THE DETERMINANTS AND TECHNICAL EFFICIENCY ANALYSIS OF EQUITY MUTUAL FUNDS IN INDONESIA

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ABSTRACT: This research aimed to empirically examine the determinants and technical efficiency analysis of equity mutual funds traded in Indonesia in the time horizon of 2012 to 2016. This research uses time series and annual data of macroeconomic variables and equity mutual funds in Indonesia. The study is processed and analyzed quantitatively by using panel data regression and Data Envelopment Analysis (DEA). The research reveals that the exchange rate, inflation rate, BI rate, fund size, and fund age significantly affect Treynor ratio as much as 81.46%. In terms of variables, exchange rate, inflation rate, and BI rate have negative and significant effect towards Treynor ratio, while fund size and fund age have positive and significant effect towards Treynor ratio. In addition, the result of data envelopment analysis (DEA) which is used to measure technical efficiency indicates that BNP Paribas Solaris is the most efficient equity mutual fund with average efficiency score of 100% along five years of observation. The least efficient fund resulted throughout the study is Mandiri Investa Cerdas Bangsa with 4% average efficiency score. Lastly, the overall average technical efficiency score of all samples examined is 50.70%.

KEYWORDS: Exchange rate, inflation rate, BI rate, fund age, fund size, Data Envelopment Analysis, mutual fund

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1. INTRODUCTION

Capital market has been playing important roles in the development of economy of many countries. Its function as the source of funding has significant contribution towards the country's economy. Funds generated from public offerings can be used for companies to expand the business, resulting in increased output and employment (Nasution, 2015). The industry has been growing rapidly in Indonesia within the last decade and it includes relatively robust growth of mutual funds industry, especially following the tax incentive for mutual funds given by the government (Wibowo, 2011). Financial Service Authority (OJK) of Indonesia reported that the total of mutual funds' Net Asset Value (NAV) climbed for 81% from Rp 187.59 trillion in 2012 to Rp 338.75 trillion in 2016. Mutual fund allows investors with diverse amount of capital to invest their income across various asset classes and to have their funds managed by professionals (Sanzhar, 2013). Being professionally managed and offering diversity, mutual fund has turned into attractive investment for both retail and institutional investors.

Basically, there are two categories of mutual funds: open-end funds and closed-end funds. Supported by the growth of financial market, open-end funds are then classified into numerous types of funds. Sorted from funds with the least risk, mutual funds commonly traded in Indonesia are money market funds, fixed-income funds, balance funds, and equity funds (Nafees, Ahmad, & Khan, 2013). Based on Asset Under Management (AUM), equity funds hold the highest amount of AUM as it accounts half of the total of open-end funds AUM, followed by fixed-income funds, money market funds, and balance funds. The role of equity funds traded in Jakarta Composite Index toward the assets managed by the leading investment companies in Indonesia can be seen within the following table. As shown, equity funds contribute one-third to the AUM, indicating its significance amongst the industry. Due to significant development of mutual fund and its beneficial impacts towards the capital market and broad economy, studying the determining factors of mutual funds' performance has seized the curiosity of investors, fund managers, and investment analysts. The study has been even more intensifying in developed countries where mutual funds returns are higher (Bazar, 2013).

L. & Mazuy (1966) developed a measurement named after the creator, treynor ratio, for calculating risk-adjusted return. It is widely used for investors, fund managers, and researchers for measuring portfolio return since it gives information of mutual fund average risk-adjusted-return obtained in excess of market's average gains. Besides indicating the attractiveness of the fund, the ratio measures fund managers predictive capability given the risk level for each portfolio (Arifin, 2011). Rather than evaluating mutual fund performance only based on its total return whose numbers are derived from historical NAV, Arifin (2011) suggested that mutual fund performance is examined by using risk-adjusted return. His study showed that equity mutual funds in Indonesia performed quite well during the period of research. This intrigues the researcher to study the risk-adjusted return of mutual fund instead of their NAV which equals to book value per share of the fund, to provide a more relevant performance assessment. According to Monjazeb & Ramazanpour (2013), macroeconomic variables affect stock prices, leading to the volatility of returns generated by mutual funds whose underlying involves equity. World (2017) reported Indonesia to walk strong for the year. The sound domestic fundamentals are acknowledged by an upgraded credit rating, followed by a twice BI cut rate to 4.5% level, forecasted GDP growth of 5.2%, and inflation to remain within the target range of 4.3% as well as the rupiah remain remarkably stable.

Hence, the researcher aims to examine those macroeconomic factors as they affect significantly on the mutual fund performance in Indonesia as studied by Wahyuningtyas & Hartono (2016). In addition, Monjazeb & Ramazanpour's (2013) research resulted in a significant relation between the macro variables and funds performance. Furthermore, mutual fund embraces several attributes such as fund size, fund age, and management fee. The basic characteristics vary for each fund and they influence on mutual funds (Ferreira, Miguel, & Ramos, 2007). Therefore, the researcher incorporates internal variables and external ones to examine the relationship between those factors toward the performance of equity mutual funds existing in Indonesia.

Besides determining the influence that external and internal variables have towards equity mutual funds in Indonesia, Maulana & Majid (2010) found that equity funds in Indonesia could not maintain technical efficiency persistently during 2004 - 2007. Due to this result, the researcher is given reason to test out the efficiency of equity mutual funds in Indonesia on the recent period of 2012 – 2016.

Referring to Toyo & Damayanti (2014), Alexandri (2014), Murhadi (2010) and Lubis et al (2010), most of Indonesian mutual funds were not able to outperform their benchmarks. Regardless of mutual fund growing penetration into the society during the recent years, stastistics figure that the funds performance are still lagging in comparison to their standards with equity mutual funds leading the lag benchmarking to JCI.

Mutual fund performance must then affect investors' decisions. Neelima & Rao's (2016) observation has discovered that investors pay attention to the quality of products, reputation of the company and the advisory services given. In addition, investors are aware of the risk management of the funds they purchase (Haq, 2013). Considering the potential and importance that the mutual fund industry holds, the researcher seeks to analyze the determinants of equity mutual fund performance. Being a much-diversified fund, mutual fund performance evaluation for the equity asset class is suitable to be represented by the Treynor ratio. Not only is it sensitive to market movement, but the Treynor ratio also indicates the ability of fund managers to select the right stocks for maximizing their portfolio return (L. & Mazuy, 1966).

Correspondingly, macroeconomic circumstances along with fund managers' market timing and selectivity ability affect mutual funds' performance in addition to the effects brought by the fund's traits themselves (Alexandri, 2014). Monjazeb & Ramazanpour (2013) found throughout their research that exchange rate and inflation rate influence fund performance in the short-run as they affect a country's monetary policy to some extent. Similarly, the BI rate influences investors' investment activities, making it influential on fund performance (Utami & Dharmastuti, 2014). In addition to that, Dahlquis et al (2000) discovered that fund size is influential to fund performance. Besides fund size, the age of the fund also impacts how well funds perform (Monjazeb & Ramazanpour, 2013). This study is purposed to find whether there is any partial significant influence of exchange rate, inflation rate, BI rate, mutual fund size, and mutual fund age towards the Treynor ratio of equity mutual funds in Indonesia.

2. LITERATURE REVIEW AND HYPOTHESES

Macroeconomic

Macroeconomics as one of the economic fields examines economic-wide conditions, performance, and development through several indicators, such as inflation, interest rate, national income, gross domestic product, unemployment rate, and foreign exchange rate (College, 2014). Macroeconomic events and the movement of therefore its variables have always been the interest of economists, government, business people, and broad society.

Inflation

Inflation can be defined as the hike in general price levels and the decline in the value of money (Mankiw, 2012). According to Purwanto (2004), an increase in the inflation rate will lead to a decrease in investment activity due to less amount of savings (supply of funds) and greater expected return on investment. A higher rate of inflation urged investors to hold riskier investing and yet demand for better investment returns to offset the effect of inflation. Maulana (2013) explained that a generally stable price level provides certainty within the domestic economy encourages production sector activities and finally drives the economy into betterment. His research discovered that inflation significantly affected equity funds' performance since inflation directly influences how companies profit. Higher price level leads to a surge in production costs and selling price for companies as well as weaken the purchasing power of customers which is then reflected in stock prices and equity fund return.

BI Rate

Interest rate can be interpreted as the amount charged (percentage of principal) by a lender to a borrower in account of assets used. Next, bank rate defined as the interest rate at which a country's central bank charged for lendings to domestic bank which is purposed to affect economic activity. Lower bank rate encourages lower cost of funds which therefore helps to boost the economy (Mishkin, 2010). Referring to Bodie et al (2008) interest rate is one of the most essential macroeconomic factors

considered in an investment analysis, considering the condition when interest rates are high can lessen the present value of future cash flows, thus diminishing the attractiveness of investment opportunities.

When interest rate moves downward investors seek for better investment return, be it stocks, bonds, and other security products. On the contrary, when the rate goes upward stocks and bonds would be less appealing compared to deposits. This in line with Wibowo's (2011) study that revealed BI rate to negatively affected fixed-income funds performance. However, Pasaribu & Kowanda (2014) stated that BI rate does not significantly affect equity funds return.

Mutual Funds Size

The investigation regarding the effect of scale on mutual fund performance has been interesting to researchers. According to Chen et al (2004), the size of the fund deteriorated fund performance. Their research disclosed that liquidity remains crucial for funds to achieve attractive returns, as shown by the compelling performance of small capitalized equity funds. Additionally, citing Rao N. & Rao S. B. (2009), the study pointed out that medium and large-sized equity funds were incapable of outperforming benchmarks while those smaller funds reached excellent performance. On the other hand, through examining balanced funds in Indonesia, Utami & Dharmastuti (2014) concluded that how large asset under the management of a fund did not influence their investment returns.

Mutual Funds Age

According to Moore (2016), fund age significantly influences the standard deviation. In other words, mutual fund age affects how risky a fund is. As shown by her research result, younger funds generally have lower risk-adjusted returns. This implies longer track record is essential for investors' investment decisions. The study revealed that top-performing funds will continue performing well as they age, and the bottom-performing funds are more likely to cease operations and "drop out" of the pool at a lower age,

Mutual Funds Performance Measurement – Treynor Ratio

Several performance measurement models are regularly used to evaluate the performance of mutual funds. The risk-adjusted performance models adopted are the Sharpe ratio and Jensen's alpha, whereas the market timing models are Treynor-Mazuy and Henriksson-Merton model (Arifin, 2011). Within this study, the researcher chose the Treynor-Mazuy model for measuring mutual fund performance due to its perfect assumption of diversification which suits equity funds best. This model is an alternative model to distinguish the market timing ability of the fund manager. The model assumes that if a fund manager can predict market returns, he will allocate a greater proportion of the market portfolio when the market return is high, and vice versa. This aspect is not measured by Sharpe and Jensen's alpha model.

Theoretical Framework

Theoretical framework represents the beliefs on how certain variables are related to each other (a model) and an explanation why the research believes that these variables are associated with each other (Sekaran & R., 2011). The theoretical framework of this research is described by Figure 1:

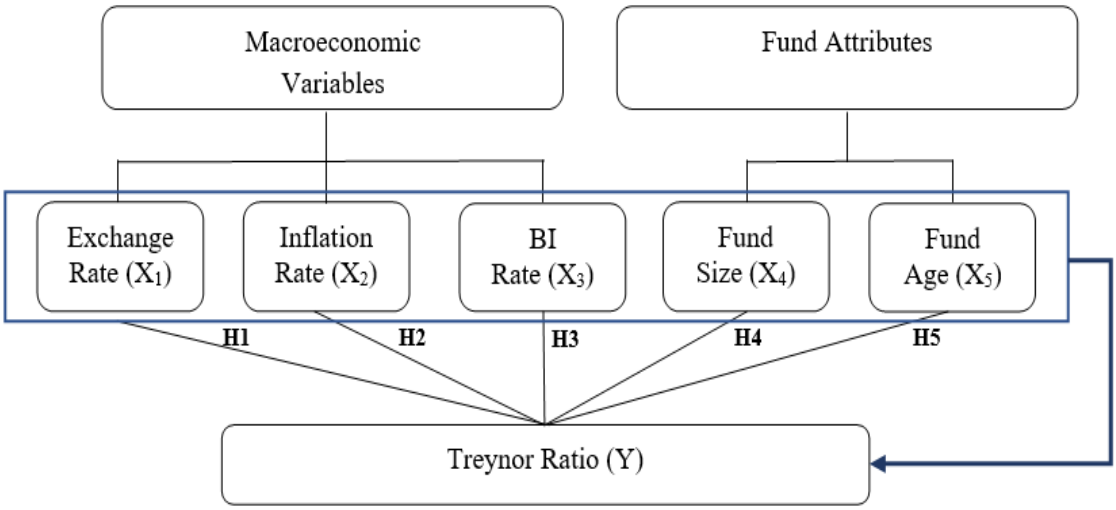

Figure 1. Theoretical Framework

Within this study, the variables are segregated into two types based on their relationship, which are dependent variables and independent variables. The dependent variable is represented by the Treynor ratio (Y) and the independent variables are represented by exchange rate (X_1), inflation rate (X_2), BI rate (X_3), fund size (X_4), fund age (X_5). The researcher aims to see any partial influence from each independent variable towards the dependent variable, expressed by H_1 – H_5 in the black line. Correspondingly, the simultaneous influence from all independent variables is expressed by H_6 in the blue line.

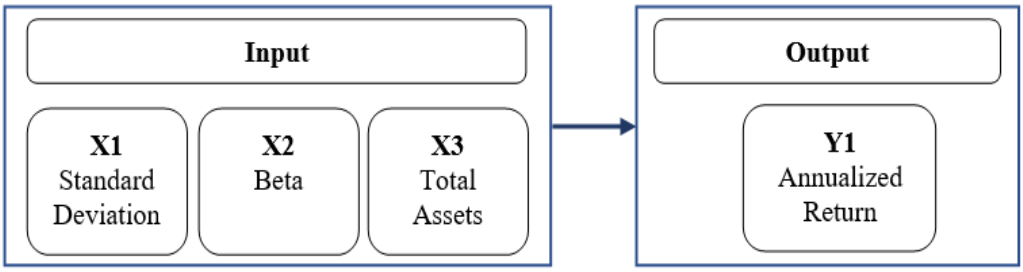

Figure 2. Theoretical Framework of Technical Efficiency

Mutual Fund Technical Efficiency

The researcher models Indonesian equity mutual fund efficiency produces one output by employing three inputs. Those inputs are standard deviation (X_1), beta (X_2), and total assets (X_3), while the output is monthly return (Y).

Hypothesis

Based on the theoretical review and theoretical framework, the researcher constructed the following hypotheses:

H1: There is a significant influence of the exchange rate on Treynor ratio of Indonesian equity mutual funds.

H2: There is a significant influence of inflation rate on the Treynor ratio of Indonesian equity mutual funds.

H3: There is a significant influence of BI rate on Treynor ratio of Indonesian equity mutual funds.

H4: There is a significant influence of fund size on Treynor ratio of Indonesian equity mutual funds.

H5: There is a significant influence of fund age on Treynor ratio of Indonesian equity mutual funds.

H6: There is a significant simultaneous influence of exchange rate, inflation rate, BI rate, fund size, and fund age towards the Treynor ratio of Indonesian equity mutual funds.

The Relationship of CAR to MSME Credit Distribution

CAR is the amount of equity capital required to cover the risk of financial loss that may arise from cultivation of assets that are risky. The greater this ratio, the bank's profit will also increase. In other words, the smaller the risk of a bank, the greater profits of a bank (Kuncoro and Suhardjono, 2011). Therefore, the greater amount of CAR, the more ability of banks in distributing its credit (Warjiyo, 2006). As well as has been studied by NesaPurnamasari (2012) that CAR have positive and significantly affected the credit distribution in Islamic banks.The criteria of Capital Adequacy Ratio (CAR) Level Assessment that have been set by Bank Indonesia are presented in the following table:

Table 1. The Criteria of CAR Level Assessment

Level	Criteria	Information
Level 1	CAR > 12%	Significantly higher than certainty
Level 2	9% ≤ CAR < 12%	Higher than certainty
Level 3	8% ≤ CAR < 9%	Less high than certainty
Level 4	6% ≤ CAR < 8%	Lower than certainty
Level 5	CAR ≤ 6%	Less lower than certainty

Return on Assets

According to Hasan and Haruman (2011), ROA is banking ratio that used to measure the effectiveness of the company in utilizing all resources in order to measure the ability to generate profits. The higher this ratio, it means the more effective use of assets to obtain income and the better performance of the bank. According to Bank Indonesia Circular Letter No. 6/23/DPDN, ROA ratio is formulated as the following:

$$ROA = \frac{Annual\ profit\ before\ taxes}{Average\ assets} \text{ X } 100$$

The relationship of ROA to MSME Credit Distribution

ROA is banking ratio that used to measure the effectiveness of the company in utilizing all resources in order to measure the ability to generate profits. The higher this ratio, it means the more effective use of assets to obtain income and the better

performance of the bank. The higher profit that a bank may have, it will enable bank to offer and distribute more credit. The higher ROA, then the more ability the banks in distributing credit. As has been studied by Nesa Purnamasari (2012) that ROA have positive and significantly affected the credit distribution in Islamic Bank. The criteria of Return on Assets Level Assessment that have been set by Bank Indonesia are presented as follow:

Table 2. The Criteria of ROA Level Assessment

Level	Criteria	Information
Level 1	ROA > 1,5%	Very high
Level 2	1,25% < ROA ≤ 1,5%	High
Level 3	0,5% < ROA ≤ 1,25%	High Enough
Level 4	0% < ROA ≤ 0,5%	Low
Level 5	ROA ≤ 0%	Very low

Non-Performing Finance

Based on the criteria of NPF that has been set by Bank Indonesia, the NPF is the financing that are substandard, doubtful and loss. The smaller NPF ratio, it means the better performance of the bank, and the more total of financing that can be distributed by bank. According to Bank Indonesia Circular Letter No. 6/23/DPDN, NPF ratio is formulated as the following:

$$NPF = \frac{Credit\ loss}{Total\ credit} \text{ X } 100\%$$

The relationship of NPF to MSME Credit Distribution

According to Bank Indonesia's Dictionary, NPF is non-performing loan consisting of loans, which are classified as substandard, doubtful and bad loans. The term "NPL" refers to commercial bank, while "NPF" refers to Islamic bank. Meydianawathi (2007) states that Non-Performing Loan is the ability of a bank to collect loans it provides until they are paid fully, and Abusharba (2005) states that Non-Performing Financing is used to measure the level of financing problems faced by Islamic banks. NPF has the limit safe maximum to 4% as advised by Bank Indonesia. The higher this ratio, indicating the quality of Islamic bank financing is getting worse. In the other word, the smaller NPF ratio of a bank, means the more ability a bank in distributing its credit. The criteria of Non – Performing Finance Level Assessment that have been set by Bank Indonesia are presented as follow:

Table 3. The criteria of NPF Level Assessment

Level	**Criteria**	**Information**
Level 1	NPF < 2%	Very good
Level 2	2% ≤ NPF < 5%	Good
Level 3	5% ≤ NPF < 8%	Good Enough
Level 4	8% ≤ NPF < 12%	Less good
Level 5	NPF ≥ 12%	Not good

Financing to Deposit Ratio

Financing to Deposit Ratio indicates the level of financing provided to customers (excluding interbank loans) compared to the total number of third-party funds (savings, time deposits, and demand deposits, but excluding interbank deposits) of Islamic banks (Dendawijaya, 2009). The relationship of FDR to MSME Credit Distribution.FDR is also called as the ratio of credit to total third party funds were used to measure the third party funds are channeled in the form of credit. Channeling the credit is the main activity of the bank, therefore the bank's main source of revenue comes from these activities. The higher FDR, the higher funds can be distributed to third parties. The higher this ratio, means the lower ability of bank liquidity. Therefore, based on the government regulation stated that the amount of FDR has the limit safe about 80 percent, but the FDR tolerance limits ranged from 85% - 100% (Bank Indonesia, 2013). According to Bank Indonesia Circular Letter No. 6/23/DPDN, FDR ratio is formulated as the following:

$$FDR = \frac{Total\ financing}{Third\ party\ funds} \text{ X } 100\%$$

Operating Expense Operating Income

OEOI has a very large contribution to the banking company's ability to manage its assets in generating earnings. The lower the OEOI ratio means the better the performance of the bank's management. The greater the OEOI ratio shows that the bank are less efficient in running their business activities. According to Bank Indonesia regulation, the ideal value of OEOI ratio that a bank should have in order to show a good level of bank efficiency is between 50-% 75%. If the ratio is above 90% and/

or nearly 100%, it shows that the performance of bank has a very low level of efficiency. In accordance with the provisions of Bank Indonesia, the maximum OEOI ratio that still can be tolerated is 93.52%. According to Bank Indonesia Circular Letter No. 6/23/DPDN, May 31, 2004, OEOI is formulated as the following:

$$OEOI = \frac{Operating\ Expense}{Operating\ Income} \text{ X } 100\%$$

The relationship of OEOI to MSME Credit Distribution

Operating Expense Operating Income is Islamic banking financial ratio that is used to measure the efficiency of the bank's ability to conduct its operations. The higher this ratio, the greater the bank's inefficient operating costs (Dendawijaya, 2009). The lower the OEOI ratio means the better the performance of the bank's management, and the more ability of banks in distributing its credit. Meanwhile, when the banks are less efficient in running their business activities, it will not enable the banks to distribute more credit, and the financing activities of the banks may be interrupted. As has been studied Aldilla (2010) that OEOI has significant effect to the total distribution of credit. According to Bank Indonesia regulation, the ideal value of OEOI ratio that banks should have in order to show a good level of bank efficiency is between 50%-75%. If the ratio is above 90% and/ or nearly 100%, it shows that the performance of bank has a very low level of efficiency. The criteria of Operating Expense Operating Income Level Assessment that have been set by Bank Indonesia are presented in the following table:

Table 4. The criteria of OEOI Level Assessment

Level	Criteria	Information
Level 1	OEOI ≤ 83%	Very high
Level 2	83% < OEOI ≤ 85%	High
Level 3	85% < OEOI ≤ 87%	Less high
Level 4	87% < OEOI ≤ 89%	Low
Level 5	OEOI > 89%	Less low

Theoretical Framework

This research is using five independent variables consisting of CAR, ROA, NPF, FDR and OEOI, and a dependent variable which is MSME credit distribution. According to the literature review and previous research, the researcher had arranged the hypothesis and then illustrated into the following theoretical framework:

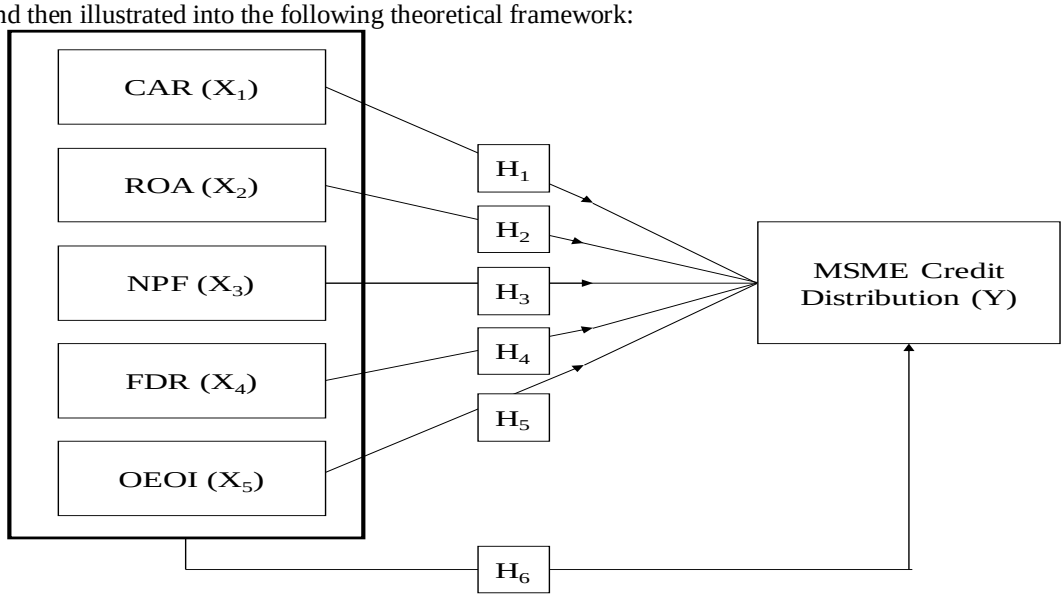

Figure 3. Theoretical Framework

Hypotheses

This research is using six hypotheses to be tasted in order to determine the result. Based on the statement of problem, and theoretical framework above, the hypothesis of this research are described as follow:

Hypothesis 1 : There is significant effect of Capital Adequacy Ratio to MSME credit distribution in Islamic bank

Hypothesis 2 : There is significant effect of Return on Asset to MSME credit distribution in Islamic bank

Hypothesis 3 : There is significant effect of Non-Performing Finance to MSME credit distribution in Islamic bank

Hypothesis 4 : There is significant effect of Financing to Deposit Ratio to MSME credit distribution in Islamic bank

Hypothesis 5 : There is significant effect of Operating Expense Operating Income to MSME credit distribution in Islamic bank

Hypothesis 6 : There is significant effect of Capital Adequacy Ratio, Return on Assets, Non-Performing Finance, Financing to Deposit Ratio, and Operating Expense Operating Income simultaneously to MSME credit distribution in Islamic Bank

3. RESEARCH DESIGN

Research Method

This research is conducted to find out the factors that lead into the increasing or decreasing number of credit distributed by Islamic banking to MSME sector in Indonesia during 2012 - 2015, by analyzing the performance of Islamic bank through its financial ratio which consist of CAR, ROA, NPF, FDR and OEOI. The ratio will be compared with the percentage of credit distributed to MSME sector. If the ratios indicate a good performance, it signs that the bank can manage all of the aspect very well and able to increase its financing to MSME sector as well in future.

Sampling Design

According to Sekaran (2013), sampling is the process of obtaining information from a subset (sample) of a larger group (population).

Table 5. Sample Size Calculation

Bank Name	Year	quarter	Total
Bank BNI Syariah	2012	Q3, Q4	2
	2013	Q1, Q2, Q3, Q4	4
	2014	Q1, Q2, Q3, Q4	4
	2015	Q1, Q2, Q3	3
Bank Mega Syariah	2012	Q3, Q4	2
	2013	Q1, Q2, Q3, Q4	4
	2014	Q1, Q2, Q3, Q4	4
	2015	Q1, Q2, Q3	3
Bank MandiriSyariah	2012	Q3, Q4	2
	2013	Q1, Q2, Q3, Q4	4
	2014	Q1, Q2, Q3, Q4	4
	2015	Q1, Q2, Q3	3
Bank BukopinSyariah	2012	Q3, Q4	2
	2013	Q1, Q2, Q3, Q4	4
	2014	Q1, Q2, Q3, Q4	4
	2015	Q1, Q2, Q3	3
Bank BCA Syariah	2012	Q3, Q4	2
	2013	Q1, Q2, Q3, Q4	4
	2014	Q1, Q2, Q3, Q4	4
	2015	Q1, Q2, Q3	3
Bank BRI Syariah	2012	Q3, Q4	2
	2013	Q1, Q2, Q3, Q4	4
	2014	Q1, Q2, Q3, Q4	4
	2015	Q1, Q2, Q3	3
Total Sample Size			78

This research has a dependent variable which is MSME credit as Y, and five independent variables which consist of Capital Adequacy Ratio as X_1, Return of Assets as X_2, Non-performing Finance as X_3, Financing to Deposit Ratio as X_4 and Operating Expense and Operating Income as X_5.The sample are using purposive sampling method. Purposive Sampling Method is sampling technique with particular consideration (Sugiyono, 2011). The data needed in this research will be obtained from the quarterly report that being published in the official website of the six chosen Bank during 2012 to third quarter of 2015, therefore this research uses 78 times observation (N = 78) as calculated in **table 5.**

Multiple Regression Analysis

According to Higgins (2005), Multiple Regression analysis is a statistical tool that allows the researcher to examine how multiple independent variables are related to a dependent variable. Multiple regression analysis model in this research is used to test the effect of Islamic banking financial ratios to MSME credit distribution. The regression analysis used in this research in order to test the hypothesis multiple regression are stated as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

This research has a dependent variable which is MSME credit as Y, and five independent variables which consist of Capital Adequacy Ratio as X_1, Return of Assets as X_2, Non-performing Finance as X_3, Financing to Deposit Ratio as X_4 and Operating Expense and Operating Income as X_5. $\beta_{1.....}\beta_5$ are regression coefficient and ε is error.

Hypothesis Testing

Hypothesis testing is used to test whether the independent variable (CAR, ROE, NPF, FDR and OEOI) have an effect to the dependent variable (MSME credit distribution), both partially and altogether. The partial effect of each independent variable to dependent variable can be tested using T-test. While to the test the altogether or the whole effect of independent variables to dependent variable is using F-test.

T-test

T-test is aimed to analyze the partial relationship between each of independent variable toward dependent variable by looking the t significance value.

a. CAR

CAR has 0.020 significant value in which it is smaller than α (0.05). It means CAR variable has significant effect to MSME credit in Islamic bank. In addition, the negative value of t indicates that ROA has indirect relationship with MSME credit distribution in Islamic Bank. The result is consistent with result of previous research conducted by Nesa Purnamasari (2012) which is stated that CAR has positive and significantly affected the credit distribution.

Table 6. Result of T-Test

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	-94.626	28.693		-3.298	.002
CAR	-.867	.363	-.278	-2.389	.020
ROA	.141	.540	.021	.262	.794
NPF	4.490	1.587	.350	2.829	.006
FDR	1.369	.227	.451	6.031	.000
OEOI	.147	.230	.058	.642	.523

b. ROA

ROA has 0.794 significant value in which it greater than α (0.05). it means ROA variable has no significant effect to MSME credit distribution in Islamic bank. The result is consistent with result of previous research conducted by Wuri Arianti and Harjum Muharam (2012) which is stated that ROA have not influence to financing in Islamic bank.

c. NPF

NPF has 0.06 significant value in which it is smaller than α (0.05). It means NPF variable has significant effect to MSME credit in Islamic bank. In addition, the positive value of t indicates that NPF has direct relationship with MSME credit distribution in Islamic Bank. The result is inconsistent with result of previous research conducted by Aldilla De Vega (2010) which is stated that NPF has negative and insignificant effect to the total distribution of credit.

d. FDR

FDR has 0.00 significant value in which it is smaller than α (0.05). it means FDR variable has positive significant effect to MSME credit in Islamic bank. In addition, the positive value of t indicates that FDR has direct relationship with MSME credit distribution in Islamic Bank. The result is inconsistent with result of previous research conducted by Fitri Suci Lestari (2013) which is stated that FDR has insignificant influence the amount of financing in Islamic bank.

e. OEOI

OEOI has 0.642 significant value in which it is greater than α (0.05). It means OEOI variable partially has no significant effect to MSME credit distribution in Islamic bank.

The result is consistent with result of previous research conducted by Fitri Suci Lestari (2013) which is stated that OEOI do not significantly influence the amount of financing in Islamic bank.

F-test

The F-test aimed to determine whether there is a significant effect of independent variables (CAR, ROA, NPF, FDR and OEOI) altogether toward dependent variable (MSME credit distribution) by looking at the t significance value provided by ANOVA table that has been constructed in SPSS. The result of F-test is presented in the following table:

Table 7. Result of F-Test

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16263.867	5	3252.773	24.202	.000[a]
	Residual	9677.072	72	134.404		
	Total	25940.939	77			

Based on the table above, it shows that the significance value of F-test is 0.000 which it is smaller than α (0.05) and the F table also shows the positive value. Therefore, it can be concluded that there is significant effect of all independent variables (CAR, ROA, NPF, FDR and OEOI) simultaneously toward MSME credit distribution in Islamic Bank during 2012 – 2015.

Multiple Linear Regression

In this research, multiple linear regression analysis is used to determine the influence of independent variables (CAR, ROA, NPF, FDR and OEOI) and a dependent variable (MSME credit distribution). It can be done by interpreting the numbers in unstandardized coefficient beta. Refers to the table 4.4, the interpretation based on the multiple linear regression equation are explained as follow:

MSME Credit = - 94.626 – 0.867 CAR + 4.490 NPF + 1.369 FDR

a. Constant Value of the regression equation is equal to -94.626. The number indicates the level of MSME credit in the chosen Islamic bank when the level of CAR, ROA, NPF, FDR, and OEOI is ignored ($X_1 = X_2 = X_3 = X_4 = X_5 = 0$)

b. CAR as X_1, has a negative regression coefficient which is equal to -0.864. Negative coefficient of CAR indicates that CAR has negative effect to MSME credit in the Islamic Bank. This number illustrates that if there is an increase of 1 percent or 0.01 of CAR, then the CAR variable will be affecting to the decreasing of MSME credit as many as 0.867 percent, with the assumption that the other independent variables are constant.

c. ROA as X_2, has a positive regression coefficient which is equal to 0.141. Positive coefficient of ROA indicates that ROA has positive effect to MSME credit in the Islamic Bank. This number illustrates that if there is an increase of 1 percent or 0.01 of ROA, then the ROA variable will be affecting to the increasing of MSME credit as many as 0.141 percent, with the assumption that the other independent variables are constant.

d. NPF as X_3, has a positive regression coefficient which is equal to 4.490. Positive coefficient of NPF indicates that NPF has positive effect to MSME credit in the Islamic Bank. This number illustrates that if there is an increase of 1 percent or 0.01 of NPF, then the NPF variable will be affecting to the increasing of MSME credit as many as 4.490, with the assumption that the other independent variables are constant.

e. FDR as X_4, has a positive regression coefficient which is equal to 1.369. Positive coefficient of FDR indicates that FDR has positive effect to MSME credit in the Islamic Bank. This number illustrates that if there is an increase of 1 percent or 0.01 of FDR, then the FDR variable will be affecting to the increasing of MSME credit as many as 1.369 percent, with the assumption that the other independent variables are constant.

f. OEOI as X_5, has a negative regression coefficient which is equal to 0.147. Positive coefficient of OEOI indicates that OEOI has positive effect to MSME credit in the Islamic Bank. This number illustrates that if there is an increase of 1 percent or 0.01 of OEOI, then the OEOI variable will be affecting to the increasing of MSME credit as many as 0.147 percent, with the assumption that the other independent variables are constant.

Interpretation of Result

a. CAR towards MSME credit distribution in Islamic bank

Based on the T-test, CAR (X_1) has 0.020 significant value in which it is smaller than α (0.05). It means CAR partially has significant effect to MSME credit distribution in Islamic bank. Therefore, the alternative hypothesis is accepted which stated that there is a significant effect of Capital Adequacy Ratio to MSME credit distribution in Islamic Bank, and the null hypothesis is rejected. The significant effect means that when the capital of the bank is increasing, then the more of credit distributed to MSME by Islamic Commercial Bank during the selected year. Islamic Commercial Bank, has shown the greater amount of CAR ratio during the selected year. Firdaus and Ariyanti (2009) was stated that the increasing of CAR in Islamic Bank may be caused by the increasing of the additional capital from the shareholders, and also the increasing on deposit of the bank itself. CAR variable in the chosen Islamic banks generally has follow the requirements of Bank Indonesia with the standard of 8%. To conclude, the increasing of CAR in Islamic Commercial Bank is affecting the increasing of credit distribution to MSME and vice versa. Several researchers have supported this finding with the same research findings as this research. According to Nesa Purnamasari (2012), CAR has positive and significantly affected the credit distribution in Bank UmumSyariah.

b. ROA towards MSME credit distribution in Islamic bank

Based on the T-test, ROA (X_2) has 0.794 significant value in which it is bigger than α (0.05). It means partially ROA has no significant effect to MSME credit distribution in Islamic bank. Therefore, the null hypothesis is accepted which stated that there is no significant effect of Return on Asset to MSME credit distribution in Islamic Bank, and the alternative hypothesis is rejected. The insignificant effect means that when the income of the bank is increasing, then the less of credit distributed to MSME by Islamic Commercial Bank during the selected year. Several researchers have supported this finding with their own research findings. According to Wuri Arianti (2012), ROA has no influence to the financing. The different result has found by other researcher, Nesa Purnamasari(2012), which stated that ROA have positive and significantly affected the credit distribution. The different result occurred because several reasons, such as different sample of banks that being observed by researcher, and different selected year that being examined in their research. Even though based on the criteria of Return On Asset level assessment, ROA in the chosen Islamic bank are categorized as very high, this condition is not affecting the total credit distributed to MSME during the selected year. However, these condition does not mean that Islamic bank is ignoring this ratio in their financing activities, because the bigger ROA ratio, means the better the effort of a bank in investing their income and the better their financing activities.

c. NPF towards MSME credit distribution in Islamic bank

Based on the T-test, NPF (X_3) has 0.06 significant value in which it is smaller than α (0.05). It means NPF variable has significant effect to MSME credit in Islamic bank. In addition, the positive value of t table indicates that NPF has direct relationship with MSME credit distribution in Islamic Bank. Therefore, the alternative hypothesis is accepted which stated that there is a significant effect of Non-Performing Finance to MSME credit distribution in Islamic Bank, and the null hypothesis is rejected. The significant effect, means that when the NPF ratio is smaller, it will be affecting the total of credit distributed to MSME by Islamic Commercial Bank during the selected year. Based on the Criteria of Non Performing Finance Level Assessment, with an average of NPF that amounted to 2.18% which is in between 2 - 5%, it means NPF value in the chosen Islamic bank are categorized as good. The smaller this ratio, it means the better performance of the bank. To conclude, when a bank has smaller NPF ratio, it means the more ability of a bank in distributing its credit. Several researchers have supported this finding with their own research findings. As studied by WuriArianti (2012) which resulting that NPF variable has not influence to the financing in Islamic bank. Other researcher also found the same result, as studied by Aldilla De Vega (2010) which found that NPF has negative and insignificant effect to the total distribution of credit in Islamic banks. The different result occurred because several reasons, such as different sample of banks that being observed by researcher, and different selected year that being examined in their research. Even though the results of this research is inconsistent with result of previous research, it does not mean that

Islamic bank is ignoring their NPF ratio in their financing activities, since the smaller this ratio indicating the better quality of Islamic bank in their financing activities.

d. FDR towards MSME credit distribution in Islamic bank

Based on the T-test, FDR (X_4) has 0.000 significant value in which it is smaller than α (0.05). It means FDR has insignificant effect to MSME credit distribution in Islamic bank. In addition, the positive value of t indicates that FDR has direct relationship with MSME credit distribution in Islamic Bank. Therefore, the alternative hypothesis is accepted which stated that there is a significant effect of Financing to Deposit Ratio to MSME credit distribution in Islamic Bank, and the null hypothesis is rejected. The significant effect, means that when the FDR ratio is increasing, it will be affecting the total of credit distributed to MSME by Islamic Commercial Bank during the selected year.

Several researchers have supported this finding with their own research findings. According to FitriSuci Lestari (2013), FDR variable do not significantly influence the amount of financing in Islamic bank. The different result occurred because several reasons, such as different sample of banks that being observed by researcher, and different selected year that being examined in their research. Even though the results of this research is inconsistent with result of previous research, it does not mean that Islamic bank is ignoring this ratio in their financing activities. Since FDR ratio shows the ability of a bank to repay the withdrawal of funds by depositors, then this ratio should always be maintained, and should be below 80% as this value has been advised by Bank Indonesia.

e. OEOI towards MSME credit distribution in Islamic bank

Based on the T-test, OEOI (X_5) has 0.523 significant value in which it is bigger than α (0.05). It means OEOI has insignificant effect to MSME credit distribution in Islamic bank. In addition, the positive value of t indicates that OEOI has direct relationship with MSME credit distribution in Islamic Bank. Therefore, the null hypothesis is accepted which stated that there is no significant effect of Operating Expense Operating Income to MSME credit distribution in Islamic Bank, and the alternative hypothesis is rejected. The lower OEOI ratio means the better the performance of the bank's management, and the more ability of banks in distributing its credit. Meanwhile, when the banks are less efficient in running their business activities, it will not enable the banks to distribute more credit, and the financing activities of the banks may be interrupted. The insignificant means that when the OEOI ratio is smaller, it will not be affecting the total of credit distributed by Islamic Commercial Bank to MSME during the selected year. The insignificant effect may be caused by the ratio of OEOI during the selected year which are categorized as quite high. The ratio of OEOI is exceeding the tolerable ratio of OEOI with the maximum of 110.53%, because of Bank Indonesia requires that the ratio OEOI for Islamic banking is maximum of 80 percent.Several researchers have supported this finding with their own research findings. According to Nesa Purnamasari (2012), OEOI variable significantly affecting the credit distribution. Aldilla De Vega (2010) also found the same result, which stated that has significant effect to the total distribution of credit in Islamic bank. Meanwhile FitriSuci Lestari (2013) found different result in her research, it stated that OEOI variable do not significantly influence the amount of financing in Islamic bank. The different result occurred because several reasons, such as different sample of banks that being observed by researcher, and different selected year that being examined in their research.

To conclude, even though OEOI has no significant effect to MSME credit distribution in Islamic Commercial Bank during the selected year, it does not mean that Islamic bank is ignoring this ratio in their financing activities, since OEOI has a very large contribution to the banking's ability to manage its assets in generating earnings, because when a banks are less efficient in running their business activities, it will not enable the banks to distribute more credit, and the financing activities of the banks may be interrupted.

4. CONCLUSION

a. Capital Adequacy Ratio has significant effect to MSME credit distribution in Islamic bank, with the level of significant 0.020. This explain it has significant effect in statistical way and theories. The significant effect means that when the capital of the bank is increasing, it will be affecting the increasing of total credit distributed. The result has been supported by theories and several previous research, which stated that the higher value of CAR, means the more credit distributed to MSME sector in Islamic banks, and vice versa if the CAR is lower, then the less ability of bank is distributing its credit. In addition, the negative value of beta that provided on table 4.6, means when there is an increase of 1 percent or 0.01, then the CAR variable will be affecting to the decreasing of MSME credit distribution as many as 0.867 percent.

b. Return on Asset has no significant effect to MSME credit distribution in Islamic bank with the level of significant 0.794. This explain it has no significant effect in statistical way, while some theories and previous research explain it does have effect of ROA to credit distribution, but it does not reach to the point that can be categorized to have significant effect. Deeper analysis, the higher value of ROA ratio, means the bank tendency to get greater profit and bank has ability to increase the credit distributed to MSME sector in Islamic banks and vice versa. In addition, the positive value of beta that provided on table 4.6, means when there is an increase of 1 percent or 0.01, then the ROA variable will be affecting to the increasing of MSME credit distribution as many as 0.141 percent.

c. Non Performing Finance has significant effect to MSME credit distribution in Islamic bank with the level of significant 0.006. The results of this research has been supported by previous research and theories. The smaller value of NPF ratio, means the more credit distributed to MSME sector in Islamic banks. In addition, the positive value of beta that provided on table 4.6, means when there is an increase of 1 percent or 0.01, then the NPF variable will be affecting to the increasing of MSME credit distribution as many as 4.490 percent.

d. Financing to Deposit Ratio has significant effect to MSME credit distribution in Islamic bank with the level of significant 0.000. This explain it has significant effect in statistical way and theories. The higher this ratio, means the lower ability of bank liquidity and vice versa. FDR of Islamic Commercial Bank is exceeding the value that has been advised by Bank Indonesia, which should be below 80 percent. These condition may be affecting the decreasing of credit distributed during the selected year. In addition, the positive value of beta that provided on table 4.6, means when there is an increase of 1 percent or 0.01, then the FDR variable will be affecting to the increasing of MSME credit distribution as many as 1.369 percent.

e. Operating Expense Operating Income has no significant effect to MSME credit distribution in Islamic bank with the level of significant 0.523. This explain it has no significant effect in statistical way, while some theories explain it does have effect of the OEOI to credit distribution, but it does not reach to the point that can be categorized to have significant effect in statistical way. Deeper analysis, the higher operational expense, means the less efficient of the Islamic banks in operating income. When the banks are less efficient in running their business activities, it will not enable the banks to distribute more credit, and the financing activities of the banks may be interrupted. Meanwhile, when OEOI ratio is lower, means the better the performance of the bank's management, and the more ability of banks in distributing its credit. In addition, the positive value of beta that provided on table 4.6, means when there is an increase of 1 percent or 0.01, then the OEOI variable will be affecting to the increasing of MSME credit distribution as many as 0.147 percent.

f. All independent variables (CAR, ROA, NPF, FDR and OEOI) simultaneously have significant effect to MSME credit distribution in Islamic bank with the level of significant is 0.000. With a coefficient of determination (Adjusted R-square) of 0.601 that provided on table 4.6, it explains that MSME credit distribution are affected by all independent variables as many as 60.1 percent, and the rest of 39.9 percent are affected by other variables outside this research.

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