

## Why do Indonesian Islamic Banks Take the Risk?: The Case of Two Major Islamic Banks

Yaser Taufik Syamlan

STEI Tazkia, Indonesia, [yasersyamlan@tazkia.ac.id](mailto:yasersyamlan@tazkia.ac.id)

Ar Rizal Azinuddin

STEI Tazkia, Indonesia, [ar.azinuddin@student.tazkia.ac.id](mailto:ar.azinuddin@student.tazkia.ac.id)

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### Abstract

This study aims to analyze the effect of bank size, deposit guarantee system, number of competitors, leverage, and bank age on the risk-taking behavior of Islamic banks in Indonesia at the period of 2001-2016. Risk taking is projected to Financing to Asset Ratio (FAR). The deposit guarantee system is proxied by deposit guarantee using a dummy variable. The number of competitors is proxied by the market value of Islamic Banking. Leverage is proxied by the total of third party funds. Bank Age is proxied by bank age according to the 2001-2016 period of study. This study uses secondary data from published financial reports and uses panel data regression methods. The samples are two pioneers of Islamic Bank in Indonesia, namely Bank Muamalat Indonesia and Bank Syariah Mandiri. The results of this study show that Bank Size has a positive effect on risk taking. As a result also applies to the number of competitors and Bank Age. Only Deposit Insurance variable that has a positive but not significant influence and Leverage variable has the significant negative effect. In conclusions, the Islamic bank takes the risk due to the tight competition, the age of bank, the amount of third party fund collected and the asset of the bank.

**Keywords:** Risk Taking, Islamic Banking, Bank Size, Leverage, Deposit Insurance

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## Introduction

Bank as an intermediary institution from surplus unit to deficit unit, has an important role in the community. It takes a careful consideration to run the bank business because it will always be tangent to the risks that will be faced by the bank (Werner, 2016). Public trust in banking is the key to maintain national banking stability, and this can be achieved through the existence of legal regulations, bank supervision, and deposit guarantees for bank customers to keep the bank business healthy. One of the factors in which risks arise in bank activities is the risk-taking by bank management (Hussein, 2010).

The event of the crisis that occurred in Indonesia in 1997-1998 is a history and an important lesson that shows trust is the main key in the relationship of banks with the public. One of the 1997 crisis impacts is that Bank Indonesia was assisted by the IMF to liquidate 16 unsecured banks. This led to bank runs that occurred in some private banks and loss that reached half the GDP of Indonesia. But Bank Muamalat Indonesia as the only Islamic bank was relatively strong to withstand the crisis. Although it only operates without progress, at least the bank did not go bankrupt. This multidimensional crisis caused a decline in the value of Rupiah, the liquidation of 16 banks, and the decline in public trust toward the national banking system. To that end, the Indonesian government issued a blanket guarantee policy governing the government guarantee of all obligations (third party funds) of commercial banks and rural banks (Nasution, 2000). This policy is also intended as an effort to improve banking performance and strengthen the bank's capital structure and reduce the negative impacts caused by bank runs events. Blanket Guarantee is granted without limitation on the amount of customer deposits in the bank and implemented by the Indonesian Bank Restructuring Agency (1998-February 2004) in cooperation with the Ministry of Finance through the Government Guarantee Implementation Unit (since 27 February 2004). Based on the paradigm, as well as the existence of empirical reality that shows many conventional banks are not able to survive in the financial and monetary crisis struck, the government hence amend Law Number 7 year 1992. There are changes on some matter content Act Number 7 of 1992 set forth in Law Number 10 year 1998. This law reinforces the existence of Islamic Banking in Indonesia (Anshori, 2008)

Blanket Guarantee shows a positive implication in restoring public trust in the banking system, but on the other hand the guarantee causes a financial burden for the state and more moral hazard potential for banks. Therefore, the Government of Indonesia through the Banking Act no. 10 year 1998 section 37 b reduces the scope of underwriting by changing the policy of the

blanket guarantee to a limited guarantee. For the sake of the underwriting, the Government established the Deposit Insurance Agency (LPS) on September 22, 2004, legalized through Law no. 24 Year 2004. LPS is a deposit guarantor institution form based on the Law Number 24 Year 2004 regarding Deposit Insurance Agency as amended by Act Number 7 of 2009. Past research has proved that the implementation of the deposit guarantee system raises the moral hazard in the form of increased bank decisions in adding risky assets or in this case the Loan to Asset Ratio (LAR) ratio. Increased LAR is a sign of decreasing the quality of bank assets through higher risk taking (Chernykh& Cole, 2011).

The birth of Law No. 10 of 1998 on amendment to Law No. 7 of 1992 concerning banking, has enabled the Islamic bank to operate fully as an Islamic (BUS) Commercial Bank or by opening an Islamic Business Unit (UUS). Bank SyariahMandiri was born (a conversion from Bank Susila Bakti) and UUS Bank IFI. At the end of 1999, the total assets of Islamic banks in Indonesia only reached Rp1.12 trillion or about 0.11% compared with the conventional bank assets (Anshori, 2008).Then, there were several other Islamic banks, in December 2002 there were 2 BUS and 6 UUS, with total assets reaching Rp4.05 trillion. On December 16, 2003, the Indonesian Council of Ulama (MUI) issued a fatwa on the haram of bank interest that caused the inorganic growth. As of December 2004, the total of Islamic banks reached 3 BUS and 15 UUS with total assets of Rp15.33 trillion (Mukhlisin, *et al.*, 2015).

Banks that have high leverage, have a high risk as well. This explains when banks are fully secured by the government, banks tend to seek more assets with the aim of increasing return on equity by using third-party collected funds (Kunt & Detragiache, 2002). Based on above background, the research questions are as follows:

1. Does bank size have a significant effect to risk taking?
2. Does deposit insurance have a significant effect to risk taking?
3. Does bank competition have a significant effect to risk taking?
4. Does leverage have a significant effect to risk taking?
5. Does bank age have a significant effect to risk taking?

## Literature Review

### Theory of Risk Taking

Many researchers that discussed the theory of risk taking cited the work of the Boyd and Nicollo (2005) whereas the propose new terms “fundamental risk-incentive mechanism” that happened in banking Industry; or in this case conventional and Islamic bank System. Above mechanism exist on the asset side of banking whenever bank channeled their deposit that taken from depositors to the credit (Boyd & Nicolo, 2005). In the case of Islamic bank, this mechanism also occurred whenever IBs approved new financing proposal from customer by way of equity based financing of *Musyarakah* and *Mudharabah*, debt based of *Murabaha*, as well as the lease based financing of *Ijarah* or *Ijarah Muntahiyya Bit Tamleek*.

The risk taking that befalls in the asset side is basically driven by the deposit market competition according to Boyd and Nicollo (2005). The bad side of deposit market competition that stated by Boyd and Nicollo (2005) is a resultant of the government policy that impose the Deposit Insurance to gain and maintain the depositors trust on the banking system. To that extent, the term risk – incentive mechanism is rooted from the decision of government to give guarantee over the deposit product such as current account, saving account as well as the term deposit. Furthermore, deposit guarantee at the end pushed banks including the Islamic bank to take more risk which also create the moral hazard.

The risk taking process is also happened in Islamic bank. Alam & Tang, 2012 has observed that according to the prospect theory. Islamic Bank in the context of prospect theory still has rational in making their risky financing decisions but unveil different level of risk takingsubject to the target of outcome. Moreover, the investment of Islamic bank mainly on the financing the customer either on the productive sector that improve the economy or financing the consumptive sector to cater personal client necessity need like housing, car, or even education cost. Alam & Tang ( 2012) used Net Loans to Total Asset Ratio (NLTAR) which calculate the net financing derived from equity based, debt based and leased based financing divided to the total Islamic bank asset. This ratio also can be called as Financing to Asset Ratio (FAR).

## Variables that Influence Risk Taking

There are some variables that influence the risk taking namely bank size, deposit guarantee system, bank competition, leverage and bank age with below literature:

### 1. Bank Size

According to Hakenes & Schnabel (2011) and Hughes, *et al.* (2001) the bank size or in this case the economic scale of the bank have strong relationship to the risk – taking. Bigger bank size may add more risk-taking behavior since they have more fund than the smaller bank. Moreover, it proved that there is a significant positive influence between Bank Size on the risk taking preference. The higher the assets or assets owned by a bank, the higher the volume of credit that can be channeled by the bank, in other words the tendency of banks to take greater risks. However, internally the big banks have tendencies to diversify their financing portfolio than smaller size banks due to their stronger capital structure.

Hypothesis 1: "There is a positive influence between Bank Size on Risk Taking"

### 2. Deposit Guarantee

Based on Boyd & Nicollo (2005) the birth of deposit guarantee system may cause asymmetric condition of information, bank managers and or shareholders tend to prefer higher levels of risk with the expectation of higher returns. This situation will get worse when public guarantees of third party funds are available either explicitly or implicitly which will lead to moral hazard issues (Ngalawa, *et al.*, 2016). The government guarantee program has indeed had a positive effect on the banking sector as seen from the flow of public funds that gradually re-entered the banking sector, the panic that has occurred has been eased.

Hypothesis 2: "There is a positive influence between Deposit Insurance on Risk Taking"

### 3. Bank Competition

According to Cubillas & González (2014) the financial liberation will affect the bank behavior to take risk or in this case giving more financing to the customer. Financial liberation that is represented by the number of banks in banking industry will promote the sturdier bank rivalry. By that, the stiffer competition will make banks (both conventional and Islamic bank) try hard to select and analyze more prospective clients before giving finance to

them. In conjunction to that, Cetorelli & Peretto (2012) stated that more banks in a country will result more finance that can be given to the customer or in this case will boost the ratio that used in this research; Net Loans to Total Asset Ratio (NLTAR). All in all, we can conclude the next hypothesis that relates to the competition below:

Hypothesis 3: "There is a positive influence between Bank Competition on Risk Taking"

#### 4. Leverage

According to the Werner (2016) banks including the Islamic banks operated under the intermediation theory where bank collected leverage from depositor to be channeled into the debtor in form of productive or consumptive financing. The leverage; in the Islamic banking context current account & saving account based on *wadiah/mudharabah* as well as *mudharabah* term deposit (Ismael, 2014) have positive relationship to the on Financing to Asset Ratio or FAR (Cubillas & González, 2014; Hamidah, *et al.*, 2015; Nițescu & Duna, 2016). This means when leverage rises, banks are more likely to take risks by extending excessive credit. Banks with high leverage ratios have a high risk when the bank is fully secured by the deposit insurance agency.

Hypothesis 4: "There is a positive influence between Leverage on Risk Taking"

#### 5. Bank Age

Past research proves that the experience or the age of the running company triggers risk taking by way of making investment for better company performance in the future. The age of the company is one of the most important factors that determines the growth of the company, the diversity of growth of the company and the possibility of the company can be dissolved. The age of the company is one of the important attributes on the company's performance, because it explains the experience owned by the company in managing the company (Yildiz, *et al.*, 2013).

In the case of banking business, according to Bouwman & Malmendier, 2015, the bank tend to take more risk whenever the economy is on the boom cycle and take less risk when the bust economy happened. in the context of this research, two banks that selected as the sampel have passed both boom and bust economic cycle and fit to be scrutinize in the matter of risk taking behavior.

Hypothesis 5: "There is a positive influence between Bank Age on Risk Taking"

## Previous Studies

Boyd and Nicollo (2005) made some mathematical model that derived from an assumption that the government policy at the end will affect the banking competition. The kind of policy that might influence it is deposit guarantee. The deposit guarantee will provide an asymmetric information where bank will utilize the proceed from third party fund to expand their balance sheet by giving financing to the debtors. The exploitation thru credit drawdown done by bank due to the guarantee that government provide to the depositors or in other word, government will handle the depositors fund even if the loan that disburse to financing customer default.

Alam and Tang (2012) introduced a ratio that called Net Loan to Total Asset Ratio (NLTAR) to measure the risk taking behavior that Islamic bank have taken during the observe period. The NLTAR or in this research termed as Financing to Asset Ratio ( according to Hamidah,*et al.*, n.d.)is the amount of loan both productive as well as consumptive loan in any segment divided the total asset. The credit data that used by authorare financing by way of equity based, debt based and lease based contract. The research used prospect theory as analysis approach and found that Islamic bank are averting the risk. It is also found that 99 Islamic bank over the world who had higher NLTAR or FAR tend to take lower risk.

Hamza & Saadaoui (2013), which studied 59 banks all over the world between period of 2005 – 2009, found that the risk- taking might be lowered when Islamic banks offered the profit sharing investment account (PSIA). PSIA has value proposition of risk sharing as well as more discolsure to hinder the assymetric information. This research used GMM method and recommend that Islamic bank should operate under the profit and loss sharing system to normalize the risk-taking behavior.

Hamidah,*et al.*, (n.d.) studied 4 stated owned bank using linear regression and found that the deposit guarantee and bank size have positive and significant impact to the risk taking or in this case Financing to Asset Ratio (FAR)

## Methodology

### Data

This research uses quantitative research method in the form of data processing through annual report of Islamic bank to get complete and accurate data in research target. The object of this research is Islamic Banking which is registered in Financial Services Authority or OJK and Bank Indonesia and has a complete financial report from 2001 to 2016 period. This study applies the Panel Data Regression to scrutinize, as well as to prove, the hypotheses development. Based on stipulated criteria, the sample of the research are Bank Muamalat Indonesia(BMI) and Bank SyariahMandiri (BSM). This paper will use 5(five) variables which have proxy as follows:

- a. Bank size; Bank size measure using Natural Logarithm Total Asset;
- b. Deposit Insurance; 0 = blanket guarantee & 1 = Limited Guarantee;
- c. Bank Competition; Comparison of Islamic bank asset in the study to market share in the concerned period;
- d. Leverage; natural logarithm Proportion of Total Third Party Funds received by the bank (current account, saving account, time deposit) in IDR; and
- e. Bank Age; the age of bank in year.

### The Panel Data Regression

This research is processed using the panel data analysis due to the cross section data. Data Regression Panel is a combination of Cross Section data and Time Series data, where the same Cross Section unit is measured at different times. So in other words, panel data is data from several of the same individuals observed in a given period of time. In the Data Panel regression analysis method, the model equation using Time Series data can be described in detail as follows:

Models with time series data

$$Y_t = \alpha + \beta X_t + \epsilon_t; t = 1, 2, \dots, T$$

N: Number of time series data

While the model equation using Cross Section data can be described in detail as follows:

Models with cross section data

$$Y_i = \alpha + \beta X_i + \epsilon_i; i = 1, 2, \dots, N$$

N: Number of cross section data

Because the panel data regression analysis method is a combination of data between Time Series data and Cross Section data, the model can be described in detail as follows:

$$Y_{it} = \alpha + \beta X_{it} + \epsilon_{it}; i = 1, 2, \dots, N; t = 1, 2, \dots, T$$

info:

N: Number of observations

Q: Number of times

N x T: Number of Data Panels

## Result and Analysis

### Results

#### 1. The Chow Test

The Chow test is conducted to estimate the most suitable model between fixed effect model and fixed coefficient (Pooled Least Square). The hypothesis submission of chow Test is as follows:

H0: Pooled Least Square

H1: Fixed Effect Model

In the best model test using Chow Test, it can be seen from the probability value (Prob.) For Cross-Section F. If the Prob. value > 0.05 then H0 is accepted and the selected model is PLS, if the Prob. Value < 0.05 then the selected model is FEM. Thus, these are the results of data processing from panel data regression with Chow Test Table:

**Table 1.**The Chow Test Result

Prob. > F	0,1474
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Source: processed data.

In table 1 above, note that the Prob.value is 0.1474 > 0.05 which means significant at the 5% level, then H0 is accepted and H1 is rejected. The Chow test result selected model is Pooled Least Square (PLS).

#### 2. The Hausman Test

The Hausman test aims to estimate the most suitable model between the fixed effect model and the Random Effect Model (REM). The hypothesis submission of Hausman Test is as follows:

H0: Fixed Effect Model

H1: Random Effect Model

If the value (Prob. > Chi2) is greater than the significance level (5%) then the received H0 or Random Effect Model is more appropriate than the Fixed Effect Model. However, if the value (Prob. > Chi2) is less than the significance level (5%) then the received H0 or Fixed Effect Model is more appropriate to use than the Random Effect Model. The result of data processing from panel data regression with Hausman test is as follows:

**Table 2.**The HausmanTest Result

Prob. >Chi2	0,3890
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Source: processed data.

Based on table 2 above, it can be seen that Prob. > Chi2  $0.3890 > 0.05$  which means not significant from 5% of real level. From Hausman's test results, it is known that the value (Prob. > Chi2) is 0.3890. From this result it can be concluded that Random Effect Model is more appropriate than Fixed Effect Model. The next step is to test whether Pooled Least Square or Random Effect Model is better to use by performing the Lagrange Multiplier Test (LM Test).

### 3. The LM Test

After passing Hausman and Chow test, Researchers still have to do the LM test because there is no prominent model. This test is performed to select the right model for this research, between Pooled Least Square or Random Effect Model with the following hypothesis:

H0: Pooled Least Square

H1: Random Effect Model

If the value (Prob. > Chi2) is greater than the significance level (5%) then the accepted H0 or Pooled Least Square is more appropriate to use than the Random Effect Model. However, if the value (Prob. > Chi2) is less than the significance level (5%) then the received H0 or Random Effect Model is more appropriate to use than the Pooled Least Square. From the results of Lagrange Multiplier (LM Test), it is known that the value (Prob. > Chi2) is 1,000. From this result it can be concluded that Pooled Least Square (PLS) is more appropriate to use than the Random Effect Model (REM). To see the complete statistical result of these test, please refer to the appendix 1, appendix 2, and appendix 3.

**4. The Determination Coefficient Test (R2)**

**Tabel 3.**The Determination Coefficient Test (R-square)

Effects Specification			
R-squared	0.414250	Mean dependent var	0.749025
Adjusted R-squared	0.301605	S.D. dependent var	0.055127
S.E. of regression	0.052573	Sum squared resid	0.071861
F-statistic	3.677502	Durbin-Watson stat	1.806623
Prob(F-statistic)	0.011938		

Source: author (2018)

The following test results coefficient of determination or R-square can be seen in Table 3. The coefficient of determination can be known by looking at R-Square. The coefficient of determination shows the proportion of variation of the dependent variable which can be explained by the independent variable. Based on Table 3 above, it can be seen that the R-Square in this study amounted to 0.414250 or 41%. These results indicate that the dependent variable of risk taking is 41% influenced by independent variables, while the rest is 59% influenced by variables or factors outside the model of this study.

**5. The Simultaneous Significance Test (F-test)**

F test is performed to find out whether the variable of Bank Size, LPS, Bank Competitor, Leverage, Bank Age simultaneously have an effect on the specified variable that is risk taking.

**Tabel 4.**F-test

Prob. (F-statistic)	0.011938
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Based on Table 4 above, note that the prob value (F-Statistic) is 0.011938 to the value of significance <0.05 of real level, then H0 is rejected, so in conclusion there is an influence from Bank Size, Deposit Insurance, Bank Competitors, Leverage, Bank Age simultaneously towards risk taking.

## 6. The Partial Significance Test (t-Test)

Tabel 5. t-Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BANK SIZE	0.343782	0.123767	2.777648	0.0098
LPS	0.001878	0.043267	0.043406	0.9657
BANK COMPETITOR	0.143724	0.033508	4.289294	0.0002
LEVERAGE	-0.324345	0.125525	-2.583909	0.0155
BANKAGE	0.114503	0.020080	5.702304	0.0000
C	1.852645	0.450087	4.116191	0.0000

Partial significance test conducted to determine the effect of independent variables on individual dependent variable. T test can be seen from the level of significance of each variable, if the significance value  $<0.05$  then the independent variables affects the dependent variable.

Based on Table 5 above, it can be seen that all independent variables have a significant effect on risk taking, there is only 1 variable that has no significant effect that is deposit guarantee with the value of 0.9657. The highest value of the significant variable of 0.9657 (deposit guarantee) and the lowest value of 0.0000 (Bank Age). Bank Size variable has positive and significant effect to risk taking with a probability value of 0.0098  $<0.05$ . LPS variable has no positive effect and is not significant to risk taking with a probability value of 0.9657  $<0.05$ . Then, Bank Competitor variable has positive and significant effect to risk taking with a probability value of 0.0002  $<0.05$ . Furthermore, Leverage variable have a negative and significant effect on risk taking with a probability value of 0.0155  $<0.05$ . The Bank Age variable has a probability value of 0.00000  $<0.05$  indicating that Bank Age has a positive and significant effect on risk taking.

### Analysis

H1: There is a positive influence between Bank Size on Risk Taking

In table 5 it is known that the probability value of Bank Size is 0.0098, therefore it can be concluded that Bank Size has a positive and significant effect on risk taking. This indicates that there is a bank size intervention in risk taking behavior undertaken by the banks. This can be seen from the size of banks that have large assets, tend to give credit in large numbers, and can potentially be a moral hazard.

There are studies with similar results among others, explaining that bank size is one of the variables that affect the possibility of moral hazard in the state-

owned conventional banks in Indonesia. Banks that have large sizes tend to provide capital easily and if not well controlled, then moral hazard will arise due to the function of banks as business partners, by increasing profits (Hamidah, Sudarto, & Jati, 2015). This research found that Bank Size has a positive and significant effect on risk taking proxied with Loan to Asset Ratio.

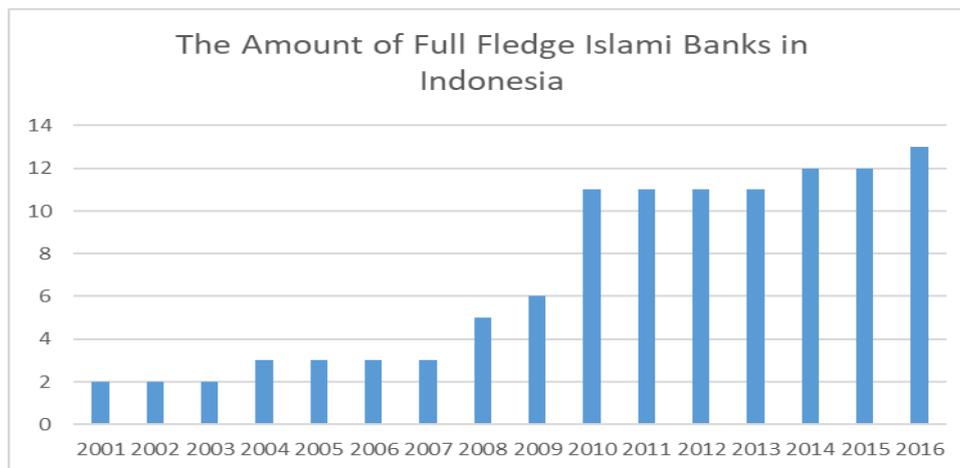
H2: There is a positive influence between deposit guarantee on Risk Taking

Based on Table 5, it can be seen that the effect of the Guarantee System using coverage limit is positive and insignificant on risk taking with a probability of  $0.9657 > 0.05$ . So it can be concluded that the deposit guarantee system using the coverage limit policy does not affect the risk taking behavior in Islamic Banking in Indonesia. This is not in line with the previous research showing that coverage limit has a positive and significant impact on risk-taking preference in state-owned banks in Indonesia (Hamidah et al., 2015). They mentioned that the change in policy from blanket guarantee to coverage limit could affect the risk taking preference of state-owned banks in Indonesia. Thus, the results of this study can not answer the second hypothesis. This is because of the difference in the object and the number of samples. Also, the policy of financing in Islamic banks does not approach moral hazard due to the different system and financing stages in Islamic banks. There is an additional principle that is the halal aspect of the party who applied for financing. Which in this case, can reduce the level of possibility of moral hazard in Islamic Banking industry.

H3: There is a positive influence between Bank Competitive on Risk Taking

Based on Table 5 it can be seen that the influence of Bank Competition is positive and significant towards risk taking with a probability of  $0.0002 < 0.05$ . So it can be concluded that Bank Competition in Islamic Banking have an effect on risk taking preference. This indicates that the more the number of banks, the higher the policy of Islamic banks in taking risks, in this case the banks are encouraged to take more risks because there is a level of competition. This is in line with the previous research, that the level of bank competition has a positive effect on risk-taking by the banking industry (Boyd & De Nicolo, 2005; Cubillas & González, 2014; Huang & Lee, 2013). The study explains the influence of competition on risk-taking from banks. So the hypothesis H3 can be answered.

**Tabel 6.** Growth of Total Full Fledge Islamic Baks in 2001-2006



Source : OJK-StatistikPerbankanSyariah (SPS) 2016

In this case, BSM and BMI became the major players in the Islamic Banking industry from 2001 to 2004. After that in 2005 to 2008 the competition was getting tighter because there were 5 Islamic banks in the industry. It became the peak and a beginning of a new era of Islamic banks since the presence of Law no. 21 of 2008, the business is busy because of the new competitors either it is in the form of Islamic Commercial Bank (BUS) or Islamic Business Unit (UUS). Furthermore, this is in line with research from Cubillas& Gonzales (2014) which states that many competitors will make the financing market become tighter. A bank that can offer a competitive margin will win the competition.

H4: There is a positive influence between Leverage on Risk Taking

Based on Table 5 it can be seen that Leverage influence which is the total third party fund is positive and significant towards risk taking with a probability of  $0.0155 < 0.05$ . So it can be concluded that leverage in Islamic banking has an effect on risk taking preference. This is in line with previous research showing the effect of Leverage on risk taking with positive and significant results. The object of research in the previous study calculated the risk preference in state-owned banks (Hamidah,*et al.*, 2015). That is when the Third Party Fund (DPK) rose, the provision of financing tend to go down or can be said to falter. This is in contrast with a research that states after the deposit guarantee, total deposits from third party funds increased so that banks are able to distribute more credits. Banks with high leverage ratios have a high risk when the bank is fully secured by the deposit insurance agency (Celerier, *et al.*, 2016; Dell’Araccia, *et al.*, 2014)). The incompatibility of the results of this study is a natural thing considering that

the previous research took samples from conventional banks while this study took Islamic banks as objects. In principle, according to (Ahmad, 1993), financing in Islamic banks is very different from the character with conventional banks. Islamic banks puts the principle of *halal* and *thoyyiban* forward, when channeling the financing (Ahmad, 1993). The financing selection process should consider the halal aspect of the customer's business. After that, the needs of customers cannot be directly accommodated because Islamic banks are obliged to understand the customer's business first and then select the appropriate contract of the business. This is not the case in conventional banks because the used system is not considering the halal aspect of the customer's business because the most important aspect is only the feasibility of repayment. In Hamidah's research (2015), Leverage has a positive effect which means that when the DPK rises it can be directly channeled into financing.

H5: There is a positive influence between Leverage on Risk Taking

Based on Table 5 it can be seen that the influence of Bank Age which is the Islamic bank's age is positive and significant towards risk taking with a probability of  $0.0000 < 0.05$ . So it can be concluded that Bank Age in Islamic Banking has an effect on risk taking preference. This is in line with the previous research, that the bank's age, or bank history has a positive and significant impact on risk-taking in conventional banking (Bouwman & Malmendier, 2015). In this case, both in Islamic banks and conventional banks, the older age of a bank gives a positive impact because the business experience also increases. In addition, in the case of BMI and BSM who became the object of this study, it also has an effect on the amount of financing.

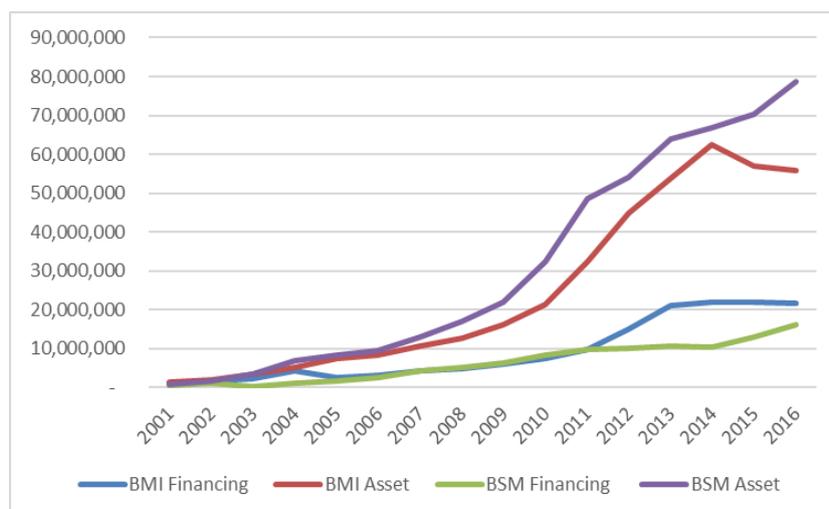


Figure 1. The development graph of total assets, financing at BSM BMI  
Source: BMI and BSM Financial Report

From the data above, the increasing of the operating age of banks, also affects the increasing amount in DPK or third party fund. The increase in total deposits will ultimately increase the total assets. In addition, the rise in DPK also makes BMI and BSM able to boost their financing, according to the charts through the increasing trend. In the end bank risks will also increase because of the various assets used in the financing are also getting larger from year to year.

All in all, Based on table 4, the assessment of the whole variables with a probability value of 0.011938 so that the significance value is  $<0.05$  of real level. So the conclusion there is an influence from Bank Size, deposit guarantee, Bank Competitors, Leverage, Bank Age toward the simultaneous risk taking. The results of this study cannot prove hypothesis H6. Where all the independent variables have a positive effect on the dependent variable. This is because there is one variable that is not significant to the risk taking, which is deposit guarantee. It confirms the difference between Islamic banks and conventional banks because only one variable which is Leverage (DPK) that has a negative notation due to the reason like the different financing procedures in Islamic banks and conventional banks.

## **Conclusion and Recommendation**

### **Conclusion**

The objective of this study to find evidence related to the influence of dependent variable that is risk taking, to independent variable that is Bank Size, deposit guarantee, Bank Competitor, Leverage and Bank Age. The object used in this research is Islamic Banking registered in Bank Indonesia (BI) with 15 year period from 2001-2016. The results are (1) Bank Size proved to have a positive effect on risk taking. The size of the banking sector will indirectly increases the risk taking. Thus, it can be seen that the size of banking shows how much risk preference is taken by the banking system (2) Deposit Insurance proved to have positive but not significant impact on risk taking. This shows that if the coverage guarantee system as in coverage limit conducted by deposit guarantee in Islamic Banking rises, risk-taking preference also increases. However, Deposit Insurance variable has no significant impact on the risk taking of Islamic Banking. (3) Bank Competition proved to have a positive and significant impact on risk taking. This shows that banking competition can increase risk taking preference in Islamic Banking. (4) Leverage has a negative and significant impact on risk taking. That means if the value of Leverage increases, then the risk preference made

by Islamic banks is reduced. This is because when it comes to Islamic banks, in performing the financing function there are very strict stages from various aspects, especially aspects that pay attention to the halal aspect - an effort from the proposed financing, in contrast to the stage of financing in conventional banks. (5) Bank Age has a positive and significant impact on risk taking. That means if the age of the bank grew, then the Islamic bank tends to be more daring in risk taking preference.

## **Recommendation**

Based on the above result, there are two recommendations which are:

1. For the future research, this topics can be broaden by omitting the variable of deposit guarantee. It seem logic since only two Islamic bank in Indonesia, namely Bank Syariah Mandiri (BSM) and Bank Muamalat Indonesia (BMI), who have experience in both limited guarantee as well as blanket guarantee. The omission of that variables may give more findings that will be benefit to the Islamic bank Industry
2. For the Regulator in this case Indonesia Financial Authority (OJK), as per advised by the Hamza & Saadaoui (2013), the PSIA can be solved the matter of excessive risk taking by Islamic bank since the risk can be shared among investors and Islamic banks. Moreover, PSIA will reduce the asymmetric information that is now occurred in Islamic bank. To this extent, OJK can implement the work of Syamlan (2018) which is the first who write the investment account for Indonesian Islamic Banking.

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## Appendix

### Appendix 1: Chow test

```
. xtreg far banksize lps bankkompetitor leverage bankage, fe

Fixed-effects (within) regression           Number of obs   =       32
Group variable: semuaperba~n              Number of groups =        2

R-sq:  within = 0.2657                     Obs per group:  min =       16
        between = 1.0000                    avg =            16.0
        overall = 0.1056                    max =            16

                                           F(5,25)         =       1.81
corr(u_i, Xb) = -0.9497                    Prob > F         =       0.1474
```

far	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
banksize	.1697207	.2499971	0.68	0.503	-.345158	.6845994
lps	.0669947	.0382837	1.75	0.092	-.0118519	.1458414
bankkompetitor	.2190157	.2004466	1.09	0.285	-.1938117	.6318432
leverage	-.0978605	.2032728	-0.48	0.634	-.5165088	.3207877
bankage	-.0206244	.0129978	-1.59	0.125	-.0473938	.006145
_cons	-1.294935	1.585337	-0.82	0.422	-4.559998	1.970128
sigma_u	.16227					
sigma_e	.05232591					
rho	.90581209	(fraction of variance due to u_i)				

```
F test that all u_i=0:      F(1, 25) =      12.39          Prob > F = 0.0017
```

```
. est sto fem
```

## Appendix 2: Hausmann test

. hausman fem rem

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fem	(B) rem		
banksize	.1697207	-.2799984	.4497191	.1874002
lps	.0669947	.0596064	.0073884	.
bankkompet~r	.2190157	.1633184	.0556973	.
leverage	-.0978605	.2311885	-.329049	.1324093
bankage	-.0206244	.0081769	-.0288012	.0125755

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V\_b-V\_B)^(-1)](b-B)  
 = 5.23  
 Prob>chi2 = 0.3890  
 (V\_b-V\_B is not positive definite)

## Appendix 3: LM test

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

far[semuaperbankan,t] = Xb + u[semuaperbankan] + e[semuaperbankan,t]

Estimated results:

	Var	sd = sqrt(Var)
far	.0039589	.0629198
e	.002738	.0523259
u	0	0

Test: Var(u) = 0

chibar2(01) = 0.00  
 Prob > chibar2 = 1.0000

#### Appendix 4: Multicollinearity test

	FAR	BANKSIZE	LPS	BANKKOMPETI TOR	LEVERAGE	BANKAGE
FAR	1.000000	-0.041972	0.747978	-0.007820	-0.024689	0.342831
BANKSIZE	-0.041972	1.000000	0.721653	-0.717807	0.798301	0.752543
LPS	0.747978	0.721653	1.000000	-0.685277	0.720948	0.662021
BANKKOMPET ITOR	-0.007820	-0.717807	-0.685277	1.000000	-0.697612	-0.727109
LEVERAGE	-0.024689	0.798301	0.720948	-0.697612	1.000000	0.760032
BANKAGE	0.342831	0.752543	0.662021	-0.727109	0.760032	1.000000

#### Appendix 5: Heterodexcity test

Weighted Statistics			
R-squared	0.414250	Mean dependent var	0.749025
Adjusted R-squared	0.301605	S.D. dependent var	0.055127
S.E. of regression	0.052573	Sum squared resid	0.071861
F-statistic	3.677502	Durbin-Watson stat	1.806623
Prob(F-statistic)	0.011938		
Unweighted Statistics			
R-squared	0.214153	Mean dependent var	0.748805
Sum squared resid	0.071899	Durbin-Watson stat	1.836172