

## **BANKING FINANCIAL SYSTEM STABILITY ANALYSIS**

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### **Abstract**

The purpose of this study was to determine the effect of the competition's level, the level of credit growth on financial system stability. The method in this study is panel data regression with three approaches, namely common effect, fixed effect and random effect. The data used is monthly time series data starting from June 2015 to June 2018 and cross section data from all types of commercial banks covering four types of banks based on the distribution of BUKU (Business Commercial Banks). The data obtained from the official website of Bank Indonesia, the Financial Services Authority, the internet and other references sourced from literature, literature studies, scientific journals, supporting books and various other sources related to research. The results of this study indicate that the Fixed Effect Model is the best model for further estimation based on the results of the Chow test and Hausman test. These results also explain that the Bank's Competition Level has a positive effect but not significant on bank stability. Meanwhile, credit growth has a negative impact and significant on bank stability, and profit sharing financing has a positive impact and significant on bank stability.

**Keywords:** Bank Competition Level; Credit Growth; Inflation; Bank Stability; Fix Effect Panel Model

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### **Introduction**

Banking has undergone a metamorphosis since the era of deregulation. Deregulation is a policy set by the government to facilitate the establishment of new banks which has an impact on increasing the number of domestic banks. Banks are currently one of the financial institutions that have a major influence on the process of economic growth and stability. This can be seen from the dominance of banks in the share of financial sector assets, where banks reached 79% (Kajian Stabilitas Keuangan, 2018).

According to the Banking Law Law No. 21 of 2008 concerning Islamic Banking, one of the functions of a bank is to carry out an intermediation role. The main function of intermediation carried out by banks has a role in the process of stabilizing the financial system because banks are the largest fund-raising institutions. This is in accordance with the main authority of the banking system itself to regulate the distribution and payment system properly to all levels of society.

The proliferation of banking in Indonesia is marked by a very large number. Currently, there are 95 conventional banks in Indonesia. Meanwhile, there are 14 Islamic banks. The increase in the number is not based on strong regulations. This increase was accompanied by moral hazard by private banks as well as the implementation of a financial liberalization system which resulted in a banking crisis in Indonesia. This was marked by the monetary crisis in 1998. As a result, 23 banks were liquidated and public confidence in banking was lost (Bank Indonesia, 2018).

To deal with the crisis, the government implemented the Indonesian Banking Architecture (API) policy in 2004. With this API, which is the basic framework for the banking system in Indonesia (Kajian Stabilitas Keuangan, 2018). With the implementation of the API system, many banks are conducting mergers and acquisitions. This is the main objective of the API policy with the formation of 60 banks in Indonesia, of which 2 to 3 international banks, 3 to 5 national banks and 30 to 50 specialist banks within a period of 10 to 15 years. It is hoped that this policy can provide a strong role for bank institutions in maintaining financial stability in the economy. Financial stability in banking itself is influenced by various factors which the authors simplify into three influencing variables, namely the level of banking competition, credit growth and also profit sharing financing.

Stability is a measure of economic success and an indicator of economic resilience from various crises, because it is this crisis that provides many lessons for the economy in many countries. Various efforts, overcoming, preventing and mitigating crisis risks have become homework for many countries, especially Indonesia. Two crises that occurred in 1998 and 2008 have created instability and eroded public confidence. The sustainability of the economic mechanism, namely in setting prices, allocation of funds, risk management, resilience to crises, the ability to carry out the intermediation function and the driving force of economic growth can be achieved with good stability. On the other hand, the crisis triggered by the increasingly integrated financial system due to the globalization of the financial sector, increasingly dynamic financial product innovation, and various transactions will lead to the opposite condition (Budi Santoso, 2014).

Banking stability and financial stability are interrelated. This is because healthy banking conditions are usually reflected by the condition of banks that carry out their functions properly, namely in distributing third party funds in the form of credit and financing. To increase economic growth, it can be seen in the availability of credit which can later be converted into investment. Giving credit is also the main activity of banks to generate profits (Shijaku, 2017). However, credit growth in banks always fluctuates which can be shown in the following table:

**Table 1**  
**Banking Credit Growth in 2020**

<b>Bulan</b>	<b>Pertumbuhan Kredit (%)</b>
Januari	5.70
Februari	5.50
Maret	7.20
April	5.73
Mei	2.40
Juni	1.34
Juli	1.53
Agustus	1.04
September	0.12
Oktober	-0.47
November	-1.39
Desember	-2.7

**Source: Bank Indonesia, processed in 2021**

Based on the table above, credit growth in 2020 is slowing down. Although in March there was an increase, from April to December there was a decrease. Even in October began to see a significant decline up to -0.47%. Which then in the following month also decreased. This is due to the weak demand for credit, where credit risk in the banking sector is still very high.

To avoid this risk, in running the financial system and its financing, it uses a profit-sharing scheme. In the last thirty years the main successful schemes in Islamic countries. In Indonesia, this scheme was only used in 2004. However, the current results have not been able to describe the actual potential of the Islamic financial system. So there is a need for further studies on this profit-sharing system which will later be able to stabilize the financial system in banking (Bank Indonesia, 2018).

From this study, the author wants to find out how the influence of competition's level, credit growth and profit sharing financing on the financial stability of banks in Indonesia. In research that has been conducted (Apriadi et al., 2017) show that increased bank competition will reduce banking stability. However, research conducted by (Shijaku, 2017) show that bank stability has a positive and significant effect on financial stability in banking. Subsequent research from (Bilan et al., 2016) showed a significant influence.

Another study on credit growth conducted by (SE, 2020) showed that credit growth had no effect on banking stability. In contrast, research conducted by (Zevananda & Pangestuti, 2017) showed a negative and significant influence on banking stability. The positive results between the influence of credit growth and banking stability were investigated by (Faruqinata, 2019). Subsequent research conducted by (Pujianti & Sitorus, 2016) showed a negative and significant influence between profit sharing financing and banking stability. Negative results were also

obtained in (Elvani et al., 2017) but were not significant. In contrast to (Tawami, 2017) which results that profit sharing financing has a positive influence on banking stability.

With the differences in results from previous researchers, a research gap was obtained in previous studies. Differences in the results of this study caused by different in the amount of data and methods used. Furthermore, the researchers expanded the object of research in this study, namely banking in Indonesia, Islamic and conventional banking.

## Research Methods

The data used is monthly time series data starting from June 2015 to June 2018 and cross section data from all types of commercial banks covering four types of banks based on the distribution of BUKU (Business Commercial Banks). If the data is paneled, 148 observations will be formed from a total of 37 month periods and 4 types of banks. The data obtained from the official website of Bank Indonesia, the Financial Services Authority, the internet and other references sourced from literature, literature studies, scientific journals, supporting books and various other sources related to research.

### 1. Stationarity Test

According to (Arifin, 2016), the stationarity test is used to analyze time series data to see if there is a unit root between variables so that the relationship between variables becomes valid. The stationarity test is used to test time series data so that it is not flat, does not contain trend components with constant diversity and does not occur periodic fluctuations (Sujarweni, 2015).

The test used is the Unit Root Test developed by Dickey-fuller. There is a provision if the probability value is less than 0.05, it shows stationary data, but if the probability value is more than 0.05, it means the data is not stationary (Wahyu Winarno, 2015).

### 2. Panel Data Regression Estimation

#### 1) Common Effect Method

This method will assume that the combined data shows the actual condition where the intercept value of each variable is the same as the slope coefficient of the variable used and the same in all cross section units.

#### 2) Fixed Effect Model

This model is characterized by the presence of an object that has a constant value that remains large for various time periods.

#### 3) Random Effect Model

This approach used to overcome the weakness of the fixed effect method which uses quasi-variables. Therefore, this model results in uncertainty.

Panel Data Model Selection

a. Chow-Test

This test determine the PLS or FEM model will be chosen to process the data. If the cross section probability value is  $> 0.05$ , it means the model chosen is PLS. Then, if the value is  $< 0.05$ , it means the model chosen is fixed effect.

b. Hausman Test

This test determine the FEM or REM model will be used in the analysis. If the cross section probability value is  $> 0.05$ , the model chosen is random effect. Then, if the value is  $< 0.05$ , the model chosen is fixed effect.

3. Classic Assumption Test

1) Normality Test

In general, before doing the test to get a conclusion, it is necessary to do a normality test. This test used to find out the data in the study are normally distributed or not. Normality test carried out using the Jarque Berra (JB) test. If the probability of Jarque Berra (JB)  $> 0.05$ , the residuals are normally distributed.

2) Heteroscedasticity Test

Heteroscedasticity test is a condition which the variance and confounding error not constant for all independent variables. A good regression model if there is no heteroscedasticity. If the test result is above the significant level ( $r > 0.05$ ), it means that there is no heteroscedasticity and vice versa. Then, if the label is below significant ( $r < 0.05$ ), it means that there is no heteroscedasticity (Sujarweni, 2015).

3) Multicollinearity Test

This test used to test the regression model found a correlation between the independent variables. In a good regression model, there is no correlation between the independent variables (Ghozali, 2005). The method for testing the existence of this multicollinearity can be seen from the tolerance value or variance inflation factor (VIF). The limit of the tolerance value  $> 0, 1$  or the VIF value is less than 10, so there is no multicollinearity.

4) Autocorrelation Test

According to (Sujarweni, 2015) the autocorrelation test used to determine the correlation between the confounding variable in a certain period and the previous variable.

## Results and Discussions

Hypothesis testing begins with testing classical assumptions. The tests are multicollinearity test, heteroscedasticity test, and normality test. Multicollinearity test is a test to determine a correlation between the regression model and the independent variables. The result of multicollinearity test can be seen from the VIF value  $< 10$ . In this study, all variables had a VIF value  $< 10$  so there was no multicollinearity of symptoms.

While the heteroscedasticity test is a test to find out the regression model has the same residual variance from one observation to another. The regression model is

homoscedastic or no heteroscedasticity. If the significance probability  $> 0.05$ , it means that there is no heteroscedasticity. Subjective knowledge variable with sig. 1,260, country image sig. 1,064, and halal label sig. 1,093. It can be concluded that all variables have a sig value  $> 0.05$  means there are no symptoms of heteroscedasticity.

Last, a normality test used to determine the residual variables were normally distributed or not. This test done by checking the significance value of Asymp.Sig (2-tailed). If 0.05, it means that the distribution is normal. From this study, the value of Asymp.Sig (2-tailed) is  $0.259 > 0.05$ , it means that the residual value is normally distributed.

Furthermore, this study uses panel data, so the researcher uses the Hausman test in the regression selection model which is shown in the following table:

**Table 1**  
**Model Selection Test**

<b>Correlated Random Effects - Hausman Test</b>			
<b>Equation: Untitled</b>			
<b>Test cross-section random effects</b>			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.058746	3	0.0063

Because the value is  $< 0.05$ , the model chosen is fixed effect. With fashion; The results of research to test the following hypotheses are obtained:

**Table 2**  
**Hypothesis Test**

<b>Determinant Coefficient and Adjusted R Square</b>	
R	0.940662
Adjusted R Square	0.913960
<b>Result of t-Test</b>	
Standardized Coefficient Beta (X1)	8.83E-10
t	1.006875
Sig.	0.3200
Annotation	Tidak signifikan
Standardized Coefficient Beta (X2)	-2.204888
t	-5.612165
Sig.	0.000
Annotation	Signifikan
Standardized Coefficient Beta (X3)	0.183092
t	0.054073
Sig.	0.001
Annotation	Signifikan
<b>Result of the F-Test</b>	
F	35.22791
Sig.	0.000
Annotation	Signifikan
*Significant (Sig.<0.05)	

From the table above, it can be concluded that the adjusted  $R^2$  value is (0.913960) with the dependent variation is 91.39%. While 8.61% influenced by variations of the other dependent variables model. Then, in the Bank Competition Level Test (X1), the probability value is  $0.3200 > 0.05$  with a coefficient of  $8.83E-10$ , then the competition's level has a positive effect but not significant on bank stability. Therefore, the first hypothesis rejected. This is because the results in this study do not show significant results but have a positive coefficient. It means that the level of banking competition in Indonesia does not have a major influence on financial stability in Indonesian banks. In accordance with the theory of Structure Conduct Performance (SCP) which explain how companies will behave when facing certain market structures in an industry. This behavior will later create a certain performance. From this result, the banking parties perform well in the face of an increasingly tight market. The results of this study have similarities with research conducted by (Bilan et al., 2016).

In the credit growth variable (X2), the probability value obtained is  $0.0000 < 0.05$  with a coefficient of  $-2.204888$ , then credit growth has a negative and significant effect on bank stability. It means that the second hypothesis in this study also rejected. Thus, it can be conclude that the decline in credit to banks will also reduce the level of banking stability in Indonesia. It happens because credit growth is the key to economic progress in a country. With the decline in credit growth, it will affect several aspects. This research supports the data for the last one year in 2020 where credit growth in Indonesian banks has decreased every month. This research is the same as the research conducted (Zevananda & Pangestuti, 2017)

Finally, the profit-sharing financing variable (X3) obtained a probability value of  $0.0001 < 0.05$  with a coefficient of  $0.183092$ , then profit-sharing financing has a positive influence and significant on bank stability. Due to the expectation of the profit-sharing system to improve the financial system in banking. Although at this time, profit sharing financing is still rarely used, it has proven to be able to stabilize the banking financial system. This is reinforced by the research conducted by (Ichsan, 2016) which also gave the same results in this study. This research is the same as the research conducted by (Tawami, 2017)

## Conclusion

An empirical study of the level of competition, credit growth and profit sharing financing on banking stability in Indonesia illustrates that the impact of the API (Indonesian Banking Architecture) policy has an influence on the structure and performance of the banking system. By using the method of panel data analysis and the FEM approach, the level of bank competition has a positive effect but not significant on banking stability. It can be concluded that the more competitive the bank, the stability will increase but not significantly.

The results of the credit growth variable have a negative effect and significant on bank stability. Due to the factors of receiving funds such as interest rate income and third party funds which in some phenomena have a more influential influence than the

credit growth variable. It can also interpreted that credit growth also influenced by other factors such as interest rates and profit-sharing financing as well as GDP has far measured to affect stability. Finally, the profit-sharing financing variable has positive and significant results on bank stability. The results can be concluded that profit sharing financing has a lot of involvement in bank stability.



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