

Islamic and Conventional Banks Stability: A Comparative Analysis.

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Abstract

This paper will attempt to measure the financial stability for Islamic and conventional banks and compare the result of financial stability between two kinds of banks. In this study, financial stability will be measured using z-scores. The data sample used in this study include 4 Indonesian Islamic bank and 4 Indonesian conventional banks, which is represent by 2 larger bank and 2 smaller one. After got z-score, descriptive statistic and stationarity test also conducting to compare the stability result both of banks. A comparative study showed that conventional banks maybe more stable than Islamic banks. Regression analysis using fixed effect model were conducted to investigate the factors influence banks stability. Regression result showed the factor which have a significant influence to banks stability are Islamic dummy, size of banks and cost to income ratio. While the others variable such us credit to asset ratio, income diversity and Islamic banks income diversity have no significant effect to banks stability, however, have a correct sign for all variables.

Keywords: Islamic banks, conventional banks, stability, z-score, panel data

Introduction

Stability on banking industry affected the effectiveness of the conduct in monetary policy (Warjiyo, 2000). It showed by the conduct of banking function as the intermediaries institution for reallocating fund from society to another form of funding product could work well. It is necessary to know how stable banking industry to accomodate the conduct of monetary policy. In the banking industry cycle, islamic banks in conjunction with conventional banks have an important role for maintaining the monetary policy.

The most common characteristic that distinguish islamic banks and conventional is the exist of interest. Islam banks which following islam laws avoid all of transaction which contain interest, but replacing them by profit or loss sharing and goods services trading (Siddiqi 2000). The power of islamic banks has been proven by the great history of islamic banks written through financial crisis where almost all conventional bank got failure, but no single islamic bank reported fail.

In Malaysia, islamic banks are significantly correlated to the long run economic growth and

capital accumulation, and bring this country become international islamic financial hub (Hafas, 2009). While based on research by (Beck, Demirgüç-kunt, & Merrouche, 2013) accross 22 countries, including Indonesia showed Islamic banks have higher intermediation efficiency, lower cost efficiency, lower non-performing loans and higher capitalization, those affect the result of z-scores to become higher which indicates the low risk of bank insolvency.

Cihak and Hesse (2008) conducted cross country studies of Islamic banks impact on financial stability. Using z-scores as a measure of stability, their study found that (i) small Islamic banks tend to be financially stronger than small commercial banks; (ii) large commercial banks tend to be financially stronger than large Islamic banks; and (iii) small Islamic banks tend to be financially stronger than large Islamic banks

The difference of system between conventional banks and islamic banks have different effect to their stability. There is no clear consensus in the literature on question of whether Islamic banks are more or less stable than conventional banks.(Ghassan, Fachin, & Guendoz, 2013). The power of islamic banks could not represented the stablization of the industry. Thus need to do the research to solve the research gap.

Indonesia which Islam has dominant role in their people life is an interesting object to research the islamic banking industry. There are 11 Islamic banks in Indonesia which operate using dual banking system based on API (Arsitektur perbankan Indonesia). In this study, will try to answer the question, whether the Islamic banks more or less stable than the conventional one, using the sample four

Indonesian conventional banks and four Indonesian Islamic banks.

This research is using Z-score methods to measure financial stability. A higher z-score corresponds to a lower upper bound of insolvency risk—a higher z-score therefore implies a lower probability of insolvency risk (Cihak and Hesse, 2008). This method is very useful to show the condition when a company or firm is going to get insolvency which related to stability. This study also attempted to identify the factors that influence the stability. Using pooled model, we will estimate which are the factor that have influence on banks stability, both conventional and Islamic banks.

Methods

Stability measurement in this study using Z-Score. The Z Score has become a populer measure of bank soundness (Boyd and Runkle, 1993; Maechler, Mitra, and Worrell, 2005 and Cihak and Hesse, 2008). In the literature of Islamic Banking indicator is first used empirically by Cihak and Hesse (2008), but theoretically had been discussed by Mirakhor (1987, see Gamaginta and Rokhim, 2011). Cihak and Hesse (2008) define z-core as:

Where where k is equity capital and reserves as percent of assets, μ is average return as percent of assets, and σ is standard deviation of return on assets as a proxy for return volatility. According to Yeyati and Micco (2007), a smaller Z-score (a greater risk exposure) can be associated with narrower returns (for example, because of larger inefficiencies or reduced market power), a larger return volatility (due to poorer diversification or a less conservative investment option), or a higher level of leverage (due to lower capitalization).

As a first step in this study, we perform basic statistical tests for the z-scores and compare z-

scores in Islamic and conventional banks. To examine the robustness of the result in the first step, we conduct standart deviation analysis. The underlying idea behind these alternative approaches is that the standard deviation underlying the z-score gives only a part of the information about the behavior of z-scores (Hesse and Cihak,2007; Cihak and Hesse, 2008). As a second step, we use regression analysis to see some additional factors that explain bank-to-bank variation in z-scores. In this step, fixed effect panel regression model will be applied. The spefication model of fixed effect model (FEM) is bellow:

Where the dependent variable is the z-core, as explain above. All of the independent variabel reflect industry variabel for all banks. There are total asset for bank i at time t , credit to asset ratio (CA) for bank i at time t , cost to income ratio (CI) for bank i at time t and income diversity for bank i at time t . CA is percentage of total credit to total asset of each bank. For Islamic banks, credit activity refers to lending with the Murobahah and Mudharobah scheme. CI is percentage of total operational cost to total operational income and ID is income diversity. Income diversity is usefull to control for differences in the structure of the bank's income (Laeven and Levine, 2005; Cihak and Hesse, 2008). This variable captures the degree to which banks diversify from traditional lending activities (those generating net interest income) to other activities (Cihak and Hesse, 2008). Income diversity measure is defined as follow:

For Islamic banks, net interest income replace by income from fund disbursement. Higher value of ID variable, correspond to a higher degree of diversification.

Our data set including four Islamic Banks, there are Muamalat Bank, Bank Syariah Mandiri, Bank Syariah Bukopin and Bank BRI Syariah. The availability of data series is the reason we use the banks sample. Due to, only four Islamic banks that have more than 30 series data (quarterly). For conventional banks, we use also four banks sample, there are Panin Bank, OCBC Bank, Index Selindo Bank and Agris Bank. that they are relatively same in category based on core capital which grouping on General Bank Business Classification (Bank Umum Kategori Usaha/BUKU). The source of data is from the quarterly financial report from each bank, for 2008q1 – 2016q2. Length of the data series can showing the variability and volatility of the stability score.

Result and DiscuSSION

In the first step we will discuss about z score, test equality of mean between Islamic and conventional banks.The basic data analysis suggest that conventional banks may be more stable than conventional banks. Conventional banks z score on average higher than Islamic banks (Table 1).

Table 1: Test of Equality of Mean

Variable	Islamic Banks	Conventional Banks
Z-Score	12.807	41.148***
Credit to Asset (%)	70.402***	64.797
Cost to Income (%)	88.369**	84.677
Income Diversity	0.22	0.23
Total Asset (Trilyon Rp)	23.8	49.03*

Source: Author calculation

Note: The difference between value of commercial and Islamic bank at 95% confidence level is significant at 10% (*) ; at 5% (**); at 1% (***)

The lower z score Islamic banks on average caused by the lower value of ROA, Equity to Asset Ratio and the higher of standar deviation. We have calculate ROA, Equity to Asset Ratio

(E/A) for Islamic and conventional banks at the sample period.

Table 2: Descriptive Statistic for ROA and EA

	Islamic Banks	Conventional Banks
Mean ROA	1.12	1.56
Stdev ROA	0.49	0.20
Mean E/A	9.41	14.95

Source: author calculation

Table 1 shows, even z score Islamic banks lower than conventional banks, however, Islamic banks have on average higher loan to asset ratios than conventional banks. This condition reflecting the fact that Islamic banking prohibits of investment in non-lending operations such as regular bonds, exchange market and derivative or trading asset.

Islamic banks have higher cost to income ratio than conventional banks. This result suggest that Islamic bank in the sampel period relatively less efficient than conventional banks. But this result have to more analysis using particular tools, especially in term of efficiency analysis. However, at least, this finding also support the previous study, which found that Islamic banks are less efficient than conventional banks, such as Mokhtar, Abdullah and Alhabshi (2006) and Johness, Izzeldin and Pappas (2012).

For the income diversity, there is no significant difference between Islamic and conventional banks. The lower value of income diversity showing that, both Islamic banks and conventional banks still depend on the tradional (lending) activity in order to maximize their profit. In the other words, both of bank not maximizing yet the other source of income, such a fee based and transaction banking.

To examine the finding in the previous step, we have also used another way to measure stability of z score. Stationerity test of z score were conducted to measure the stability z score both of banks. The stationary of data is data which have a mean, variance and autovariance remain constant at any time the data was created or used. When the data are stationary, meaning that the data can be said to be more stable

Following Hassan, Fachin and Guendoz (2012), unit root test by applying ADF-GLS were conducted to tes the stationarity of z score both of banks. As present at the Table 3, z score for Islamic banks look non stationary in the level (ADF t stat < Mc Kinnon Critical Value at 5%). In the opposite, z score for conventional stationary in the level (ADF t stat < Mc Kinnon Critical Value at 5%). Based on ADF test, due to z score for conventional has stationary and z score for Islamic banks has non stationary, so that, we conclude that z score for conventional banks may be more stable than Islamic banks. These result confirm the result of test quality of mean in the previous step.

Table 3: Stationarity Test for Z Score

Z Score	Test for unit root in	ADF t Stat	Critical Value (5%)
Islamic Banks	Level	1.928869	2.963972
Conv Banks**	Level	3.046459	2.957110

Source: Author Calculation

The result above are usefull to compare the stability between Islamic and conventional banks, but may overlook some additional factors that explain bank-to-bank variation in z-scores. Therefore, we will examine this issue more formally using regression with Fixed Effect Model (FEM).

Table 4: Regression Result (Fixed Effect Model)- Dependent Variable: Z Score

Variable	Coefficient	P Value
Islamic Dummy	-24.392***	0.000
Asset	4.808*	0.054
Credit to Asset (CA)	-0.0157	0.750
Cost to Income (CI)	-0.0658*	0.078
Income Diversity (ID)	3.151	0.645
Income Diversity-Islamic	0.3024	0.969
Constant	38.9341	0.000
Observation	260	
R-squared	0.8842	

Source: Author calculation

These regression result identify that factors are significant in determining z score both of banks are, Islamic dummy, total asset and cost to income ratio. Even the other variable are not statistically significant, but they have generally the expected signs.

A negatif relation and statistically significant at 1% level for Islamic Dummy confirm from the simple comparison of test of equality of mean and stationarity test, that conventional banks tend to more stable than Islamic banks. These result confirm the first step due to the larger difference in mean of z score between Islamic and conventional banks.

Total asset have significant effect at 10% level and a positive relation to banks stability. More higher the asset of a bank, these bank will tend to more stable than the smaller one. Due to, the main business of the banks is manage for a risk, the greater the bank's assets, the greater the ability to absorb risk and improve the stability of the bank. This found support Cihak and Hesse (2008) finding, that total asset have a positive relation and significant effect to bank stability.

Variabel credit (loan) to asset ratio have a negative sign but statistically not significant.

Even there is no significant effect, but this variable have a correct sign. The same result also found by Cihak and Hesse (2008), if all of banks (Islamic and conventional banks) be a regressor in one model, variabel credit to asset ratio have a negative sign but not significant effect. If a bank have a high in credit (loan), this bank will more probable to insolvent due to probability of default from credit activity.

Variable cost to income ratio have a negative and significant effect at 10% level. banks with higher cost to income tend to have lower z-scores. Cost to income ratio as a proxy of efficiency. The greater cost to income ratio, banks will increasingly inefficient. inefficiency will lead to increased operating costs, thereby decreasing profitability and will result in lower z score

Income diversity have a negatif impact but statistically not significant. This variabel have a correct sign influence to bank stability. A small influence on the z score showing that both of banks still depend on traditional or lending activity to maximize profit. Non operating income, have not been maximized. For Islamic banks, income diversification also have no effect to bank stability. These result proving that Islamic bank in Indonesia, have not been maximized not operating income to generate profit.

Conclusion

In this paper we have presented an empirical study about the comparison of financial stability between Islamic and conventional banks and the factors influence. We conduct two step, in the first step we use statistic descriptive analysis to see the different stability. Using test of equality of mean, noted that Islamic banks are lower stable than conventional banks. To confirm the result of

statistic descriptive analysis, we also conduct the stationarity test to measure the stability of z score. The result of stationarity test also support the previous finding, that conventional banks in this sample are more stable than Islamic banks. We also conducting regression analysis, fixed effect model to identify the factors that influence the stability. The factors that have significant effect to banks stability are Islamic dummy, size bank (total asset) and cost to income ratio. The other variables that are credit to asset ratio, income diversity and income diversity for Islamic banks has no significant effect to stability. The limitation of this study are the availability of the data series for Islamic banks and the model specification. In the further research, we suggest for using more sample of bank and conducting Dynamic Panel Data Analysis.

Acknowledgement

Gratitude and big appreciation to Kinanti Z Patria who help in collecting the data. The main well to the Chair of Committee and Chair of Scientific Commite of ICIMM 2016, Dr. Adiatma Siregar and Prof. Dr. Tati S Joesron that have been offered an opportunity for the author to a presenting our paper.

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