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Asymmetric Information and Non-Performing Financing: Study in The Indonesian Islamic Banking Industry

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Abstract. *The purposes of this study are: First, to analyze the indications of moral hazard and adverse selection on Indonesian Islamic commercial banks. Second, to analyze the influence of moral hazard and adverse selection on the Non Performance Financing of Indonesian Islamic banks. This study uses Error Correction Model (ECM) as a tool of analaysis. The results show that the indications of moral hazard have a positive effect on the non-performing financing (NPF) in the short run. The indication of the presence of moral hazard occurs at the long run on GDP variable, and the allocation of Murabaha financing (RM) has a positive effect on the mudharabah (FM) profit and loss sharing. The test results also show that adverse selection that represented by the profit sharing rate (PSR) has a positive effect on the level of risk sharing toward non-performing financing (NPF) in the long run.*

Keywords: *asymmetric information, moral hazard, adverse selection, Islamic banks*

Abstrak. *Tujuan dari penelitian ini adalah: Pertama, untuk menganalisis indikasi moral hazard dan adverse selection pada bank-bank komersial Islam Indonesia. Kedua, menganalisis pengaruh moral hazard dan adverse selection terhadap tingkat pembiayaan bermasalah bank syariah Indonesia. Penelitian ini menggunakan Error Correction Model (ECM) sebagai alat analisis. Hasilnya menunjukkan bahwa indikasi bahaya moral memiliki efek positif pada pembiayaan bermasalah (NPF) dalam jangka pendek. Indikasi keberadaan moral hazard terjadi pada jangka panjang pada variabel PDB dan alokasi pembiayaan murabahah memiliki efek positif pada tingkat bagi hasil mudharabah. Hasil pengujian menunjukkan juga bahwa adverse selection yang diwakili oleh tingkat bagi untung (PSR) memiliki pengaruh positif terhadap tingkat pembagian risiko terhadap tingkat pembiayaan bermasalah (NPF) dalam jangka panjang.*

Kata Kunci: *informasi asimetris, moral hazzard, adverse selection, perbankan syariah*

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Introduction

The development of Islamic banking over the world and especially in Indonesia has experienced significant growth. Ernst & Young report in (2012) on research in the MENA (the Middle East and Nort Africa) concluded that the average growth of Islamic banking per year about more than 20 percent while the conventional banking is less than 9 percent. Islamic banks increase not only in numbers but in also the coverage area. This fact shows that the market share of Islamic banks is growing. At the same time, the social demand for Islamic banking services also increased in accordance. This positive trend is not without obstacles; issues that are micro and macro dynamics have become inseparable from those growths. These issues had become inseparable, indirectly intertwined with the growth of Islamic banking as it is today. On the other hand, the consequences of follow-up showed a negative trend in the form of high levels of non-performance loan (from now on called NPF (Non-Performing Financing). The Islamic banking system, use the term Non-Performance Finance (NPF) that is known as the ratio of defaulting financing on total financing; in the conventional banking system, the term used is non-performance loan (NFL). Belek (2013) state that there is the asymmetrical risk upstream in Islamic banking.

The NPF is one of the key indicators to assess the performance of a bank, with the theory proven that lower the NPF the better the performance of the bank, and vice versa the higher the NPF, the poorer the bank performance (Haneef et al., 2012). Therefore, the NPF is one threat toward the liquidity, solvency, and profitability of a bank. To overcome this matter, it is needed an effort to ensure that the existence of Islamic banks in Indonesia is not threatened by bankruptcy.

Kennedy (1973) argues that the main cause of the NPL is the neglect of the precautionary principle and action of moral hazard, or a not healthy lending/borrowing process. Violation of the principle of prudence in granting credit or loans engineering is of a systemic nature if done in a highly sophisticated way. According to Scott (2003), the banking crisis essentially began in reckless loans, even to businesses that were not viable or speculative. This abandonment of the element of prudence eventually leads to the creation of conditions that make it difficult for the bank itself. While Snyder (2012) stated that the asymmetric information between lenders and borrowers, would allow capital flow and cause a problem called moral hazard. Karayalcin, et al. (2002) had stated that the asymmetric information and uncertainty that are introduced, and only focus on centralized investment level, will make capital flows gone astray (moral hazard).

There are several causes of NFL (the emergence of moral hazard), the not

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optimal work of the process of credit distribution when credit is distributed with and avoidance of internal rules prevailing in the bank, which a deviation either intentional or not (Herijanto, 2011). NPL/F can also occur due to the presence of an element of collusion; the crime theory said that more than 90% of crimes in the banking sector are made in cooperation with the people within the sector itself. People, who already understand the intricacies of banking and operational systems, are included in these crimes fictitious credit allocation generally makes credit crimes. Also, the behavior of collusion between the bank as the creditor and the debtor, who was committed from the beginning (Mohammed, 2005).

Non-performing loans are caused by conspiracy factors (self-dealing), which are collusive, and are affected by the concerned parties with the credit applicant, may lead to an assessment that is objective, unfair, inaccurate, and not thorough (Siahaan, 2010). Not to mention that the loans are granted by superior instruction. In other words that the loan process has been influenced by the parties with interest in credit disbursement. Sutojo (2008) argues that there are some causes that come from the internal management of the bank that could lead to NPL, such as low ability or the sharpness of the bank in analyzing the creditworthiness, and so forth. Thus it can be said that non-performing loans are a result of the failure of the bank's internal management, all the above conclusions, in the end, point out the internal management of the bank, which is not professionally conducted (Supramono, 2009). Sapuan (2016) said that the profit sharing financing had become less preferable if we compared to Islamic debt financing instruments. This is caused by the existence of asymmetric information in profit sharing financing.

Departing from this fact, as a concern of academic researchers, we had considered necessary to do research on asymmetric Information (moral hazard and adverse selection) in the mechanism of financing in Islamic banking especially with the scheme of mudharaba financing. The purpose of this study is first to analyze the indications of moral hazard and adverse selection on the mudharaba financing of some Indonesian Islamic Banks (Bank of BRI Shariah, Bank of Shariah Bukopin, and Bank of BJB Shariah). Secondly, analyze the effect of moral hazard and adverse selection on the Non-Performance Financing of those Islamic Banks.

Literature Review

The research conducted by Noorsy about moral hazard aimed to analyze the effect of moral hazard on macroeconomic stability. The study population was state-owned banks (Limited Bank), National Private Banks, joint venture banks, and foreign banks, a total number of 10 banks; Mandiri Bank, BCA, BNI, BRI, Danamon Bank, BII, Permata Bank, Panin Bank, Bukopin Bank, and CitiBank. By using quantitative analysis in the form of Structural Equation Modeling with a Partial Least Square (PLS) method. The quantitative test results of the study show that moral hazard in banking does not have a significant impact on macroeconomic stability. The object of his research was conventional banks; therefore the area of Islamic banks wasn`t studied, as it will be in this present paper.

The research conducted by Djohanputro and Kountur (2007) and Herijanto (2011), the entitled effect of personal qualifications, the Institution Environment, and Environmental processes as well as the lending/financing control toward the emergence of NPL/NPF: comparative Study on conventional and Islamic banks in Indonesia. These two studies are similar, i.e., have a common objective, which is to determine the factors that may affect the NPL. The difference is that the first research case study was on rural banks (BPR), while the second was conducted to determine the effects of internal management factors on the emergence of NPL/NPF, with the object of research being conventional and Islamic banks.

The research conducted by Rayner (1991) focused on the issue of contract (contract regarding Islamic banks). Rayner also investigated the actions related to fraud concluded by stating that financing problems that are intentionally caused by a customer can be referred as an act of fraud that cannot be justified by norms and laws. This study concluded that the act of fraud is a form of moral hazard. Much further research related to non-performance loan (NPL) have been made, among other the one conducted by Shrestha (2011), a study to ascertain the determining factor of the non-performance loan (NPL) in 18 commercial banks in Nepal, using a descriptive statistical approach, trend and econometric factors models. Shrestha had concluded that based on comparative studies that measured from those commercial banks in the financing direction, the results obtained was positive. This result indicated a declining value of NPL, which have an impact on the performance of the banking industry in Nepal. In contrast to the results of the research conducted by Hou and Dickinson (2010) who stated that there was no substantial evidence that moral hazard is part of the (reasons) why the NPLs increase in the banking industry. On the contrary, the increasing NPL interpreted as a positive correlation between the performance of NPL and loan growth.

From all of these studies related to financing, specifically, those one related to asymmetric information issues (moral hazard and adverse selection) regarding

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its effects on the financing performance have not yet been done. For that reason, we assume that this present research is essential and urgent to be conducted to bridge the value gap and find out about whether or not is the practice of asymmetric Information (moral hazard and adverse selection) in the scheme of mudharaba financing in Islamic banking sector.

Method

The study includes a variety of elements that are very complex regarding the indications of asymmetric information (moral hazard and adverse selection) by customers. To test the influence of Non performance Financing we used several variables, such as: Gross Domestic Product, inflation, banking policy which is represented by the return generated by the ratio of Murabaha margin (MM) against mudaraba profit loss sharing (MPLS), the allocation of finance is represented by the Murabaha financing ratio (RM) toward mudaraba financing (FM), and the level of revenue sharing.

Other data was collected from agency-officer (especially marketing officers) and debtors. The sampling technique used in this research is the probability sampling, with proportionate stratified random sampling technique. The samples in this study are Bank of BRI Shariah, Bank of Sharia Bukopin, and Bank of BJB Shariah. This study is a descriptive one, with a qualitative and a quantitative approach, about the secondary data collected using data acquisition instrument of the factors that appear as variables, which were analyzed using the Error Correction Model (ECM).

ECM models used in this study has been freed from an-stationary issues models through the stationary test, a test of the degree of integration, cointegration classical assumption test, so the ECM models used in this test was viable. Below is the ECM model used:

$$DNPF = \beta_0 + \beta_1 D(GDP)t + \beta_2 D(INF)t + \beta_3 D(MM\_MPLS)_t + \beta_4 D(RM\_FM)_t + \beta_5 ECT(-1)$$

Where:

NPF = *Rasio Non-Performing Financing*

GDP = *Gross Domestic Product*

INF = Inflation

MM_MPLS = Murabaha margin toward *profit loss sharing mudharabah*

RM_FM = Murabaha to mudharabah financing

PSR = Profit Sharing Rate

ECT = Resid (-1)

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Result and Discussions

Asymmetric Information (Moral Hazard)

Asymmetric information on financing is one aspect that can cause the risk of moral hazard. As described by Murray (2011) the deviation of the data shows the evidence of the existence of asymmetric information. At Bank of BRI Shariah, based on interviews with the account officer who explained that asymmetric information could occur because of the customer has more information on the financial data compared with the bank officers themselves. Customers, to make a deposit, dishonesty in the customer business reporting development use this information. These actions of the customer consisting of not providing the right report or the operation of keeping secret some aspects to the banks are a form of moral hazard. Another factor that causes asymmetric information comes from the fact that the banks do not perform oversight and monitoring of the development of the customer's business. Although in principle, the bank cannot interfere with the customer's business, but the bank is allowed to conduct supervision and guidance of the customer's business to make sure that the mudharaba financing is not in a loss trend.

The cause of financing risk at Bank of BRI Shariah bank is the reimbursement default from the cooperative's customers. Bank of BRI Shariah mudharaba financing product customer is the corporate employees, the possibility of failure to pay back the loan is therefore due to employees layoff. Members of the cooperative as a final user, are not able to pay the loans to the cooperative, so has an enormous impact on it; that impact is the reason why the payments installment of the cooperative to the Bank of BRI Shariah bank are impaired.

We`ve got from the interviews with Bank of BJB Shariah bank some explanations about the kind of moral hazard caused by customers, some customers do duplication or falsification of securities as a guarantee and then use those securities as collateral to obtain loans from other banks. This result means that the customer by this move will get from assurances two loans from two different banks. When a customer makes a doubling of collateral in the form of securities, he can sell those guarantees while on the other hand; those guarantees are utilized by another bank as a loan guarantee.

Based on these interviews with Bank of BJB Shariah we can conclude that the kind of moral hazard that occurs is also caused by negligence on the management part of banks in conducting checks of customers financing application documents. Some customers to commit fraud, which could harm the entire bank industry, use these negligences from the bank management side. Bank of BJB Shariah performs periodic monitoring actions once a month, to minimize the occurrence of acts of moral hazard by customers. Those monitoring are also conducted with the aim that the bank will have an eye on his customer's business development in each period. Monitoring is a form of risk mitigation for Bank of BJB Shariah, and they`re conducted to avoid abuse or misuse.

Bank of Shariah Bukopin gives a loan to his customers by conducting a strict client selection. This is to avoid the risk of moral hazard where customers can misuse the funds, which is not by the contract. The emergence of the financing risk caused by customers who did not issue self-financing or funding comes entirely from the bank so that it can trigger customer negligent in running the business. Asymmetric information that may occur in the customer financing occurred when the customers deliberately commit fraud in the process of reporting of the business development. The financial statements of the client's business are a guideline for the banks to determine the customer's business development. If the customer intentionally manipulates the financial statement, for example, the customer makes a markup on the expenses so that on the report of the revenue the amount of income will be small. This action will certainly have an impact on the calculation of profit sharing between the bank and the customer and between the bank and its depositors.

From these three banks, the object of this study we can conclude that the risk of moral hazard could be caused by asymmetric information. Asymmetric information caused by two factors: internal factors and external factors. Internal factors derived from bank employees associated with the procedure of financing. External factors are obtained from the customer recipient of financing. Internal factors occurred because of bank`s lack of proficiency in the analysis of the customer financing petition filing. Financing analysis is factors that influence the decision of the committee in analyzing the financing of customer request. Errors in the analysis will lead to some losses for banks.

Adverse Selection

Adverse selection occurs before a contract, where the customer willingly provides data and information that are false to get his applications for financing acceptable by the bank. Banks do not check the documents of customers. Therefore they provide financing to customers who are not eligible. An internal account officer makes Bank of Shariah Bukopin feasibility customer selection study, is performed by an internal account officer, so it is feared that it appears personal interests between that accounts officer and customers. This personal interest sparks the occurrence of

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adverse selection, customers who are not eligible for financing, because of account officer`s interests on those customers, their application form for financing became accepted and then be realized.

Adverse selection faced by Islamic banks, namely the information and data provided to the Islamic banks in the form of false data, ranging from identity cards, office address, and type of false collateral. Manipulation of data is also made by some customers' oo their bank accounts for the sake of obtaining financing. Forgery against a bank account, for example, few months before the submission of financing application, the value of savings of the customer increase, and after the financing is realized and to the check, those savings the bank figure out that those savings values were fictitious. Some other customers portray themselves as a having good character, and therefore worthy to obtain financing. Banks make mistakes by providing financing to customers who have false data, due to the negligence of banks in customer selection. Banks are overconfident with documents provided by customers; they do not follow the principle of 5C in the analysis of financing.

Adverse selection occurs because banks don`t have enough information about the reputation and the real financial condition of customers. This limitation is due to the lack of transparency among banks. Bank of BRI Shariah on our interview had explained that the absence of transparency of information among banks is also one of the causes of adverse selection. Adverse selection may also occur due to the behavior of employees of the bank itself. Bank employees knowingly approved the financing request of some customers, but the administration and analysis done to those customers would show that they were not eligible for financing. Because of the relationship between the bank employees and the customers, the financing can be easily approved. Internal factors within the banks can also be the source of the emergence of adverse selection. Adverse selection negatively affects a bank that faces financing problems. Adverse selection can also be the cause of moral hazard.

The Result of Error Correction Model

In conducting the ECM test, we run several tests as the prelude to assure of the quality of data, namely data normality test, data linearity test, stationary data test, integration test, the degree of co-integration test and classical assumption (multicollinearity, heteroscedasticity and autocorrelation). The results show us no data quality violation; we then run the ECM test. Error Correction Model is one approach used to analyze the time series model used to study the consistency relationships between the short-run and the long run of the tested variables.

$$D(NPF) = \beta_0 + \beta_1 D(GDP)_t + \beta_2 D(INF)_t + \beta_3 D(MM\_MPLS)_t + \beta_4 D(RM\_FM)_t + \beta_5 D(PSR)_t + \beta_6 ECT_t$$

The long run is a period that allows to hold a full adjustment of any changes that arise, to indicate the extent to which changes in the independent variable the dependent variable is in full conformity. The ECM result can be seen in Table 1.

Table 1. ECM Long-run Results

Variable	Coefficient	Std. Error	t-statistics	Prob
C	0.666651	0.532800	1.251221	0.2149
GDP	0.000008	0.0000009	8.867696	0.0000
INF	-0.166393	0.522124	-0.318685	0.7509
MM_MPLS	-0.046444	0.004821	-1.036209	0.3036
RM_FM	-0.590365	0.116055	-5.086949	0.0000
TBH	0.026969	0.009043	2.982228	0.0039
R-squared	0.545206		F-statistics	17.26270
Adj R-square	0.513623		Prob	0.00000

Source: data processing

Table 1 shows that the ECM test results in the long run, simultaneously all the independent variables (GDP, inflation, MM_MPLS, RM_FM and PSR) significantly have impact on NPF. That is shown by the value of the F prob (statistically equale to 0.000000), meaning that the independent variables are significant at the significance level of 1%. the results of the partial test shows that GDP and PSR (profit sharing rate) positively significantly affect NPF and the variable RM_FM (murabaha financing allocation toward mudharaba financing) has a significant and negative effect on NPF at 1% level of significancy, while inflation and MM_MPLS (murabaha margin toward mudaraba profit-loss sharing) has significantly no impact on NPF.

Furthermore, from the above results, can be seen the long-run residual value, this residual value is used to estimate the short-run equation. The short-run equation results obtained by using Error Correction Model (ECM) a data processing approach shown on Table 2.

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These short-run estimation results indicate that simultaneously all independent variables have a significant effect on NPF at the level of significance of 5%, but partially no independent variable has a substantial impact on the NPF. The ECT coefficient value as shown in the results of the analysis above is equal to -0.318089 meaning that the balance. The development of NPF in the previous period was adjusted to the current period is equal to 31.8089% with a probability of 0.0013, which certify the authenticity of the model`s specification and can indeed explain the variations of the dependent variable.

Table 2. ECM Short run Results

Variable	**Coefficient**	**Std. Error**	**t-statistics**	**Prob**
C	-0.022528	0.068071	-0.330954	0.7417
D(GDP)	0.0000077	0.0000054	1.433048	0.1563
D(INF)	-0.493276	0804480	-0.613162	0.5418
D(MM_MPLS)	0.000475	0.027282	0.017413	0.9862
D(RM_FM)	-0.455806	0.392352	-1.161729	0.2493
D(TBH)	0.002545	0.005007	0.508243	0.6129
ECT(-1)	-0.318089	0.094920	-3.351112	0.0013
R-squared	0.178483		F-statistics	2.534695
Adj R-square	0.108067		Prob	0.028055

Source: Eviews 8 (data processing)

Interpretations of the ECM Test Results in the long and the short run: The GDP Variable (Gross Domestic Product) has a significant and positive effect on NPF at the long run, while in the short run it has no significant impact. This result indicates, in the long run, the occurrence of moral hazard represented by GDP in Islamic banking. The variables inflation and MM_MPLS (Murabaha margin toward mudharaba profit loss sharing) at both the long and the short-run, has no significant effect on NPF, which mean no moral hazard identification. The variable Murabaha financing allocation (RM) toward mudharaba profit-loss sharing (FM) at the long run has a significant and adverse effect on NPF, while in the short run does not affect the NPF significantly. This result means that in the long run, RM_FM identify the presence of moral hazard, while in the short run

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there is no indication of moral hazard. PSR variable (profit sharing rate) in the long run has a significant and positive effect on NPF, while in the short run PSR the variable has no significant impact on NPF. This variable PSR identifies the presence of adverse selection on Islamic banking industry in Indonesia. Ameer et al. (2012) said that the full-fledged Islamic banks do not provide comprehensive disclosure related to a profit-sharing investment account.

Asymmetric information on mudharaba financing as one cause of the risk of moral hazard as described by Murray (2011), stating that the deviation of the data as evidence of asymmetric information. At Bank of BRI Syariah, we discovered that customers have more information on financial data of the corporate business compared to the bank officers themselves. In Bank of BJB Shariah, we found that there is a kind of action of moral hazard committed by customers; some customers do duplication or falsification of securities so that they can use those securities as collateral to obtain financing from other banks. Regarding Bank of BJB Shariah other results were found, we found out the moral hazard that occurs is also caused by negligence from the bank management side in conducting verification on the customer financing application document. Sukmana and Suryaningtyas (2016) conclude that the role of capital and bank's performance had an essential part in the banking liquidity.

Adverse selection occurs because banks generally don`t have all information about the reputation and the financial situation of the customers. This limitation is due to the lack of openness between the bank and its customers. At BRI Syariah, we found that the lack of transparency regarding information among banks is also one of the causes of adverse selection. Adverse selection may also occur due to the behavior of employees of the bank itself. Bank employees knowingly approved the financing request of some customers, who typically are not eligible, this occurred because of the relationship between bank employees and some customers.

Conclusion

The Error Correction Model (ECM) test results show indications of moral hazard represented by Gross Domestic Product (GDP), which has a positive effect on the non-performing financing (NPF). The variable of MM_FM (Murabaha financing toward mudharabah) significantly has an adverse impact on NPF at the long run, while the other variables (inflation and the ratio of Murabaha margin (MM) toward mudharaba profit and loss sharing (MPLS) did not significantly influence the NPF. This result means that the two variables do not indicate the existence of moral hazard in the long run in Islamic banking sector. From the test,

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we also found out that the indications of adverse selection presented by PSR (profit sharing rate) that has a positive and significant effect on the NPF. At the short run, all the independent variables showed no indication of moral hazard and adverse selection.

Further research can use more comprehensive indicator of moral hazard and adverse selection in Islamic banking sector. Researchers then could use more sophisticated and complex methods of analysis as well as qualitative approach deeper.

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