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CREDIT-RISK DETERMINATION: ANALYSIS OF ISLAMIC AND COMMERCIAL BANKS IN MALAYSIA

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INTRODUCTION

1.0 Introduction

The financial market plays a key role in promoting risk-sharing and effective utilization of assets among stockholders. In Malaysia, the financial sector is overseen by Bank Negara Malaysia (BNM), which is a statutory body governed by Malaysia's Central Bank Act 2009 to promote monetary and financial stability. This aims to provide a conducive environment for the Malaysian economy's sustainable development and manage credit risks, particularly during economic downturn. In fact, the BNM currently plays a significant role in introducing policies to expand and improve financial markets, particularly the foreign-exchange market.

1.1 Research Background

▶ Credit-risk management (CRM) is one of the most important activities banks must undertake in order to survive the ever-growing competition in the banking sector. Commercial-bank credit-giving operations continue to constitute one of banking institutions' key sources (Shkodra & Ismajli, 2017).

▶ The study aims at addressing the key question: Do credit risks give an impact to banks in Malaysia? Accordingly, some papers have attempted to answer this question but have performed it using cross-country data and have only looked at commercial banks.

▶ In order to fill in the gap, this study has investigated credit-risk determination among 26 commercial banks and 16 Islamic banks in Malaysia for the period between 2009 and 2019.

1.2 Problem Statements

When a financial crisis occurred a few years back in Malaysia, the most affected part was the country's financial-risk exposure. Many previous studies have calculated credit risks in various financial structures that help or restrict the functioning of Islamic banks, finding it challenging for them to compare country-specific data (Lassoued, 2018).

Ping (2015) has also supported that the lending practices of commercial banks are affected not only by the macroeconomic situation but also by the changes to the market and other external factors, as well as internal operations. Hence, the threats are certain future occurrences that may or may not be expected from loans that can result in the losses of the credit assets of commercial banks.

This study seeks to determine the relationship between profitability, inefficiency, loans-to-deposit rate, inflations, and exchange rate towards credit risks. At the same time, the investigation also intends to identify some factors that may influence credit risks among Islamic banks and commercial banks in Malaysia.

LITERATURE REVIEW

Credit Risk

▶ Credit risk is defined as the risk that the promised cash flows from loans and securities held by financial institutions may not be paid in full (Saunders & Cornet, 2008 and Al-Smadi & Ahmed, 2009).

▶ According to Klieštik and Cúg (2015), credit risk represents loss probability that the firm incurs in the case of business partner failure. This can be considered as failure to fulfil the obligations under the terms of the contract, which in turns results in the business of creditors.

▶ Small Islamic banks tended to be more financially stable than small commercial banks, large commercial banks at manage credit risk better than large Islamic banks and unexpectedly, small Islamic banks were financially stronger than large Islamic ones (Cihák and Hesse, 2010).

Inefficiency, ROA, ROE, Loans Deposit Ratio, Inflations & Exchange Rate

➢ Beck et al. (2013) compared the efficiency, the stability of commercial and Islamic banks and the business operation.

➢ The impact of the profitability explained much of the variation in z-scores, so we can clearly conclude about the association between profitability and stability.

➢ Shkodra and Ismajli (2017), discovered that the t-tests show four variables in the model (IE, ROE, CG and LDR) are found to be statistically significant at the empirical significance level of less than 5%. In addition, the relationship between the ROE and CR is positive and significant.

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➢ Inflation and exchange rate are one of the factors that consider as macroeconomic factor. This is because some of the banks that have higher level of non-performing loan will more sensitive to the macroeconomic shocks.

➢ The result proof that the non-performing loans level tends to increase when there is a high inflation, exchange rate decline, and an increase of unemployment (Klein, 2013).

➢ Next is exchange rate, Chaibi and Ftiti (2014) stated that the relationship between the exchange rate and non-performing loan may be either positive or negative. This is consistent with the study of Nkusu (2011) who also stated that the changes in the exchange rate can cause mixed implications.

2.2 Conclusion

As conclusion, high interest rate will be an obstacle for borrowers to repay their loan, so that it may make the risk composition of loan applicants to shift toward the bad risks (Bohachova, 2008).

Based on the research done by Chaibi and Ftiti (2014), it shows that the relationship between interest rate and non-performing loan is positive. This is because the borrowers' debt burden will be increased when there is a rise in interest rate, and hence weakens the debt servicing capacity of borrowers, resulting to a higher rate of non-performing loan and end up with an increase in credit risk as well.

METHODOLOGY

▶ A set of 453-observation sample size from 2009 until 2019 has been derived from Thomson Reuters Eikon database, which has involved the independent variables, namely profitability (return on asset and return on equity), inefficiency, loans-to-deposit ratio, and credit rates (inflation rate and exchange rate), while the dependent variable is credit risks as a strong measurement for credit performance. This study has been conducted at 16 Islamic banks and 26 commercial banks in Malaysia by using a multivariate panel regression model. The data analysis and interpretation have been processed by using Stata 10 ic.

▶ This secondary-data analysis has applied a combination of time-series data and cross-sectional data, where all the data collected have been used to observe two or more time periods. The Random Effects Model (REM) is a statistical model in which some of the parameters (effects) that define the systematic components of the model exhibit some forms of random variation.

▶ This model has been used in the panel analysis of hierarchical or panel data with the assumption that there are no fixed effects from all the parameters used. In other words, it allows for individual effects to happen. Besides, it has also been used to identify individual characteristics for each observation in the sample.

3.1 Estimation Equation Model Framework

$$CR_{i,t} = \alpha + \beta_1\,ROA_{i,t} + \beta_2\,ROE_{i,t} + \beta_3\,IE_{i,t} + \beta_4\,LDR_{i,t} + \beta_5\,INF_{i,t} + \beta_6\,ER_{i,t} + \alpha_i + \varepsilon_{i,t}$$

Where:

CR   = Credit risks;

ROA   = Return on asset;

ROE   = Return on equity;

IE   = Inefficiency;

LDR   = Loans-to-deposit ratio;

INF   = Inflation rate;

ER   = Exchange rate;

α   = Constant;

β   = Coefficient representing the independent variables;

Ɛ   = Error terms

RESULTS

4.1 Descriptive Statistic

Table 4.0 Descriptive statistic

Stats	CR	ROA	ROE	IE	LDR	INF	ER
Mean	0.7737	2.3336	18.1218	28.6410	0.6344	1.9969	3.2456
Median	0.9037	1.09395	11.7864	37.8	0.71	2.091	3.273
Max	3.3766	94.8091	458.2218	100	3.871	4.300	4.300
Min	0	-5.2977	-38.2651	0	0	0	0
Sd	0.3503	8.6789	43.3282	25.8154	0.5642	1.1500	1.1170
Skewness	-0.1513	7.7606	6.4313	0.0479	2.2229	-0.0230	-2.0654
Kurtosis	11.2428	68.1885	50.2633	1.4639	11.95414	2.1365	6.6686
Obs	453						
Groups	42						

➢ Table 4.0 shows the summary of descriptive statistics that comprises the measures of central tendency (mean and median), as well as the measures of the data distribution (kurtosis and skewness). The skewness has been used to measure the symmetry of the time series, while kurtosis has been used for the degree of peakedness of a distribution. The function of kurtosis has been to identify whether the distribution of the data is normal or not.

➢ The indicator distribution has been used to show the peakedness or flattering of the data distribution. The best result for kurtosis should be around 3. The skewness has a mixed result, in which there is a right and left skewed distribution. The highest standard deviation is recorded by return on equity by 43.3282 times, which indicates that it has the highest variability of data, whereas the least is performed by credit risks, which is the most stable.

4.1 Pearson Correlations

The correlation is a statistical measure that indicates the extent to which two or more variables fluctuate together. There are two directions in a correlation, and it can be either positive or negative.

Table 4.1 Pearson Correlations

	CR	ROA	ROE	IE	LDR	INF	ER
CR	1.000						
ROA	0.0820	1.0000					
ROE	0.1084	0.8379	1.0000				
IE	0.4297	0.2186	0.3356	1.0000			
LDR	0.3748	0.0974	0.1311	0.1094	1.0000		
INF	0.3806	0.0504	0.0986	0.0959	0.3806	1.0000	
ER	0.4951	0.0819	0.0898	0.2373	0.3279	0.5164	1.0000

Table 4.1 represents the correlation between all the variables. It shows that all the values have a positive correlation with credit risks. It indicates that those variables have a parallel relationship, where if one variable increase or decreases, the other variables will increase or decrease in parallel. Looking at the final results, it shows that credit risks is positively correlated with all the variables and move in the same direction (Greenidge & Grosvenor, 2010; Nkusu, 2011; Klein, 2013; Chaibi & Ftiti, 2015; Lassoued, 2018).

4.2 Random Effect Model

The correlation is a statistical measure that indicates the extent to which two or more variables fluctuate together. There are two directions in a correlation, and it can be either positive or negative.

No. of obs	=	453
Prob> F	=	0.0000
R-squared	=	0.4044

CR	Coef.	Std. Err	z	P>|z|	[95% Conf. Interval]	
ROA	0.007382	0.0024746	2.98	0.003	0.0025323	0.0122325
ROE	-0.002147	0.000579	-3.70	0.000	-0.0032841	-0.0010111
IE	0.004885	0.000683	7.15	0.000	0.0035462	0.0062245
LDR	0.151962	0.027080	5.61	0.000	0.0988869	0.2050387
INF	0.037878	0.011833	3.20	0.001	0.0146848	0.061072
ER	0.085278	0.012913	6.60	0.000	0.0599693	0.1105875
_Cons	0.210165	0.040450	5.20	0.000	0.1308843	0.2894468

- Based on Table 3 above, all the variables are significant towards profitability as the P-value of the t-stat is below 1% and 10% significant levels. In the same way, it also shows that the F-stat is below 5% at significant level, thus, it shows beyond doubt that all the independent variables are statistically significant in influencing the dependent variable, which is profitability, hence, the overall model is significant. Meanwhile, the overall R-squared is 40.44% of the variation changes in credit risks can be explained by all the independent variables.

- Based on the final estimation above, it is evident that credit risks among the Islamic banks and commercial banks in Malaysia is the best measure by using this model to indicate the determinants factors influence on credit risks. All the independent variables analyzed are significant as the z-statistic reading is more than 2, which is determined as significant. The results show that return on asset (ROA) is 2.98, return on equity (ROE) -3.70, inefficiency (IE) 7.15, loans-to-deposit ratio (LDR) 5.61, and the macroeconomic variables inflations (INF) and exchange rate (ER) are 3.20 and 6.60 respectively. The overall reading based on this model is that the most significant independent variable towards credit risks is inefficiency (IE); 7.15.

4.3 Summary of the Chapter

Independent Variables	Expected Result	Finding Result	Literature Review Finding
Return on asset (ROA)	Positive	Positive	**Supported by:** Shkodra and Ismajli (2017) and Lassoued (2018) and Yeyati and Micco (2007).
Return on equity (ROE)	Positive	Positive	**Supported by:** Lassoued (2018), Shkodra and Ismajli (2017) and Yeyati and Micco (2007).
Inefficiency (IE)	Positive	Positive	**Supported by:** Shkodra and Ismajli (2017) and Pastor (2002).
Loans to deposit ratio (LDR)	Positive	Positive	**Supported by:** Shkodra and Ismajli (2017).
Inflations (INF)	Positive	Positive	**Supported by:** Espinoza and Prasad (2010), Klein (2013) and Greenidge and Grosvenor (2010).
Exchange rate (ER)	Positive	Positive	**Supported by:** Lassoued (2018), Chaibi and Ftiti (2014) and Nkusu (2011).

CONCLUSION AND RECOMMENDATION

Conclusion

➢ This study has been conducted based on the main purpose which is examining the significant relationship between credit risks among Islamic banks and commercial banks in Malaysia. There are many previous studies conducted in their own case countries, hence, this study has been undertaken to provide deeper understanding on the determining of credit risks among Islamic and commercial banks in Malaysia.

▶ Furthermore, Random Effect Model (REM) has been chosen after as the final result. It can be concluded that all the independent variables have a positive relationship with credit risks (Greenidge & Grosvenor, 2010; Nkusu, 2011; Klein, 2013; Chaibi & Ftiti, 2015; Shkodra & Ismajli, 2017; Lassoued, 2018). In an addition, this study has also finalised that the inefficiency factor is the most influencing variable towards the changes in credit risks compared to the other variables.

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Recommendation for Future Research

▶ Since the study has only been able to be conducted in Malaysian banks, the future researchers can also have better resources and able to obtain more data which highly advisable conducted in other countries with more independent variables.

▶ Other than that, future researcher can also include other variables which are available in other literatures such as, workload, career growth, safe and healthy working condition and others in order to improve effectiveness of credit-risk determination.

▶ Thus, future researcher could extend to more time period of study in order to get more accurate and precise during the analysis tested. This is because the data finding could also be contrasting with this study as the number of years are increased.