CHAPTER IV
DATA ANALYSIS AND DISCUSSIONS

This chapter explains about the analysis of data taken from this research. After ward, the result of data analysis were tested by the hypothesis test.

4.1. Descriptive Statistic of Research Variable

Statistic description aimed for to know the character of sample that used in this research. Table 4.1 illustrates a sample characteristic that used by this research in detail.

Table 4.1

Statistic Description of Research Variable

	BANK EFFICIENCY OF BANK SHARIA	BANK EFFICIENCY OF BANK CONVENTIONAL	INF	INTR	EXCHR
Mean	0.921531	0.908719	1.798420	7.140625	0.011303
Maximum	1.000000	1.000000	53.00000	9.250000	0.169604
Minimum	0.692000	0.808000	-7.928571	5.750000	-0.11663
Std. Dev.	0.088129	0.064440	9.947625	1.066229	0.054124
Observations	32	32	32	32	32

Source : Data processed, 2016

From the result of descriptive statistic analysis above, it can be concluded that the minimum value of variable efficiency sharia bank was 0.692 and the maximum value of variable efficiency sharia bank was 1. The average value of variable efficiency sharia bank from 2007 until 2014 was 0.921531 with the standard deviation of 0.088129. The average value was 0.921531 that means, the level of efficiency sharia bank in doing its operational activity was 92.1531%.

Standard deviation that showed the spread of variable efficiency bank during the period of research was 0.088129 from 32 data.

From the result of descriptive statistic in above, it can be concluded that the minimum value of variable efficiency conventional bank was 0.808 and the maximum value of variable efficiency conventional bank was 1. The average value of variable efficiency conventional bank from 2007 until 2014 was 0.908719 with the standard deviation of 0.06444. The average value was 0.908719 that means, the level of efficiency conventional bank in doing its operational activity was 90.8719%. Standard deviation that showed the spread of variable efficiency conventional bank during the period of research was 0.06444 from 32 data. From the result of descriptive analysis above, it can be concluded that the efficiency of sharia bank (92.1531%) was better than the efficiency of conventional bank (90.8719%).

From the result of descriptive statistic above, it can be concluded that the minimum value of variable inflation was -7.928571 and the maximum value of variable inflation was 53. The average value of variable inflation from 2007 until 2014 was 1.798420 with standard deviation of 9.947625. The average value of inflation changes was 1.798420 that means in average, the value of inflation changes from 2007 until 2014 increased 1.798420%. Standard deviation that showed the spread of variable inflation that changes during the period of research was 9.947625 from 32 data.

From the result of descriptive statistic above, it can be concluded that the minimum value of variable interest rate was 5.75 and the maximum value of variable interest rate was 9.5. The average value of variable interest rate from 2007 until 2014 was 7.140625 with the standard deviation of 1.066229. The average value of interest rate was 7.140625 that means, the policy of interest rate reflected stance of monetary policy which was defined by Bank Indonesia and announced to the public of 7.140625%. Standard deviation, that showed the spread of variable interest rate during the period of research was 1.066229 from 32 data.

From the result of descriptive statistic above, it can be concluded that the minimum value of variable exchange rate was -0.11663 and the maximum value of variable exchange rate was 0.169604. The average value of exchange rate from 2007 until 2014 was 0.011303 with the standard deviation of 0.054124. The average value of exchange rate was 0.011303 that means, the level of comparison exchange rate between Rupiah (Rp) and Dollar ($) was 0.011303. Standard deviation that showed the spread of variable exchange rate during the period of research was 0.054124 from 32 data.

4.2. Bank Performance

4.2.1. Sharia Bank Performance

Sharia bank performance was aimed to know the input and output of sharia bank. Table 4.2 illustrated the performance of sharia bank from 2007 until 2014 that was used in this research.

Table 4.2

Sharia Bank Performance

Bank Performance	Years							
	2007	2008	2009	2010	2011	2012	2013	2014
A. Input								
1. Bills Payable	944,497	2,423,992	3,852,000	6,117,000	6,992,000	12,082,000	12,320,000	9,847,000
2. Fixed Assets	295,959	436,020	672,000	899,000	1,194,000	1,803,000	2,198,000	4,094,000
3. Deposits	3,750,376	4,238,337	6,202,000	9,056,000	12,006,000	17,708,000	18,523,000	18,649,000
B. Output								
1. Investment	5,640,000	7,910,000	9,955,000	13,416,000	17,903,000	26,585,000	33,839,000	41,718,000
2. Advances plus Loans	26,624,905	36,584,973	46,186,000	68,181,000	102,655,000	147,505,000	184,120,000	199,329,000
3. Zakat	1,904,390	2,463,225	59,000	55,000	64,000	3,025,000	205,000	585,000

Source : Annual Report of Sharia Bank from 2007-2014, 2016

From the above table, it can be concluded that the input of sharia bank especially in bills payable was relatively increasing every year. In 2007, bills payable was 944,497. In 2008, bills payable was 2,423,992. In 2009, bills payable was 3,852,000. In 2010, bills payable was 6,117,000. In 2011, bills payable was 6,992,000. In 2012, bills payable was 12,082,000. In 2013, bills payable was 12,320,000. In 2014, bills payable was 9,847,000.

From the above table, it can be concluded that the input of sharia bank especially in fixed assets increased every year. In 2007, fixed assets was 295,959. In 2008, fixed assets was 436,020. In 2009, fixed assets was 672000. In 2010, fixed assets was 899,000. In 2011, fixed assets was 1,194,000. In 2012, fixed assets was 1,803,000. In 2013, fixed assets was 2,198,000. In 2014, fixed assets was 4,094,000.

From the above table, it can be concluded that the input of sharia bank especially in deposits increased every year. In 2007, deposits was 3,750,376. In 2008, deposits was 4,238,337. In 2009, deposits was 6,202,000. In 2010, deposits was 9,056,000. In 2011, deposits was 12,006,000. In 2012 deposits was 17,708,000. In 2013, deposits was 18,523,000. In 2014, deposits was 18,649,000.

From the above table, it can be concluded that the output of sharia bank especially in investment increased every year. In 2007, investment was 5,640,000. In 2008, investment was 7,910,000. In 2009, investment was 9,955,000. In 2010, investment was 13416000. In 2011, investment was 17,903,000. In 2012, investment was 26,585,000. In 2013, investment was 33,839,000. And in 2014, investment was 41,718,000.

From the above table, it can be concluded that the output of sharia bank especially in loans increased every year. In 2007, loans was 26,624,905. In 2008, loans was 36,584,973. In 2009, loans was 46,186,000. In 2010, loans was 68,181,000. In 2011, loans was 102,655,000. In 2012, loans was 147,505,000. In 2013, loans was 184,120,000. In 2014, loans was 199,329,000.

From the above table, it can be concluded that the output of sharia bank especially in zakat was relatively fluctuating. In 2007, zakat was 1,904,390. In 2008, zakat was 2,463,225. In 2009, zakat was 59,000. In 2010, zakat was 55,000. In 2011, zakat was 64,000. In 2012, zakat was 3,025,000. In 2013, zakat was 205,000. In 2014, zakat was 585,000.

4.2.2. Conventional Bank Performance

Conventional bank performance aimed to know the input and output of conventional bank. Table 4.3 illustrated the performance of conventional bank from 2007 until 2014 that was used in this research.

Table 4.3

Conventional Bank Performance

Bank Performance	Years							
	2,007	2,008	2,009	2,010	2,011	2,012	2,013	2,014
A. Input								
1. Bills Payable	20,866,000	237,053,000	207,893,000	224,737,000	308,396,000	312,288,000	400,057,000	474,835,000
2. Fixed Assets	168,612,000	264,723,000	301,382,000	272,356,000	290,390,000	343,130,000	355,058,000	427,782,000
3. Deposits	1,510,834,000	1,753,292,000	1,973,042,000	2,338,824,000	2,784,912,000	3,225,198,000	3,663,968,000	4,114,420,000
B. Output								
1. Investment	12,230,000	9,607,000	9,719,000	8,436,000	8,918,000	591,425,000	798,157,000	903,194,000
2. Advances plus Loans	1,002,012,000	1,307,688,000	1,437,930,000	1,765,845,000	2,200,094,000	2,725,674,000	3,319,842,000	3,706,501,000
3. Corporate Social Responbility	263,000	291,000	756,000	1,761,000	1,276,000	2,607,000	2,914,000	3,305,000

Source: Annual Report of Conventional Bank from 2007-2014

From the above table, it can be concluded that the input of conventional bank especially in bills payable was relatively increasing every year. In 2007, bills payable was 20,866,000. In 2008, bills payable was 237,053,000. In 2009, bills payable was 207,893,000. In 2010, bills payable was 224,737,000. In 2011, bills payable was 308,396,000. In 2012, bills payable was 312,288,000. In 2013, bills payable was 400,057,000. In 2014, bills payable was 474,835,000.

From the above table, it can be concluded that the input of conventional bank especially in fixed assets was relatively fluctuating every year. In 2007, fixed assets was 168,612,000. In 2008, fixed assets was 264,723,000. In 2009, fixed assets was 301,382,000. In 2010, fixed assets was 272,356,000. In 2011, fixed assets was 290,390,000. In 2012, fixed assets was 343,130,000. In 2013, fixed assets was 355,058,000. In 2014, fixed assets was 427,782,000.

From the above table, it can be concluded that the input of conventional bank especially in deposits increased every year. In 2007, deposits was 1,510,834,000. In 2008, deposits was 1,753,292,000. In 2009, deposits was 1,973,042,000. In 2010, deposits was 2,338,824,000. In 2011, deposits was

2,784,912,000. In 2012 deposits was 3,225,198,000. In 2013, deposits was 3,663,968,000. In 2014, deposits was 4,114,420,000.

From the above table, it can be concluded that the output of conventional bank especially in investment was relatively fluctuating every year. Inw 2007, investment was 12,230,000. In 2008, investment was 9,607,000. In 2009, investment was 9,719,000. In 2010, investment was 8,436,000. In 2011, investment was 8,918,000. In 2012, investment was 591,425,000. In 2013, investment was 798,157,000. In 2014, investment was 903,194,000.

From the above table, it can be concluded that the output of conventional bank especially in loans increased every year. In 2007, loans was 1,002,012,000. In 2008, loans was 1,307,688,000. In 2009, loans was 1,437,930,000. In 2010, loans was 1,765,845,000. In 2011, loans was 2,200,094,000. In 2012, loans was 2,725,674,000. In 2013, loans was 3,319,842,000. In 2014, loans was 3,706,501,000.

From the above table, it can be concluded that the output of conventional bank especially in corporate social responsibility was relatively fluctuating every year. In 2007, corporate social responsibility was 263,000. In 2008, corporate social responsibility was 291,000. In 2009, corporate social responsibility was 756,000. In 2010, corporate social responsibility was 1,761,000. In 2011, corporate social responsibility was 1,276,000. In 2012, corporate social responsibility was 2,607,000. In 2013, corporate social responsibility was 2,914,000. In 2014, corporate social responsibility was 3,305,000.

4.3. Bank Efficiency

This sub chapter explained about bank efficiency of conventional bank and sharia bank. Table 4.4 explained about bank efficiency of conventional bank and sharia bank every year.

Table 4.4

Bank Efficiency

Period	BE conventional	BE Sharia	Period	BE conventional	BE Sharia
2007Q1	0,904	0,99	**2011Q3**	0,911	0,96
2007Q2	0,831	0,994	**2011Q4**	0,938	0,893
2007Q3	0,822	1	**2012Q1**	0,862	0,962
2007Q4	1	1	**2012Q2**	0,892	0,911
2008Q1	0,941	0,932	**2012Q3**	0,901	0,909
2008Q2	0,96	1	**2012Q4**	0,902	0,817
2008Q3	1	1	**2013Q1**	0,918	0,988
2008Q4	1	0,941	**2013Q2**	0,944	0,967
2009Q1	0,833	0,897	**2013Q3**	0,962	1
2009Q2	0,894	0,841	**2013Q4**	0,968	0,949
2009Q3	0,871	0,891	**2014Q1**	1	1
2009Q4	0,887	0,745	**2014Q2**	1	1
2010Q1	0,824	0,832	**2014Q3**	0,985	0,975
2010Q2	0,808	0,692	**2014Q4**	0,976	1
2010Q3	0,826	0,778	**Average**	0,9087	0,9215
2010Q4	0,816	0,745	**Levene Test**	F = 2264	sig = 0,137
2011Q1	0,827	0,898	**t test**	t = -0,664	sig = 0,509
2011Q2	0,876	0,982			

Source: Data Processed, 2016

Before using the independent sample t-test, firstly homogeneity test with F test (levene's test) was done. From the above data, it could be seen that the significant value in this research was 0.137. This probability was bigger than the standard probability which was 0.05. Thus, all variants in this research was the

same. Based on F test, independent sample t-test was done by using equal variance assumed.

After doing F test, independent sample t test was done by using equal variance assumed. Based on the data above it can be seen that the result of independent samples t test based on equal variance assumed was -0.664 with the significant value of 0.509>0.05. Based on that result, it can be concluded that there was no significant difference between the efficiency of conventional bank and the efficiency of sharia bank.

4.4. The Influence of Macroeconomic Factors Toward The Efficiency of Sharia Bank

4.4.1. Classical Assumption Test

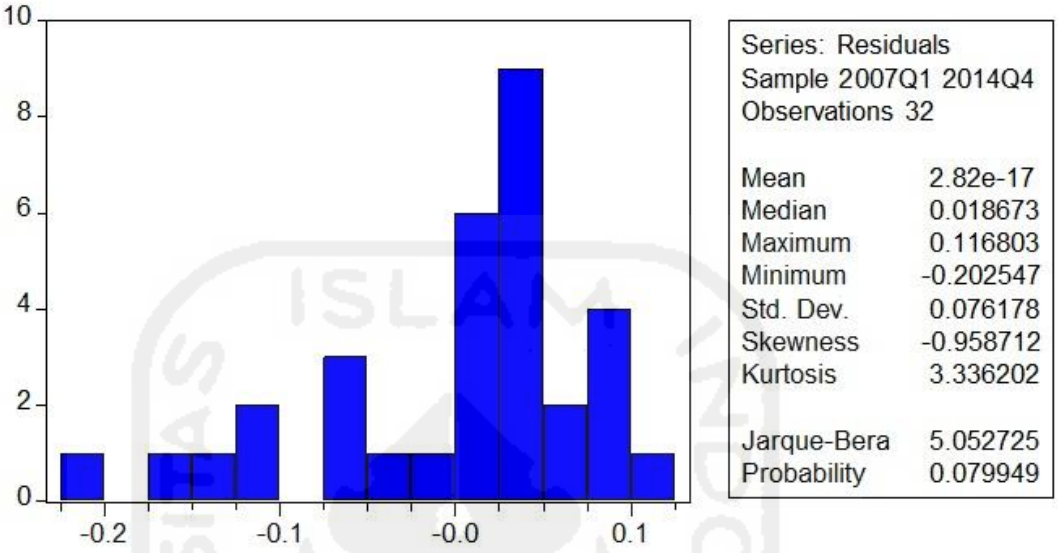
Before using regression model for hypothesis test, first of all the model should be tested to know whether the model fulfill the classical assumption or not. This assumption was the underlying regression analysis. This classic assumption test was intended to ensure that the model really meet the basic assumption in the regression that includes: normality test, multicolinearity test, autocorrelation test and heteroscedasticity test.

4.4.1.1. Normality Test

Normality test aimed to test the regression model, residual variable that had normal distribution. Normality test used Jorquera-Bera test. The result of normality test was as follow:

Figure 4.1

The Result of Normality Test of Sharia Bank



Source : Data Processed, 2016

Based on the above diagram, the value of probability was 0.079949 because the value of probability was > 0.05. Thus, the regression model could fulfill normality assumption and could be used for the next analysis.

4.4.1.2. Multicoliniearity test

Multicoliniearity test aimed to test regression model that had correlation among the independent variables. The result of multicoliniearity test was as follow:

Table 4.5

The Result of Multicoliniearity Test of Sharia Bank

	INF	INTR	EXCHR
INF	1	-0.245323191796738	-0.036028391872210 6
INTR	-0.245323191796738	1	0.248343257411647
EXCHR	-0.036028391872210 6	0.248343257411647	1

Source: Data Processed, 2016

Based on the above result, it can be concluded that sharia bank did not have any multicoliniearity problem in regression model because the correlation coefficients among each independent variables was below 0.05.

4.4.1.3. Autocorrelation Test

Autocorrelation test aimed to test regression model that had correlation between residual problem in period t and problem in period t-1 (period before). The result of autocorrelation test by using Q statistic test was as follow:

Table 4.6

The Result of Autocorrelation Test of Sharia Bank

Date: 08/03/16 Time: 18:38
Sample: 2007Q1 2014Q4
Included observations: 32

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |**** |	. |**** |	1	0.477	0.477	7.9815	0.005
. |*** |	. |**. |	2	0.395	0.217	13.644	0.001
. |* . |	. *| . |	3	0.173	-0.106	14.766	0.002
. |**. |	. |* . |	4	0.203	0.114	16.362	0.003
. | . |	.**| . |	5	-0.032	-0.208	16.404	0.006

Source: Data Processed, 2016

Based on the above result, a statistic of probability still had the value of less than 0.05. Thus, it means that it still had problem on autocorrelation.

Because there are autocorrelation problems in regression model, needed to be repaired in regression model problem in autocorrelation. One of the ways to repair autocorrelation was by using Newey, Whitney and Kenneth method.

4.4.1.4. The Result of Heteroscedasticity Test

Heteroscedasticity test aimed to test the regression model whether it happened inequality variance of residual for every observation or not. If the variance of residual for every observation is the same, it is called homoscedasticity, otherwise it is called heteroscedasticity. The result of heteroscedasticity test is as follow:

Table 4.7

The Result of Heteroscedasticity Test of Sharia Bank

White Heteroscedasticity Test:

F-statistic	1.644515	Probability	0.176572
Obs*R-squared	9.055727	Probability	0.170468

Source: Data Processed by SPSS, 2016

Based on the result of heteroscedasticity test by using white test generated the significant Obs*R-squared value of 0.170468 which was more than 0.05. Thus, it showed heteroscedasticity phenomena that did not occurred in regression model. The model used in this research was feasible to test dependent variable based on the input of independent variable.

To fix the autocorrelation and heteroscedasticity problem, Newey, Whitne and Kenneth developed HAC method (heteroscedasticity and autocorrelation consistent variance). This method aimed to know the consistent standard error if there was heteroscedasticity element or autocorrelation element in regression model (Widarjono, 2009).

4.4.2. Multiple Regression Linier Test

The analysis method used in this research was multiple linier regression test. Because there was heteroscedasticity and autocorrelation problems, it needed to be repaired from that problem. The repairement for heteroscedasticity and autocorrelation used HAC method (heteroscedasticity and autocorrelation consistent variance). The result of multiple regression linier test by using HAC

method (heteroscedasticity and autocorrelation consistent variance) by using Eviews 5.1 was as follow:

Table 4.8

The Result of Multiple Regression Linier Test of Sharia Bank

Dependent Variable: BE
Method: Least Squares
Date: 08/03/16 Time: 18:40
Sample: 2007Q1 2014Q4
Included observations: 32
Newey-West HAC Standard Errors & Covariance (lag truncation=3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.669558	0.146234	4.578691	0.0001
INF	1.12E-05	0.001847	0.006056	0.9952
INTR	0.034794	0.018060	1.926628	0.0642
EXCHR	0.309558	0.223986	1.382042	0.1779

R-squared	0.252822	Mean dependent var	0.921531
Adjusted R-squared	0.172768	S.D. dependent var	0.088129
S.E. of regression	0.080156	Akaike info criterion	-2.093225
Sum squared resid	0.179898	Schwarz criterion	-1.910008
Log likelihood	37.49159	F-statistic	3.158120
Durbin-Watson stat	1.005985	Prob(F-statistic)	0.040189

Source: Data processed, 2016

The result of regression equation in the above table, could be formulated by using the multiple regression as follow:

BE = 0.669558+1,12E-05INF+0.034794INTR+0.309558EXCHR

The coefficient of each variable could be explain as follow:

From the result of regression test which generated the value of constant = **0.6695581** showed that besides variables which had been determined, there were

other variables that influenced bank efficiency of **0.6695581.** In other words, every independent variable had a zero sum. Thus, the bank efficiency was **0.6695581.**

From the result of regression test which generated the value of consistent inflation of **1.12E-05** showed that there were positive relationship between inflation and bank efficiency. It means that if inflation increased by one, the bank efficiency would increased **1.12E-05** with the assumption that other variable was constant.

From the result of regression test which generated the value of consistent interest rate of **0.034794** showed that there were positive relationship between interest rate and bank efficiency. It means that if interest rate increased by one, the bank efficiency would increased **0.034794** with the assumption that other variable was constant.

From the result of regression test which generated the value of consistent exchange rate of **0.309558** showed that there were positive relationship between exchange rate and bank efficiency. It means that if exchange rate increased by one, the bank efficiency would increased **0.309558** with the assumption that other variable was constant.

4.4.3. T Test

To prove the influence of independent variable toward dependent variable, partial test was done by using T test. By comparing p-value (sig-t) toward significant degree by the tolerance of 5%, it can be used to make a decision if the hypothesis is rejected or accepted.

1. First Hypothesis Test

The steps of first hypothesis test in this research were as follows:

a. Determine the formula of operational hypothesis (H_0) and alternative hypothesis (H_a)

H_0 :inflation did not have positive influence toward bank efficiency in sharia bank

H_a :inflation did have positive influence toward bank efficiency in sharia bank

b. Determine significant degree

This research used significant degree (α) of 5% or 0.05

c. The criteria of accepted or rejected hypothesis was as follows:

- H_0 was accepted if probability (p) ≥ 0.05
- H_0 was rejected if probability (p) < 0.05

d. Calculating probability (p) with regression by using SPSS

e. Make a conclusion : adjusting the result of procedure (3) and (4)

Based on Table 4.8, p-value (0.9952) > 0.05. It can be concluded that H_0 was rejected. Thus, inflation had no significant influence toward bank efficiency.

2. Second Hypothesis Test

The steps of second hypothesis test in this research were as follow:

a. Determine the formula of operational hypothesis (H_0) and alternative hypothesis (H_a)

H_0 : interest rate did not have negative influence toward bank efficiency in sharia bank

H_a :interest rate had negative influence toward bank efficiency in sharia bank

b. Determine significant degree

This research used significant degree (α) of 5% or 0.05

c. The criteria of accepted or rejected was as follow:

- H_0 was accepted if probability (p) ≥ 0.05
- H_0 was rejected if probability (p) < 0.05

d. Calculate probability (p) with regression by using SPSS

e. Make a conclusion : adjusting the result of procedure (3) and (4)

Based on table 4.8, p-value (0.0642)>0.05. It can be concluded that H_0 was rejected. Thus, interest rate did not have significant influence toward bank efficiency in sharia bank.

3. Third Hypothesis Test

The steps of third hypothesis test in this research was as follow:

a. Determine the formula of operational hypothesis (H_0) and alternative hypothesis (H_a)

H_0 : exchange rate did not have positive influence toward bank efficiency in sharia bank

H_a :exchange rate had positive influence toward bank efficiency in sharia bank

b. Determine significant degree

This research used significant degree (α) of 5% or 0.05

c. The criteria of accepted or rejected was as follows:

- H_0 was accepted if probability (p) ≥ 0.05
- H_0 was rejected if probability (p) < 0.05

d. Calculate probability (p) with regression by using SPSS

e. Make a conclusion : adjusting the result of procedure (3) and (4)

Based on table 4.8, p-value (0.1779) > 0.05. It can be concluded that $H_{0\ was}$ accepted. Thus, exchange rate had significant influence toward bank efficiency in sharia bank.

4.4.4. Coefficient Determination Test

Coefficient Determination test (R^2) aimed to test the influence of independent variable on dependent variable (Ghozali, 2011). R^2 test was used to know the presentation of dependent variable which way identified by independent variable. The value of coefficient determination was between zero and one. If the value of R^2 is small, the capability of independent variables in influencing dependent variable was very limited.

To know the influence of independent dependent variable, it can be seen the amount of adjusted coefficient determination or adjusted R^2. Table 4.6 showed the amount of adjusted R^2 = 0.172768 or in other word 17.2768% that showed the variable of bank efficiency influenced by macroeconomics variable. While the

remaining 82.7232% which was influenced by another variable was not used in this research.

4.4.5. F Test

F test was used to know significant and positive influence of independent variable at the same time against the dependent variable compared to Sig F as the result of multiple linear regression with the significant degree of 5% ($\alpha = 0.05$). From table 4.8, the result of F test was Sig F = 0.040189. Because 0.040189<0.05, Ho was rejected and Ha was accepted, or it can be concluded that there is positive influence in macroeconomics variable which consists of inflation, interest rate and exchange rate in the same time toward bank efficiency.

4.5. The Influence of Macroeconomics Factors Toward Efficiency of Conventional Bank

4.5.1. Classical Assumption Test

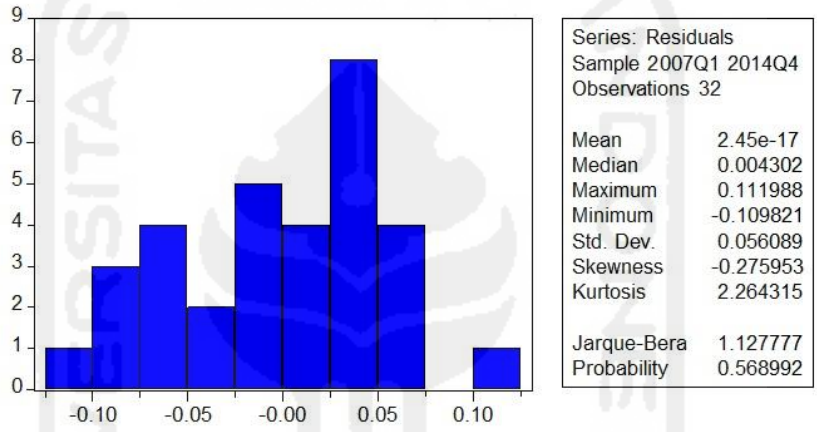
Before using regression model in hypothesis test, first of all the model should be tested to know that the model will fulfill classic assumption or not, which this underlying regression analysis. This classical assumption test was intended to ensure that the model really met the basic assumption in the regression that included: normality test, multicolinearity test, autocorrelation test and heteroscedasticity test.

4.5.1.1. Normality Test

Normality test aimed to test the regression model, residual variable had normal distribution. Normality test used Jorquera-Bera test. The result of normality test was as follow:

Figure 4.2

The Result of Normality Test of Conventional Bank



Source : Data Processed, 2016

Based on the above result, it can be concluded that the value of probability was 0.568992. Because the value of probability > 0.5, the regression model can fulfill the normality assumption, it could be used for the next analysis.

4.5.1.2. Multikoliniearity Test

Multikoliniearity test aimed to test the regression model to find the correlation among independent variables. The result of multikoliniearity test was as follow:

Table 4.9

The Result of Multicolinierity Test of Conventional Bank

	INF	INTR	EXCHR
INF	1	-0.245323191796738	-0.0360283918722106
INTR	-0.245323191796738	1	0.248343257411647
EXCHR	-0.0360283918722106	0.248343257411647	1

Source : Data Processed, 2016

From the above analysis, it can be generated that in the regression model, there was no multicolinierity problem because the value of coefficient correlation for each independent variable was less than 0.05.

4.5.1.3. Autocorrelation Test

Autocorrelation test aimed to test the regression model that had correlation between residual problem in period t and the problem in period t-1 (period before). The result of autocorrelation test by using Q statistic test was as follow:

Table 4.10

The Result of Autocorrelation Test of Conventional Bank

Date: 08/03/16 Time: 18:55
Sample: 2007Q1 2014Q4
Included observations: 32

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |*** |	. |*** |	1	0.429	0.429	6.4457	0.011
. |* . |	. *| . |	2	0.106	-0.095	6.8546	0.032
. |* . |	. |* . |	3	0.088	0.098	7.1456	0.067
. *| . |	.**| . |	4	-0.115	-0.229	7.6585	0.105
. *| . |	. |* . |	5	-0.065	0.111	7.8271	0.166

Source: Data Processed, 2016

From the above result, it can be generated that the value of probability Q statistic had the probability of less than 0.05. Thus, there was an autocorrelation problem.

4.5.1.4. The Result of Heteroscedasticity Test

Heteroscedasticity test aimed to test regression model whether inequality variance happened on residual from every observation. If the variance of residual from every observation was the same, it was called homoscedasticity, otherwise it was called heteroscedasticity. The result of heteroscedasticity test was as follow:

Table 4.11

The Result of Heteroscedasticity Test of Conventional Bank

White Heteroskedasticity Test:

F-statistic	1.608062	Probability	0.186438
Obs*R-squared	8.910890	Probability	0.178652

Source : Data Processed, 2016

Based on the result of heteroscedasticity test by using white test generated the significant Obs*R-squared value of 0.178652 which was more than 0.05. Thus, it showed heteroscedasticity phenomena did not happen in regression model. The model used in this research was feasible to test the dependent variable based on the input from independent variable.

4.5.2. Multiple Linier Regression Test

The analysis method used in this research was multiple linier regression test. The result of multiple regression linier test by using Eviews 5.1 was as follow:

Table 4.12

The Result of Multiple Linier Regression Test of Conventional Bank

Dependent Variable: BE
Method: Least Squares
Date: 08/03/16 Time: 19:30
Sample: 2007Q1 2014Q4
Included observations: 32
Newey-West HAC Standard Errors & Covariance (lag truncation=3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.754209	0.091637	8.230380	0.0000
INF	0.001018	0.000901	1.129677	0.2682
INTR	0.020849	0.013080	1.593957	0.1222
EXCHR	0.336815	0.156502	2.152147	0.0402

R-squared	0.242394	Mean dependent var	0.908719
Adjusted R-squared	0.161221	S.D. dependent var	0.064440
S.E. of regression	0.059017	Akaike info criterion	-2.705500
Sum squared resid	0.097526	Schwarz criterion	-2.522283
Log likelihood	47.28800	F-statistic	2.986167
Durbin-Watson stat	1.042269	Prob(F-statistic)	0.047992

Source : Data Processed, 2016

The result of regression equation in the above table, could be formulated by using the multiple regression as follow:

BE = 0.754209+0.00108INF+0.020849INTR+0.336815EXCHR

The coefficient of each variable could be explained as follow:

From the result of regression test which generated the value of constant = **0.754209** showed that beside variables which had been determined, there were another variables that influence bank efficiency of **0.754209.** In other word, every independent variable was a zero sum. Thus, the bank efficiency was **0.754209.**

From the result of regression test which generated the value of consistent inflation = **0.00108** showed that there were positive relationship between inflation and bank efficiency. It means, that if inflation increased by one, the bank efficiency would increased by **0.00108** with the assumption that other variable was constant.

From the result of regression test which generated the value of consistent interest rate = **0.020849** showed that there were positive relationship between interest rate and bank efficiency. It means that if interest rate increased by one, the bank efficiency would increased by **0.020849** with the assumption the other variable was constant.

From the result of regression test which generated the value of consistent exchange rate = **0.336815** that showed that there were positive relationship between exchange rate and bank efficiency. It means that if exchange rate increased by one, the bank efficiency would increased by **0.336815** with the assumption that other variable was constant.

4.5.3. T Test

To prove the influence of independent variable toward dependent variable, partial test was done by using T test. By comparing p-value (sig-t) toward significant degree by the tolerance of 5%, it can be used to make decision if hypothesis was rejected or accepted.

1. First Hypothesis Test

   The steps of the first hypothesis test in this research was as follow:

a. Determine the formula of operational hypothesis (H_0) and alternative hypothesis (H_a)

H_0 : inflation did not have positive influence toward bank efficiency in conventional bank

H_a : inflation had positive influence toward bank efficiency in conventional bank

b. Determine significant degree

This research used significant degree (α) of 5% or 0.05

c. The criteria of accepted or rejected hypothesis was as follow:

- H_0 was accepted if probability (p) $\geq$ 0.05
- H_0 was rejected if probability (p) < 0.05

d. Calculate probability (p) with regression by using SPSS

e. Make a conclusion : adjust the result of procedure (3) and (4)

Based on Table 4.12 it can be obtained p-value (0.2682) > 0.05. Thus, it could be concluded that H_0 was accepted. It means that inflation had significant influence toward bank efficiency in conventional bank.

2. Second Hypothesis Test

The steps of the second hypothesis test in this research was as follow:

a. Determine the formula of operational hypothesis (H_0) and alternative hypothesis (H_a)

H_0 : interest rate did not have negative influence toward bank efficiency in conventional bank

H_a : interest rate had negative influence toward bank efficiency in conventional bank

b. Determine significant degree

This research used significant degree (α) of 5% or 0.05

c. The criteria of accepted or rejected hypothesis was as follow:

- H_0 was accepted if probability (p) ≥ 0.05
- H_0 was rejected if probability (p) < 0.05

d. Calculating probability (p) with regression by using SPSS

e. Make a conclusion : adjust the result of procedure (3) and (4)

Based on table 4.12, p-value (0.1222) > 0.05. Thus, it could be concluded that H_0 was accepted. It means that interest rate had significant influence toward bank efficiency in conventional bank.

3. Third Hypothesis Test

The steps of the third hypothesis test in this research was as follow:

a. Determine the formula of operational hypothesis (H_0) and alternative hypothesis (H_a)

H_0 : exchange rate did not have positive influence toward bank efficiency in conventional bank

H_a : exchange rate had positive influence toward bank efficiency in conventional bank

b. Determine significant degree

This research used significant degree (α) is 5% or 0.05

c. The criteria of accepted or rejected hypothesis was as follow:

- H_0 was accepted if probability (p) ≥ 0.05
- H_0 was rejected if probability (p) < 0.05

d. Calculate probability (p) with regression by using SPSS

e. Make a conclusion : adjust the result of procedure (3) and (4)

Based on table 4.12, p-value (0.0402) < 0.05. Thus, it can be concluded that H_0 was rejected. The exchange rate did not have significant influence toward bank efficiency in conventional bank.

4.5.4. Coefficient Determination Test

Coefficient Determination test (R^2) aimed to test the influence of independent variable on the dependent variable (Ghozali, 2011). R^2 test was used to know the presentation of dependent variable which way identified by the independent variable. The value of coefficient determination was between zero and one. If the value of R^2 was small so that means the capability of independent variables in influencing the dependent variable was very limited.

The influence of independent dependent variable could be seen from the adjusted coefficient determination or adjusted R^2 in table 4.12. It showed that adjusted R^2 = 0.161221 or in other word 16.1221%. Beside that, it showed that the variable of bank efficiency was influenced by macroeconomics variable. While the remaining 83.8779% was influenced by other variable that was not used in this research.

4.5.5. F Test

F test was used to know the significant positive influence of independent variable at the same time against the dependent variable which was compared to Sig F resulted by multiple linear regression with the significant degree of 5% (α = 0.05). Table 4.12 showed that the result of F test was Sig F = 0.047992. Because 0.047992 < 0.05, Ho was rejected and Ha was accepted, or it can be concluded that there was positive influence in macroeconomics variable which consisted of inflation, interest rate and exchange rate at the same time toward bank efficiency.

4.6 The Influence of Macroeconomic Factors Toward The Efficiency of Bank Sharia and Conventional

4.6.1. Classical Assumption Test

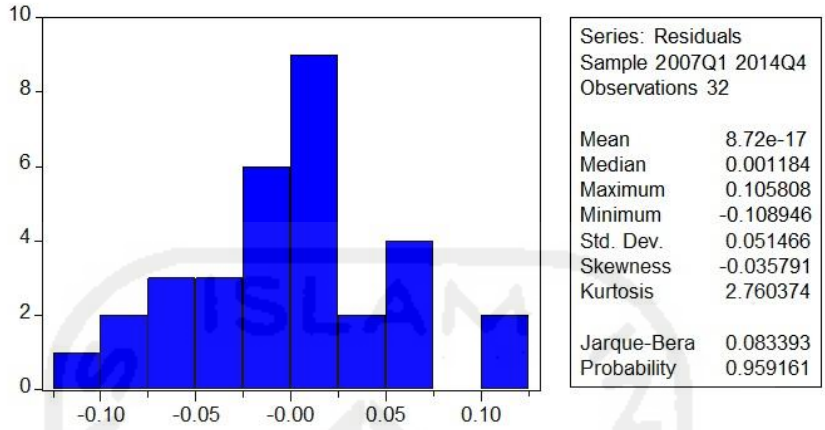
Before using regression model for hypothesis test, first of all the model should be tested to know that the model fulfill classical assumption or not, which underlying the regression analysis. This classical assumption test intended to ensure that the model really meet the basic assumption in the regression that includes: normality test, multicolinearity test, autocorrelation test and heteroscedasticity test.

4.6.2. Normality Test

Normality test aimed to test that in regression model, residual variable have normal distribution. Normality test used Jorquera-Bera test. The result of normality test was as follow:

Figure 4.3

The Result of Normality Test of Sharia and Conventional Bank



Source : Data Processed, 2016

Based on the above result, the value of probability was 0.959161. Because the value of probability > 0.5, the regression model can fulfill normality assumption. Thus, it can be used for the next analysis.

4.6.3. Multicoliniearity Test

Multicoliniearity test aimed to test that in regression model there could be correlation among independent variables. The result of multicoliniearity test was as follow:

Table 4.13

The Result of Multicoliniearity Test of Sharia and Conventional Bank

	EXCHR	INF	INTR
EXCHR	1	-0.036028391872210 6	0.248343257411647
INF	-0.036028391872210 6	1	-0.245323191796738
INTR	0.248343257411647	-0.245323191796738	1

Source : Data Processed, 2016

From the above result, in regression model there was no multicoliniearity problem because the value of coefficient correlation from each independent variable was less than 0.05.

4.6.4. Autocorrelation Test

Autocorrelation test aimed to test regression model that was correlation between residual problem in period t and problem in period t-1 (period before). The result of autocorrelation test with using Q statistic test was as follow:

Table 4.14

The Result of Autocorrelation Test of Sharia and Conventional Bank

Date: 08/03/16 Time: 14:41
Sample: 2007Q1 2014Q4
Included observations: 32

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |*** |	. |*** |	1	0.457	0.457	7.3390	0.007
. |* . |	. *| . |	2	0.094	-0.145	7.6604	0.022
. | . |	. | . |	3	0.031	0.062	7.6963	0.053
. | . |	. | . |	4	0.022	-0.008	7.7147	0.103
.**| . |	.**| . |	5	-0.216	-0.292	9.5996	0.087

Source: Data Processed, 2016

From the above result of autocorrelation test, the value of probability Q statistic had the probability of less than 0.05. Thus, there was autocorrelation problem.

4.6.5. The Result of Heteroscedasticity Test

Heteroscedasticity test aimed to test in the regression model whether inequality variance happened on residual from every observation. If the variance of

residual every observation was the same, it was called homoscedasticity, otherwise it was called heteroscedasticity. The result of heteroscedasticity test was as follow:

Table 4.15

The Result of Heteroscedasticity Test of Sharia and Conventional Bank

White Heteroscedasticity Test:

F-statistic	3.977384	Probability	0.006265
Obs*R-squared	15.62813	Probability	0.015895

Source : Data Processed, 2016

Based on the result of heteroscedasticity test by using white test, it generated the significant Obs*R-squared value of 0.015895 which was less than 0.05. It showed that heteroscedasticity phenomena happened in regression model. Thus, the model used in this research was not feasible to be used to test the dependent variable based on the input of independent variable.

To fix the autocorrelation and heteroscedasticity problem, Newey, Whitne and Kenneth developed HAC method (heteroscedasticity and autocorrelation consistent variance). This method aimed to know standard error which was consistent if there was heteroscedasticity element or autocorrelation element in regression model (Widarjono, 2009).

4.6.6. Multiple Linier Regression Test

The analysis method that used in this research was multiple linier regression test. Because there was heteroscedasticity and autocorrelation problem. It needed to be repaired. The solution of heteroscedasticity and autocorrelation was HAC

method (heteroscedasticity and autocorrelation consistent variance). The result of multiple regression linier test by using HAC method (heteroscedasticity and autocorrelation consistent variance) by using Eviews 5.1 was as follow:

Table 4.16

The Result of Multiple Linier Regression Test of Sharia and Conventional Bank

Dependent Variable: BE
Method: Least Squares
Date: 08/03/16 Time: 14:44
Sample: 2007Q1 2014Q4
Included observations: 32
Newey-West HAC Standard Errors & Covariance (lag truncation=3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INF	0.001072	0.000641	1.673078	0.1055
INTR	-0.020423	0.015864	-1.287384	0.2085
EXCHR	0.385645	0.145762	2.645715	0.0132
C	1.077360	0.104729	10.28713	0.0000

R-squared	0.252712	Mean dependent var	0.937813
Adjusted R-squared	0.172645	S.D. dependent var	0.059536
S.E. of regression	0.054153	Akaike info criterion	-2.877522
Sum squared resid	0.082113	Schwarz criterion	-2.694305
Log likelihood	50.04035	F-statistic	3.156270
Durbin-Watson stat	0.903138	Prob(F-statistic)	0.040265

Source : Data Processed, 2016

The result of regression equation in the above table could be formulated by using multiple regression as follow:

BE = 1.077360+0.001072INF-0.020423INTR+0.385645EXCHR

The coefficient of each variable can be explained as follow:

From the result of regression test, the value of constant = **1.077360.** It showed that besides variables which had been determined, there were another

variables that influence bank efficiency of **1.077360.** In other word, every independent variable was a zero sum. Thus, the bank efficiency was **1.077360.**

From the result of regression test, the value of consistent inflation = **0.001072.** It showed that there were positive relationship between inflation and bank efficiency. If inflation increased by one, the bank efficiency would increased by **0.001072** with the assumption that other variable was constant.

From the result of regression test, the value of consistent interest rate = **-0.020423**. It showed that there were positive relationship between interest rate and bank efficiency. If interest rate increased by one, the bank efficiency would increased by **-0.020423** with the assumption that other variable was constant.

From the result of regression test, the value of consistent exchange rate = **0.385645**. It showed that there were positive relationship between exchange rate and bank efficiency. If exchange rate increased by one, the bank efficiency would increased by **0.385645** with the assumption that other variable was constant.

4.6.7. T Test

To prove the influence of independent variable toward dependent variable, partial test was done by using T test. By comparing p-value (sig-t) toward significant degree by the tolerance of 5%, it can be used to make decision if hypothesis was rejected or accepted.

1. First Hypothesis Test

   The steps of the first hypothesis test in this research was as follow:

a. Determine the formula of operational hypothesis (H_0) and alternative hypothesis (H_a)

H_0 : inflation did not have positive influence toward bank efficiency in sharia bank conventional bank

H_a : inflation had positive influence toward bank efficiency in sharia bank and conventional bank

b. Determine significant degree

This research used significant degree (α) of 5% or 0.05

c. The criteria of accepted or rejected hypothesis was as follow:

- H_0 was accepted if probability (p) $\geq$ 0.05
- H_0 was rejected if probability (p) < 0.05

d. Calculate probability (p) with regression by using SPSS

e. Make a conclusion : adjust the result of procedure (3) and (4)

Based on Table 4.16 it can be obtained p-value (0.1055) > 0.05. Thus, it could be concluded that H_0 was accepted, it means that inflation had significant influence toward bank efficiency in sharia bank and conventional bank.

2. Second Hypothesis Test

The steps of the second hypothesis test in this research was as follow:

a. Determine the formula of operational hypothesis (H_0) and alternative hypothesis (H_a)

H_0 : interest rate did not have negative influence toward bank efficiency in sharia bank and conventional bank

H_a : interest rate had negative influence toward bank efficiency in sharia bank and conventional bank

b. Determine significant degree

This research used significant degree (α) of 5% or 0.05

c. The criteria of accepted or rejected hypothesis was as follow:

- H_0 was accepted if probability (p) ≥ 0.05
- H_0 was rejected if probability (p) < 0.05

d. Calculate probability (p) with regression by using SPSS

e. Make a conclusion : adjust the result of procedure (3) and (4)

Based on table 4.16, p-value (0.2085) > 0.05. Thus, it could be concluded that H_0 was accepted. It means that interest rate had significant influence toward bank efficiency in conventional bank.

3. Third Hypothesis Test

The steps of the third hypothesis test in this research was as follow:

a. Determine the formula of operational hypothesis (H_0) and alternative hypothesis (H_a)

H_0 : exchange rate did not have positive influence toward bank efficiency in sharia and conventional bank

H_a : exchange rate had positive influence toward bank efficiency in sharia and conventional bank

b. Determine significant degree

This research used significant degree (α) is 5% or 0.05

c. The criteria of accepted or rejected hypothesis was as follow:
    - H_0 was accepted if probability (p) ≥ 0.05
    - H_0 was rejected if probability (p) < 0.05
d. Calculate probability (p) with regression by using SPSS
e. Make a conclusion : adjust the result of procedure (3) and (4)

Based on table 4.16, p-value (0.0132)<0.05. Thus, it can be concluded that H_0 was rejected. It means that, the exchange rate did not have significant influence toward bank efficiency in sharia bank and conventional bank.

4.6.8. Coefficient Determination Test

Coefficient Determination test (R^2) aimed to test the influence of independent variable on the dependent variable (Ghozali, 2011). R^2 test was used to know the presentation of dependent variable which way identified by the independent variable. The value of coefficient determination was between zero and one. If the value of R^2 was small, the capability of independent variables in influencing the dependent variable was very limited.

The influence of independent dependent variable could be seen from the adjusted coefficient determination or adjusted R^2 in table 4.16. It showed that adjusted $R^2 = 0.172645$ or in other word 17.2645%. It showed that the variable of bank efficiency was influenceed by macroeconomics variable. While the remaining 82.7355% was influenceed by another variable that was not used in this research.

4.6.9. F Test

F test was used to know the significant positive influence of independent variable at the same time against the dependent variable which was compared, to Sig F that was resulted by multiple linear regression with the significant degree of 5% ($\alpha = 0.05$). Table 4.16 showed that the result of F test was Sig F = 0.0400265. Because 0.0400265 < 0.05, Ho was rejected and Ha was accepted, or it can be concluded that there was positive influence in macroeconomics variable which consisted of inflation, interest rate and exchange rate at the same time toward bank efficiency.

4.7. Discussion

4.7.1. Bank Performance and Bank Efficiency

Based on the above result, it could be concluded that the performance of sharia bank in input relatively increased every year. But in 2014, bills payable for sharia bank had decreased from the previous year. In 2013, bills payable of sharia bank was 12,320,000 and in 2014, it was 9,847,000.

The performance of sharia bank in output was relatively increasing every year. While in zakat, sharia bank was relatively fluctuating. This happened from 2008 until 2014. In 2009, zakat was decreasing from 2009 until 2010. But in 2011, it was increasing until 2012. Afterward, it was decreasing in 2013 and then it was increasing again in 2014.

The performance of conventional bank in input was relatively increasing every year. While bills payable was relatively fluctuating. Bills payable in

conventional bank had fluctuating progress every year. Sometimes bills payable in conventional bank was increasing but sometime it was decreasing. It also happened in fixed asset of conventional bank. Fixed asset of conventional bank was also relatively fluctuating but increasing more. Only in 2010 fixed asset of conventional bank was decreasing.

The performance of conventional bank in output was relatively fluctuating every year. Investment of conventional bank was the one variable that had the most fluctuating among others. Sometimes investment in conventional bank was increasing but sometimes it was decreasing. In 2011 to 2012, it had high increase of 891,800 to 798,157,000. Corporate social responsibility in conventional bank was also fluctuating. Sometimes corporate social responsibility in conventional was increasing and sometimes it was decreasing.

Based on the above result, the efficiency of sharia bank was relatively fluctuating every year. Sometimes the efficiency of sharia bank was increasing but sometimes it was decreasing. Similar to the efficiency of conventional bank, the efficiency of conventional bank was relatively fluctuating. Sometimes it was increasing but sometimes it was decreasing.

The relation between the performance of bank and the efficiency of bank was when bank performance was increasing which lead to bank efficiency. It could be seen from the result of this research. When the performance of sharia bank was decreasing, the efficiency of bank will also decreasing.

4.7.2. The Influence of Inflation Toward Bank Efficiency

Based on the above result, it can be concluded that inflation did not have an influence toward bank efficiency either in sharia bank or conventional bank. The amount of inflation would not influencing bank efficiency either in sharia bank or conventional bank.

Inflation happened because the development of business cycle influenced the economy and suffers booming. Beside that, it happened because of the development of business cycle, actually it had more influence on input than output and finally in the bank performance would increase. The influence of inflation depends on the inflation that had been fully anticipated or not fully anticipated by the bank. If the inflation had been fully anticipated, the interest rate which was applied by bank would increase to cover inflation risk. Thus, the income enhancement would be faster than cost enhancement and then it would influence positively on the performance of bank especially profitability. But if the management of bank did not anticipate the changes of inflation, the interest rate applied by bank were slowly adapted and the cost enhancement would be faster than the income enhancement. At the end, the inflation would not influence toward bank efficiency.

4.7.3. The Influence of Interest Rate Toward Bank Efficiency

Based on the above result, it could be concluded that the interest rate did not have any significant influence toward bank efficiency of conventional bank but it had positive influence toward bank efficiency of sharia bank. It means that the

changing of interest rate would not influence the changing of bank efficiency of conventional bank but it would influence toward bank efficiency of sharia bank. In theory, a unique feature that differentiates sharia bank from conventional bank was the profit loss sharing paradigm, which was in sharia predominantly based on the mudarabah and musyarakah concepts of Islamic contracting. Under the PLS paradigm, the assets and liabilities, the assets and liabilities of sharia banks were integrated in the sense that borrowers share profits and losses with the bank, which in turn share profits and losses with the depositors. It means that logically, interest rate should not have any influence toward bank efficiency of sharia bank. But the result of this research was interest rate that had positive influence toward bank efficiency of sharia bank. This result was the same with Chong and Liu research (2007). In their research, sharia banks in Malaysia were not interest free. It means, that interest rate would influence bank efficiency of sharia bank because sharia bank had consideration about interest rate to determine profit loss sharing paradigm.

Interest rate have a big role in the operational of bank. The main business of bank is taking the deposit and giving the loans. If the interest rate increase, the obligation of bank in paid will also increase. But, the interest rate of bank loans will increase too. The efficiency of operational in bank has an influence in determination of the interest rate of credit and will influence bank in controlling its interest rate. In this term, there are causality relationship between interest rate and bank efficiency, which is the determination of bank efficiency can also be done by seeing the attitude of determination in interest rate by experience. This thing can happen

because, in general, in normal condition of volatility the interest rate tends to be low, so it can give certainty of work for the bank.

This result is in line with the research of Haron and Ahmad (2000) which proved that interest rate had negative influence toward bank efficiency.

4.7.4. The Influence of Exchange Rate Toward Bank Efficiency

Based on the above result, it could be concluded that the exchange rate had positive influence toward bank efficiency in conventional bank. The bigger the exchange rate the bigger the bank efficiency.

Exchange rate is the price of the currency in other country toward domestic currency. The low currency of Rupiah toward other currency especially US dollars ($) will encourage the weakening of purchasing power of people that can make happen interestingly less the level of investment profit in capital market. In export section, the depreciation of Rupiah toward domestic currency (US$) allows exporter offers goods at lower price, so it makes raising competitiveness in abroad. Based on the theory, exchange rate reflects the balancing of supply and demand toward Rupiah or US Dollars (US$). Depreciation reflects, the declining in the ability of economic in Indonesia and the ability of company fundamental also decreases, and vice versa. Thus, appreciation will increase bank efficiency.

This result is similar to Abaido's research (2014) which proved that the exchange rate had positive influence toward bank efficiency.

But, based on the above result, it can be concluded that exchange rate did not have any significant influence toward bank efficiency in conventional bank. The amount of exchange rate did not have influence toward bank efficiency.

When exchange rate decline, people believe more on sharia bank rather than conventional bank. The reason of that public trust is the historical experience when economic crisis happened in 1997, during that time the depreciation was very bad and many conventional banks got bankrupt because of the high interest rate to counterbalance the inflation and also to attract people want to do saving. Thus, it makes negative spread and the bank cannot fulfill their obligation to people that had been saving in their bank.