ERM Implementation and Non-Performing Loans Performance: Comparison between Islamic Bank and Conventional Bank

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Abstract:

There are different characteristics between islamic banking and conventional banking that cause a variety of questions, including the implementation of ERM. This study focuses on the effect of ERM implementation on NPL performance of banking, If the implementation of ERM is good, so the performance of NPL will also better. This study investigate the effect of ERM implementation on NPL performance on islamic banking and conventional banking. This study also investigate a different test level of ERM implementation that affect NPL on each type of banking. The sample consisted of 30 conventional banks listed on the Indonesia Stock Exchange and 10 Islamic banking based on the Islamic Banking Statistics that issued by Bank Indonesia for the 2011-2016 research period. This study find that the implementation of ERM has a significant negative effect both on the islamic banking and on conventional banking. While the results of different tests conducted show that the implementation of ERM to NPL has more influence on conventional banking than in islamic banking, this could be due to the maturity level of both types of banks. Conventional banking has also existed for a long time compared to Islamic, so it certainly has a functioning structure efficiently, but for Islamic banking still requires effort and improvement for further development.

Introduction

The development of Islamic banks in Indonesia began with the establishment of Bank Muamalat Indonesia in 1991. The enthusiasm of society is big enough to make conventional banks start to make Islamic business units in order to provide sharia banking services for the customers, which is then followed by the emergence of Sharia Community Financing Agency. This rapid development is inseparable from the composition of Indonesia's population, where as many as 86.17% embraced Islam.

Although islamic banks are relatively new when compared to conventional banks, their current presence can be seen as a competitor for conventional banks as well as being a strategic contributor to the financial system and economic growth. At the same time, the existence of islamic banks is seen as a complement to conventional banks in terms of the types of products and customer needs that not owned by conventional banks (Abdel Megeid, 2017).

Same as conventional banks, in order to maintain the competitiveness, profitability, and loyalty of customers, islamic banks should be able to mitigate risks, in this case the risk management framework used by islamic banks refers to Basel Accord II (which is also applied in conventional bank) and adjusted to the characteristics of sharia (Riandy, 2015).

In general, the risks that faced by islamic banks are same with conventional banks, such as credit risk, market risk, liquidity risk, operational risk, legal risk, reputation risk, strategic risk and also compliance risk. But the different, islamic banks must follow sharia principles. To ensure all products and procedures are in accordance with sharia principles, islamic banks are assisted by "Dewan Pengawas Syariah" (DPS). DPS has an

important and strategic role in the implementation of sharia principles, so the existence of DPS is a must in islamic banks. This is stated in Law No.40 in 2007 about "Perseroan Terbatas" and Law No.21 in 2008 about islamic banking (Riandy, 2015).

Although the risk that face by Islamic bank and conventional bank are the same, there is still a variety of questions. For example, several studies have compared the size of risk between the two types of banks (Abedifar, Molyneux, & Tarazi, 2013; Beck, Demirgüç-Kunt, & Merrouche, 2010; Čihák & Hesse, 2010), that studies conclude that small islamic banks have lower risk than small conventional banks, although there is no clear distinction for large banks. The difference in risk taking between the two types of banks can be attributed to various things including the applicable regulatory framework. Klomp & Haan (2012) show that the effect of regulation on bank risk is not same between banks. In terms of liquidity risk, Abdel Megeid (2017) found that conventional bank performance is better in terms of liquidity risk management than Islamic Bank. There is a significant difference between the islamic bank and conventional bank in liquidity risk management that can be attributed to the availability of more conventional bank funds than Islamic bank.

Previous research focused on the differences between islamic banking and conventional banking in general, this research focuses on ERM implementation on Non-performing Loan (NPL) performance in bank. This study adds moderating variable, that is internal audit and this study also conduct a different test of ERM implementation on NPL in islamic bank and conventional bank. The lower NPL value indicates that ERM is implemented effectively and anticipate various possible risks in determining the customer to be given the loan. This can increase the value of the bank so it will provide a positive signal for stakeholders, both customers, investors and banking supervisors.

This study aims to investigate whether ERM implementation has an effect on the performance of NPL of islamic bank or conventional bank, whether the existence of internal audit can strengthen (weaken) the relationship between ERM implementation to NPL performance, and also do different test how big of ERM implementation influence NPL at conventional bank and islamic bank considering the existence of different rules and the existence of islamic banks that are still new compared to conventional banks so there is a possibility of different ERM implementation that can be used as the basis for further ERM development.

This research contributes to add literature on ERM implementation. First, this research gives evidence that ERM implementation can influence NPL performance in bank, the better implementation of ERM done by bank is better performance of NPL (smaller NPL value), where ERM implementation both will give a positive signal for stakeholders. Second, by conducting different test of ERM implementation impact on NPL performance of islamic bank and conventional bank, it can be seen the comparative level of ERM implementation to NPL performance in each bank, so that future can be done development and improvement to produce more effective ERM implementation.

Literature Reviews
Theoretical framework

Bank has the responsibility to improve performance so that bank can give benefit to all stakeholders. In accordance with the theory of stakeholders that focus on the company's view of the various layers of stakeholders (Mallin, 2016). Under this theory, banks will conduct activities as expected by stakeholders by mitigating credit risk (Hanim Tafri, Abdul Rahman, & Omar, 2011). and implementing Enterprise Risk Management to reduce non-performing loans to banks (Haneef et al., 2012).

Risk management practices are critical to an organization's strategic management (ISO - The International Organization for Standardization, 2009). One of risk management practice is to apply the internal control framework of COSO Enterprise Risk Management that will help the company to have a consistent definition of what is meant by enterprise-level risk and will consider the risks across the company consistently (Moeller, 2011). In running the banking business, many risks will arise such as liquidity risk, credit risk, operational risk, and interest rate risk (Chen, Cheng, & Shevlin, 2010). By applying ERM, bank can establish an overall risk profile so that investors can know the value of the company in the future because the information give a signal from the financial statements (Bromiley, McShane, Nair, & Rustambekov, 2015).

Internal audits are independent assurance and consultancy activities that aim to add value and improve organizational operations. In addition, internal audit can help the organization to achieve their goals by bringing systematic and disciplined approaches to evaluate and improve the effectiveness of risk management, risk management processes (IIA, 2009). In line with the requirements set by the prevailing banking regulations in the EU Member States, Government Ordinance No. 99/2006 on credit institutions and capital adequacy gives importance to internal control. Thus, the credit institution's internal control mechanism must be established by internal rules and should provide at least an organization's risk management, compliance and internal audit functions.

Research Model, Hypotheses, and Method
The effect of ERM and Non-performing loans performance in Islamic bank

In islamic banks, the requirement of credit application in islamic bank is more stringent than conventional bank so that credit risk from islamic bank is smaller than conventional banking. Islamic banks will not experience a negative spread, because of the funds disbursed for financing will be obtained revenue, not interest as in conventional bank (Khediri, Charfeddine, & Youssef, 2015). ERM can theoretically reduce the volatility of cash flow, agency risk, and information risk, which in turn can reduce the risk of corporate default (Lundqvist & Vilhelmsson, 2018). Then the hypothesis is tested:

> H1   *Implementation of ERM has a significant negative effect on the performance of non-performing loan in Islamic bank.*

The effect of ERM and Non-performing loans performance in conventional bank

According to an IMF staff discussion note published in September 2015, the NPL is an obstacle in economic activity, especially for countries that focus primarily on bank financing, such as in the euro area. High NPLs reduce profitability, increase funding costs and bind the bank's capital to negatively affect credit supply (Mesnard, 2016). Then the hypothesis is tested:

> H2   *Implementation of ERM has a significant negative effect on the performance of non-performing loans in conventional banks.*

The effect of ERM and Non-performing loans performance in Islamic bank compare with conventional bank

Islamic banks are different with conventional banks because of the prohibition of "riba" and the need to comply with sharia. With the nature and characteristics of the risks facing by islamic banks, it should be different from the risks faced by conventional banks. Many of the issues highlighted related to the core problem of inability to manage risk effectively due to the lack of relevant instruments available in the context of Islamic bank (Khediri et al., 2015). In islamic banks, the character of the customer is more prioritized, rather than the cover guarantee in the form of assets. Thus, the assessed debtors are not legally flawed and their business activities are going well. Therefore, the risk of sharia banks is actually smaller than conventional banks. Islamic banks will not experience a negative spread, because of the funds disbursed for financing will be obtained income, not interest as in conventional banks. Then the hypothesis is tested:

> H3   *The effect of ERM Implementation on the performance of non-performing loans of islamic bank is greater than conventional bank.*

The effect of ERM, non-performing loans performance, and internal audit

The importance of the audit function in the banking world has increased rapidly during the financial crisis, the focus of management turning to the process of risk management control (Voiculescu, 2016). The role of internal audit is to assist management in protecting inheritance, reputation and ensuring sustainable development of the organization, by providing extensive analysis and comprehensive insight (IIA, 2009). In the "Internal audit function in bank", the internal audit function should provide the board of directors and senior management of the bank with assurance of the quality of the internal control system, thereby reducing the risk of loss and damage to the bank's reputation. Then the hypotheses are tested:

> H4a   *Internal audit strengthens the significant negative effect of ERM implementation on the performance of non-performing loans in islamic banks.*
>
> H4b   *Internal audit strengthens the significant negative impact of ERM implementation on the performance of non-performing loans in conventional banks*

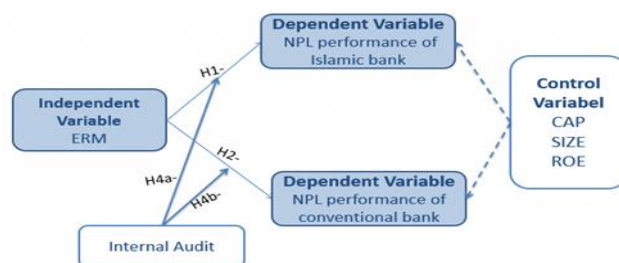**Figure 1: Research model**

Data and research sample

In this study the method used is a quantitative empirical study. In this study, there will be statistically regression testing on Enterprise Risk Management (ERM) implementation on Non-Performing Loans (NPL) performance, then this study also conduct the different test to compare the research subject between conventional bank and islamic bank.

The sample of the research are all banking companies listed on Indonesia Stock Exchange in 2011-2016 and all sharia banking companies in 2011-2016 with reference to statistical data of Shariah banking issued by BI period 2011. The sampling period started in 2011 due to the revision of PSAK 50/55 (revised 2011) which requires banks to use fair value accounting to measure and report financial instruments.

The retrieval of the data is secondary by using the annual report of the company which can be downloaded through the official website of BEI ("IDX," n.d.) for banking companies listed on the BEI. Then for islamic banking, the data is annual reports that can be downloaded through the official website of each bank. Datastream collection is also done by accessing the Economic and Business Data Center in Faculty of Economics and Business University of Indonesia (FEB UI).

The sample selection technique used in this research is purposive sampling with several criteria determined to be in accordance with the purpose of research. The criteria in question are (1) a listed banking company on the IDX reporting ERM on its annual report for a period of 6 years 2011-2016; and (2) sharia companies in Indonesia that have reported ERM in their annual report for 6 years period 2011-2016. The total sample obtained from banking companies based on these criteria are 40 banking companies (30 conventional bank and 10 islamic bank companies).

Operational variable

NPL performance in this study used as dependent variable which assessed will decrease with existence of ERM implementation. NPL reduction in a company is considered necessary because according to Mesnard (2016) high NPLs can reduce profitability, increase funding costs and bind the bank's capital so that negatively affect the supply of credit. The performance of NPLs in conventional and islamic bank will be assessed through NPL ratios that obtained from the distribution of total NPLs to total corporate loans.

Then for independent variable in this research will be shown by ERM which measurement of its implementation that is seen based on ERM checklist. This study uses checklist measurements based on ISO 31000 following previous studies by (Agista & Mimba, 2017). with five-dimensional classification of risk management: mandate and commitment, framework planning, implementation of risk management, monitoring and continuous improvement. The ERM ratio is obtained by the number of each item expressed divided by the total item that should be disclosed.

Internal audit hereinafter used as a moderating variable on the effect of ERM implementation on NPL performance of the company. This variable is expected to act as a factor that strengthens the significant negative effect of ERM implementation on NPL performance. Based on the research of Abdolmohammadi (2012), the measurement of internal audit variables is done through the ratio of the IA competency check attribute which includes education / department, certification, and training. The educational background in economics / accounting tends to support the internal audit function, so it will be assessed 1 if an economics / accounting graduate and 0 if not. When IA has internal certification and accounting knowledge, the assumption have understood the importance of the role played so 1 if there is certification and 0 otherwise. While the training on IAA members shows continuous education efforts so that it will be assessed 1 if the training is done and 0 if not. Ratio IA is obtained through the number of each item disclosed divided by the total item that should be disclosed This research uses Capital, Size, and Return on Equity as control variable. Capital ratio is measured by ratio of total equity to total assets, then size based on natural log of total assets, and ROE through net income to equity ratio. This is in accordance with the results of research Abdel Megeid (2017) that there is a relationship between business size, net working capital, ROE, ROA and adequacy of capital requirements on conventional bank risk management and islamic bank of Bangladesh during 2006-2010.

Bank size is also often considered as an important factor for NPL. Zhang, Cai, Dickinson, & Kutan (2016) argues that bank size has negatively effect to NPL levels. While ROE reflects the level of profitability of a company. Profitability ratios represent ratios that show a combination of liquidity, asset management, and debt on operating results (Brigham & Houston, 2010). If associated with financing within the bank, then the asset management includes the management of bank receivables in order to avoid bad loans (NPL slightly), the lower the NPL value, the higher the profitability of the bank so that between ROE and NPL will be negatively effect. High profitability will also a signal of greater return on stockholders.

Data Analysis

Based on the use of quantitative method with time series data type between 2011-2016 and cross section, this research uses panel data type. Tests conducted on the research is to determine whether there is an effect of ERM implementation on NPL performance in banking companies (conventional and islamic). Given the differences that set in conventional and islamic bank, this study suspect that the implementation of ERM on the performance of NPL in islamic bank will be greater than conventional bank. This study compare that differences by analyzing the variance differences between the islamic bank and conventional bank (Hanim Tafri et al., 2011). Internal audit in this research is also included as a factor that can strengthen ERM implementation to NPL performance. Based on the conceptual framework, the research model to test the hypothesis is as follows:

- Testing model 1:

$NPL_1 = \beta + \beta_1 ERM + \beta_2 IA + \beta_3 ERM*IA + \beta_4 CAP + \beta_5 Size + \beta_6 ROE + \varepsilon it....(1)$

- Testing model 2

$NPL_2 = \beta + \beta_1 ERM + \beta_2 IA + \beta_3 ERM*IA + \beta_4 CAP + \beta_5 Size + \beta_6 ROE + \varepsilon it...(2)$

Where:

NPL_1 : Non-performing Loan Islamic Bank

NPL_2 : Non-performing Loan Conventional Bank

ERM : Enterprise Risk Management

CAP: Capital ratio

Size : Size

ROE: Return on Equity

IA : Internal audit

ε: Error term

Models 1 and 2 are used to test hypothesis 1 (H1), hypothesis 2 (H2), hypothesis 4a and 4b (H4a and H4b). In this section the test is done by using the regression panel. As for hypothesis 3 (H3) related to different test, testing to compare conventional bank and islamic bank is done by using T-Test with two-sample means comparisons-test. The researchers compared the mean constant values in each variable. All data in this study were obtained by using software stata.

Results and Discussion

Descriptive statistics

Table 1 and 2 provide descriptive statistics for all variables in islamic banks and conventional banks.

Table 1: Descriptive Statistics of Conventional Bank

	Variable	Mean	Median	SD	Min	Max
N=180	**NPL**	0.0216788	0.0179087	0.0162333	0.001068	0.078
	ERM	0.87	0.88	0.072851	0.64	1
	IA	0.6111046	0.66667	0.260122	0.333	1
	CAP	0.1215401	0.11741	0.0378523	0.0115936	0.2573611
	SIZE	13.63212	13.70545	0.6996588	12.31815	15.01649
	ROE	0.1019107	0.12374	0.1479002	0.4799336	0.5224932
	NPL: Non-performing Loan ; **ERM**: Enterprise Risk Management ; **IA:** Internal Audit; **CAP**: Capital; **SIZE**: Total asset; **ROE:** Return on Equity;					

Source: Prepared authors, 2018

Table 2: Descriptive Statistics of Islamic Bank

	Variable	Mean	Median	SD	Min	Max
N=60	**NPL**	0.0193333	0.01830	0.0109393	0.0013746	0.0479501
	ERM	0.8913333	0.9	0.0633919	0.64	1
	IA	0.5944444	0.66667	0.2681573	0.3333333	1
	CAP	0.1521914	0.11167	0.1143514	0.0547993	0.537814
	SIZE	13.06606	12.9936	0.7378013	11.80755	15.0016
	ROE	0.0574332	0.06026	0.1034217	-0.3897562	0.2979335
	NPL: Non-performing Loan ; **ERM**: Enterprise Risk Management ; **IA:** Internal Audit; **CAP**: Capital; **SIZE**: Total asset; **ROE:** Return on Equity;					

Source: Prepared authors, 2018

The average NPL in the islamic bank is 0.0193333, with a standard deviation of 0.0109393. As for the Conventional Bank is 0.0216788, with a small standard deviation of 0.0162333 indicates that the data from the performance of NPL has a normal distribution. For the average ERM on the islamic bank is 0.8913333, with a standard deviation of 0.0109393. While in Conventional Bank is 0.87, with standard deviation 0.072851 indicates that ERM implementation of a company varies between companies. The average internal audit (IA) in islamic bank is 0.5944444 with a standard deviation of 0.2681573. Then the average internal audit (IA) in conventional bank is 0.6111046, with the standard deviation is 0.260122. For control variables, the average value of CAP, SIZE, and ROE is greater in conventional banks than islamic banks.

Empirical results
Islamic bank

This study tested the estimation model to determine the best model in the study at islamic bank. The results show that the Random Effect Model is the best model used in this study. Then, this study tested Pearson correlation which result showed that there is multicollinearity problem in ERM variable. Thus, to overcome these problems, researchers conduct treatment by centralizing the ERM variable. The results are shown in Table 3.

Table 3: Pearson Correlation of Islamic Bank

	NPL	ERM_C	IA_C	CAP	SIZE	ROE
NPL	1.0000					
ERM_C	-0.3303	1.0000				
IA_C	0.0297	-0.1770	1.0000			
CAP	-0.0117	-0.2287	-.1661	1.0000		
SIZE	0.1642	0.3887	0.2265	-0.4856	1.0000	
ROE	-0.3911	0.3781	0.1919	-0.2321	0.2767	1.0000

Source: Prepared authors, 2018

This study uses regression test to know whether there is an effect of ERM implementation to NPL performance in Islamic bank. After testing on the data, the results obtained as shown in table 4 that the coefficient of Enterprise Risk Management (ERM) is negative and significant (coefficient = -0.0554926, p <0.05), this indicates that the implementation of Enterprise Risk Management (ERM) has a significant negative effect on the performance of non-performing loans, which support H1. The better ERM implementation performed by the bank, the better the performance of its NPL (less NPL value). With a good ERM implementation there is a control in making decisions. Bank management will not make decisions based solely on target achievement alone, but also take consideration and analysis related to the risks it faces, and these activities will be more effective with the commitment of stakeholders and adequate procedures.

In addition, the ERM * IA coefficient is positive and not significant (coefficient = .0014902, p> 0,05), it shows that there is no effect of ERM implementation on NPL performance in Islamic bank with moderated by internal audit, thus rejecting H4a. Islamic bank is still relatively new in the banking industry so that the internal control structure is still not functioning properly, so it requires more business and development. Meanwhile, when viewed from the coefficient (positive) which shows the opposite relationship of the (negative), this is most likely due to the limitations of this study in determining the method of measurement IA in accordance with the research model. Measurements of IA variables in this study used the ratio of checklist of internal audit audit background, audit / risk awareness certificate owned by internal audit members as well as training and training followed by internal audit members, expressed in annual report. There is a possibility that these variables are less able to capture the actual internal audit activity in the bank to show less than optimal results. Based on the perspective of stakeholder theory that focuses on the company's view on the various stakeholder layers (Mallin, 2016). Under this theory, banks will conduct activities as expected by stakeholders by mitigating credit risk (Hanim Tafri et al., 2011) and implementing Enterprise Risk Management to reduce non-performing loans in banks (Haneef et al., 2012).

Table 4: Regression Result of Islamic Bank and Conventional Bank

Variable	Predic	Conventional			Islamic		
		Koef	Prob		Koef	Prob	
Constanta		-0.793776	0.022		-0.0089864	0.747	
ERM	-	-0.033537	0.036	**	-0.0554926	0.013	**
ERM*IA	-	0.0074469	0.125		0.0014902	0.826	
CAP	-	0.0216716	0.492		-0.0048215	0.754	
SIZE	+	0.0069289	0.007	***	0.0060979	0.001	***
ROE	-	-0.0421789	0.000	***	-0.0338544	0.006	***
Adjusted R^2			0.1815			0.3091	
F-Statistic			0			0	

*** significance at 1%. ** significance at 5%, * significance at 10%

NPL: Non-performing Loan ; **ERM**: Enterprise Risk Management ; **IA:** Internal Audit; **ERM*IA:** Moderasi IA terhadap ERM; **CAP**: Capital; **SIZE**: Total asset; **ROE:** Return on Equity;

Source: Prepared authors, 2018

Conventional bank

This study tested the estimation model to determine the best model in research on Conventional Banks. The results show that the Random Effect Model is the best model used in this study. Then, this study tested Pearson correlation which result showed that there is multicollinearity problem on Enterprise Risk Management (ERM) and Return on Equity (ROE) variable. Thus, to overcome these problems, researchers do the treatment by centralizing the ERM and ROE variables.

This study conducts regression tests to determine whether there is an effect of ERM implementation on NPL performance in conventional bank. After testing on the data, the results obtained as shown in table 4 that the coefficient of Enterprise Risk Management (ERM) is negative and significant (coefficient = -0.033537, p <0.05), this indicates that the implementation of Enterprise Risk Management (ERM) has a significant negative effect on the performance of non-performing loans, which support H2. Similar to islamic banks, a good ERM implementation indicates that the risk management function within the company is working properly, which means that there is adequate control over all bank activities including decision making. Bank management will not make decisions based solely on target achievement alone, but also undertake in-depth considerations and analysis of the risks it faces, and these activities will be more effective by the commitment of stakeholders and adequate procedures. If it is associated with the level of maturity should conventional banks have a better and stable ERM implementation.

In addition, the ERM * IA coefficient is positive and insignificant (coefficient = 0.0074469, p> 0.05), it shows that there is no effect of ERM implementation on NPL performance in conventional bank with moderated by internal audit, thus rejecting H4b. This is due to the limitations in determining the method of measuring IA in accordance with the research model. Measurements of IA variables in this study used the ratio of checklist of internal audit audit background, audit / risk awareness certificate owned by internal audit member and the training and training which was followed by internal audit member, expressed in annual report. There is a possibility that these variables are less able to capture the actual internal audit activity in the bank to show less than optimal results.

Based on the perspective of signaling theory, in running the banking business, there are many risks that will arise such as liquidity risk, credit risk, operational risk, interest rate risk, and so on (H. J. Chen & Lin, 2016). By applying ERM, the bank can establish an overall risk profile (Tschemernjak, 2004) so that investors can know the value of the company in the future because it can see the information signal from the financial statements.

Table 5: Pearson Correlation of Conventional Bank

	NPL	ERM_C	IA	CAP	SIZE	ROE_C
NPL	1.0000					
ERM_C	-0.0466	1.0000				
IA	0.0985	0.0531	1.0000			
CAP	0.0470	0.0704	0.0158	1.0000		
SIZE	0.1163	0.3398	0.2110	-0.0060	1.0000	
ROE_C	-0.2891	0.0237	0.0865	0.0064	0.4135	1.0000

Source: Prepared authors (2018)

Comparison of conventional bank and islamic bank

This study uses t test tested with Two-sample means comparisons-test to perform different test at conventional bank and islamic bank. After testing on the data, the results obtained as shown in table 6. The comparison results seen from the constant mean of NPL variables in conventional banks amounted to 0.0216788 while the mean variable NPL at Islamic banks of 0.0193333. There is a variance between the performance of NPLs in conventional banks and sharia banks which show that there are differences in performance in both banks. But the difference of variance tends to be small at 0.0023455 so it can be concluded that the performance of NPL conventional bank is not too different from islamic bank. Value of T calculate is 1.0424 with P Value of Pr 0.2983 on degree of freedom (DF) 238. Because the value 0.2983 is greater than the critical limit of 0.05 then the hypothesis decision is to reject H3 or that means implementation ERM on NPL performance in islamic banks is not greater than conventional banks. This is in accordance with the results in table 6 which shows that conventional banks have larger NPL performance than islamic banks. In accordance with research conducted by Shafique, Hussain, & Taimoor Hassan (2013), there is no significant difference between conventional financial institutions (CFIs) and Islamic financial institutions (IFIs) in all types of risks except the risk of equity investments. The only reason that this study can find is that islamic banks are a new form of banking business compared to conventional banks so that islamic banks still need an improvement to achieve a good level of performance.

In islamic banks, the requirement of credit application in islamic banking is more stringent than conventional banking so that credit risk from islamic banking is smaller than conventional banking. Therefore,

on the credit side, in sharia rules, the bank acts as a seller, while the customer as a buyer murabahah. That mechanisms will prevent the possibility of credit funds that are used for speculative transactions, or for buying and selling foreign exchange. If there is a default, bank is easy to get the funds back because there are assets that have value in the form of credit disbursed. In islamic banks, the character of the customer (personal guarantee) is more predominant, rather than the cover guarantee in the form of assets (Haneef et al., 2012). Thus, the assessed debtors are not legally flawed and their business activities are going well will get the priority. Therefore, the risk of islamic banks is actually smaller than conventional banks. Islamic banks will not experience a negative spread, because of the funds disbursed for financing will be obtained income, not interest as in conventional banks. Based on the decision theory, the depositor can determine which banks are selected to either invest in decisions based on NPL performance and regulation. Bank may also take the decision to add internal auditors when the performance of the NPL looks bad (Abdolmohammadi, 2012).

Table 6: Test Result of ttest

Variable	N	Mean	SD	SE
Conventional	180	0.0216788	0.0162333	0.00121
Islamic	60	0.0193333	0.0109393	0.0014123
Combination	240	0.0210924	0.0150978	0.0009746
df: 238	T value: 1.0424	Pr ($|T| > |t|$) = 0.2983		

Source: Prepared authors (2018)

Conclusion

Implementation of ERM for islamic and conventional banks has benefits for performance especially in non-performing loans. Based on the research conducted with samples of 30 conventional banks and 10 islamic banks with the study period 2011-2016, this study finds that ERM implementation has a significant negative effect on the performance of non-performing loans both in Islamic bank and conventional bank. However, this study finds insignificant effect on internal audit that internal audit weakens ERM implementation to non-performing loans performance in both islamic bank and conventional bank. The result of different test shows that the implementation of ERM to NPL has more influence on conventional bank compared to syariah bank, it can be caused by the maturity level of both types of banks. Conventional banks that have been established for a long time compared to islamic banks, have been ensured to have functioning structures efficiently. As for islamic banks still require business and improvement for further development.

As with most ERM and internal audit studies based on checklists, this study has limitations. The data analyzed do not reflect the actual situation because the researcher gives subjective checklist assessments and the researcher's understanding differs on every aspect of ERM and internal audit. This study also found several companies that did not explain the internal audit profile so that information about the internal audit was still lacking which might have led to insignificant results in this study.

Despite some limitations, this study also contributes to the literature on ERM implementation related to NPL performance in islamic bank and conventional bank. This research also contributes to practitioners, regulators, and researchers. First, this research can help internal auditors to understand and evaluate how effective ERM is applied. Second, this research can help regulators to make policies related to lending for customers in islamic bank and conventional banking. Further research can examine with a larger sample period so the research can be more representative and describe the actual situation. Further research can also develop this research model by adding other risk variables that are not used in this study.

References

(Voiculescu), C.-I. Z. (2016). *Measuring the Value of Internal Audit in the Banking Industry.* The Audit Financiar Journal, 14*(141), 1009–1009.*

Abdel Megeid, N. S. (2017). *Liquidity Risk Management: Conventional Versus Islamic Banking System in Egypt.* Journal of Islamic Accounting and Business Research, 8*(1), 100–128.*

Abdolmohammadi, M. J. (2012). *Chief Audit Executives' Assessment of Internal Auditors' Performance Attributes by Professional Rank and Cultural Cluster.* Behavioral Research in Accounting, 24*(1), 1–23.*

Abedifar, P., Molyneux, P., & Tarazi, A. (2013). *Risk in Islamic Banking.* Review of Finance, 17*(6), 2035–2096.*

Agista, G. G., & Mimba, N. P. S. H. (2017). *Pengaruh Corporate Governance Structure Dan Konsentrasi Kepemilikan Pada Pengungkapan Enterprise Risk Management.* E-Jurnal Akuntansi, 20*(1), 438–466.*

Beck, T., Demirgüç-Kunt, A., & Merrouche, O. (2010). *Islamic vs. Conventional Banking: Business Model, Efficiency and Stability.*

Brigham, E. F., & Houston, J. F. (2010). *Manajemen Keuangan Edisi Kedelapan. Jakarta: Penerbit Erlangga.*

Bromiley, P., McShane, M., Nair, A., & Rustambekov, E. (2015). *Enterprise Risk Management: Review, Critique, and Research Directions.* Long Range Planning, 48*(4), 265–276.*

Chen, H. J., & Lin, K. T. (2016). *How do Banks Make the Trade-offs among Risks?The Role ofCorporate Governance.* Journal of Banking and Finance, *72(November), S39–S69.*

Chen, S., Chen, X., Cheng, Q., & Shevlin, T. (2010). *Are Family Firms More Tax Aggressive than Non-Family Firms?* Journal of Financial Economics, *95(1), 41–61.*

Čihák, M., & Hesse, H. (2010). *Islamic Banks and Financial Stability: An Empirical Analysis.* Journal of Financial Services Research, *38(August), 95–113. https://doi.org/10.1007/s10693-010-0089-0*

Haneef, S., Riaz, T., Ramzan, M., Rana, M. A., Ishaq, H. M., & Karim, Y. (2012). *Impact of Risk Management on Non-performing Loans and Profitability of Banking Sector of Pakistan.* International Journal of Business and Social Science, *3(7), 307–315.*

Hanim Tafri, F., Abdul Rahman, R., & Omar, N. (2011). *Empirical Evidence on the Risk Management Tools Practised in Islamic and Conventional Banks.* Qualitative Research in Financial Markets, *3(2), 86–104.*

IDX. (n.d.).

IIA. (2009). IIA Position Paper: The Role of Internal Auditing in Enterprise-Wide Risk Management.

ISO - The International Organization for Standardization. (2009). *ISO 31000:2009 - Risk Management - Principles and Guidelines.* ISO 31000:2009.

Khediri, K. Ben, Charfeddine, L., & Youssef, S. Ben. (2015). *Islamic versus Conventional Banks in the GCC Countries: A Comparative Study Using Classification Techniques.* Research in International Business and Finance, *33(January), 75–98.*

Klomp, J., & Haan, J. de. (2012). *Banking Risk and Regulation: Does One Size Fit All?* Journal of Banking and Finance, *36(12), 3197–3212.*

Lundqvist, S. A., & Vilhelmsson, A. (2018). *Enterprise Risk Management and Default Risk: Evidence from the Banking Industry.* Journal of Risk and Insurance, *8(1), 127–157.*

Mallin, C. A. (2016). Corporate Governance. *United Kingdom: Oxford University Press.*

Mesnard, B, Margerit, A. Power, C and Magnus, M. (2016). *Non-performing Loans in the Banking Union: Stocktaking and Challenges.* European Parliament, Economic Governenance and Support Unit, *(March), 1–11.*

Moeller, R. R. (2011). COSO Enterprise Risk Management: Establishing Effective Governance, Risk, and Compliance Processes. *New Jersey: John Wiley & Sons, Inc.*

Riandy. (2015). *Manajemen Risiko Perbankan Umum dan Perbankan Syariah (Bagian 4-End).*

Shafique, O., Hussain, N., & Taimoor Hassan, M. (2013). *Differences in the Risk Management Practices of Islamic versus Conventional Financial Institutions in Pakistan: An Empirical Study.* Journal of Risk Finance, *14(2), 179–196.*

Tschemernjak, R. (2004). *Assessing the Regulatory Impact: Credit Risk - Going Beyond Basel II.* Balance Sheet, *12(4), 37–41.*

Zhang, D., Cai, J., Dickinson, D. G., & Kutan, A. M. (2016). *Non-performing Loans, Moral Hazard and Regulation of the Chinese Commercial Banking System.* Journal of Banking and Finance, *63(February), 48–60.*