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## Effect of Non-Performing Investment on Islamic Banks Performance: An empirical study on Islamic Banks in Bangladesh

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### Abstract

*Non-performing investment are the amounts that can not be collected by organization from clients. In Bangladesh banking sector is facing severe consequences from lack of collection of non-performing loan(non performing investment for Islamic banks). Emphasizing the significance of the subject the study is undertaken to find out how non performing investment effect performance of Islamic banks in Bangladesh for five year period from 2012 to 2016.Statistical tests such as (descriptive statistics, correlation and regression analysis) are performed to find out the effect non performing investment have on the overall performance of Islamic banks. Correlation analysis opine negative association of non performing investment with bank performance, bank size and capital adequacy ratio. On the other hand, regression analysis did not found any significant effect of non performing investment with bank performance..*

### *Keywords:*

*Bank performance (ROA and ROE), Non-performing investment(NPI), Causes of NPL*

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## 1. Introduction

In order to be an efficient economic system financial system should be transparent and accountable. Banking industry as a life blood of economic system should be efficient. Bank performance is satisfactory when banks can satisfy the customers with minimum risk and maximum return. Poor performance of banking industry has a consequence on both the economy of a particular country and in the world economy, (Khan and Senhadji, 2001). Among many risks facing by banks the most severe risk is the risk of non-recovery of loans (non performing investments for Islamic banks) that are given to borrowers. Default loans after a specific period become non-performing loans. Non-performing loans are not a source of earning for banks rather they are loss for banks (Hennie, 2003). Loopholes in the financial system, lack of inefficiency of management system, political influence are the prime reasons of non-performing loan. In Bangladesh there are almost 58 listed banks. At present the amount of NPL is increasing in Bangladesh. In 2010 the NPL as an outstanding loan was 7.2% and in 2017 September it was 10.7%. The rate of NPL ratio is much more higher than other neighbor countries. Almost 45000 billion money was written off as NPL (Islam, M.A, 2018). Report from Bangladesh bank (the central bank of Bangladesh) stated that default loan have increased to 74303 crore in 2017 compared to 62172 crore in 2016. Default loans as a portion of outstanding loans have also risen to 9.31% from 9.23% in 2017 compared to 2016 (Mallick, S. 2018). From the statistics it can be noticed that non-performing loan has become a major concern for financial industries of Bangladesh specially for banking industry. The study is undertaken to discover how non performing investment effect Islamic banks performance by analyzing the research question: Do non performing investment effect the performance of Islamic banks in Bangladesh?

Although much research on this topic done by researchers are basically related with impact of NPL in terms of banks profitability as well as how credit risk effect bank performance there is little work done considering how Non performing investment can effect the performance of Islamic banks. The research aims to remove research gap by studying how NPI can effect performance of Islamic banks in Bangladesh and further opening a field for research in the topic throughout the world.

## 2. Literature Review

The loans that cannot be collected by banks from customers are regarded non-performing loans. The prime cause that is responsible for non-performed loan is failure to choose potential customer i.e. the customers who can pay loans in right time (Chowdhury, H.M.M.). Other causes include: poor credit appraisal, high-interest rate, inflation, low amount of GDP (Hou, 2007). Financial institutions especially banks suffer severely as a result of NPL. Reserves needed to be maintained by banks to guard against NPL. Increase in NPL reduce banks profit which is in turn reduce income of banks. Excess NPL decreases the money flow in the economy which results in economic recession.

For finding out the association between NPL and bank efficiency of Malaysia and Singapore banks a study had been done by (Karim, Chan and Hassan, 2010). The study revealed NPI increases as a result of cost inefficiency of banks.

To show how credit risk management effect the performance of Nigerian banks for 2004 to 2008 (Kargi, 2011) conducted research. Descriptive statistics, correlation and regression analysis were done. The result opined that credit risk had significant relationship with bank performance. Further research emphasizing the impact of credit risk on Nigerian bank performance for 2004-2008 by (Hamisu, 2011) revealed credit risk and bank profitability were significantly related. Similar type of study on Pakistani banks by (Iftikhar, 2016) found NPL and capital adequacy ratio had significant existence with performance of bank (ROA and ROE).

A different type of study undertaken on Central and Eastern European countries for 2009-2012 to explore the association of NPL with GDP, inflation and unemployment problem by (Skarica,2014) found NPL negative relationship with GDP and positive relationship with unemployment rate, inflation.

To find out relationship between NPL with profitability of Nigerian banks for period of 2006 to 2012 research were done by (Adebisi and Benjamin,2015).The research found ROA was insignificantly related with NPL but ROE was significantly related with NPL.

For seeing the impact bank-specific factors had with NPL on Albanian Banks for period 2002-2012 (Ali and Eva,2015) undertook a study. The result revealed exchange rate and loan growth had positive relationship with bank performance and GDP, interest rate had negative relationship with bank performance.

Study was conducted to find out the relationship of NPL with other factors for period 2008-2014 in Malawian banks by (Chimkono, Muturi &Njeru,2016).The result opined that NPL ratio, cost efficiency ratio, average lending interest rate had significant existence with bank performance. To explore how non- performing loan effect Nigerian banks performance a study had been conducted for period 1994 to 2014 by (Etale. L,Ayunku & Etale. E, 2016). Descriptive statistics, unit root test, correlation, regression analysis were conducted by researchers. The results found negative association of NPL with ROCE which meant increase in NPL cause decrease in firm performance. Similar type of study on the Nigerian bank for period of 2000 to 2013 was done by (Ozurumba,2016). The results found negative relationship between ROA and ROE with NPL.The study opined that this negative relationship was an indicator of danger for sustainability of banks.

To find out the effect of NPL with net interest on the stock exchange of Bangladesh for the period 2008 to 2013(Akter & Roy,2017) conducted research. The research found significant relationship of NPL with net interest margin of banks. Further research were done to find the relationship between NPL and profitability of Ethiopian banks by (Balango and Rao,2017).The study revealed that NPL was negatively associated with profitability .

Study on Kenyan banks with respect to bank performance (ROA and ROE) and NPL were undertaken by (Chege and Bichanga,2017) for period 2011 to 2015.The study found that non-performing loan, size of the bank, operating cost and liquidity were significantly associated with bank performance (ROA) and capitalization was insignificantly related with bank performance (ROA).

For exploring how profitability is related with Ghana banks (Baasi,2018) conducted research for period (2006-2015). The result revealed that NPL had negative relation with ROE, on the other hand CAR had positive relation with ROE.

### **Hypothesis of the study:**

For the study hypothesis are developed by studying research papers .

A study is done on the effect of non -performing loan on the profitability of Ethiopian banks by (Balango and Rao 2017) took non-performing loan ratio as a hypothesis.

Therefore the first hypothesis of the study is:

Ho1: There is no relationship between NPI with Islamic banks performance.

Ha1: There is relationship between NPI with Islamic banks performance.

Bank size is used as an indicator to find out the effect it has with NPI. A study made by (Chege and Bichanga, 2017) studying non-performing loan and financial performance of Kenyan commercial banks considered bank size is an indicator.

The second hypothesis of the study is:

Ho2: There is no relationship between size of the bank with Islamic banks performance.

Ha2: There is relationship between size of the bank and Islamic banks performance.

Capital adequacy ratio have been used as an indicator to measure the effect of non- performing loan on Ethiopian banks by (Balanco and Rao,2017) .

The third hypothesis of the study is:

Ho3: There is no relationship between CAR with Islamic banks performance.

Ha3: There is relationship between CAR with Islamic banks performance.

### 3. Research Method

The study uses Simple Random Sampling. Simple random sampling is used because it gives the chance of every sample being selected. There are eight Islamic banks in Bangladesh. Samples of six Islamic banks are being taken for research. The study used secondary data which is collected from annual reports of six Islamic banks from 2012 to 2016. 2012 to 2016 period is used because Non performing investment during this period have become an area of concern of banks as it has increased to a great level. Thirty annual reports of six Islamic banks for year 2012 to 2016 are being used for the study.

Variables used in the study:

Dependent variable: Bank performance (ROA and ROE).

Independent variable: Size of bank, NPI and CAR.

Software used to perform tests: IBM SPSS 20 software is used to do descriptive statistics, correlation analysis and regression analysis.

Model development:

For the study econometric model is used.

The model is as follows:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Here Y= Bank performance(ROA and ROE)

a = Constant

$\beta_1$ -  $\beta_3$ = Regression Coefficient of Independent Variables.

**Table 1. Variables and their proxies**

Variable	Symbol	Proxies
ROA	Y	Net income / Total asset
ROE	Y	Net income/ Total equity
Size of the bank	X1	Logarithm of total asset
NPI	X2	Bad debt/Investment
CAR	X3	(Tier 1 capital + Tier 2 capital ) / Risk-weighted asset
Error term	€	

## 4. Results and Discussion

### 4.1 Ratio Analysis

Ratio analysis is undertaken to evaluate the overall performance of the Islamic banks.

**Table 2. Five-year ratio analysis of ROA, ROE, Bank size, NPI, and CAR**

Year	ROA	ROE	Bank Size	NPI ratio	CAR
2012	1.48	14.28	5.23	3.8	11.69
2013	1.07	11.79	5.28	3.84	12.76
2014	1.04	10.62	5.52	4.39	12.58
2015	0.96	10.68	5.41	4.24	12.77
2016	1.08	13.07	5.48	4.57	11.89

Source: Annual Report of six sample Islamic Banks from 2012-2016.

**Return on Asset:** The return on asset can be computed by taking net profit with respect to total asset of banks. ROA shows the profitability of banks. In 2012, ROA was 1.48%.ROA continued to decrease till 2015.In 2016, ROA increased to 1.08% .It indicates the good revenue generation of Islamic banks to fulfill short-term obligations.

**Return on Equity:** ROE is found by dividing net income to total equity. The more the ROE the better return is for the shareholders investment. In 2012, ROE was 14.28% which decreased in 2013 to 11.79%. In 2014 and 2015 ROE declined. In 2016, it increased slightly. This indicted external source of funds require higher cost and it decreases profitability for Islamic Banks .

**Bank Size:** Bank Size is calculated by taking the logarithm of total assets. The size of Islamic Banks were 5.48% in 2016 and it gradually increased from 2012 to 2016.

**Non-Performing Investment Ratio:** Non-performing investment ratio is calculated by dividing the non-performing investment to total investments.High ratio results in large amount of bad debts which is loss for the banks. Islamic banks had the low ratio of NPI in 2012. The highest figure of the NPI ratio was in 2016.

**Capital Adequacy Ratio:** CAR shows how bank assets (loans, investments, securities) have been financed by using capital of the banks. It is described as a percentage of a bank's risk-weighted credit exposures. CAR ensures safety of depositors money as well as financial soundness of banks. Capital adequacy ratio of Islamic bank increased from11.69% to 12.77% in 2015. In 2016 it decreased to 11.89% which meant the slowdown of Islamic banks capital. It shows that capital cannot be used to cover up due dates and risks will be faced by banks in upcoming days.

## 4.2 Descriptive Statistics

**Table 3. Calculation of Minimum, Maximum, Mean & Standard Deviation**

Items	N	Minimum	Maximum	Mean	Std. Deviation
ROA	5	.96	1.48	1.1257	.20079
ROE	5	10.62	14.28	12.0883	1.58136
Size	5	5.23	5.52	5.3840	.12542
NPI	5	3.80	4.57	4.1667	.33883
CAR	5	11.69	12.77	12.3373	.51116

From table-3, the values of range, minimum, maximum, mean and standard deviation can be found. Range is found by maximum minus minimum value. Highest value is termed as maximum value and lowest value is termed as minimum value. Mean represents average value of all observations which is found by dividing all the number of observations. Standard deviation measures the risk involved . Standard deviation of all variables is low. It can be concluded that less risk involved.

### 4.3 Correlation analysis

Table 4. Pearson Correlation test

Items	ROA	ROE	Size	NPI	CAR
ROA	1				
ROE		1			
Size	-.669	-.567	1		
NPI	-.577	-.351	.951	1	
CAR	-.786	-.910	.216	.003	1

From table -4, correlation analysis of independent variable with dependent variable can be found. Independent variables bank size, NPI, CAR are negatively related with dependent variable ROA and ROE. Negative association between bank performance and NPL also found by (Etale, L, Ayunku & Etale. E, 2016), (Ozurumba,2016) and (Balango and Rao,2017). Negative correlation opines an increase in the independent variable causes dependent variable to decrease and vice versa. It is seen that bank size, NPI, CAR will reduce as a result of the increase in ROA and ROE and increase as a result of the decrease in ROA and ROE.

### 4.4 Regression analysis

Table 5. Regression Analysis based on ROA

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.995 <sup>a</sup>	.990	.962	.03929	.990	34.48	3	1	.124	2.599

*a. Predictors: (Constant), CAR, NPI, Size*

*b. Dependent Variable: ROA*

Table 6. Regression analysis based on ROE

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.990 <sup>a</sup>	.981	.924	.43703	.981	17.12	3	1	.175	2.599

*a. Predictors: (Constant), CAR, NPI, Size*

*b. Dependent Variable: ROE*

In table-5 & 6, Regression analysis is done in terms of dependent variable (ROA and ROE).R value indicates how dependent and independent variables are associated. In case of ROA and ROE, the value is .995 and .990. The value close to 1 means the bank performance (ROA and ROE) are positively related with size of the bank, NPI, CAR. R square shows the variation of the independent variable concerning the dependent variable. The value of R square is .990 regarding ROA and .981 regarding ROE. The result suggests that dependent variable ROA and ROE can explain 99% and 98.1 % of the independent variables (bank size, NPI and CAR). Adjusted R square shows how close the

data fits the line of regression. The respective adjusted R square values are .962 in case of ROA and .924 in case of ROE. So 96.2% and 92.4% of data fits the regression line. Durbin Watson statistics give an idea about the consistency of time series data. The standard value is 0 to 4. DW value in case of both ROA and ROE is 2.599. The value above two opines that data series are consistent and there is no autocorrelation involved. P value in both cases of ROA and ROE is greater than 0.05 which rejects the alternative hypothesis and indication of no relationship between Islamic bank performance with NPL. Similar type of result is also found by (Adebisi and Benjamin, 2015) on their conducted research on impact of NPL in terms of profitability of Nigerian banks.

## 5. Conclusion

The study explore how non performing investment effect Islamic banks performance. Negative effect of non performing investment with Islamic banks performance are found in terms of correlation analysis. In regression analysis no effect is found between non performing investment and banks performance. The research creates a scope for researchers to identify the reasons of negative effect of non performing investment with bank performance when correlation analysis is used and also the reason of not finding any effect of non performing investment with bank performance when regression analysis is used with recommendations.

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