

The Impact of Housing Loan/Financing on Malaysian Bank Risk Performances

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Abstract

This study investigates the impact of housing loan/financing on bank risk performances in Malaysia. The data is collected from 12 commercial banks and 12 Islamic banks in Malaysia within the period of 2002-2016. Non-performing loan (NPL) and loan loss provision (LLP) are used as proxies for bank risk and they are regressed with housing loan/financing, expenses, total loan, income, gross domestic product and inflation. The results from Random and Fixed Effect models show that housing loan/financing has significant impact on the NPL and the LLP of commercial banks and Islamic banks. The results also show that even though commercial banks seem to dominate housing loan/financing market, but Islamic banks are capable to compete with commercial bank in this specific type of financing.

Keywords: Commercial bank; Islamic bank; House financing; Risk.



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1. Introduction

House is a basic need for every human being. Beside as a protection, it serves as a place to spend time with the family and a place where family members meet to celebrate special occasion. Even though house plays an important role in our life but buying a house needs a long-term commitment and large financial obligation. With the rise of house prices, it is difficult for people to buy house. Most people today cannot afford to own a house and they have to apply house financing from financial institutions such as commercial banks and Islamic banks. It is common for commercial banks to offer loan with interest for customers that intent to buy house. In contrast with Islamic banks, they offer house financing that is based on Shariah principles where element of interest is being eliminated from the contract (Iqbal and Mirakhor, 2007); (Haron and Shanmugam, 2001).

Housing loan/financing refers to a long-term financing facility provided by financial institutions for purchasing house and Bank Negara Malaysia (BNM) has set a maximum period of repayment of 35 years for this type of financing (Isa and Hussain, 2016). There are two types of housing loan plans in Malaysia, namely fixed housing loan and flexible housing loan plans. The fixed housing loan plan is a loan which instalment payable on a monthly basis is fixed until the end of instalment period. As for a flexible housing loan, it gives the borrower option to reduce the instalment at any time by paying more than the instalment or paying in lump sum at any one time. With this type of house financing, the borrower will be able to save money during lower interest rates and even the instalment period can be shortened.

Malaysia has a unique banking system which is known as a dual banking system. This system provides an alternative to customers whether to choose commercial or Islamic banking products. Housing loan or housing financing are among the banking products that are available in both banks. Even though both products have similar goal of helping customers to own a house but housing loan in commercial bank has different structure with house financing in Islamic banks. In commercial bank, housing loan is structured based on a creditor-debtor relationship where it provides borrower with payment schedule which consist of interest and principal (Tse, 1997).

Noorul Hafizah (2007) states that the amount of housing loan in Malaysia has increased significantly from year to year and housing loans contribute to the largest portion of bank total loans. For this reason, Malaysian banks are relying on housing loan in their loan portfolio and this will give impact not only to their returns but also to their risks especially credit risk. Credit risk refers to a risk arising from the possibility of a customer unable to settle its financial liability with the bank (Haron, 2005). It may occur if the borrower cannot afford to pay the housing loan instalment and the bank has a right to liquidate the house in order to cover the cost of the loan.

The relationship between housing loan/financing and credit risk is unique due to the significant contribution of housing loan/financing to the bank performances. At the same time there are limited researches that analyse the relationship between housing loan/financing and bank risk. Previous researches usually focus on the impact of total

loan and bank risk and studies on housing loan/financing are scarce. Therefore, it is timely to conduct study on house financing and its impact on bank risk performances where this study not only examines the commercial banks, but it is also evaluates Islamic bank performances. The finding of this study will be useful as a reference for the future studies regarding the relationship between house financing and bank risk. In addition, this study is also beneficial for the banking regulator and bank management especially in constructing rules and regulation regarding house financing and housing demand in Malaysian market.

2. Literature Review

An effective risk management system is a core discipline that must be maintained by all banking institutions to ensure their continuous growth while creating a healthy financial environment. Previous literatures try to investigate factors that influence bank risk and they concluded that these factors can be grouped into bank specific factor and macroeconomic factor. For instance, [Ahmad and Ahmad \(2004\)](#) examined factors affecting credit risk of banks in Malaysia. They found that bank specific factors such as management efficiency, risk-weighted assets and size of total assets have significant influence on credit risk of Islamic banking, while commercial banking credit risk are significantly affected by loan exposure to risky sectors, regulatory capital, loan loss provision and risk-weighted assets.

In the same market, [Seaw *et al.*, \(2015\)](#) examined the impact of economic and bank specific variables on credit risk of Malaysian banks for the period of 1998 to 2013. The research uses ordinary least square to measure the relationship between dependent and independent variable. The results show that gross domestic product, inflation, bank performance and reserve requirement are significant to credit risk. In addition, [Manab *et al.*, \(2015\)](#) studied the impact of earning management on credit risk for 30 Malaysian companies from 2006 to 2012. The results show that there is significant relationship between liquidity ratio and credit risk after and before the earning management adjustment.

[Safari \(2014\)](#) also analysed factors influencing credit risk of 53 companies from 2010 to 2011 and risk weighted assets are used to measure the credit risk. Only two variables are significant with credit risk which are loan and expenses variables. [Adzobu *et al.* \(2017\)](#) examined the effect of loan portfolio diversification on the profitability and the risk of banks using both static and dynamic estimation techniques. Using return on asset (ROA) and return on equity (ROE) as proxies for bank profitability and non performing loan (NPL) and loan loss provision (LLP) as proxies for bank credit risk, the results show that loan portfolio diversification significantly reduces banks' profitability and increases banks' risk.

[Mwaura \(2013\)](#) examined the effects of internal and external factor on credit risk in 20 commercial banks in Kenya for period 2003 to 2012. The results report the significant relationship between GDP, inflation, interest rates, unemployment and stock performance with credit risk as measured by bank NPL. In addition, [Tehulu and Olana, \(2014\)](#) studied on the relationship between bank specific variable and credit risk. for 10 banks in Ethiopia from 2007 and 2011. The results revealed that credit growth, bank size, operating inefficiency and ownership have statistically significant impact on credit risk.

As for Iranian market, [Haddadi and Hassan, \(2016\)](#) investigated the relationship between credit risk and factor affecting credit risk using DEMATEL method from year 2011 to 2015. The results show that there is a significant relationship between credit risk of customers and liquidity ratios, Leverage ratios may have inverse relationship with credit risk and profitability ratios.

[Duong and Huong \(2016\)](#) examined factors that influence bank credit risk for 20 banks in Vietnam from 2006 to 2014. With NPL as a dependent variable the results show that GDP has positive relationship with credit risk. In the more recent study, [Tona, \(2017\)](#) proved that LLP may be used to measure credit risk in banks where this study used data for six banks from 2001 to 2015. The results show that economic growth, inflation, bad debt and income have significant relationship with bank LLP.

3. Data and Methodology

This study uses secondary data which have been extracted from the statement of financial position, statement of comprehensive income and account notes of sample banks' annual reports. The nature of data is unbalanced data which mainly involves 24 Malaysian banks (12 commercial banks and 12 Islamic banks) for the study period covers from 2002 to 2016 (15 years). Meanwhile for macroeconomic data such as GDP and inflation are downloaded from the BNM's website. Two models are developed in investigating the impact of house financing and other independent variables on bank risk. Using NPL and LLP as proxies of bank risks, the models are as follows:

$$NPL_{it} / LLPTA_{it} = \alpha_0 + \beta_1 EXTI_{it} + \beta_2 TLTA_{it} + \beta_3 INTL_{it} + \beta_4 LPRO_{it} + \beta_5 GDP_{it} + \beta_6 CPI_{it} + \varepsilon_{it}$$

This study uses six dependent variables which are divided into two parts; bank specific and macro-economic variables. Bank specific variables refer to variables which are controllable within bank management and these include expenses (EXTI), total loan (TLTA) income (INTL) and housing loan/financing (PRO). Macroeconomic variables refer to the external factor variable and this study use Gross Domestic Product (GDP) and Consumer Price Index (CPI) as proxies of macroeconomic variables. The detail of the variables is reported in Table 1.

Table-1. Variable Description

Variable	Measurement	Notation
Non-performing loan (NPL)	NPL / Total Loan	NPL
Loan loss provision (LLP)	LLP / Total Asset	LLLPTA
Expense	Total expenses / total income	EXTI
Leverage	Total loan / total asset	TLTA
Income	Income / total loan	INTL
Property financing	Natural log total property financing	LPRO
Gross Domestic Product	Growth in GDP	GDP
Consumer Price Index	Growth in CPI	CPI

4. Findings and Discussion

Descriptive statistics are used to summarize the results in the form of mean, standard deviation, minimum and maximum values for the study period of 2002-2016. Table 2 reports the descriptive statistics for the variables used in this study.

Table-2. Descriptive Statistics of Dependent and Independent Variables.

Variable	Obs	Mean	Std.Dev.	Min	Max
NPL (%)	269	2.52	2.55	0.06	24.92
LLP (RM'000)	269	155,617	208,107	1,325,478	-224,094
TA (RM'000)	269	67,627,564	85,517,314	960,647	496,062,610
TL (RM'000)	269	44,817,229	58,255,917	183,547	32,3,719,559
PRO (RM'000)	269	16,178,161	23,457,021	14,310	146,261,128
INC (RM'000)	269	2,066,875	2,373,619	10,240	11,550,018
TEXP (RM'000)	269	811,439	992,265	840	5,629,901
PAT (RM'000)	269	755,150	1,062,501	-1,307,963	6,422,644
GDP (%)	269	5.1	1.3	1.5	7.4
CPI (%)	269	2.4	1.1	0.5	5.4

PRO: house financing, NPL: Non-performing loan, LLP: Loan loss provision, TA: total asset, INC: interest income, TEXP: total expenses, PAT: profit after tax, TL: Total Loan GDP: nature log of gross domestic product, CPI: consumer price indexes,

Table 2 shows that the mean NPL over the study period was 2.52, where Public Bank recorded the minimum value of NPL of 0.06 while the highest NPL was recorded by Affin Islamic Bank with non performing financing value of 24.92 in 2005. As for LLP, the mean LLP for all banks was RM 155 million where the highest value of LLP was reported by Maybank in 2014 with RM 224 million while the lowest LLP was for Bank Islam Malaysia Berhad on 2006 with total LLP of RM -1.3 billion. The mean for total asset (TA) is RM 67 billion with the highest values of RM 49 billion and the lowest values of RM 960,647. The mean for housing loan/financing was RM 16 billion where the highest was for Public Bank with total housing loan of RM 146 billion on 2016.

As for interest income, it recorded the mean value of RM 2 billion with the highest income was RM 11 billion for Public Bank on 2016, The lowest income was recorded by Citibank Islamic on 2007 with the value of RM 10,240,000. Meanwhile, the mean of total expenses (TEXP) for the study period was RM 811 million with the minimum value of TEXP was RM 840,000 and the maximum was RM 5 billion. The mean for profit after tax (PAT) was RM 755 million where BMB recorded negative return in 2006 with the losses of RM 1.3 billion due to the its financing problem and the highest PAT was RM 6.4 billion recorded by Maybank on 2016. For macroeconomic data, the mean value of GDP for the period of 2002-2016 was 5.16%. and the maximum GDP was 7.4% in years 2010. The mean for CPI was 2.48% for the same period where the maximum CPI was 5.44% in years 2008 and the minimum CPI was 0.58% in 2008.

Table-Error! No text of specified style in document.3. Regression Results for NPL and LLPTA.

	NPL		LLPTA	
	1 Commercial	2 Islamic	1 Commercial	2 Islamic
	FEM	FEM	REM	FEM
Constant	33.8256 (0.000)***	16.3737 (0.063)*	-0.0186 (0.000)***	0.0209 (0.253)
Bank specific				
LPRO	-1.8209 (0.000)***	-0.8358 (0.013)**	0.0011 (0.000)***	-0.0020 (0.031)**
TEXPTI	0.1416 (0.156)	-0.0111 (0.994)	-0.0013 (0.453)	-0.0033 (0.114)
TLTA	-17.6419 (0.310)	0.2449 (0.903)	0.0002 (0.218)	0.0197 (0.312)

INCTL	-2.5867 (0.115)	-38.2658 (0.104)	-0.0551 (0.131)	0.0086 (0.930)
Macro variable				
GDP	0.1995 (0.003) ***	0.0678 (0.486)	0.0000 (0.874)	0.0002 (0.316)
CPI	0.0400 (0.686)	-0.1103 (0.451)	-0.0000 (0.704)	-0.0001 (0.755)
R ²	0.0858	0.0099	0.1635	0.0496
Observation	140	129	140	129

ALL: all bank, CB: commercial bank, IB: islamic banks, texpti: total expenses/total income, tlta: total loan/total asset, inctl: income/total loan, lpro: nature log property gdp: gross domestic product, cpi: consumer price indexes, P value are in parentheses *** p<0.01 p<0.05 p<0.1

Table 3 reports on the impact of housing loan/financing and other variables on NPL and LLPTA for 12 commercial banks and 12 Islamic banks. The regression is divided into two models; Model 1 for commercial banks and Model 2 for Islamic banks. All models were regressed with Random Effect Model (REM) and Fixed Effect Model (FEM) where Hausman tests have been conducted to identify the best fit models. The tests show that all models (except for CB in LLPTA model) are in favor of FEM and due to the presence of heteroscedasticity and autocorrelation problems, all models are regressed with robust standard errors.

From the results, it is found that LPRO are significant for commercial banks and Islamic banks in the NPL regression. As a proxy for housing loan/financing, the coefficients of LPRO are -1.8209 for Model 1 and -0.8358 for Model 2. The negative signs indicate that one unit increase in housing loan/financing will reflect the 1.8209 and 0.8358 decrease in the NPL for commercial banks and Islamic banks respectively. Similar to the results in NPL, LPRO also shows significant relationship with LLPTA in Model 1 and Model 2. Table 3 shows that housing loan/financing are significant with beta coefficients of 0.0011 for commercial banks and -0.0020 for Islamic banks. However the coefficient sign for commercial banks is positive and different with other models. This indicates that one unit increase in housing loan of commercial banks leads to a 0.0011 increase in their LLPTA. In contrast with commercial bank, LPRO has negative relationship with Islamic bank LLP with -0.0020 coefficient values. The result shows that one unit decrease in LPRO leads to 0.0020 increase in Islamic banks NPM. As for other variable, it is found that only GDP is significant in Model 1 where it shows positive relationship with NPL with coefficient equals to 0.1995. This indicates that a one unit increase in the GDP variable will lead to a 0.1995 unit increase in NPL.

5. Conclusion

This study provides some empirical supports to the theoretical studies on the relationship between housing loan/financing and bank risk performances. In general, previous studies show that bank loans have significant relationship with bank risk performances. They support this view by proposing that the higher the bank loans the higher could be the bank returns and risk. But there are not many studies focus on the impact of specific type of loan such as housing loans/financing on bank risk performances. This study contributes to the existing banking literature on bank risk by including housing loan/financing as the focus variable. On top of that this study also investigates the impact of house financing which are unique for Islamic banks.

The results for both commercial banks and Islamic banks show that the relationship between housing loan/financing is negative related with bank risk. Bank management should give attention to home loan/financing facility by providing better services and greater benefits to the home loan/financing customers. In addition, Islamic banks should use this opportunity to expand their market because their market share for home loan/financing is smaller compare to conventional banks. With an increase demand of house and growth in population, Islamic banks should grab this opportunity to offer more benefits and attractive package to new home loan/financing customer.

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