

Portfolio Diversification Strategy and It's Effects on the Portfolio Performance in Indonesian Capital Market

I Gst. Bgs. Wiksuana Luh Gede Sri Artini Henny Rahyuda
Ni Ketut Purnawati Ida Bagus Darsana

Department of Management, Faculty of Economics and Business, Udayana University, Indonesia

Abstract

This research aims to analyze the portfolio performance based on diversification strategy in one and multi sectors in Indonesia's capital market. The philosophy underlying the diversification strategy in one sector is "too much of a good thing is wonderful", which means the amount of stocks to be observed and monitored will be less, so that attention and analysis of the selected stocks will be more profound. The sample was collected from go-public companies listed on the Indonesia Stock Exchange (BEI) and the Indonesia capital market, and traded actively in the period of 2011 to 2015. The data analyzed using a variety of tools to measure the performance of the stock portfolio (portfolio return, risk, and risk-adjusted return), Warren Buffett financial performance, and discriminant test of Independent Sample t-test. The results indicate no difference between performance of stock portfolio in one sector and in multi sectors in the Indonesian capital markets. This can be explained that the diversified portfolios from various stocks of multi sectors will show the same performance with portfolios on various stocks in one sector.

Keywords: portfolio diversification strategy, one sector and multi sector stocks, stock portfolio performance.

INTRODUCTION

The debates over investment strategies to build a stock portfolio have taken place since a decade ago. Since then, the testing on diversification strategies to portfolio has been done in several capital markets in the world, leading to a conclusion that no consistent relation was found between portfolio diversification strategy and portfolio performance. A number of studies that examine the strategy of diversified portfolios have been performed by DBond and Thaler 1985; De Long, *et al.* 1990; Shleifer and Vishny, 1990; Rouwenhorst, 1998; Conrad and Kaul, 1998; Moskowitz and Grinblatt, 1999; Grundy and Martin, 2001; Jegadeesh and Titman, 2001; Llewellyn, 2002; Hameed and Kurnadi, 2002; Hurn and Pavlov, 2003; Wiksuana, 2009; Shan Hu, *et al.*, 2011; Henker, *et al.*, 2012; Kazan, *et al.*, 2014; Al Bakri, 2014; and Kamil, 2014.

Due to no consistent research findings on the influence of the diversification strategy on portfolio performance in a wide range of capital market in the world, this subject is still interesting to be observed. Hence, it is still possible to construct a diversification strategy that is effectively applied in the Indonesian capital market.

In the theory of portfolio, an investor can reduce risk by investing in shares that have different levels and correlated negatively with each other or with diversified portfolios. The stocks composing of negative correlation portfolios will move toward opposite direction. The advantage of diversified portfolios is reducing risk in the preparation stage; when one of the shares is declining, the others will balance it. The disadvantage of this strategy is, since it consists of various different sectors, this strategy urges the investor to know and observe the development of each business sector, particularly in identifying when and which sector will experience an increase, in order not to lose the opportunity to earn higher returns for investing in other not promising sectors.

Another strategy is to build diversified portfolios on shares from a well controlled business sector to reduce risk because of limited knowledge of other sectors. The advantage of this strategy is the investors can focus on one particular sector and get the chance to gain maximum returns when the chosen sector experiences significant strengthening. The weakness of this strategy is the substantial risk of loss if the investors choose the wrong sector to allocate funds since the beginning.

This study will test the portfolio diversification strategy in one sector and multi sectors in Indonesia's capital market. The diversification strategy for one sector refers to Warren Buffett's financial performance which has been proven able to show good performance in various capital markets in the world. The strategy includes several indicators: Earnings Predictability, Level Of Debt, Return On Equity (ROE), Return On Total Capital (ROTC), Capital Expenditures, and Return On Retained Earnings (RORE). Moreover, for multi sectors, the strategy refers to sectors with stocks from top companies in LQ 45 index.

Based on the description, the problem of the research is whether the performance of the portfolio diversification strategy by one sector is different from that of produced by multi sectors in the Indonesia's capital market?

THEORETICAL REVIEW

In investing in stock, investors will use various strategies to gain performance comparable or exceeding the market performance. There are two strategies that can be selected in building portfolio, namely passive portfolio

strategy and active portfolio strategy. Passive portfolio strategy usually includes actions which tend to be passive in investment, based on the share movement on the market index. That is, investors do not actively seek information or buy and sell the stocks that could produce abnormal return. The investors will only follow the market index.

On the other hand, active portfolio strategy would essentially require active participation of the investors in choosing, buying and selling stocks, looking for information, by following the time and movement of stock prices as well as other active attempts to produce abnormal return. Certainly investors should be careful in choosing the right strategy, whether active portfolio, passive portfolio, or the combination of the two strategies simultaneously (Jones, 2014).

Active portfolio strategy essentially can be implemented with the fundamental approach in analysing stocks. The fundamental approach is to analyze a stock based on the financial performance of the issuers (profits, dividends, sales and others) and the industry performance in which the company operates. The goal is to achieve the portfolio performance that exceeds the performance of the portfolio acquired through passive strategy. In other words, investors will seek to obtain a higher return than that of the fellow investors. They are proactively looking for additional information, improving their ability in analyzing the information that affects the performance of the stock portfolio; even more, they dare to pay at a high rate for consulting services on the best stocks. Those attempts are done to improve the performance as expected.

Passive diversification strategies encompass buy and hold strategy and indexing strategy. In buy and hold strategy, investors buy a number of shares and keep holding them for some time. This strategy can be applied in the portfolios consisting of many stocks or only certain types of stocks. The indexing strategy in practice can be defined as the purchase of mutual fund or pension fund by investors. By buying mutual fund, investors expect that the performance of their investments on several stocks in mutual fund duplicates/reflects the performance of the market index.

The purpose of the strategy is to gain returns more than those acquired through passive strategies. Some of the active strategies that investors could perform are choosing stocks, rotation sector, momentum investing, and contrarian investing.

As part of strategies in choosing stocks, investors are actively conducting analysis for the best stocks, namely those the optimum risk-return level than other alternatives. The fundamental analysis is applied to find out the prospect of the shares in the future. Investors will buy the stocks if the intrinsic value is above the market prices (undervalued), and sell the stocks when the intrinsic value is below the market price (overvalued).

The sector rotation strategy is usually preferred by investors who invest in domestic shares. In this case, the investors can act in two ways i.e. investing in shares of firms engaged in certain sectors to anticipate cyclical changes in the economy later, and performing modifications or changes in the portion of portfolios invested in different industrial sectors, to anticipate the cyclical changes, growth and decline of the stock price.

The momentum strategy as one of the active portfolio strategies can be used by investors and investment managers to build portfolios. The momentum strategy is carried out by way of purchasing shares previously having good performance, and selling shares with past bad performance. If the momentum strategy works well, the winner's portfolios are supposed to produce positive performance and the loser's portfolios have negative performance. The difference in performance of the winner-loser should be significantly positive. Empirical evidence on momentum investment strategy have been documented in the United States by Jegadeesh and Titman (individual stock momentum) and Moskowitz and Grinblatt (momentum stocks of the industry); in Europe by Rouwenhorst; in Australia by Hurn and Pavlov; in the Asia-Pacific region (outside Indonesia) by Hameed and Kusunadi; and in Indonesia by Wiksuana.

Contrarian investing strategy is the active portfolio strategy that was first introduced by DeBondt and Thaler (1985). Using the United States capital market data, they found that the stocks initially giving a positive rate of return (winner) or negative (loser) will experience reversals in subsequent periods. Investors who buy loser's stocks and sell the stocks after being the winner will gain a significant abnormal return to 15% per year for the time horizons of 3 to 5 years.

Warren Buffett's strategy is the active portfolio strategy that recommends stock picking from one sector, and not multi sectors as recommended by other active portfolio strategies. Recently, studies on the strategy of Warren Buffett have largely been undertaken using the stocks of companies listed on NYSE or NASDAQ. There are six criteria of stock picking according to Buffett (Reese and Forehand, 2009), namely:

1) Earnings predictability

Buffet tends to invest in companies with stable and predictable earnings growth. When a company suffered losses in the past decade, it will be excluded from the list, with the exception of the negative profit at the beginning of the fiscal year. Stock picking criteria based on earnings predictability is described as follows:

- a) Net profit rises for 10 consecutive years and the company never loses –> Pick (Best Case)
- b) Net profit rise for 10 consecutive years and the company never loses (except when there is one-year profit decline of more than 45% of the previous year) –> Pick

c) Other combinations – > Drop

2) Level of Debt

Buffet likes companies financed conservatively. Buffet would observe if long-term debt can be repaid with net profit for five years or less and the most favoured is that could be repaid with net profit of less than two (2) years, and the company is not a financial company. The Buffet's criteria based on level of debt are:

- $Long\text{-}term\ debt \leq 2x\ earnings \rightarrow Pick\ (Best\ Case)$
- $2x\ earnings < Long\text{-}term\ debt \leq 5x\ earnings \rightarrow Pick$
- $Long\text{-}term\ debt > 5x\ earnings \rightarrow Drop$

3) Return on Equity / ROE (rata-rata 10 tahun)

Buffet prizes companies with an average ROE of at least 15% or more. If the average ROE within ten (10) years is 15% or more, Buffet would consider a high return over equity in selecting stocks in the portfolio, because it indicates that the management has allocated the retained earnings well. Buffet's model based on ROE criteria is:

- $ROE \geq 15\% \rightarrow Pick$
- $ROE < 15\% \rightarrow Drop$

Description: $ROE = \frac{Net\ Earnings}{Equity}$

4) Return on Total Capital / ROTC

Some companies are sometimes financed with more debt than equity, and they can still produce consistently high ROE. For non financial companies, Buffets utilizes ROTC which is defined as net income divided by the total capital plus debt. The Buffet's model for the criteria is as follows:

- $ROTC \geq 12\% \rightarrow Pick$
- $ROTC < 12\% \rightarrow Drop$

Description: $ROTC = \frac{net\ earning}{(debt + equity)}$

5) Capital Expenditures

Buffet prefers companies that do not require a large capital expenditure, meaning that the companies do not need a lot of money to improve equipment, factories, or research and development to remain competitive. Cash flow greater than zero is good because it indicates that companies make more money than they consume. Conversely, if cash flow is equal to zero or even negative, it is seen as a bad sign since it indicates that the company expenditure is more than the earnings. Buffet's criteria for this model are:

- $Free\ Cash\ Flow > 0 \rightarrow Pick$
- $Free\ Cash\ Flow \leq 0 \rightarrow Drop$

Description:

Free Cash Flow (FCF)= Operating Cash Flow-Capital Expenditure

6) Use of Retained Earnings (RORE)

Another way of Buffett to assess performance management is by observing the use of retained earnings for a certain period of time and then comparing it to the increase in earnings per shares in the same period. Hence, there must be margin between the profit in the current fiscal earnings and the fiscal earnings of ten (10) years ago that are divided by the the retained earnings in the same period. A comparison between the retained earnings per portfolio and earnings per portfolio shows a rate of return of the retained earnings. Buffett accepts 15% or more rate of return from the retained earnings, meaning that the management has worked well. If the return rate of retained earnings is less than 15% but greater than or equal to 12 per cent, it is still acceptable to Buffett, meaning that the management has been proven able to generate the income of shareholders well. The criteria for this model are as follows:

- $RORE \geq 15\% \rightarrow Pick\ (Best\ Case)$
- $12\% \leq RORE < 15\% \rightarrow Pick$
- $RORE < 12\% \rightarrow Drop$

Description:

$RORE = \frac{(EPS(y) - EPS(y-10))}{Retained\ Earnings(y)}$

Sharpe index as a measurement tool of the portfolio performance in this study is developed by William Sharpe and often also called reward-to-variability ratio. Sharpe index puts the basis of calculations on the concept of capital market line as a benchmark, that is by dividing the portfolio risk premium with the deviation standard. Risk premium is the margin between the average performance generated by a portfolio and an average performance of risk free asset. Standard deviation is the risk of fluctuations in the portfolio generated because of changes in return from one sub period to the others in the whole period. In the theory of portfolio, standard deviation is the total risk of the systematic/market risk and unsystematic risk.

Sharpe index can be used to measure the risk premium for each unit of risk on the portfolios. Investment in the SBI does not contain specific performance risk. Meanwhile, investment portfolio contains risks, thus, the return of the investment is expected to be greater than the risk-free assets. Sharpe index measures the addition of risk premium per unit of risk taken. The level of the portfolio performance can be determined using Sharpe index. Higher Sharpe index of a portfolio than any other portfolio is correlated with the better performance (Jones, 2014).

Some research about the performance of portfolio in various capital markets have been explored by scholars. Treynor (1965), Sharpe (1966), and Jensen (1968) using the Capital Asset Pricing Model (CAPM) compare the performance of mutual fund and the market portfolio. Their findings suggest that in general, the return obtained by investment managers are not high enough to meet the operating costs.

According to the review above, the research hypothesis in this study is that the performance from the portfolio diversification strategy for one sector is different from the performance of for multi sectors in Indonesia's capital market.

RESEARCH METHODS

Research Variables

a. Performance of One Sector Stock Portfolio

- 1) Earnings Predictability-based portfolio performance
This is the performance of 10 stock portfolios of consumer goods sector that is based on the highest Earnings Predictability as measured by Sharpe index in every semester from Semester I of 2011 to Semester II of 2014.
- 2) Level of Debt-based portfolio performance
The portfolio performance of 10 stocks of consumer goods sector that is based on the lowest level of debt the lowest as measured by the Sharpe index in every semester from Semester I of 2011 to Semester II of 2014.
- 3) Return On Equity-based portfolio performance
The portfolio performance of 10 stocks of consumer goods sector that is based on the highest Return On Equity as measured by Sharpe index every semester from Semester I of 2011 to Semester II of 2014.
- 4) Return on Total Capital-based portfolio performance
It describes the performance of 10 stocks of consumer goods sector that is based on the highest Return on Total Capital as measured with Sharpe index in every semester from Semester I of 2011 to Semester II of 2014
- 5) Capital Expenditures-based portfolio performance
It explains portfolio performance of 10 stocks of consumer goods sector that is based on Capital Expenditures with positive free cash flow greater than zero as measured by the Sharpe index in each semester from Semester I of 2011 to Semester II of 2014.
- 6) Retained Earnings-based portfolio performance
The portfolio performance of 10 stocks of consumer goods sector that is based on the highest Retained Earnings as measured by the Sharpe index in every semester from Semester I of 2011 to Semester II of 2014.

b. Performance of Stock Portfolios in Multi Sectors

The portfolio performance of 10 multi sectoral stocks listed in LQ 45 index with the highest return in every sector is measured by the Sharpe index on every semester for the period of February 2011-July 2011, August 2011-January 2012, February 2012-July 2012, August 2012-January 2013, February 2013-July 2013, August 2013-January 2014, February 2014-July 2014, August 2014-January 2015.

Populations and Samples

The population of the research included top companies in the Indonesian capital market with shares registered in the LQ 45 index, and sub sector companies of consumer goods amounting to 37 issuers. The selection of the sample was done by using multiphase sampling to build the stock portfolios of one sector and multi sectors, that amounted to 10 stocks for each group (one sector and multi sectors) during the period of Semester I of 2011 to Semester II of 2014, and stocks listed in LQ45 indeks for the period of February 2011-July 2011, August 2011-January 2012, February 2012-July 2012, August 2012-January 2013, February 2013-July 2013, August 2013-January 2014, February 2014-July 2014, August 2014-January 2015.

Data Analysis Methods

a. Building Stock Portfolios in One Sector and Multi Sectors

- 1) Calculate the actual return of each stock
- 2) Calculate the expected return of each stock
- 3) Calculate the stock covariant in portfolio
- 4) Calculate the correlation coefficients of level of return

- 5) Calculate the expected return of the portfolios
 - 6) Calculate the risk of the portfolios
 - 7) Build one sector stock portfolios and multi sector portfolios with Markowitz model.
- b. Measure the stock performance of one sector and multi sectors using the Sharpe index.
- c. Perform discriminant test between one sector portfolio performance and multi sector portfolio performance using the statistical model of Independent Sample t-test.

RESEARCH FINDINGS AND DISCUSSION

Multi Sector Portfolio Performance

Portfolios from 10 stocks of top companies listed in the LQ 45 index with the highest return in each respective sector are described in Table 10. The performance of such portfolios produce negative Sharpe index in all periods of analysis, meaning that the return from those portfolios is smaller than generated from free-risk assets. This explains that portfolios of ten leading stocks in the LQ 45 index of the Indonesia's capital market are not capable of generating return at a greater amount than the SBI interest rate.

Table 1. Performance of Multi Sector Stock Portfolios

Keterangan	E(Rp)	Variance	Standar Deviasi	SBI	Indeks Sharpe
Smtr I 2011	4.35%	1.31%	11.46%	6.71%	-20.61%
Smtr II 2011	2.07%	0.93%	9.66%	6.46%	-45.39%
Smtr I 2012	3.37%	0.86%	9.26%	5.79%	-26.17%
Smtr II 2012	3.97%	0.90%	9.51%	5.75%	-18.70%
Smtr I 2013	4.77%	1.31%	11.44%	5.79%	-8.93%
Smtr II 2013	1.47%	1.18%	10.86%	7.07%	-51.57%
Smtr I 2014	6.05%	1.13%	10.65%	7.50%	-13.61%
Smtr II 2014	4.38%	0.79%	8.90%	7.57%	-35.90%

Source: Data Analysis

Performance of Portfolios in One Sector

The Performance of One Sector Portfolios Based on Earning Predictability

The performance of ten portfolios with the highest earnings in each semester during the first half of 2011 to the second half of 2014, indicates that the stock portfolios made up of ten companies in consumer goods sector with the highest earnings show negative Sharpe index, meaning the return generated from the portfolios is lower than the risk-free return (interest rate of SBI), except in the first half of 2013 that indicates positive Sharpe index.

Table 2. The Performance of One Sector Portfolios Based On Earnings Predictability

Keterangan	E(Rp) (%)	Variance (%)	Standar Deviasi (%)	SBI (%)	Indek Sharpe (%)
Smtr I 2011	3.16	1.04	10.19	6.71	(34.83)
Smtr II 2011	1.17	0.87	9.32	6.46	(56.81)
Smtr I 2012	4.31	0.71	8.41	5.79	(17.62)
Smtr II 2012	1.49	0.87	9.33	5.75	(45.61)
Smtr I 2013	7.29	1.43	11.97	5.79	12.55
Smtr II 2013	(1.62)	0.91	9.56	7.07	(90.90)
Smtr I 2014	0.78	0.55	7.43	7.50	(90.42)
Smtr II 2014	(0.90)	0.89	9.41	7.57	(90.10)

Source: Data Analysis

The Performance of One Sector Portfolios Based on the Level of Debt

The portfolios built based on the ten stocks from companies with the lowest level of debt and belonging to consumer goods sector, produce return lower than the risk-free return (interest rate of SBI). The Sharpe index is negative, except in the first semester of 2013 that produces positive Sharpe index.

Table 3. The Performance of One Sector Portfolios Based on the Level of Debt

Keterangan	E(Rp)	Variance	Standar Deviasi	SBI	Indeks Sharpe
Smtr I 2011	2.1%	0.8%	9.0%	6.7%	-51.0%
Smtr II 2011	-0.4%	0.6%	7.5%	6.5%	-90.4%
Smtr I 2012	5.6%	1.2%	10.7%	5.8%	-1.8%
Smtr II 2012	0.6%	0.9%	9.6%	5.8%	-53.7%
Smtr I 2013	6.6%	1.8%	13.5%	5.8%	6.4%
Smtr II 2013	-1.6%	0.9%	9.3%	7.1%	-93.2%
Smtr I 2014	2.4%	0.7%	8.1%	7.5%	-63.3%
Smtr II 2014	-2.1%	0.9%	9.6%	7.6%	-100.1%

Source: Data Analysis

The Performance of One Sector Portfolios Based on Return On Equity (ROE)

The portfolios based on the stocks of ten companies with the highest Return On Equity in each semester during Semester I of 2011 to Semester II of 2014 show negative Sharpe index, except in Semester 1 of 2013 that indicate positive Sharpe index. The return in most of the periods of analysis is lower than the risk-free return (SBI interest rate).

Table 4. The Performance of One Sector Portfolios Based on Return On Equity (ROE)

Keterangan	E(Rp)	Variance	Standar Deviasi	SBI	Indeks Sharpe
Smtr I 2011	2.02%	0.94%	9.70%	6.71%	-48.31%
Smtr II 2011	0.93%	0.91%	9.56%	6.46%	-57.81%
Smtr I 2012	5.21%	0.62%	7.90%	5.79%	-7.32%
Smtr II 2012	2.45%	0.96%	9.82%	5.75%	-33.62%
Smtr I 2013	8.66%	1.81%	13.46%	5.79%	21.31%
Smtr II 2013	-3.82%	1.07%	10.34%	7.07%	-105.40%
Smtr I 2014	2.65%	0.67%	8.19%	7.50%	-59.22%
Smtr II 2014	-0.68%	0.91%	9.54%	7.57%	-86.50%

Source: Data Analysis

The Performance of One Sector Portfolios Based on Return On Total Capital (ROTC)

The portfolios built based on the stocks of ten companies of consumer goods sector and having the highest Return On Total Capital (ROTC) show negative Sharpe index during the analysis period, except in Semester 1 of 2013 that indicate positive Sharpe index. The portfolio return which could be generated is lower than the risk-free return (SBI interest rate).

Table 5. The Performance of One Sector Portfolios Based on Return On Total Capital (ROTC)

Keterangan	E(Rp)	Variance	Standar Deviasi	SBI	Indeks Sharpe
Smtr I 2011	2.4%	1.0%	9.8%	6.7%	-43.7%
Smtr II 2011	1.6%	0.8%	8.7%	6.5%	-55.4%
Smtr I 2012	4.3%	0.6%	7.6%	5.8%	-19.0%
Smtr II 2012	3.0%	1.0%	9.8%	5.8%	-27.8%
Smtr I 2013	9.6%	2.4%	15.4%	5.8%	24.7%
Smtr II 2013	-2.2%	0.9%	9.7%	7.1%	-95.0%
Smtr I 2014	1.4%	0.6%	7.5%	7.5%	-81.9%
Smtr II 2014	0.0%	0.9%	9.6%	7.6%	-78.9%

Source: Data Analysis

The Performance of One Sector Portfolios Based on Capital Expenditures

The portfolios built from the stocks of ten companies of consumer goods sector and having free cash flow greater than 0 in each semester during Semester I of 2011 to Semester II of 2014 show negative Sharpe index,

except in Semester 1 of 2013 that indicate positive Sharpe index. The generated portfolio return is lower than the risk-free return (SBI interest rate).

Table 6. The Performance of One Sector Portfolios Based on Capital Expenditures

Keterangan	E(Rp)	Variance	Standar Deviasi	SBI	Indeks Sharpe
Smtr I 2011	2.92%	0.99%	9.96%	6.71%	-38.07%
Smtr II 2011	-0.08%	0.81%	9.01%	6.46%	-72.59%
Smtr I 2012	3.13%	0.64%	8.00%	5.79%	-33.30%
Smtr II 2012	3.05%	0.99%	9.97%	5.75%	-27.07%
Smtr I 2013	8.17%	1.86%	13.62%	5.79%	17.47%
Smtr II 2013	-2.37%	1.15%	10.70%	7.07%	-88.20%
Smtr I 2014	0.06%	0.51%	7.16%	7.50%	-103.93%
Smtr II 2014	0.62%	1.08%	10.37%	7.57%	-67.02%

Source: Data Analysis

The Performance of One Sector Portfolios Based on Retained Earning (RORE)

The portfolios built from the stocks of ten companies of consumer goods sector and having the highest *Retained Earning* show negative Sharpe index in all periods of analysis. The return which could be generated is lower than the risk-free return (SBI interest rate).

Table 7. The Performance of One Sector Portfolios Based on Retained Earnings

Keterangan	E(Rp)	Variance	Standar Deviasi	SBI	Indeks Sharpe
Smtr I 2011	3.70%	1.02%	10.12%	6.71%	-29.72%
Smtr II 2011	0.76%	0.82%	9.04%	6.46%	-63.05%
Smtr I 2012	2.54%	0.60%	7.75%	5.79%	-41.89%
Smtr II 2012	3.31%	0.64%	7.97%	5.75%	-30.60%
Smtr I 2013	4.64%	1.60%	12.64%	5.79%	-9.10%
Smtr II 2013	1.10%	10.47%	32.36%	7.07%	-18.46%
Smtr I 2014	2.76%	0.89%	9.42%	7.50%	-50.36%
Smtr II 2014	1.82%	0.79%	8.87%	7.57%	-64.76%

Source: Data Analysis

Based on the research findings and discussions above, stock portfolios in multi sectors and one sector in almost all periods of analysis generate negative Sharpe index, which means the portfolios from both approaches are not yet capable of generating return on investment that exceeds the return of free-risk assets if referring to the SBI interest rate. Nevertheless, during the first half of 2013, one sector portfolios built based on Warren Buffet's investment strategy consisting of earnings predictability, level of debt, ROE, ROTC and capital expenditures are able to generate positive Sharpe index. Meanwhile, the performance of multi sector portfolios of leading stocks in the LQ 45 index also produces negative Sharpe index in all periods of analysis.

This condition is due to economic crisis in the United States and Europe since 2008, which indirectly affected Indonesia's economy. Indonesia Composite Index (IHSG) in 2011 growth only reached 3.18%, much lower than growth in 2010 that reached 45%. The rising prices of gas, basic electricity rate, minimum wage, as well as the weakening of exchange rate give impact to the development of the Indonesia capital market, which in turn affect the business conditions of companies listed on the Indonesia stock exchange. In the first half of 2013, the industry belonged to consumer goods and registered on the Indonesia stock exchange grew by 28%. The increase in fuel oil and the weakening Rupiah did not bring impact to the purchasing power of society as well as the performance of companies in the consumer goods sector in the capital market of Indonesia.

In the second half of 2013, monetary crisis took place due to fiscal deficit, affecting the State Budget Revenues and Expenditures until 2013; hence, at the end of June 2013, the Government took a controversial step by reducing fuel subsidies. This also affected Indonesia's capital market that led to the decline of IHSG drastically, followed by attenuation of Rupiah against US dollar. Bank Indonesia as the monetary regulator released new BI rate three (3) times up to 7.5% increase by the end of 2013. This condition persisted until 2014,

causing the weakening of Rupiah and higher inflation that were slowing down economic growth in 2014.

Discriminant Test of One Sector and Multi Sectors Portfolio Performance

Based on the results normality test, the data on performance of one sector portfolios with measurement indicators of earnings predictability, level of debt, ROE, ROTC, capital expenditures, RORE, and multi sector portfolio performance of the leading stocks in the LQ 45 are distributed normally, so than Independent Sample t-test is used to compare the portfolios of both sectors.

Table 8. The Comparison between Performance of One Sector Portfolios based on Earnings Predictability and Performance of Multi Sector Portfolios

Group Statistics										
Kriteria		N	Mean	Std. Deviation	Std. Error Mean					
Kinerja	Earning	8	-0.517	0.38088	0.13466					
	LQ45	8	-0.276	0.15295	0.05408					

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Interval of the Difference	
								Lower	Upper	
Kinerja	Equal variances assumed	5.618	0.033	-1.66	14	0.119	-0.24088	0.14512	-0.55212	0.07037
	Equal variances not assumed			-1.66	9.2	0.131	-0.24088	0.14512	-0.56806	0.08631

Source: Data Analysis

Table 8. indicates no difference between the performance of one sector portfolios on the basis of Earnings Predictability of consumer goods companies and portfolio performance of several winning sectors in LQ 45 index. From the levene test, the value of Sig > 0.05, the variance between groups is homogenous (the homogeneity conditions are fulfilled). If the conditions are met, t test on equal variance assumed is used, and if not met, equal variance not assumed t test will be used. Since the sig levene is 0.033 < 0.05, the homogeneity is not met (heterogeneous), so the t test used is equal variance not assumed, that is, t:-0.166. The absolute value of t is 1.662, where <t table on DF of 9.198, in other words the p value (Sig 2 tailed) of 0.130 is greater than 0.05.

Table 9. The Comparison between Performance of One Sector Portfolios based on Level of Debt and Performance of Multi Sector Portfolios

Group Statistics										
Kriteria		N	Mean	Std. Deviation	Std. Error Mean					
Kinerja	level of debt	8	-0.5589	0.40403	0.14285					
	LQ45	8	-0.2761	0.15295	0.05408					

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Interval of the Difference	
								Lower	Upper	
Kinerja	Equal variances assumed	4.497	0.052	-1.851	14	0.085	-0.28275	0.15274	-0.6103	0.04484
	Equal variances not assumed			-1.851	8.966	0.097	-0.28275	0.15274	-0.6285	0.06297

Source: Data Analysis

Table 9. shows no difference between the portfolio performance of consumer goods sector based on the

level of debt and portfolio performance of winning sectors in LQ45 index. As the sig levene is $0.052 > 0.05$, the homogeneity is fulfilled, so that equal variance assumed t test is used. Thus, p value (Sig 2 tailed) of 0.085 is greater than 0.05.

Table 10. shows no difference between stock portfolio performance of companies in consumer goods sector based on Return On Equity performance and portfolio performance of multi sectors in LQ45 index. Because the sig levene is $0.069 > 0.05$, the homogeneity is achieved, so that the portfolio performance t test is used. The value of p (Sig 2 tailed) of 0.227 is greater than 0.05.

Table 10. The Comparison between Performance of One Sector Portfolios based on Return On Equity and Performance of Multi Sector Portfolios

Group Statistics									
Kriteria		N	Mean	Std. Deviation	Std. Error Mean				
Kinerja	ROE	8	-0.471	0.408	0.14429				
	LQ45	8	-0.276	0.15295	0.05408				

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Interval of the Difference	
								Lower	Upper	
Kinerja	Equal variances assumed	3.873	0.069	-1.265	14	0.227	-0.1949	0.15409	-0.5254	0.13561
	Equal variances not assumed			-1.265	8.928	0.238	-0.1949	0.15409	-0.5439	0.15412

Source: Data Analysis

Table 11. indicates no difference in the portfolio performance of consumer goods sector based on ROTC and the portfolio performance of leading sectors in LQ45 index. Because the sig levene is $0.044 < 0.05$, the homogeneity is achieved (heterogeneous); hence, equal variance not assumed t test is employed, and the significance of 0.225 is greater than 0.05.

Table 11. The Comparison between Performance of One Sector Portfolios based on Return on Total Capital (ROTC) and Performance of Multi Sector Portfolios

Group Statistics									
Kriteria		N	Mean	Std. Deviation	Std. Error Mean				
Kinerja	ROTC	8	-0.4713	0.39487	0.13961				
	LQ45	8	-0.2761	0.15295	0.05408				

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Interval of the Difference	
								Lower	Upper	
Kinerja	Equal variances assumed	4.897	0.044	-1.303	14	0.213	-0.195125	0.149714	-0.5162	0.12598
	Equal variances not assumed			-1.303	9.054	0.225	-0.195125	0.149714	-0.5335	0.14324

Source: Analysis Data

Table 12. shows no difference between the portfolio performance of firms in consumer goods sector based on Capital Expenditures and the portfolio performance of leading sectors in LQ45 index. Due to the fact

that the sig levene is $0.025 < 0.05$, the homogeneity is not achieved (heterogeneous). Thus, equal variance not assumed is used and shows significance at 0.140 that is greater than 0.05.

Table 12. The Comparison between Performance of One Sector Portfolios based on Capital Expenditures and Performance of Multi Sector Portfolios

Group Statistics											
Kriteria		N	Mean	Std. Deviation	Std. Error Mean						
Kinerja	FCF	8	-0.5159	0.38997	0.13787						
	LQ45	8	-0.2761	0.15295	0.05408						
Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means						Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	
Kinerja	Equal variances assumed	6.252	0.025	-1.619	14	0.128	-0.23975	0.1481	-0.5574	0.07789	
	Equal variances not assumed			-1.619	9.104	0.140	-0.23975	0.1481	-0.5742	0.09469	

Source: Data Analisis

Table 13. proves no difference between the performance of stocks in consumer goods sector based on return on retained earnings (RORE) and the performance of leading stocks from various sectors in LQ45 index. As the sig levene is $0.369 > 0.05$, the homogeneity is fulfilled, so that equal variance assumed t test is applied. P value (Sig 2 tailed) of 0.244 is greater than 0.05.

Table 13. The Comparison between Performance of One Sector Portfolios based on Return on Retained Earnings (RORE) and Performance of Multi Sector Portfolios

Group Statistics											
Kriteria		N	Mean	Std. Deviation	Std. Error Mean						
Kinerja	RORE	8	-0.3851	0.20193	0.07139						
	LQ45	8	-0.2761	0.15295	0.05408						
Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means						Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Error Difference	Lower	Upper	
Kinerja	Equal variances assumed	0.862	0.369	-1.217	14	0.244	-0.109	0.08956	-0.3011	0.08309	
	Equal variances not assumed			-1.217	13.043	0.245	-0.109	0.08956	-0.3024	0.08442	

Source: Data Analisis

Based on the tests to portfolio performance of consumer goods sector referring to the 6 investment strategy criteria by Warren Buffet that is compared to the portfolio performance of leading stocks from varying sectors in LQ 45 index, the findings prove no difference between the performance of both groups.

CONCLUSION

After the tests have been done to both groups, the data analysis is done and shows the results do not support the hypothesis proposed earlier. The conclusions of this study are:

- 1) Performance of multi sector portfolios on the leading stocks in every top sector in the LQ45 index is

negative at all periods of analysis. The negative performance means that the portfolio return is lower than the risk-free return (SBI interest rate).

- 2) Performance of one sector portfolios based on Earning Predictability, Level of Debt, Return On Equity (ROE), Return On Total Capital (ROTC), Capital Expenditures, and Return on Retained Earning (RORE) is negative at almost all the analysis periods, except in the first half of 2013. Especially for portfolios built on the basis of retained earning (RORE), the performance is negative at any period of analysis. The negative performance means that the portfolio return is lower than the risk-free return (interest rate of SBI).
- 3) There is not any differences between the performance of one sector portfolios and the performance of multi sector portfolios. This means that the portfolio diversification strategy to build portfolio of different stocks in various sectors turns out to produce the same performance with the portfolio of different stocks in one sector (consumer goods sector).

Based on the conclusions described above, several suggestions are given in this study as follows:

- 1) Investors in the Indonesia's capital market strategy that want to diversify the portfolios from both multi sectors and one sector, need to first conduct performance analysis on some sectors before deciding which type of sectors to be used as the basis of investing in portfolios. Sector rotation strategy can serve as an alternative in carrying out portfolio diversification strategy.
- 2) This research is conducted with limitation to stocks of consumer goods sector and also leading stocks in the LQ45 index. Therefore, further research is recommended to analyze all stocks listed on the Indonesia stock exchange. In addition, it is recommended to extend and add the periods of analysis and number of stock portfolios to give more representative results.
- 3) One sector stock portfolios are built based on the investment strategy by Warren Buffet. It is advisable for further research to use elimination method as mentioned in the book *The Guru Investor*, to eliminate one or more criteria that is not met.

REFERENCES

- Anas Al Bakri, 2014, Portfolio Diversification Strategy and the Impacts on the Middle East Real Estate Investment Decision, *International Journal of Economics and Finance*, Vol. 6, No. 2; pp. 62-74.
- Brailsford, Tim, 1992, A Test for the winner-loser Anomaly in the Australian Equity Market: 1958-1987, *Journal of Business Finance and Accounting*, January, pp. 225-241.
- Brigham, F. Eugene and Philip R. Daves. 2008. *Intermediate Financial for Management*, Tenth Edition. New York : McGraw-Hill, Inc.
- Brinson, Gary P., Randolph Hood, and Gilbert L. Beebower, 1986, Determinants of Portfolio Performance, *Financial Analysts Journal*, pp. 39-44
- Chan, K.C., Jason Karceski, and J. Lakonishok, 1998, The Risk and Return from Faktors, *Journal of Financial and Quantitative Analysis*, Vol. 33 (2), pp. 159-187.
- Clare, Andrew, and Stephen Thomas, 1995, The Over-reaction Hypothesis and the UK stock market, *Journal of Business Finance and Accounting*, October, pp. 961-973.
- Conrad, J. and G. Kaul, 1998, An Anatomy of Trading Strategies, *Review of Financial Studies*, Vol. 11, pp. 489-519.
- Daniel, K., D. Hirshleifer, and A. Subrahmanyam, 1998, Investor Psychology and Security Market Under and Over Reactions, *Journal of Finance*, Vol. 53, pp. 1839-1885.
- DeBondt, W.F.M. dan R.H. Thaler, 1985, Does the Stock Market Overreact?, *Journal of Finance*, Vol. 40 (3), July, pp. 793-808.
- De Long, J.B., A. Shleifer, L. Summers and R. Waldmann, 1990, Noise Trader Risk in Financial Market, *Journal of Political Economy*, Vol. 98, pp. 703-738.
- Fama, E.F., 1981, Stock Returns, Real Activity, Inflation and Money, *American Economic Review*, Vol. 71 (4), September, pp. 545-565.
- Fama, E.F. and French, K.R., 1992, The Cross Section of Expected Stock Return, *Journal of Finance*, Vol. 47, No. 2, June, pp. 427-465.
- Ferson, Wayne E., and Campbell R. Harvey, 1991, Sources of Predictability in Portfolio Returns, *Financial Analyst Journal*, May-June, pp. 49-56.
- Ferson, Wayne E., and Rudi W. Schadt, 1996, Measuring Fund Strategy and Performance in Changing Economic Conditions, *The Journal of Finance*, Vol. LI (2), June, pp. 425-448.
- Harvey, C.R., 1995, Predictable Risk and Return in Emerging Markets, *Review of Financial Studies*, Vol. 8, pp. 773-816.
- Hangstrom, G. Robert. 1999. *The Warren Buffett Portfolio Mastering The Power of The Focus Investment Strategy*, New York : John Willey & Son, Inc.
- Hangstrom, G. Robert. 2004. *The Warren Buffett Way*, Second Edition. New Jersey: John Willey & Son, Inc.
- Henker, Julia, et al., 2012, The Vanishing Abnormal Returns of Momentum Strategies and 'Front-

- Running' Momentum Strategies, *Journal of Accounting and Finance*, 12 (4), pp: 86-100.
- Hurn, Stan and Parlov, Vlad, 2003, Momentum in Australia Stock Returns, *Australian Journal of Management*, Vol. 28 (2), September, pp. 141-155.
- Jegadeesh, N. and S. Titman, 2001, Profitability of Momentum Strategies: An Evaluation of Alternative Explanations, *The Journal of Finance*, Vol. LVI (2), April, pp. 699-720.
- Jones, Charles P., 2014, *Investment: Principles and Concepts*, 12th Edition., New York: John Willey & Sons.
- Kamil, Karmila Hanim, 2014, Industry Momentum Strategy in Malaysian Stock Market, *International Journal of Business and Social Science* (11), pp: 194-202.
- Kazan, Halin and Kultigin Uludag. 2014, Credit Portfolio Selection According To Sectors In Risky Environment : Markowitz Practice, *Asian Economic and Financial Review*, 4 (9), pp.1208-1219.
- Kryzanowski, L and H. Zhang, 1992, The Contrarian Investment Strategy Does Not Works in Canadian Market, *Journal of Financial and Quantitative Analysis*, September, pp. 383-394.
- Lo, A. and C. MacKinlay, 1990, Data Snooping Biases in Tests of Financial Asset Pricing Models, *Review of Financial Studies*, Vol. 3, pp. 431-467.
- Mangram, Myles E. 2013. A Simplified Perspective of The Markowitz Portfolio Theory, *Global Journal of Bussiness Research*, Vol. 7, No.1, pp., 59 – 70.
- Moskowitz, T. and M. Grinblatt, 1999, “Do Industries Explain Momentum”, *Journal of Finance*, Vol. LIV (4), August, pp. 1249-1288.
- Nai Fu Chen., and Feng Zang. 1998. Risk and Return Value Stocks, *Journal of Bussiness*, Vol 71, No 4. pp. 503-535.
- O’Loughlin, James. 2003, *The Real Warren Buffet Managing Capital, Leading People*, First Edition. London: Nicholas Brealey.
- Plessis, AJ Du, and M Ward. 2009. A Note Applying The Markowitz Portfolio Selection Model as A Pasive Investment Strategy on The JSE. *Investment Analysis Journal*, No.69, pp.39-45.
- Ravid, S.A., and O.H. Sarig, 1991, Financial Signaling by Comitting to Cash Outflows, *Journal of Financial & Qualitative Analysis*, Vol. 26 (2), June, pp. 165-180.
- Reese.P. John and Jack M. Forehand. 2009 . *The Guru Investor How to Beat The Market Using History’s Best Strategies*, New Jersey: John Willey & Sons Inc.
- Shan Hu, John Wei, Yue Chin Chen, 2011, The Performance of Momentum Investment Strategies: An International Examination of Stock Markets, *International Journal of Management*, 28 (4), pp. 165-195.
- Sharpe, William F., 1966, Mutual Fund Performance, *Journal of Business*, Vol. 39, pp. 119-138
- Statman, Meir. 1987. *How Many Stocks Make A Diversified Portfolio?. Journal of Financial and Quantitative Analysis*, Vol. 22, No.3, pp.353 – 363.
- Tandelilin, Eduardus. 2010. *Portofolio dan Investasi*, Edisi Pertama. Yogyakarta : Penerbit Kanisius.
- Wiksuana, IG.B. 2009. Kinerja Portofolio Saham Berdasarkan Strategi Investasi Momentum di Pasar Modal Indonesia, *Jurnal Manajemen dan Kewirausahaan*, Vol 11: 1.
- Wilson, W. Jack, and Charles P.Jones. 2001. The Relationship Between Performance and Risk : Whence The Bias, *The Journal of Financial Research*, Vol IV, No.2. pp. 103 – 108.
- Yang,Chin. W, Ken Hung.2010. A Generalized Markowitz Portfolio Selection Model With Higher Moments, *International Review of Accounting, Banking and Finance*, Vol.2, No.1,pp.1-8.