Abstract: The objective of this study is to examine the effect of credit risk, liquidity risk, interest rate risk, and capital on bank profitability in conventional banks listed on the Indonesia stock exchange (IDX) in 2007-2017. This type of research is descriptive and causality using secondary data, namely financial statements. The population in the study is a conventional public bank registered on the Indonesian stock exchange. This research’s sampling technique used purposive sampling. The sample used was 12 banks. The method used in this research is panel data regression method with a significance level of 5% using a random effect model. Hypothesis testing used t test, F test, and coefficient of determination. The results showed that simultaneous credit risk, liquidity risk, interest rate risk, and capital had a significant effect on bank profitability. Partially credit risk has a negative and significant effect on bank profitability. Interest rate risk has a positive and significant effect. While the liquidity risk and capital variables do not affect bank profitability.

Keywords: Credit Risk, Liquidity Risk, Interest Rate Risk, Capital and Profitability.

1. Introduction

Competition in the banking industry is not perfect competition but a monopoly which is then coupled with collusion to regulate price and non-price competition. Banks may not be in a truly competitive situation because in a pure competitive situation the new bank is threatened with bankruptcy and this will endanger the economy in a macro manner because the collapse of a bank can spread to other banks (contagion effect). Competition between banks can occur due to the struggle for productive resources, for example in deposits, savings, and lending which are sources of income. Inter-bank non-price competition can take the form of gifts and promotions to attract as many customers as possible. Competition can also take the form of new products and types of services supported by technological developments that can reduce the costs of production and distribution. Regulators must pay attention to the level of competition between banks, considering the greater the tendency towards monopoly, the greater the inefficiency that occurs as a result of declining competition. However, it is also necessary to understand that to be able to compete with global (foreign) banks, large, sturdy and stable banks are needed which are generally obtained through the process of mergers and acquisitions, without compromising the possible level of competition (Widyastuti, 2013).

The role of banks in advancing the economy of a country is enormous. Almost all sectors related to various financial activities always need bank services. At present and in the future we will not be separated from the world of banking, if we want to run financial activities, both individuals and institutions, whether social or corporate (Kasmir, 2013). The structure of the Indonesian financial industry in 2018 is still dominated by banks consisting of Commercial Banks (BU) and People's Credit Banks (BPR). The total
number of commercial banks in 2018 was 115 banks where there were 102 conventional commercial banks and 13 Islamic banks. (Indonesian Banking Statistics, May 2018).

The turmoil in the global financial market, which has caused liquidity to dry out on the global money market, also has an impact on the liquidity and performance of Indonesia’s domestic banking. The tightness of banking liquidity that occurred in the fourth quarter of 2008 caused a number of banks to find it difficult to meet their short-term liquidity needs. Segmentation that occurs in the interbank money market (PUAB) is exacerbated by declining supply of funds from banks that actually still have excess liquidity, but tend to avoid risk (risk aversion) and prefer to keep their funds just in case (liquidity hoarding).

The problem of liquidity is quite influential on the behavior of banks, namely banks that were initially quite aggressive in conducting credit expansion in 2008 became more cautious. The bank’s prudence attitude and concerns over an increase in non-performing loans (NPL) encourage banks to place their funds in SBIs (Bank Indonesia Certificates) and FASBI (Bank Indonesia deposit facilities). (Report of the Indonesian economy, 2009).

Figure 1. Development of Commercial Bank Profitability (ROA) in Percent (%)

The decline in profitability (ROA) in late 2008 began from the peak of profit growth in the first quarter of 2008. The decline in performance was influenced by increased credit growth, but not accompanied by falling credit risk so that the allowance for earning assets (PPAP) was increased. In terms of profitability, banking profit before tax grew to 7% compared to 2013 which grew 15% in line with declining Return on Assets (ROA). In 2015 the restrained performance of banking intermediation has resulted in a decrease in profitability and banking efficiency reflected in a declining ROA ratio. The continued decline in performance was in the midst of the success of banks in reducing their funding costs due to increased reserve costs due to a slowdown in credit growth accompanied by an increase in credit risk. The decline in ROA was driven by a decline in the banking NIM ratio as a result of a slowdown in credit growth which has led to a decrease in banking interest income. (Indonesian Economic Report BI 2009, 2014 & 2015).

2. Method
This research is included in the type of descriptive research and causality, namely identifying causal relationships between various variables. The population in this study were commercial bank companies listed on the Indonesia Stock Exchange (IDX) from 2007 to 2017, totaling 12 banks. Sampling uses purposive sampling method.
2.1. Operational definitions and variable measurements

Dependent Variable (Y)

Dependent variable namely Profitability is a ratio that shows a comparison between earnings (before tax) and total bank assets, this ratio shows the level of efficiency of asset management carried out by the bank concerned.

Independent Variable (X)

a. NPL (gross) (X1), namely the comparison between bad credit and the total disbursed by the bank. Gross NPL does not take into account reserves for bad loans at public bank companies on the IDX in 2007-2017.

b. LDR (X2) which is a ratio that states how far the bank has used depositors to provide loans to customers at public bank companies on the Indonesia Stock Exchange in 2007-2017.

c. NIM (X3), which is a comparison between Interest Income (bank interest income earned) minus Interest expenses (bank interest costs which are borne) divided by Average Interest Earning Assets (average earning assets used) in commercial bank companies on the IDX 2007-2017.

d. CAR (X4), which is a comparison between bank capital and Risk Weighted Assets (RWA) at commercial bank companies on the IDX in 2007-2017.

2.2. Analysis Data Method

The method of data analysis in this study is multiple regression analysis with the help of Eviews.

3. Result and Discussion

3.1. Result

Classical Assumption Test

Residual normality test using the Jarque-Bera (J-B) test. In this study, the significance level used was $\alpha = 0.05$. The results of the data normality test with Jarque-Bera (J-B) can be shown in the following figure:
### Table 1. Multicollinearity Test with Correlation Matrix

The results of multicollinearity testing, it can be concluded that there are no symptoms of multicollinearity between independent variables. This is because the correlation value between independent variables is not more than 0.9.

#### Autocorrelation Test

Assumptions about the independence of residuals (non-autocorrelation) can be tested using the Durbin-Watson test (Field, 2009). The statistical value of the Durbin-Watson test ranges between 0 and 4.

<table>
<thead>
<tr>
<th></th>
<th>NPL</th>
<th>LDR</th>
<th>NIM</th>
<th>CAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPL</td>
<td>1.000000</td>
<td>0.206223</td>
<td>-0.035139</td>
<td>0.015648</td>
</tr>
<tr>
<td>LDR</td>
<td>0.206223</td>
<td>1.000000</td>
<td>0.023370</td>
<td>0.068821</td>
</tr>
<tr>
<td>NIM</td>
<td>-0.035139</td>
<td>0.023370</td>
<td>1.000000</td>
<td>0.194828</td>
</tr>
<tr>
<td>CAR</td>
<td>0.015648</td>
<td>0.068821</td>
<td>0.194828</td>
<td>1.000000</td>
</tr>
</tbody>
</table>

#### Heteroscedasticity Test

Detection of the presence or absence of heteroscedasticity can be done by the Breusch-Pagan test. Following are the results of the Breusch-Pagan test.

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
<th>d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>1.618272</td>
<td>(11,116)</td>
<td>0.1736</td>
</tr>
<tr>
<td>Obs*R-squared</td>
<td>6.401646</td>
<td>11</td>
<td>0.1711</td>
</tr>
</tbody>
</table>

#### Determination of Estimation Model between Common Effect Model (CEM) and Fixed Effect Model (FEM) with Chow Test

The following results are based on the Hausman test using Eviews 9.

<table>
<thead>
<tr>
<th>Effects Test</th>
<th>Statistic</th>
<th>d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section F</td>
<td>7.098670</td>
<td>(11,116)</td>
<td>0.0000</td>
</tr>
<tr>
<td>Cross-section Chi-square</td>
<td>67.941446</td>
<td>11</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

#### Determination of Estimation Model between Fixed Effect Model (FEM) and Random Effect Model (REM) with Hausman Test

The following results are based on the Hausman test using Eviews 9.
Table 5. Results of the Hausman Test

Based on the results of the Hausman test in Table 5, it is known that the probability value is 0.7791. Because the probability value is 0.7791 > 0.05, the estimation model used is the random effect model (REM) model.

Hypothesis testing
In testing the hypothesis, the coefficient of determination analysis will be carried out, testing for simultaneous influence (F test), and testing for partial influence (t test). Statistical values of the coefficient of determination, F test, and t test are presented in Table 6.

Table 6. Statistical values of the coefficient of determination, F test, and t test

Coefficient of Determination (R2)
Based on Table 6, it is known that the coefficient of determination (Adjusted R-squared) is $R^2 = 0.4044$. This value can be interpreted as NPL, LDR, NIM and CAR simultaneously or together affect ROA of 40.44%, the remaining 59.56% is influenced by other factors.

Test of Significance of Simultaneous Influence (Test F)
Based on Table 6, it is known the Prob value. (F-statistics), which is 0.000000 < 0.05, it can be concluded that NPL, LDR, NIM and CAR simultaneously, have a significant effect on ROA.

Multiple Linear Regression Equations and Test for Significance of Partial Effect (t Test)
Based on Table 6, the following multiple linear regression equations are obtained.

$$Y = 0.365 - 0.401X_1 - 0.289X_2 + 0.867X_3 + 0.165X_4 + e$$

Based on Table 6, it is known:

a. It is known that the regression coefficient of the NPL variable is -0.401, which is negative. This means that the NPL has a negative effect on ROA. It is known that the Prob value is 0.0000, which is < 0.05 significance level, then NPL has a significant effect on ROA.

b. It is known that the regression coefficient of the LDR variable is -0.289, which is negative. This means that the LDR has a negative effect on ROA. It is known that
the Prob value is 0.1742, which is > the 0.05 significance level, then the LDR does not significantly influence ROA.

c. It is known that the regression coefficient of the NIM variable is 0.867, which is positive. This means that the NIM has a positive effect on ROA. It is known that the Prob value is 0.0000, which is <0.05 level of significance, then the NIM has a significant effect on ROA.

d. It is known that the regression coefficient of the CAR variable is 0.165, which is positive. This means that CAR has a positive effect on ROA. It is known that the Prob value is 0.2862, which is > the 0.05 significance level, then the CAR does not have a significant effect on ROA.

3.2. Discussions

a. Effects of Credit Risk on Profitability
The results of partial hypothesis testing show that Credit Risk with NPL proxy has a negative and significant effect on Profitability. This research shows that credit risk originates from fund disbursement activities and other commitments which constitute the greatest risk possessed by Conventional Commercial Banks and are able to have a negative influence on the profitability of Conventional Commercial Banks proxied through ROA. Interest income obtained through the distribution of loans channeled by Conventional Commercial Banks is still the largest income for Conventional Commercial Banks, so that interest income is able to increase profits and ultimately able to increase profitability proxied through ROA. The results of hypothesis testing of this study have been consistent with the results of research conducted by Rahmi (2014) which states that partially liquidity risk does not significantly influence profitability in conventional commercial banks that are proxied through ROA.

b. Effect of Liquidity Risk on Profitability
The results of partial hypothesis testing indicate that Liquidity Risk with an LDR proxy does not significantly influence Profitability. The general liquidity policy of a bank is actually determining the amount of funds to be held in cash, in the form of securities and how much will be placed in the form of loans, with various types and in the form of investments keeping in mind information about the types of bank funds (savings, current accounts, time deposits, certificates of deposit, etc.). So in a nutshell in an effort to pursue optimal profits (by providing loans) must maintain a healthy level of liquidity which is estimated to be able to accommodate / meet deposit withdrawals by customers in addition to being able to fulfill the obligation to maintain the minimum liquidity set by the regulator. So it can be concluded that when a bank expects maximum profits to be at risk at a low level of liquidity or when high liquidity means the level of profit is not optimal. So that there is a conflict of interest between maintaining high liquidity and seeking high profits. Liquidity management is very important for banks, especially to overcome liquidity risk caused by the above. To ensure that this liquidity risk does not occur, the liquidity management policies that can be carried out include maintaining short-term assets, such as cash. The results of hypothesis testing of this study have been consistent with the results of research conducted by Rahmi (2014) which states that partially liquidity risk does not significantly influence profitability in conventional commercial banks that are proxied through ROA.
c. **Effect of Interest Rate Risk on Profitability**
   The results of partial hypothesis testing indicate that Interest Rate Risk with the NIM proxy has a positive and significant effect on profitability. This study shows that the ability of banks to generate net interest affects the level of bank income for total assets. Net interest is one component of forming earnings (income), because profit is a component that forms return on assets, then indirectly if net interest income increases, the profit generated by the bank also increases, thereby increasing the bank’s profitability. For banks, the NIM ratio shows how much net interest the bank gets, where interest is the result of the bank's main activity as the channeling of funds to those in need. Because of the main business activities, the NIM ratio is an important factor for the survival of the bank. So that banks should always maintain that the NIM ratio is in a high position, so that the profits obtained will also be high. With the high profits obtained, the bank's profitability will also increase. The results of hypothesis testing of this study have been consistent with the results of research conducted by Rahmi (2014) which states that partially interest rate risk has a significant effect on profitability in conventional commercial banks that are proxied through ROA.

d. **The Effect of Capital on Profitability**
   The results of partial hypothesis testing indicate that capital with CAR proxies has no significant effect on profitability. CAR is a capital adequacy ratio that shows the ability of banks to maintain sufficient capital and the ability of bank management to identify, measure, supervise, and control the risks that arise that can affect the size of bank capital. According to Pandia (2012) the success of a bank does not lie in the amount of capital it has, but rather based on how the bank uses that capital to attract as much as possible the funds / deposits of the community which are then channeled back to the people who need it to form income for the bank. The capital condition of conventional commercial banks in the five-year period of observation (2007-2017) was very good, where the average CAR was 16.78% (far above the minimum standard of bank CAR at 8%). This condition explains that banks do not use all of their potential capital to increase bank profitability (such as the development of products and services other than loans that can increase fee base income). This causes CAR not to be a factor that has a significant effect on bank profitability. The results of the hypothesis testing of this study are consistent with the results of research conducted by Purba (2018) which states that partially capital does not significantly influence profitability in conventional commercial banks that are proxied through ROA.

4. **Conclusion**
   Based on the results of data analysis and discussions that have been conducted, this study produces several conclusions as follows:
   a. Simultaneously shows that credit risk, liquidity risk, interest rate risk and capital simultaneously have a significant effect on the profitability of conventional general banking in 2007-2017.
   b. Partially Credit Risk (NPL) has a negative and significant effect on the profitability of public banks listed on the Indonesia Stock Exchange from 2007-2017.

d. Partially Interest Rate Risk (NIM) has a positive and significant effect on the profitability of public banks listed on the Indonesia Stock Exchange from 2007-2017.


References
Indonesian Banking Statistics, May 2018. ISSN No. 1858-4233.