

# Determinant Factor of Indonesia Banking Industry to Issued Bond in 2006-2014

Faldy Baskoro<sup>1</sup>, Ir. Nunung Nuryartono<sup>2</sup> & Ir. Tb Nur Ahmad Maulana<sup>3</sup>

<sup>1</sup> Postgraduate Program of Management and Business, Bogor Agricultural University, Indonesia

<sup>2</sup> MS, Bogor Agricultural University, Indonesia

<sup>3</sup> MSc, MBA, PhD, Bogor Agricultural University, Indonesia

Correspondence: Faldy Baskoro, Postgraduate Program of Management and Business, Bogor Agricultural University, Indonesia. E-mail: faldy.baskoro@gmail.com

Received: September 4, 2015

Accepted: September 24, 2015

Online Published: November 25, 2015

doi:10.5539/ijef.v7n12p130

URL: <http://dx.doi.org/10.5539/ijef.v7n12p130>

## Abstract

Due to global economic crisis which occurred in 2008, has caused the volatility of the market and increasing the market risk. Moreover, the banking industry issued Basel III Act as a respond in order to strengthen the stability of the financial sector and prevent the negative effect on the economy from the crisis that may occur in the future. Based on Basel III Act, the banking industry is expected to meet the requirement through internal and external business activity. Furthermore, the aim of this study is to analyze which factor that determined the volume of bond issued based on internal and external factors of the company. The result shows that CAR, NIM, and BI Rate have significant effect on the volume of bond issued.

**Keywords:** bond, basel, bond issue, banking industry

## 1. Introduction

Banking industry has an important role in the economic development of a country. No. 10 of 1998 Act stated that the definition of banking is all the things which related to bank, including institutional, business activities, as well as the procedures and process to perform the business activities. While, the bank is a business entity that collect funds from the public in the form of deposits and distribute to the public in the form of loans in order to improve the living standard of many people. Mishkin (2010) stated, the bank make profit by selling liabilities with one set of characteristics (a particular combination of liquidity, risk, size, and return), and using the proceeds to buy assets with a different characteristics. This process is often referred to as asset transformation.

Bank manages its assets and liabilities to earn the highest possible profits by focusing to four main factors, which are liquidity management, asset management, liability management, dan capital adequacy management (Mishkin, 2010). These factors are a major concern for the banking industry because the banks have three major risks that must be overcome, which are market risk, credit risk, and operational risk. If the banks fail to perform its intermediation function, the impact of which will be generated will be expanded to affect customers and institutions that keep their funds and invest their capital in the bank, and will create an impact domestically and internationally. Therefore, to address these challenges and in line with dynamic developments in global economic conditions, the Basel Act was made to regulate capital adequacy of banking that serves as a buffer against possible losses. In line with the statement, Laas, Siegel (2014), stated that the establishment of the Basel Act aim to set minimum capital requirement that must be fulfilled in terms of liquidity and leverage.

The banking industry is an industry that has complex regulations. Bank has a requirement to have a minimum capital adequacy which serves as a buffer when the bank faces losses caused by internal and external factors, and still be able to perform as an intermediary. The Act was established to avoid a systemic crisis and to monitor the level of bank deposits (Wang, 2005). However, during the economic crisis that occurred in 2008 and 2009 has caused the impact of losses faced by the banking industry at the time was in excess of the minimum capital requirements of banking that has been set by the regulations of Basel, and it also gives a clear signal for the banking industry to reduce the level of leverage, increasing liquidity, more transparent, and tend to reduce the level of risk. Therefore, the Basel committee responds by making the rules and policies that can improve the stability of the financial sector and prevent the negative effects on the economy from the crisis that may occur in

the future.

In December 2010, the Basel Committee on Banking Supervision (BCBS) published two documents, which are “Basel III: A global regulatory framework for more resilient banks and banking systems.” (Revised edition was published in June 2011), and “Basel III: International framework for liquidity risk measurement, standards, and monitoring.” The regulation was published as a shock absorber for the banking industry to face the financial crisis and economic pressure. Based on the BCBS, Basel III Act has two main objectives, which are strengthening the rule of global capital and liquidity through increasing the resilience of the banking sector, and improving the ability of the banking sector to face the shocks arising from the financial crisis and economic pressure.

Basel III Act was developed on the basis of the conclusion that the root problems that plagued the financial crisis originating from the low level of bank solvency. In order to respond the occurrence of this phenomenon, the Basel regulations established to improve the level of capital adequacy. As a result, the banks have to focus on the level of liquidity and solvency.

Based on data obtained from the Indonesia Stock Exchange (2012), stated that the corporate bond market in Indonesia is dominated by the banking industry. According to Ross, Westerfield, and Jordan (2008), the background for the company to issue bonds is as an alternative source of funding in the long term. Moreover, the issuance of bonds is much more favorable compared with bank loans, because bond interest rates lower than interest rates on bank loans, bond interest paid can reduce corporate taxes so that the payment of taxes will be lower and interest payments on bonds may be performed periodically, such as three months, six months or once a year. The bond can be distinguished with stock in term of voting right in the General Meeting of Shareholders. Although bond investors have no voting rights, but the owners of the bonds benefit in terms of security. In the event of a financial crisis within the company, and requires the company to be liquidated, then the bond holder get a preferences over stock holder.

## **2. Literature Review and Hypothesis**

### *2.1 Basel Act*

Basel committee on banking supervision begins at the time of the financial market turmoil that followed the collapse of Breton Woods financial system in 1973 to regulate the exchange rate. After the collapse of the Bretton Woods system, the banking industry suffered great losses due to currency exchange rates. On June 26, 1974, the office of the West German central bank supervision revoke the operating license Herstat bank, after discovering losses caused by exchange rate amounting to three times the amount of capital. As a form of response from the incident, the central banks of the G10 alliance established a committee on banking regulation and supervisory practices in late 1974. The Committee has a goal to achieve financial stability by requiring a minimum capital adequacy for the international banking industry.

### *2.2 Capital Market*

Usman et al. (1997), stated that the capital markets are trading long-term financial instruments, both in equity and debt, issued by the government or private companies. Moreover, Presidential Decree No. 60 In 1988, states that the capital market is understood as an exchange, which is a means of bidders and the requester, bring long-term funds in the form of securities. In the Capital Markets Act No. 8 of 1995 provide an understanding of capital markets, more specifically, the activities concerned with the public offering and trading of securities, public companies relating to securities issued, as well as institutions and professions related to securities.

Manurung and Manurutng (2009), stated that the capital markets are used as long-term financing, and financing through the capital market instruments is related to the company's liquidity. If the company uses money market instruments as a long term payment. Thus, the level of liquidity will be disrupted.

### *2.3 Bond*

The bonds are financial instruments issued by a particular term and condition. Publishers issued bonds to investors with a certain of values, and the bond is a form of recognition of the issuer that the issuer borrow some funds to investors. In the bond agreement, the issuer is required to pay a sum of money to investors in the form of coupons, and the coupons are usually paid within the period per semester. Coupons in bonds can be used as an indicator of the interest earned by the investor, and the principal amount is paid when the bond reaches maturity. Coupon, maturity, and the par value of the bonds entered into an agreement between the issuer and the bondholders (Bodie et al., 2014).

#### 2.4 Financial Statement Analysis

According to Ross et al. (2008), financial ratios are one way to avoid potential problems associated with the condition of the company. Financial ratios become important due to provide available information on the financial statements and may give an idea about the performance of companies in a particular period. The company's performance can be measured the performance of the company can be measured by the aggregate economy, industry category, and the performance in the previous period.

Financial ratios are generally divided into several classifications:

- 1) Liquidity;
- 2) Capital;
- 3) Profitability;
- 4) Asset Quality;
- 5) Efficiency.

#### 2.5 Liquidity Ratio

The liquidity ratio has a function to provide information regarding the company's liquidity and financial ratios are usually called by measuring liquidity. The main concern of this financial ratio is to determine the company's ability to meet short-term obligation. Thus, the ratio will focus on current assets and current liabilities. To measure level of liquidity in the banking industry, the bank can utilize loan to deposit ratio. If the loan to deposit ratio is high, it may be an indicator that the company does not have the ability to meet short-term liabilities, and if the ratio is low, it can be an indicator that the bank does not use properly the asset allocation.

#### 2.6 Capital Adequacy Ratio

The capital adequacy ratio has a function to provide information about the capital compared with the level of risk. The ratio aims to provide security to the depositors and promoting financial stability and efficiency.

#### 2.7 Profitability Ratio

Profitability ratios measure a company's ability to generate profit based on the amount of assets and equity.

##### 1) Return on Asset

ROA is an indicator of financial ratios to indicate the percentage of profit that companies get in line with the total available resources. The ratio is a key measure of profitability due to the amount of profit that can be earned by any number of assets owned.

##### 2) Return on Equity

ROE is the amount of net income compared to the total equity of the company. The ratio is an indicator of profit generated by the equity acquired from shareholders.

##### 3) Net Interest Margin

Net interest margin can be an indicator to measure the performance of companies based on investment policy.

#### 2.8 Asset Quality Ratio

##### 1) Non Performing Loans

Non performing loans are the total number of loans that failed to pay to creditors. Loans can be categorized as NPL, once been late in paying for 90 days, but it depends on the provisions of the applicable contract.

##### 2) Coverage Ratio

Coverage ratio measures the company's ability to meet obligations. The higher the value of the coverage ratio, the better the company's ability to meet its obligations.

#### 2.9 Efficiency Ratio

##### 1) BOPO

BOPO is often called the efficiency ratio, used to measure the ability of bank management in controlling operating expenses to operating income. The smaller this ratio means more efficient operational costs incurred by the bank concerned.

#### 2.10 Hypothesis

The hypothesis used in the partial significance test on the independent variable on the dependent variable with a

significant level of 90% ( $\alpha = 10\%$ ):

- 1)  $H_0$ : LDR not significantly affects the volume of bond issuance.  
 $H_1$ : LDR has significant positive effect on the volume of bond issuance.  
Reject  $H_0$ , if p-value (t-statistic)  $< \alpha$
- 2)  $H_0$ : ROE not significantly affect the volume of bond issuance.  
 $H_1$ : ROE has significant negative effect on the volume of bond issuance.  
Reject  $H_0$ , if p-value (t-statistic)  $< \alpha$
- 3)  $H_0$ : NIM not significantly affects the volume of bond issuance.  
 $H_1$ : NIM has significant negative effect on the volume of bond issuance.  
Reject  $H_0$ , if p-value (t-statistic)  $< \alpha$
- 4)  $H_0$ : CAR not significantly affect the volume of bond issuance.  
 $H_1$ : CAR has significant positive effect on the volume of bond issuance.  
Reject  $H_0$ , if p-value (t-statistic)  $< \alpha$
- 5)  $H_0$ : NPL not significantly affect the volume of bond issuance.  
 $H_1$ : NPL has significant positive effect on the volume of bond issuance.  
Reject  $H_0$ , if p-value (t-statistic)  $< \alpha$
- 6)  $H_0$ : BOPO not significantly affect the volume of bond issuance.  
 $H_1$ : BOPO has significant positive effect on the volume of bond issuance.  
Reject  $H_0$ , if p-value (t-statistic)  $< \alpha$
- 7)  $H_0$ : BI rate not significantly affect the volume of bond issuance.  
 $H_1$ : BI rate has significant negative effect on the volume of bond issuance.  
Reject  $H_0$ , if p-value (t-statistic)  $< \alpha$

### 3. Research Method

#### 3.1 Data and Research Sample

The data used in this research is using secondary data available and derived from various relevant institutions in Indonesia. The data has been published in the public.

The populations in this study are corporate bonds listed and actively traded on the Stock Exchange specifically for the banking sub-sector over the period 2006-2014. The period chosen because it is the most recent period, so that the data used were the latest data. The sampling technique used in this research is purposive sampling method in which sample is determined by certain criteria, the determination of sample criteria are as follows:

- 1) Corporate bonds are listed and actively traded on the Indonesia Stock Exchange and have not yet matured during the period 2006-2014.
- 2) Sample of banking industry was utilizing only banks that are publicly listed.
- 3) Financial ratios data published by the issuer's.

### 4. Results and Discussion

#### 4.1 The Development of Bond Banking Industry

During the economic crisis that occurred in 2008 and 2009 has caused the impact of losses faced by the banking industry at the time was in excess of the minimum capital requirements of banking that has been set by the regulations of Basel, and it also gives a clear signal for the banking industry to reduce the level of leverage, increasing liquidity, more transparent, and tend to reduce the level of risk. Therefore, the Basel committee responds by making the rules and policies that can improve the stability of the financial sector and prevent the negative effects on the economy from the crisis that may occur in the future. The Basel Act regulate on capital adequacy minimum and the banking industry have an alternative to generate the capital structure derived from internal and external. Bonds are one of the alternative sources of long-term financing through external activities. With the bond issuance is expected to improve liquidity, and may engage in business activities effectively and efficiently.

Table 1. Bond issuers classification

Tahun	Klasifikasi Emiten Obligasi	
	Dummy 0	Dummy 1
2006	BTN, Permata	
2007		Panin, Danamon
2008	Mega, NISP	
2009	BTPN	Mandiri
2010	BTPN	CIMB Niaga
2011		Permata, BII
2012		Bukopin, BII
2013		OCBC NISP, CIMB Niaga
2014		Permata, BII

The populations in this study are corporate bonds listed and actively traded on the Stock Exchange specifically for the banking sub-sector over the period 2006-2014. In Table 1, it can be seen the samples used in this study were classified into two classes, which are dummy variables 1 and 0. The dummy variables were classified based on the categories bank's core capital held by the issuer. 0 dummy variable is the category of banks with a core capital of less than Rp. 5 Trillion (book 1 and book 2), while the dummy variable 1 is the category of banks with core capital above Rp 5 trillion (book 3 and book 4). The purpose of these classifications is to look at industry trends in the banking sector to meet minimum capital adequacy requirements based on the core capital position. Basically, the business activities of issuers classified as core capital is at the book 1 and book 2 more limited than the company with the position of the core capital classification of books 3 and 4. This book, aimed at increasing the resilience and competitiveness of banking.

#### 4.2 Classic Assumption Testing Result

##### 4.2.1 Normality Testing

Normality test was conducted in order to detect whether the regression model, the dependent and independent variables distributed normally to produced estimates that are not biased. In this study, the data time series amounted to 9 while the cross section data amounted to 2 so that the total observation observed totaled 18. Normality test is done using a histogram graph analysis. Based on the results of tests performed in the study, it is known that the normally distributed data.

##### 4.2.2 Multicoloniarity Testing

Multicoloniarity happen if among the independent variables are highly correlated so it is difficult to separate the effects of an independent variable on the dependent variable of other effects. Multicoloniarity can be seen from the correlation coefficient of each independent variable, if the value of the correlation coefficient between each independent variable is more than 0.6, it can be said to occur multikolinieritas. From the test results multikolinieritas in research, it is known that the correlation coefficient of each independent variable less than 0.6 then multikolinieritas not happen in this regression equation.

##### 4.2.3 Autocorrelation Testing

Autocorrelation in this regression model was conducted by the method of Lagrange Multiplier (LM) or The Breusch Godfrey Test the following hypotheses

$H_0$ : no autocorrelation

$H_1$ : there is Autocorrelation

If there is a p-value Obs \* R-Squared smaller than  $\alpha$  then the data contained autocorrelation, but if the p-value Obs \* R-Squared is greater than  $\alpha$  then the data is free from autocorrelation. From the tests performed using the method of LM in this study, with  $\alpha$  of 0.05 or 95 percent confidence interval shows that the p-value is greater than  $\alpha$  then accept  $H_0$ , so that it can be concluded that the model in this study free from autocorrelation.

##### 4.2.4 Heteroskedasticity

Heteroskedatisitas testing in this study is done by looking at the graph standarized residuals. Based on the results of this research, it is known that the distribution of the data seen constant it can be concluded that the regression model is free from heteroscedasticity but homoskedastisitas.

### 4.3 Descriptive Analysis

Table 2. Descriptive analysis result

	Obligasi	LDR	ROE	NIM	CAR	NPL	BOPO	BI Rate	Dummy
Mean	1.89	0.85	0.16	0.08	0.17	0.01	0.85	0.07	0.67
Median	1.57	0.88	0.15	0.05	0.16	0.01	0.85	0.07	1.00
Maximum	4.00	1.01	0.36	0.45	0.23	0.03	0.93	0.11	1.00
Minimum	0.50	0.52	0.02	0.03	0.12	0.00	0.73	0.05	0.00
Std. Dev.	1.10	0.12	0.08	0.09	0.09	0.00	0.05	0.01	0.48
Observations	18	18	18	18	18	18	18	18	18

Based on the results of descriptive statistics in Table 2, the characteristics of the sample used in this study include; the number of samples, the average value of the maximum, minimum, and standard deviation for each variabel. Pada Table 2 above shows that the number of samples used in this study a total of 18 samples of data. Based on the calculations during the observation period can be seen that the amount of the issuer's issuance of the banking industry has a standard deviation of 1.10. The standard deviation value indicates that the amount of data on the diversity of the sample observations. The highest amount of bond volume issued on the observation period the bank issued by Bank BII with a value of 4 Trillion, and the lowest number issued by Bank Permata in 2006 with a value of 500 billion rupiah.

The lowest LDR is equal to 0.52, the highest and 1.01, while the average value of the loan to deposit is the number 0.88, with a standard deviation of 0.12. It shows that the amount of data on the diversity of observation samples showed the least diversity of data, and the fluctuations that occur during the observation period is not too volatile.

ROE shown in Table 2, has an average value of 0.16, with a standard deviation of 0.08. It shows the diversity of the data ROE during the observation period 2006 to 2014. The maximum score on the observation ROE amounted to 0.36 by the Bank BTPN in 2010 amounted to 36.4%, while the minimum value of ROE amounted to 0.02 by the Bank Mandiri in 2009.

NIM Data shown in Table 2, has an average of 0.08, with a standard deviation of 0.09. The maximum value of NIM in the observation period amounted to 0.45 by the Bank Bukopin in 2012, and the minimum value of 0.03 Bank Permata in 2014 some 3.63%.

CAR in the table has a value of standard deviation of 0.09. It showed the least diversity of the capital adequacy ratio of observational data during the observation period. The maximum value of 0.23 CAR by the Bank Mandiri in 2009, and the lowest was 0.12 niai by Bank BII in 2011.

Data NPL during the observation period shown in the table, with maximum values of 0.03 by Bank Permata in 2006 and the minimum value of 0.0007 by Bank BTPN in 2009. The standard deviation of the observation variable has a value of NPLs in the number of 0.00. This shows the data manifold NPL observed in this study.

BOPO shown in table 2 has an average value of 0.85, with a standard deviation of 0.05. This shows the lack of diversity of the distribution of data within the observation period. BOPO value on the amount of the highest bond issuance is 0.93 owned by Bank BII in 2014 with BOPO value of 93.03%, and the minimum value of 0.73 owned by Bank CIMB Niaga in 2010.

BI rate seen in Table 2, has an average value of 0.07, with a standard deviation of 0.01. It shows the lack of distribution of the diversity of the data in the BI rate during the observation period 2006 to 2014. The maximum value of BI rate on the observation of 0.11 in 2006 with the value of BI rate of 11.83%, while the minimum value of the BI rate by 0.05 in 2012 with the value of BI rate of 5.77%.

Dummy variable data during the observation period can be classified into two types; which are 1 and 0. 1 classified dummy variable for the sample of issuers that have a core capital on the classification of books 3 and 4 books, while the dummy variable 0 is used as a sample of issuers that have a core capital on the classification of books 1 and 2 books.

### 4.4 Model Testing

The regression model used in this study using regression analysis model with dummy variables. The results of the regression can be seen in Table 3 below.

Table 3. Regression testing result

Variable	Coefficient	Std. Error	t-Statistics	Prob.
Dummy	0.338336	0.955813	0.353978	0.7315
BIRate	-56.57337	30.69478	-1.843094	0.0984*
BOPO	6.503583	6.102799	1.065672	0.3143
CAR	13.21328	6.666219	1.982126	0.0788*
LDR	1.452812	1.962173	0.740410	0.4779
NIM	-5.724361	2.573994	-2.223921	0.0532*
NPL	61.55280	49.73873	1.237523	0.2472
ROE	0.021254	5.070314	0.004192	0.9967
C	-3.354719	5.443497	-0.616280	0.5530
R-Squared	0.588399	Prob. (F-Statistics)		0.021175

The results of regression analysis in Table 3 indicate that the variable BI, Capital Adequacy Ratio (CAR), and Net Interest Margin (NIM) significantly affects the volume of bond issuance in the banking industry sector alpha 10%. While variable Non Performing Loan (NPL), ROA, Return on Equity (ROE), loan to deposit (LTD), and Dummy variables did not have a significant impact on the volume of bond issuance sector banking industry. Number of cross section (i) and time series (t) each totaling 2 data volume and a 9-year bond issue. The regression model equation is as follows:

$$R_{it} = -3.354719 + 1.452812 LDR_{it} + 0.021254 ROE_{it} - 5.724361 NIM_{it} + 13.21328 CAR_{it} + 61.55280 NPL_{it} + 6.503583 BOPO_{it} - 56.57337 BI Rate_{it} + 0.338336 Dummy_{it}$$

#### 4.4.1 R-Squared ( $R^2$ )

R-squared values indicate the extent of the variation of the dependent variable can explain the diversity of independent variables. Results of the estimation model used produce the R-squared value of 58.83 percent, this means that 58.83 percent of variations in the volume of bond issuance can be explained by the independent variable (Loan to Deposit, Return on Equity, Net Interest Margin, Capital Adequacy Ratio, Non Performing Loan, ROA, BI rate, and Dummy), while the remaining 41.17 percent is explained by external factors or variables in the regression model.

#### 4.4.2 F-Test

Testing was conducted to determine the effect of all independent variables included in the model together against the dependent variable. F-statistic probability value is worth 0.021175. Thus, the F-count is not significant at the 10% level, but significant at the 10% level. These results indicate that overall all independent variables that include the Loan to Deposit, Return on Equity, Net Interest Margin, Capital Adequacy Ratio, Non Performing Loan, ROA, BI rate, and Dummy has an influence on the dependent variable, namely the volume of bond issuance subsector banks ,

#### 4.4.3 T-Test

Partial testing conducted to determine the significance between independent variable on the dependent variable, assuming that the other independent variables held constant. With a significant level of 90 percent, p-value is calculated from each regression coefficient  $\alpha$  compared with 10 percent. There are 3 coefficients which has a value of less than 10 percent, the BI rate, Capital Adequacy Ratio (CAR), and Net Interest Margin (NIM). Thus, those independent variables have significant effect on the amount of bond issuance banking subsector. While 5 other coefficients have a p-value of more than 10 percent, which means no significant effect on the amount of bond issuance banking subsector.

### 4.5 Model Interpretation

#### 4.5.1 Loan to Deposit to Bond Volume Issuance

Loan to Deposit variables have positive relationships and has significant with  $p\text{-value} > \alpha$  ( $\alpha = 10\%$ ), then accept  $H_0$ . Thus based on the results of this study indicate that the variable LTD no significant effect on the volume of bond issuance. However, this studies contrary to previous studies which stated that a significant positive relationship between the loan to deposit the bond issuance volume.

A result of this study is different from research that has been conducted by Atici and Gursoy (2012) where the loan-to-deposit has a positive relationship with the issuance of bonds.

#### 4.5.2 Return On Equity to Bond Volume Issuance

Based on the test results in Table 3 indicate that the ROE has a  $p\text{-value} > \alpha$  ( $\alpha = 10\%$ ), then accept  $H_0$ . Thus, based on the results of this study indicate that the ROE does not significantly influence the volume of bond issuance. However, the results of this study contrast with research that has been done by Atici and Gursoy (2012), Chapaign (2009), and Binh and Thomas (2014) which states that the ROE significant effect on the amount of bond issuance. Based on these studies states that issuers with a good growth rate, and a high level of financial leverage tend to issue bonds in large quantities.

#### 4.5.3 Net Interest Margin to Bond Volume Issuance

The next independent variable in this study is the net interest margin, from the test results in Table known  $p\text{-value} < \alpha$  ( $\alpha = 10\%$ ), reject  $H_0$ , then the NIM variables have a significant impact on the volume of bond issuance. An increase in variable NIM, will give a negative effect on bond issuance.

#### 4.5.4 Capital Adequacy Ratio to Bond Volume Issuance

Variable CAR has a  $p\text{-value} < \alpha$  ( $\alpha = 10\%$ ), with a coefficient of 13.21328, then reject  $H_0$ . Based on test results, it can be concluded CAR variables have a significant impact on the volume of bond issuance sector banking industry. Results from this study are consistent with the theory that to raise the level of bank liquidity as indicated by the variable CAR with alternatif funding sources outlined by the variable volume of bond issuance. If the issuer bank has a goal to raise the level of Capital Adequacy Ratio, then the issuer can increase the volume of bond issuance.

The results are consistent with research conducted by Vennet et al (2004), and Binh and Thomas (2014), who obtained the results that the Capital Adequacy Ratio has a positive and significant impact on the volume of bond issuance.

#### 4.5.5 Non Performing Loan to Bond Volume Issuance

Based on the test results in Table 3, it can be seen that the  $p\text{-value} > \alpha$  ( $\alpha = 10\%$ ), accept  $H_0$ , then the non-performing loan variables have not a significant impact on the volume of bond issuance.

However, these results contrast with research that has been done by Horvarth et al (2012), and Atici and Gursoy (2012), which states that the variable NPL has a negative significance to the volume of bond issuance. Based on the study, a higher level of non-performing loans could create a decrease in the level of liquidity creation.

#### 4.5.6 BOPO to Bond Volume Issuance

Based on the test results in Table 3 show that the variable BOPO have  $p\text{-value} > \alpha$  ( $\alpha = 10\%$ ), then accept  $H_0$ . Thus, based on the results of this study indicate that the variable BOPO no significant effect on the volume of bond issuance.

However, the results of this study are not consistent with research that has been done by Bonfim and Santos (2004) which states that BOPO effect on the increase in the volume of bond issuance.

#### 4.5.7 BI Rate to Bond Volume Issuance

BI Rate has a  $p\text{-value} < \alpha$  ( $\alpha = 10\%$ ), with a coefficient of -56.57337, reject  $H_0$ . Based on test results, it can be concluded CAR variables have a significant impact on the volume of the banking industry sector bond issuance, and any increase in the BI rate by 1% will result in a decrease in the volume of issuance of -56.57337. Results from this study are consistent with the theory that the relationship between BI variables with a variable rate bond issuance volume is inversely proportional.

Bonfim and Santos (2004), Vennet et al. (2004) and Fink et al. (2005), stated that macroeconomic variables have a significant negative effect on the volume of bond issuance. The higher the variable BI rate will be an indication for issuers that the cost of financing through bonds at the time the financial instrument macroeconomic conditions or the exact interest rate increases will cause costs to rise, and issuers will have an alternative source of long-term financing.

#### 4.5.8 Dummy Variable to Bond Volume Issuance

Based on the results in Table 3 indicate that the dummy variable has a  $p\text{-value} > \alpha$  ( $\alpha = 10\%$ ), then accept  $H_0$ . Thus, based on the results of this study indicate that the dummy variables does not significantly influence the volume of bond issuance. These results are in contrast to studies which have been carried out by Chapaign (2009) stated that the bank's high-growth, high levels of financial leverage, liquidity, and has a good reputation volume tends to issue bonds in large quantities.



#### 4.6 Managerial Implications

Based on the overall end result of this research, can be formulated managerial implications for investors and issuers to increase capital through the issuance of bonds in particular, as follows:

##### 1) For Investor

Investors who want to invest in bonds banking industry may consider four variables, which are BI rate, NIM, and CAR. These factors can be used as indicators of the performance of the company and assess the company's ability to meet the minimum capital adequacy requirements. BI variable rate can be used as an indicator in the investment decision making buy / hold.

Moreover, NIM, and the CAR can be used as an indicator of the soundness of the banking system. Banks with high NIM and CAR in accordance with the requirements can be classified into a bank with a good level of financial health.

##### 2) For Company

Issuers may use information about the company's performance, and macroeconomic conditions associated with long-term external financing activities through the issuance of bonds that serve to improve the performance of the company and improve the capital structure. BI variable rate, can be an indicator of the volume of bond issuance decisions, because it relates to the cost of financing that will affect the position of the NIM. If the BI rate rises, the bank took measures to lower the volume of bond issuance, and when the BI rate drops, the bank adopted a policy of raising the volume of bond issuance. Furthermore, the bank can take steps to improve corporate performance and capital structure of the bank by considering the variables CAR.

#### 5. Conclusions

Based on the analysis, the conclusions of this study are; First, the volumes of bond issuance in the banking industry during the period 2006 to 2014 was increasing from year to year. Precisely in 2009 after the economic crisis, have caused funds from foreign countries were inflow into the developing country, such as Indonesia. In line with the statement, theses occurrence gives a clear signal for the banking industry to reduce the level of leverage, increasing liquidity, more transparent, and tend to reduce the level of risk. Therefore, the companies issue bonds as a long term financing. Based on the bank size classification of listed companies, it can be concluded that the third-party issuers with lower funding becomes active issuers to issue bonds.

Second, based on simultaneous testing, note that the Capital Adequacy Ratio, Net Interest Margin, and the BI rate has a significant impact on the volume of bank bond issuance. Based on the partial examination of the seven independent variables in this research note that there are three variables that have an influence and significant, that variable Capital Adequacy Ratio, Net Interest Margin, and the BI Rate. While variable Non Performing Loan, Loan to Deposit, Return on Equity, Dummy and BOPO not affect the volume of bond issuance.

#### References

- Atici, G., & Gursoy, G. (2012). The Determinants of Capital Buffer in the Turkish Banking System. *International Business Research*, 6(1), 224-234. <http://dx.doi.org/10.5539/ibr.v6n1p224>
- Baker, M., Greenwood, R., & Wurgler, J. (2002). The maturity of debt issues and predictable variation in bond returns. *Social Science Research Network*.
- Binh, D. T., & Thomas, A. (2014). Capital Adequacy & Banking Risk – An empirical study on Vietnamese Banks. *Social Science Research Network*.
- Blanchard, O., & Johnson, D. R. (2013). *Macroeconomics*. New Jersey: Pearson.
- Bodie, Z., Kane, A., & Marcus, A. J. (2014). *Essentials of Investments*. New York: McGraw-Hill.
- Bonfim, D., & Santos, C. (2004). Determinants of Banks Financing Cost in the Bond Market. *Social Science Research Network*.
- Case, K. E., Fair, R. C., & Oster, S. M. (2012). *Principles of Macroeconomics*. Boston: Pearson.
- Chapagain, G. S. (2009). What Influence Firms to Issue International Bond? An Empirical Study of Relationship Between Bond Financing and Firm Financial Characteristics. <http://dx.doi.org/10.2139/ssrn.1521862>
- Covitz, D. M., & Harrison, P. (2003). Do Banks Strategically Time Public Bond Issuance Because of the Accompanying. *Social Science Research Network*.
- Distinguin, I., Roulet, C., & Tarazi, A. (2013). Bank Regulatory Capital and Liquidity: Evidence from U.S. and European publicly traded banks. *Social Science Research Network*.

- Fink, G., Haiss, P., Kirchner, H., & Thorwartl, U. (2005). Financing through Bond Issues and the Nexus with Economic Growth. <http://dx.doi.org/10.2139/ssrn.1003352>
- Gabbi, G., & Salis, B. (2009). Liquidity Risk Factors for Bonds. <http://dx.doi.org/10.2139/ssrn.1452693>
- Gamba, A., & Leon, C. A. (2008). The Effect of Investment and Financing Policies on Credit Risk. *Social Science Research Network*.
- Gitman, L. J. (2009). *Principles of Managerial Finance*. New Jersey: Pearson.
- Grasso, R., Linciano, N., Pierantoni, L., & Siciliano, G. (2010). Bonds issued by Italian banks. *Social Science Research Network*.
- H. M. J. (1998). *Teori Portofolio dan Analisis Investasi*. Yogyakarta: BPFE.
- Horvath, R., Seidler, J., & Weill, L. (2012). Bank Capital and Liquidity Creation. *Social Science Research Network*.
- Hotchkiss, E., & Jostova, G. (2007). Determinants of Corporate Bond Trading: A Comprehensive Analysis. <http://dx.doi.org/10.2139/ssrn.1001459>
- Julio, B., Kim, W., & Weisbach, M. S. (2008). What Determines the Structure of Corporate Debt Issues. <http://dx.doi.org/10.2139/ssrn.1093302>
- Kapoor, J. R., Dlabay, L. R., & Hughes, R. J. (2012). *Personal Finance*. New York: McGraw-Hill.
- Keown, A. J. (2010). *Personal Finance: Turning Money into Wealth*. New Jersey: Pearson.
- Laas, D., & Siegel, C. (2014). Basel Accords versus Solvency II: Regulatory Adequacy and Consistency under the Postcrisis Capital Standards. *Social Science Research Network*.
- Mankiw, N. G. (2010). *Macroeconomics*. New York: Worth Publishers.
- Manurung, J., & Manurung, A. H. (2009). *Ekonomi Keuangan dan Kebijakan Moneter*. Jakarta: Salemba Empat.
- Mishkin, F. S. (2010). *The Economics of Money Banking & Finance*. Boston: Pearson.
- Pierret, D. (2014). Systemic risk and the solvency-liquidity nexus of banks. *Social Science Research Network*.
- Rose, P. S. (2003). *Money and Capital Markets*. New York: McGraw-Hill.
- Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2008). *Corporate Finance Fundamentals: International Student Edition*. New York: McGraw-Hill.
- Sunariyah. (2011). *Pengantar Pengetahuan Pasar Modal*. Yogyakarta: Unit Penerbit Dan Percetakan.
- Usman, M., Riphath, S., & Ika, S. (1997). *Pengetahuan Dasar Pasar Modal*. Jakarta: Institut Bankir Indonesia.
- Varotto, S. (2011). Liquidity Risk, Credit Risk, Market Risk and Bank Capital. <http://dx.doi.org/10.2139/ssrn.1746915>
- Vazquez, F., & Federico, P. (2012). Bank Funding Structures and Risk: Evidence from the Global Financial Crisis. <http://dx.doi.org/10.2139/ssrn.1997439>
- Vennet, R. V., Jonghe, O. D., & Baele, L. (2004). Bank Risk and The Business Cycle. <http://dx.doi.org/10.2139/ssrn.615564>
- Wang, L. (2005). Bank Capital Requirement and the Effectiveness of Monetary Policy: A Literature Review. <http://dx.doi.org/10.2139/ssrn.775244>
- Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Data Panel*. Cambridge: The MIT Press.
- Yener, A., Kara, A., & Ibanez, D. M. (2009). Large Debt Financing Syndicated Loans Versus Corporate Bonds. *Social Science Research Network*.

## Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).