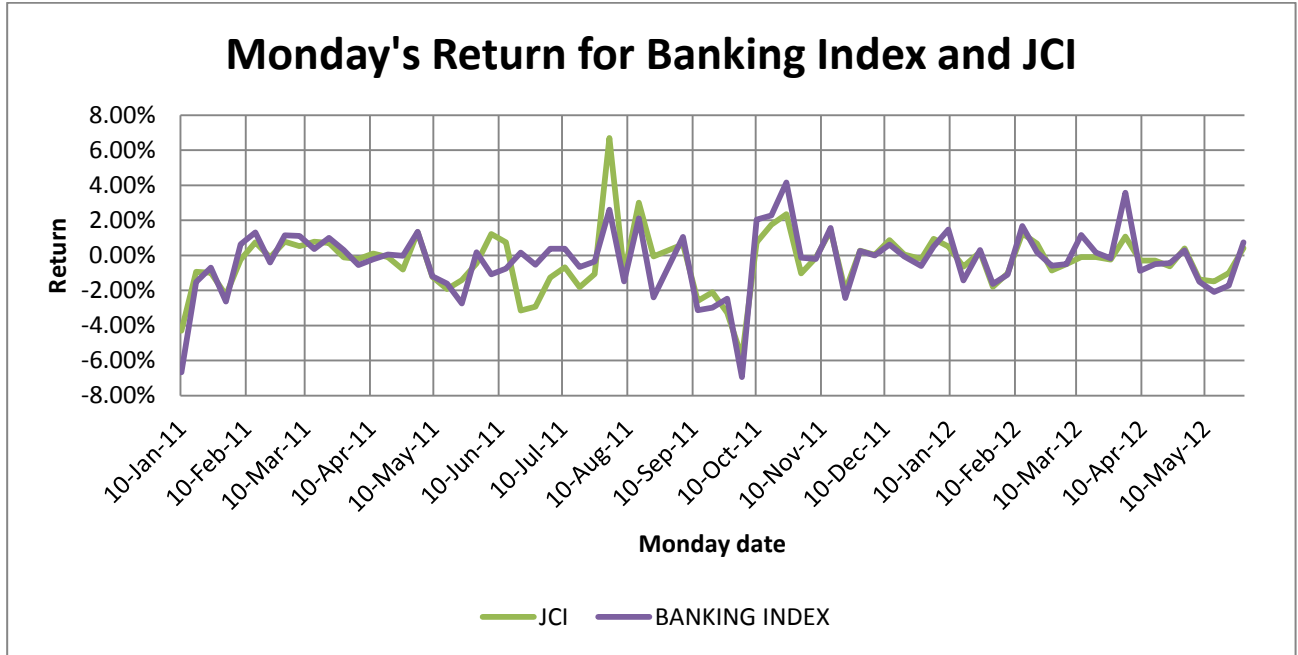
4. The Findings

4.1 Return Analysis

Banking industry is a part from the financial system of a country that serves as the financial intermediaries. Bank provides the medium of exchange where the people deposit their money and borrow the money. When people deposit their money, they will get interest and when they borrow fund, they do not need to find another source that need more trust to repay the loan.

The recent financial crisis contagious from the Europe can disturb the development for the banking industry in Indonesia. The potential of default of the Portugal, Ireland, Italy, Greek and Spain (PIIGS country) can be a problem to the world financial system. Indonesia as one of the G-20 country has a bigger chance to get out from the crisis because its GDP is mainly based on consumption and investment.

Figure 2: Monday's Return for Banking Index and JCI



From the graph above, the banking index still outperforms JCI but not all the time. There are some times like from August 2011 until October 2011; the banking index return is below JCI. This can indicate the suspicious indication that there is inefficiency in the banking index. The proof of the inefficiency will be analyzed in the next part of the analysis.

4.2 Banking Index Model Analysis

After fulfilling the classical assumption of linear regression test, the regression model for banking index becomes:

$$R_t = \beta_{wld}x_{wld} + \beta_{usa}x_{usa} + \beta_{jpn}x_{jpn} + \beta_{eur}x_{eur} + \beta_{pol}x_{pol} + \beta_{soc}x_{soc} + \beta_{fis}x_{fis} + \beta_{mon}x_{mon} + \beta_{eco}x_{eco} + \beta_{com}x_{com} + c + ar(6) + \varepsilon \quad (5)$$

Where:

- R_t = return of banking index
- $\beta_{wld} \dots \beta_{com}$ = coefficient of dummy variable
- $x_{wld} \dots x_{com}$ = dummy variable of information
- c = intercept of the regression
- $ar(6)$ = autoregressive factor order six
- ε = error of the regression

The result of the regression model is shown in the table below:

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Table 2: Banking Index Regression Result

Sample (adjusted): 7 37 39 40 42 63 65 72

Included observations: 63 after adjustments

Convergence achieved after 7 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COM	0.003031	0.003522	0.860674	0.3934
ECO	0.008205	0.003565	2.301648	0.0255
EUR	-0.004534	0.003881	-1.168278	0.2481
FIS	0.008896	0.004336	2.051829	0.0453
WLD	0.000540	0.003602	0.149916	0.8814
JPN	0.006632	0.004640	1.429367	0.1590
MON	-0.009609	0.003598	-2.670677	0.0101
POL	0.000554	0.004092	0.135442	0.8928
SOC	-0.000987	0.003576	-0.275855	0.7838
USA	0.005255	0.003820	1.375787	0.1749
C	-0.004280	0.005610	-0.762854	0.4491
AR(6)	-0.257061	0.086694	-2.965168	0.0046
R-squared	0.329448	Mean dependent var		-0.002109
Adjusted R-squared	0.184819	S.D. dependent var		0.013094
S.E. of regression	0.011822	Akaike info criterion		-5.868032
Sum squared resid	0.007128	Schwarz criterion		-5.459816
Log likelihood	196.8430	Hannan-Quinn criter.		-5.707479
F-statistic	2.277885	Durbin-Watson stat		1.496820
Prob(F-statistic)	0.023717			
Inverted AR Roots	.69+.40i	.69-.40i	.00-.80i	-.00+.80i
	-.69+.40i	-.69-.40i		

The weekend information types that are significant shows that Monday banking index return are more affected by the news from internal economy and Indonesia financial system. The stability financial system in Indonesia includes the policy from government and central bank to maintain the economy growth. Regulation and economic growth are the main concern for the investors to invest their money in a country. The Indonesia economic news boosts the performance of the banking index with the positive news of the development of economy in Indonesia. For instance in October 16th, 2011, the inflation rate of Indonesia for year 2011 is predicted to be 4.7%. That news increased the index by 2.27% along with other news that was available.

Monetary policy, on the other hand provides negative impact to the Monday banking index return. This can be explained by the behavioral finance view on regulation. Monetary policy that is imposed by the central bank of Indonesia, Bank Indonesia, may overregulated that will give disadvantage to the banking industry in Indonesia. Probe of fraud, new stricter rules and changes in the policy of interest rate, can reduce the revenue of the banks and will decline in growth.

The stability of politic and social in Indonesia not affects the banking index return because from the news that is gathered, none shows threat to the stability of financial system. If the instability of politic and social system affects the financial system, then it might happen like the financial crisis in 1998 that disrupting the economy. The current politic and social systems are better than the previous years, with less bombing and riots and stable politic with the democracy.

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News of financial crisis contagious in Europe not affects the return of banking index. Although the financial crisis in Europe is also a threat to the Indonesia financial system, it not influences the return very much because there are no current significant consequences that directly affect the financial system. The news that available from Europe provides a temporary effect as the crisis still has not found the solution. Therefore, if there are news from the European that is bad, the effect will create disposition effect in the investors but only for a while and not prolong. There are the anchoring bias that may happened to the European news because the first reaction in the Monday's trading session can be seen from the Japanese Nikkei Stock Exchange and other bourses that starts earlier than Jakarta Stock Exchange.

World news, which is mainly about Middle East political crisis, can cause volatility in commodity price. For instance in the first quarter of 2011, the situation in Libya, Egypt and Tunisia on the reformation of the government lead the price of oil futures to the peak of \$118.07 per barrel for the delivery of May 2011. The commodity and the world news are not affecting the banking index because the banking industry main concerns on the growth of Indonesia in the future not the process that is happening in other countries. Even if the world condition is so bad, Indonesia can survive with the current economy. The large portion of consumption and investment in Indonesia's GDP can support the economy although there is only limited foreign trade. Low foreign trade means that the financial system is not affected too much with the volatility of commodity future price.

News that comes from United States of America (USA) not affects the banking index return. The news from USA not much affects because the United States (US) economy is slowing down and may come to recession or depression. Recession can cause slowing down financial system growth while depression can cause it to be stagnated and no growth.

The development in US not affects the Indonesia because from the explanation of Indonesia's GDP above, Indonesia economy can still grow although there is a slowing down of global economy. The news from USA also faces the anchoring bias because along with the European countries, the economy of the countries in East Asia is dependent to those countries. With the anchor from the Japan Nikkei Stock Exchange, Hang Seng Index, and the other indices, it can create bias in the pricing in Indonesia trading activity. From the analysis above, the hypotheses that relate to the Indonesia economy news, Indonesia fiscal policy and monetary policy are accepted.

The autoregressive factor explains the lapse time of investors to react the news. The autoregressive factors shows that the banking index is still not semi-strong efficient because the return for the Monday banking index is still affected by the return of the six period time before. The conclusion for this model is banking index is efficient in the presence of Indonesia economy news, Indonesia fiscal policy and monetary news.

4.3 Jakarta Composite Index Model

The second model of this research is the Jakarta Composite Index (JCI) model. The model will use the same dummy variables in the previous model and add the return for banking index. Return for banking index is added to know how the return of banking index affects JCI and to compare the efficiency in banking index with JCI. After the adjustment, the model becomes:

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$$R_{JCI} = \beta_t R_t + \beta_{int} x_{int} + \beta_{usa} x_{usa} + \beta_{jpn} x_{jpn} + \beta_{eur} x_{eur} + \beta_{pol} x_{pol} + \beta_{soc} x_{soc} + \beta_{fis} x_{fis} + \beta_{mon} x_{mon} + \beta_{eco} x_{eco} + \beta_{com} x_{com} + ar(7) + c + \varepsilon \quad (6)$$

Where:

- R_t = return of JCI
- R_t = return of banking index
- β_t = coefficient of banking index
- $\beta_{int} \dots \beta_{com}$ = coefficient of dummy variable
- $x_{int} \dots x_{com}$ = dummy variable of information
- c = intercept of the regression
- $ar(7)$ = autoregressive factor order six
- ε = error of the regression

The result for the JCI regression model is shown below:

Table 3: Jakarta Composite Index Regression Result

Sample (adjusted): 8 21 25 29 31 72
 Included observations: 61 after adjustments
 Convergence achieved after 7 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RETURN_BANK	0.719189	0.042598	16.88329	0.0000
COM	0.002403	0.001597	1.504735	0.1388
ECO	0.003537	0.001680	2.105368	0.0404
EUR	-0.002025	0.001243	-1.629676	0.1096
FIS	-0.003093	0.002009	-1.539448	0.1301
WLD	-0.003502	0.001305	-2.682520	0.0099
JPN	0.004653	0.002207	2.108268	0.0401
MON	0.000218	0.001766	0.123509	0.9022
POL	0.002769	0.001617	1.711942	0.0932
SOC	-0.002926	0.001727	-1.693918	0.0966
USA	-0.002646	0.001553	-1.703293	0.0948
AR(7)	-0.361928	0.078238	-4.625992	0.0000
R-squared	0.863624	Mean dependent var	-0.003593	
Adjusted R-squared	0.833010	S.D. dependent var	0.014062	
S.E. of regression	0.005746	Akaike info criterion	-7.306153	
Sum squared resid	0.001618	Schwarz criterion	-6.890899	
Log likelihood	234.8377	Hannan-Quinn criter.	-7.143411	
Durbin-Watson stat	1.747904			
Inverted AR Roots	.78-.38i	.78+.38i	.19-.84i	.19+.84i
	-.54-.68i	-.54+.68i	-.86	

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The result for the regression for this model is available in Appendix M in the second part. The result shows that return of JCI comprises of 71.9% of the banking index return in Monday. This means that the banking index can be used as an indicator for JCI movement.

Economic news places a great concern in the both indices because economic development is the key for the growth of the companies in the countries especially that are listed in the index. The larger magnitude of the coefficient in the banking index shows that Monday banking index return is more impact on the economy because banking industry will grow faster when the economy is in the good and growing condition.

In the model of JCI, the world and Japanese news have significance in the Monday's return. World news is reflected in the Monday's JCI return because the world event may affect the sustainability of the companies other than banking industries that are listed in the index. For example, the riot in Egypt, Libya and Tunisia in the first quarter 2011 may affect the operational of the oil companies that operate there. The riot also causes the commodity price to rise and may affect the companies that using oil as their raw material to produce goods.

The relation of Japanese news with the model is that Japan has a good trade with Indonesia and many imported goods come from this country. Imported goods that comes from Japan to Indonesia are cars, technology related products and machines. The imported technology can cause the production of the companies in Indonesia to be affected with the development of Japan.

Although there has been more substituted for the products from other countries besides Japan, but the dependent to Japan is still high. The dependency to Japan for technology products has to be reduced because Japan has higher probability to get severe impact from the financial crisis in Europe.

The news from Europe that mainly about the financial crisis still is not significant to the model. With the good economy of Indonesia, the contagious of the woes of the financial crisis are temporary and as it is said in the banking index model, that this may be caused by the anchoring and adjustment bias that happens in Indonesia.

The financial crisis also may affect the United States (US) economy that has already shown in the signals of the slowing economy, higher unemployment rate and fluctuation of consumer confidence. The US and Indonesia has a trade relation in the textile products, technology products, and commodity products. However, with the large portion of Indonesian economy in consumption and investment, Indonesia can survive although with smaller portion of trade. On the other hand, the development in Indonesia can attract the investors in US to invest their money in Indonesia that provides greater yield than in US or Europe.

The existence of autoregressive order seven for this models also shows that in the Monday's return for JCI can be predicted by using the seven Monday's prior to the date. This indicates that there is still a potential for technical analysis to predict the return. This result can be viewed as a rejection to semi-strong efficient market hypothesis. The semi strong efficiency is only accepted in the presence of world news,

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Japan news and Indonesia economy news. If there is other news other than this, the return can still be predicted from the past data.

Efficiency Analysis

The last part of the analysis is the efficiency analysis. The Sharpe and Treynor Ratio are used to analyze the existence of abnormal return. From the model analysis above, the existence of Monday Effect is rejected. The risk free rate in the calculation of Sharpe and Treynor ratio will use the Bank Indonesia (BI) rate at the rate or 5.75%.

Table 4: Risk and Return for Banking index and JCI

β_{bank}	0.864
σ_{jci}	1.683%
σ_{bank}	1.827%
R_{jci}	5.001%
R_{bank}	-1.649%

Table 5: Sharpe and Treynor Ratio

Ratio	Bank Index	Jakarta Composite Index
Sharpe	-4.048595105	-0.44469726
Treynor	-0.085625022	-0.00748572

From the calculation above, the Sharpe ratio of banking index is -4.048 while the Jakarta Composite Index (JCI) is -0.444. Both JCI and banking index have a minus Sharpe ratio which means that there is limited excess return from the portfolio for the period of January 2011 to May 2012. The limited excess return can also be seen from the return for the same period for banking index and JCI is -1.649% and 5% respectively. This shows that banking index has bad performance in the period and JCI return also cannot surpass the risk free rate of 5.75%.

The result of Sharpe ratio shows that banking index underperforms the JCI. In other words, the banking index does not have abnormal returns against the market index, JCI. This ratio supports the result from the information related analysis part that banking index is efficient in the terms of abnormal return of the index.

From the calculation above, the Treynor ratio for the banking index is -0.0856. The Treynor ratio for JCI is -0.00748. The Treynor ratio also gives negative sign for both indices. The Treynor ratio here also shows that banking index underperforms the JCI. Diversification of assets shows that a well diverse portfolio can reduce the risk. This can be seen if the result of Sharpe ratio is compared to the Treynor ratio.

There is no mispricing of asset that happen in the banking index in the period of January 2011 to May 2012. Arbitrage strategy will provide no excess return in the banking index Monday return. The result from the modeling and the calculation of portfolio performance show that market index, JCI, is still unbeatable.

The theory of efficient market hypothesis is still withheld and no Monday effect anomaly is proven. The banking index of Jakarta Stock Exchange still lies in the weak-form efficiency in the existence of no news from Indonesia economy, fiscal policy and monetary policy. Otherwise, the banking index is in the semi-strong form of efficiency.

5. Conclusion

From the analysis of the banking index and the weekend information, it can be concluded that weekend information of Indonesian economy news, fiscal policy news and monetary policy news affect the Monday returns. The model shows that Indonesian economy news, Indonesian fiscal news and Indonesian monetary news reflects the Monday's banking index return by 0.82%, 0.8896%, and -0.96% respectively.

In the Jakarta Composite Index model, the types of weekend information that affects JCI are different with the banking index because the different exposure of information to the index. Banking index also can be used as an indicator for the JCI. With the significance of Indonesia economy, Japan and world news, JCI is exposed to the information about Indonesia economy and international trade especially in technology transfer. The JCI model shows that Indonesian economy news, Japan news and world news reflects the Monday banking index return by 0.3537%, 0.4653%, and -0.3502% respectively.

In comparison with the JCI, banking index still underperforms JCI for the period of January 2011 to May 2012. There is limited abnormal return that may exist in the banking index. Therefore, it can be concluded that banking index fall into semi-strong efficient market hypothesis for the weekend news that affects the banking index. Otherwise, the banking index is still in weak form efficient market hypothesis.

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