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Bank Ownership and Non-Performing Loans of Islamic and Conventional Banks in An Emerging Economy

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ABSTRACT

This study assesses the non-performing loans of conventional and Islamic banks as well as the influence of ownership on the non-performing loans of conventional and Islamic banks. Due to fundamental differences in Islamic and conventional bank such as funding, non-performing loans might have differing effects on Islamic and conventional banks. This study utilised data of 26 conventional banks and 16 Islamic banks from Malaysia from 2012 to 2020. A Random Effect model was used to investigate the difference between conventional and Islamic banks' non-performing loans as well as the influence of ownership on non-performing loans of conventional and Islamic banks. Results showed no significant differences for non-performing loans of conventional and Islamic banks. This result implies that despite the fact that Islamic banks may benefit from lower agency costs, this does not considerably decrease the likelihood of non-performing loans. Foreign Islamic banks shows higher non-performing loans in comparison to domestic Islamic banks. However, there were no significant differences for non-performing loans between foreign conventional and domestic conventional banks. This study suggests that Islamic bankers, particularly those intending to expand into other countries, investigate non-performing loans, which can impact the risk of a foreign Islamic bank.

JEL Classification: G21, F23, F62, F65

Keywords: Non-Performing Loans; Foreign Banks; Islamic Banks; Ownership; Comparative study

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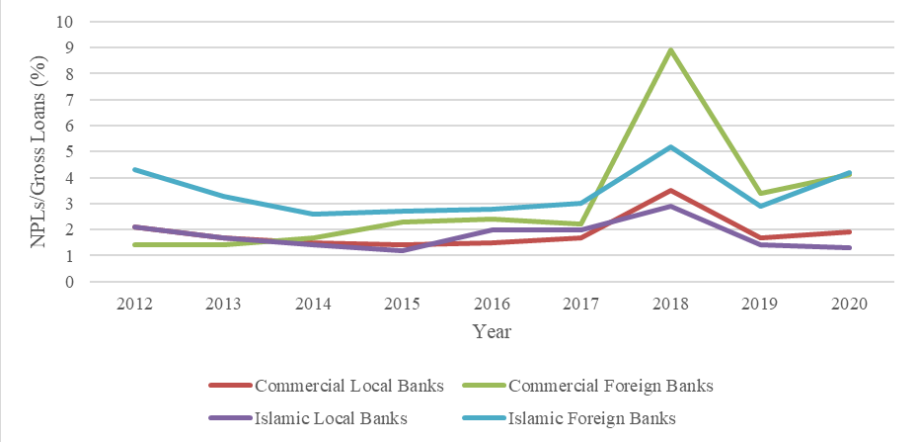
INTRODUCTION

Providing loans is a major business activity of financial intermediary. Hence, understanding non-performing loans (NPLs) of banks provides great importance as it reflects the capital provisions and performance of banks (Pop et al., 2018). Previous research on NPLs have examined the influence of various factor on NPLs such as market power (Partovi and Matousek, 2019) and growth in sectors (Alandejani and Asutay, 2017); however, not much is known about the ownership of banks and its influence on NPLs in Malaysia.

Several studies such as Partovi and Matousek (2019) and Karadima and Louri (2020) have suggested that ownership of banks may influence the NPLs. Partovi and Matousek (2019) found state-owned banks are affected to large extend by NPLs compared to private domestic and foreign banks in Turkey. On the other hand, Karadima and Louri (2020) found the presence of foreign banks is associated with lower NPLs. While these studies examined the relationship between ownership and NPLs, they did not look into banks in Malaysia, nor Islamic banks. Unlike conventional banking, Islamic banking offers several Profit and Loss Sharing (PLS) products such as *Musyarakah* and *Murabaha*. In doing so, funding and activity structures of Islamic and conventional banks have eminent differences (Beck et al., 2013). Hence, theoretically, the influence of non-performing loans on Islamic and conventional banks would be different. Aside from theoretical differences, statistic shown in Figure 1.1 shows clear differences in NPLs of conventional and Islamic banks. While the foreign counterparts of both types of banks shows higher NPLs than local banks, commercial foreign banks seem to have higher volatility in NPLs than foreign Islamic banks. According to The Malaysian Reserve (2019) and Raj (2021), foreign Islamic banks such as Kuwait Finance House (Malaysia) Bhd and Al Rajhi Banking and Investment Corporation (M) Bhd are struggling to gain market share in Malaysia, and these banks are considering mergers and acquisitions or exiting the Malaysian market entirely. This real-time issue with foreign Islamic banks in Malaysia, coupled with the theoretical gap for NPLs between commercial and Islamic banks, makes it relevant to carry out a study that look into ownership and NPLs of Islamic and conventional banks in Malaysia.



Source: Calculated by authors using data of NPLs/gross loans provided by Fitch Connect.

Figure 1 NPLs/Gross Loans of Commercial and Islamic Banks in Malaysia from year 2012 to 2021

This study examines the influence of ownership in commercial and Islamic banks on the NPLs of both banks. This study utilised banks' data from 2012 to 2020 in Malaysia. This study chooses to use banks located in Malaysia because it has substantial amount of foreign commercial and foreign Islamic banks for comparison.[1] This study used a Random Effect (RE) model to examine the influence of ownership, bank-specific and macroeconomic-specific variables on NPLs of both types of banks. Result from the panel regressions showed that the influence of foreign ownership has significant influence on NPLs of Islamic banks where else, foreign ownership show no significant influence on the NPLs of conventional banks. Our paper can help in a variety of ways. As banks continue to expand and banking becomes more globalised, it is likely

[1] Bank's data from Fitch Connect indicates that Malaysia has the highest amount of foreign Islamic banks with 5 or 31.25% from total amount of Islamic banks. Besides that, Malaysia also host to 19 foreign commercial banks or 73.08% from total amount of commercial banks.

that banks from all over the world will enter the market in the coming years. Examining the influence of foreign ownership on NPLs can thus benefit authorities, investors, and bankers by providing useful tools for foreign entry and expansion. As mentioned, several foreign Islamic banks in Malaysia are not in favourable condition and therefore, analysis from this paper can create awareness and useful reference to conventional and Islamic banks abroad on the differences in NPLs of foreign and domestic banks in Malaysia; a crucial implication of this study is providing an informed decision for oversea banks whether to enter Malaysian market as a foreign subsidiary or not. This study also provides an incremental contribution to the NPLs and ownership literature by examining both conventional and Islamic banks. As such, this paper not only benefits Islamic banks but conventional banks as well.

This paper is structured in a few sections. Section 2 discusses about theories and literature connected to ownership and NPLs, while Section 3 details the sample and methods utilised to conduct the analysis. This is followed by results and discussion, which covers the results as well as debates on the analysis, and finally, the study's conclusion.

LITERATURE REVIEWS

Islamic Banks

Capital market globalisation has resulted in an increase in cross-border banking activities (Lensink et al., 2008). As a result, policymakers and other stakeholders are increasingly interested in understanding the entry of foreign banks, and this has caused many studies to look into the influence of foreign ownership on the performance of banks (e.g., Ahamed, 2017; Saw et al., 2022). However, these studies examined the ownership influence on the profitability of banks, rather than NPLs. Although there are several studies that looked into the influence of ownership on NPLs (Karadima and Louri, 2020; Parttovi and Matousek, 2019), research on Islamic banks is scarce (Alandejani and Asutay, 2017). According to Alendejani and Asutay (2017), nonperforming loans (NPLs) are a significant source of risk not only for conventional banks but also for Islamic banks.

Miah and Uddin (2017) highlighted that discrepancies in Islamic bank performance can be ascribed to the nature of Islamic financial practices. Among them are Islamic financial products such as Mudarabah, which uses a PLS structure rather than pre-determined interest-returns. Under Mudarabah, profits are shared in a specified ratio, but losses are solely handled by the bank, i.e., the entrepreneur is protected by limited liability clauses. While the entrepreneur retains complete control over the company, key investment choices, including the inclusion of additional investors, must be authorised by the bank. As such, the NPLs of Islamic banks and conventional banks can be different. Unlike conventional loans, which looks into the credit worthiness (Rahman and Jahan, 2018), PLS products provided by Islamic banks can have lower agency costs than conventional loans because of the heavy monitoring process of products such as Mudarabah, where banks participate in and have the authority over their client’s or partner’s key investment. This reduces the agency problem and potentially reduces the risk of default (or losses) that Islamic banks have in comparison to conventional banks. Due to these differences, it makes sense that many comparative studies related to Islamic banking have been carried out (Islam et al., 2022).[2] Scholars such as Aljifri (2013) and Beck et al. (2013) have also mentioned the possibility of Islamic banks' having lower agency costs than the conventional counterparts. The PLS mechanism, according to Beck et al. (2013), may raise depositors' incentives to monitor and discipline the bank, which subsequently lower the bank's desire to monitor and discipline borrowers because the bank does not face risks such as sudden withdrawal from depositors. Under such a mechanism, Islamic banks' NPLs can be different than their conventional counterparts. However, Beck et al. (2013) also noted that Islamic banks have higher cost structures which relate to their higher complexity and the relatively young age of Islamic banks in comparison to their conventional counterparts. Nevertheless, based on the presence of PLS products in Islamic banks, where Islamic banks have the authority on key investment decisions of their partners, we formulate the following hypothesis:

[2] According to Islam et al. (2022), comparative studies account for 20% of total publications related to participation (Islamic) banks in Turkey.

$H1_0$*: The NPLs of Islamic banks is not significantly different from conventional banks.*
$H1_\alpha$*: The NPLs of Islamic banks is significantly lower than conventional banks*.

Ownership and NPLs

There are various theories about ownership. According to the *home field advantages* hypothesis, domestic banks outperform foreign banks on average (Boulanouar et al., 2021). This is largely because, unlike foreign banks, domestic banks do not encounter linguistic, cultural, currency, regulatory, and supervisory obstacles, and do not suffer from organisational diseconomies that may come from operating or monitoring from a distance (Berger et al., 2000). According to Claessens and Horen (2012), foreign banks are likely to incur additional costs and face greater barriers in financial services provision compared to domestic banks. They may have fewer information compared to the local banks on how to do business in the host country, thus putting them at a disadvantage. This suggests that foreign banks' NPLs may be higher than domestic banks' because they may lack customer information. Mateev and Bachvorov (2021), who studied the effect of ownership concentration of Islamic and conventional banks in the GCC region, showed that foreign ownership has a strong negative effect on conventional banks but a positive influence on Islamic banks, especially post-GFC.

On the contrary, the *global advantage hypothesis* asserts that foreign banks can outperform local banks by disseminating their superior management talents and/or implementing best-practice policies that reduce costs. This suggests foreign banks may have superior management in reducing non-performing loans than domestic ones. A study on efficiency by Staehr and Uuskula (2021) supports this hypothesis where they found foreign banks in Turkey have better technical efficiency and foreign banks provide better services to customers. Other studies that support this hypothesis include Ahamed (2017) and Boulanouar et al. (2021). Due to PLS products which can reduce the agency cost of foreign and domestic Islamic banks, the influence of ownership on NPL on Islamic and conventional banks can be different. Regardless, home field advantages, the global advantage hypothesis, and empirical findings from Mateev and Bachvorov (2021) suggest that ownership can have a significant impact on conventional and Islamic bank NPLs. Based on this support, we formulate the following hypothesis:

$H2_0$*: The NPLs of foreign conventional banks is not significantly different from domestic conventional banks.*
$H2_\alpha$*: The NPLs of foreign conventional banks is significantly different than domestic banks*.
$H3_0$*: The NPLs of foreign Islamic banks is not significantly different from domestic Islamic banks.*
$H3_\alpha$*: The NPLs of foreign Islamic banks is significantly different than domestic Islamic banks.*

DATA AND METHODOLOGY

Data Selection

Fitch Connect data, which offers complete banking data for the majority of nations, is utilised. Campmas (2020), Saw et al. (2020), and Saw et al. (2022) are three recent works that utilised Fitch Connect data. Malaysian conventional and Islamic bank samples were chosen because Malaysia has a significant number of overseas Islamic banks operating in specified nations. Furthermore, according to the World Economic Forum (2015), Malaysia is a vital contributor to the worldwide share of Islamic finance. Only banks with at least two observations will be sampled, as Beck et al. (2013) did. Table 1 lists the Malaysian conventional and Islamic banks, both native and international. This analysis makes use of publicly available bank financial data from 2012 until 2020. Macroeconomic statistics such as GDP growth and inflation are collected by the World Bank. Every bank-specific figure is expressed in local currency. To identify the categorisation and ownership of Islamic banks, we visit the websites of central banks and individual banks in addition to Fitch Connect.

Table 1 Sampled banks

Bank Types	Domestic Islamic Banks	Foreign Islamic Banks
Conventional	Affin Bank Berhad	Bangkok Bank Berhad
	Alliance Bank Malaysia Berhad	Bank of America Malaysia Berhad
	AmBank (M) Berhad	Bank of China (Malaysia) Berhad
	CIMB Bank Berhad	BNP Paribas Malaysia Berhad
	Hong Leong Bank Berhad	China Construction Bank (Malaysia) Berhad
	Malayan Banking Berhad	Citibank Berhad
	Public Bank Berhad	Deutsche Bank (Malaysia) Berhad
	RHB Bank Berhad	HSBC Bank Malaysia Berhad
		India International Bank (Malaysia) Berhad
		Industrial and Commercial Bank of China (Malaysia) Berhad
		J.P. Morgan Chase Bank Berhad
		Mizuho Bank (Malaysia) Berhad
		MUFG Bank (Malaysia) Berhad
		OCBC Bank (Malaysia) Berhad
		Standard Chartered Bank Malaysia Berhad
		Sumitomo Mitsui Banking Corporation Malaysia Berhad
		The Bank of Nova Scotia Berhad
		United Overseas Bank (Malaysia) Bhd
Islamic	Affin Islamic Bank Berhad	Al Rajhi Banking & Investment Corporation (Malaysia) Berhad
	Alliance Islamic Bank Berhad	HSBC Amanah Malaysia Berhad
	AmBank Islamic Berhad	Kuwait Finance House (Malaysia) Berhad
	Bank Islam Malaysia Berhad	OCBC Al-Amin Bank Berhad
	Bank Muamalat Malaysia Berhad	Standard Chartered Saadiq Berhad
	CIMB Islamic Bank Berhad	
	Hong Leong Islamic Bank Berhad	
	Maybank Islamic Berhad	
	MBSB Bank Berhad	
	Public Islamic Bank Berhad	
	RHB Islamic Bank Berhad	

Source: Bank Negara Malaysia (2022)

Main variable

This study follows the study of Vithessonthi (2016) in using non-performing loan ratio (NPLTA) as non-performing loans over total assets. For robustness, NPLs are measured using a non-performing loans ratio (NPLTL) as the non-performing loans over total loans. NPLTL is used in other studies such as Us (2017) and Staehr and Uuskula (2021) to represent NPLs.

Bank Type Variable

Value 1 is given for Islamic banks, and 0 for conventional banks. This variable test the first hypothesis (*H1*) of this study.

Ownership Variable

Foreign banks are those that have more than 50% of their shares owned by foreigners. This variable tests the second and third hypothesis (*H2* and *H3*) of this study. A value of 1 is given for foreign banks and 0 for domestic banks. Ownership variable is used as controlled variable in stage 1 analysis.

Controlled Variables

Several bank-specific and macroeconomic variables are used as control variables. This study selects controlled variables based on previous studies on NPLs and their bank-specific and macroeconomic variables. Controlled variables are described in detail in Table 2. A time dummy is included to capture time-varying heterogeneity. Other variables such as liquidity risk and capitalisation used in the study of Karadima and Louri (2021) and Vithessonthi (2016) respectively are considered but dropped due to their high correlation with lending ratio and also affect the Variance Inflation Factor (VIF) value above 10, indicating a high multicollinearity problem. However, liquidity risk is used in separate regressions to replace lending ratio in the appendix to provide further robustness.

Table 2 Description of controlled variables

Variable	Measurement	References
Bank size	Logarithm of total assets	Vithessonthi (2016), Us (2017) and Karadima and Louri (2021)
Lending Ratio	loans to total assets (%)	Us (2017) and Karadima and Louri (2021)
Liquidity Risk	Loans to total deposit (%)	Karadima and Louri (2021)
GDP growth	$(GDP_2 - GDP_1)/GDP_1$	Alendejani and Asutay (2017) and Karadima and Louri (2021)
Inflation	$(CPI_2 - CPI_1)/CPI_1$	Us (2017)
Time dummy	Value 1 is given for a given year, and 0 other years	Saw et al. (2022)

Empirical Methodology

Analysis in this study is separated into two stages. Using both conventional and Islamic bank data, the first stage examines hypothesis 1 (*H1*) using a Random Effect (RE) model. Pooled Ordinary Least Square (OLS) is considered, but due to the presence of cross-sectional heterogeneity, Generalised Least Square (GLS) is preferred over Pooled OLS. Hausman test is performed and as p-value is higher than 0.05, random effect is chosen instead of fixed effect. During first stage panel regression, the bank type variable is tested with other controlled variables including ownership, bank size, lending ratio, GDP growth, inflation and time-dummy. Two panel regressions are planned in the first stage. Regression (i) used NPLTA as a dependent variable and used commercial and Islamic banks' data. Regression (ii) used NPLTL as the dependent variable and used commercial and Islamic banks' data. Regression (ii) serves as a robustness test for regression (i). Further robustness test for regression (i) is carried out by replacing the lending ratio with the liquidity risk variable. The following shows the formula for first-stage panel regression:

$$Y_{it} = \alpha_{it} + \beta_1(Bank\ Type)_{it} + \beta_2(Ownership)_i + \beta_3(Controlled\ Bank - Specific\ Variables)_{it} + \beta_4(Controlled\ Macroeconomic\ Variables)_{it} + \beta_5(Controlled\ Time - dummy)_t + e_{it} \quad (1)$$

In the second stage, we test hypothesis 2 (*H2*) and hypothesis 3 (*H3*) of this study using RE as well, due to the presence of cross-sectional heterogeneity. At this stage, eight regressions are planned. Regression (iii) and (iv) examine the influence of ownership on NPLTA and NPLTL of commercial banks. Regression (v) and (vi) examine the influence of ownership on NPLTA and NPLTL of Islamic banks. Regression (iv) serves as a robustness test for regression (iii), while regression (vi) serves as a robustness test for regression (v). Further robustness tests for regression (iii) and (v) are carried out by replacing the lending ratio with the liquidity risk variable. The following shows the formula used for stage 2 panel regressions:

$$Y_{it} = \alpha_{it} + \beta_1(Ownership)_i + \beta_2(Controlled\ Bank - Specific\ Variables)_{it} + \beta_3(Controlled\ Macroeconomic\ Variables)_{it} + \beta_4(Controlled\ Time - dummy)_t + e_{it} \quad (2)$$

Similar to the study of Saw et al. (2022), all regressions carried out in stages 1 and 2 used the Cook outlier test to eliminate outliers. Several diagnostic checks are performed, such as Variance Inflation Factor (VIF), Modified Wald and Wooldridge tests, to test the presence of problems such as multicollinearity, heteroskedasticity, and serial correlation, respectively. We found no multicollinearity issues with variables used in this study, but modified Wald and Wooldridge tests show the presence of heteroskedasticity and serial correlation issues. Therefore, RE with robust standard error is used in all 12 regressions.

EMPIRICAL RESULTS

Descriptive statistic and Variance Inflation Factor

Table 3 shows the descriptive statistics of dependent and independent variables used in this study. While NPLTA has higher volatility in comparison to NPLTL, within independent variables, lending ratio is shown to be the most volatile with a standard deviation of 369.6431. On the other hand, table 4 shows the VIF score of variables in each regression, and we found no multicollinearity issue within the independent variables.

Table 3 Descriptive Statistic

Variable	Observations	Mean	Std. Dev.	Min	Max
NPLTA	328	0.700426	0.759811	0	7.404822
NPLTL	328	2.640933	4.958805	0	74.8997
Bank Type	373	0.386059	0.487498	0	1
Ownership	373	0.565684	0.496333	0	1
Bank Size	365	10.80883	1.655405	3.342862	14.98736
Lending Ratio	364	47.99616	369.6431	0.466851	7078.445
GDP Growth	373	3.890489	3.443539	-5.64695	6.006722
Inflation	373	1.702767	1.386027	-1.1387	3.871201

Table 4 Variance Inflation Factor

Model	i & ii	iii & iv	v & vi
Bank Type	1.37		
Ownership	1.64	1.61	1.32
Bank Size	1.64	2.20	2.03
Lending Ratio	1.16	1.59	1.81
GDP Growth	2.85	2.77	2.97
Inflation	2.85	2.79	3.02
Mean VIF	**1.92**	**2.19**	**2.23**

Note: A mean VIF of less than 10 shows that there is no multicollinearity concern.

Stage 1 Panel Regressions

The results of Stage 1 panel regression are summarised in Table 5. Table 5 shows regression using NPLTA and NPLTL as dependent variables. Bank type in both regressions shows no significant influence on NPLs of banks in Malaysia. Hence, we do not reject $H2_0$. This result is not surprising given the arguments from Beck et al. (2013) and Aljifri (2013). Although Islamic banks may have lower agency cost due to lower desire to monitor and discipline borrowers and the present of PLS products, Beck et al. (2013) also mentioned that Islamic banks are lacking in term of experience and are relatively complex in comparison which may counter the benefits of PLS and lower risks such as sudden withdrawal from depositors.

Ownership shows a positive significant influence on NPLTA while there is no significant influence on NPLTL. Bank size shows a positive, significant influence on NPLTA but no significant influence on NPLTL. The lending ratio, GDP growth, and inflation show significant influences on both the NPLTA and NPLTL of conventional and Islamic banks. Time effects are present in both regressions.

Table 5 Stage 1 Panel Regression

Model Dependant Variable	(i) NPLTA	(ii) NPLTL
Bank Type	0.271	0.0250
	(0.181)	(0.862)
Ownership	0.298*	0.210
	(0.164)	(0.697)
Bank Size	0.0845**	-0.374
	(0.0402)	(0.327)
Lending Ratio	0.000751	-0.00500
	(0.00578)	(0.0340)
GDP Growth	-0.00936	-0.0261
	(0.00868)	(0.0261)
Inflation	-0.00256	-0.0588
	(0.0187)	(0.0567)
Constant	-0.602	6.359*
	(0.497)	(3.632)
Time Effect	Present	Present
R-squared	0.1692	0.1027
Observations	316	320
Number of code	37	37

Notes: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses.

Stage 2 Panel Regressions

The results of Stage 2 panel regression are summarised in Table 6. Table 6 shows regression using a sample of Islamic and conventional banks separately. Ownership shows no significant influence on conventional banks' NPLs in regressions (iii) and (iv). Hence, we do not reject $H2_0$. This result is comparable to that of Sturm and William (2004), who discovered that foreign banks are more efficient, but there is no significant difference in terms of profitability. Tandon et al. (2014) also found no significant difference in the efficiency of foreign and

domestic banks in India. As for Islamic banks, we find that ownership has a significant positive influence at a 10% significant level on NPLTA and NPLTL in regressions (v) and (vi). Hence, $H3_0$ is rejected at a 10% significant level. This result indicates higher NPLs faced by foreign Islamic banks than domestic Islamic banks, supporting the *home field advantages hypothesis*, which suggests that foreign banks compared to local banks are more likely to incur higher expenses and encounter larger restrictions in providing financial services.

The results of controlled variables are as follows. Bank size shows no significant influence on all four regressions. Lending ratio has no significant influence on (iii), (iv), and (v), but has a 1% significant influence on NPLTL of Islamic banks in regression (vi). GDP growth and inflation show no significant influence on all regressions. A time-effect is present in all regressions.

Further Robustness

Aside from the robustness tests presented in regressions (ii), (iv), and (vi), we also offer robustness by substituting liquidity risk for lending ratio. Furthermore, this study also used Least Square Dummy Variable (LSDV) to further provide robustness for stage 1 analysis. Appendix A contains the results. The outcome employing liquidity risk as one of the controlled bank-specific variables was resilient to the outcomes in regression (i) (iii), and (v).

Table 6 Stage 2 Panel Regression

Bank Type	CB	CB	IB	IB
Model	(iii)	(iv)	(v)	(vi)
Dependent Variable	NPLTA	NPLTL	NPLTA	NPLTL
Ownership	0.0867	-0.743	0.521*	1.627*
	(0.134)	(0.789)	(0.294)	(0.965)
Bank Size	0.0334	-0.636	0.0795	0.258
	(0.0463)	(0.448)	(0.0585)	(0.177)
Lending Ratio	0.00886	0.0467	-0.0121	-0.110***
	(0.00570)	(0.0399)	(0.0120)	(0.0416)
GDP Growth	0.0867	-0.743	-0.00914	-0.0336
	(0.134)	(0.789)	(0.0175)	(0.0552)
Inflation	0.0334	-0.636	-0.0161	-0.0510
	(0.0463)	(0.448)	(0.0337)	(0.101)
Constant	-0.104	8.533*	0.0863	2.602*
	(0.499)	(5.184)	(0.523)	(1.374)
Time Effect	Present	Present	Present	Present
R-squared	0.2485	0.1392	0.2658	0.2832
Observations	187	187	129	128
Number of code	22	22	15	15

Notes: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses.

CONCLUSION

This study examines the differences between conventional and Islamic banks' non-performing loans as well as the influence of ownership on conventional and Islamic banks' non-performing loans. Using a sample of conventional and Islamic banks from Malaysia from the year 2012 to 2020, the non-performing loans of conventional and Islamic banks are not significantly different from one another. This suggests that despite the potential lower agency cost of Islamic banks in comparison to conventional banks due to the presence of profit-and-loss-sharing and lower risk in withdrawal from depositors, the relatively low experience as well as high complexity of Islamic banks may have contributed to the non-significant result between conventional and Islamic banks' non-performing loans. As for analysis on ownership and non-performing loans, this study found foreign Islamic banks have higher non-performing loans than domestic Islamic banks. This supports the home field advantages hypothesis, which suggests foreign banks face many obstacles such as culture, currency, and regulation that domestic banks do not. However, ownership does not have a significant influence on non-performing loans of conventional banks.

The findings of this study have various implications for the financial industry in the future, as well as adding to the existing literature. Firstly, despite Islamic banks may have advantages in term of agency cost, it does not significantly lead Islamic banks prone to non-performing loans and thus, we recommend that

policymakers to pay attention to both conventional and Islamic banks' non-performing loans. Secondly, this study also enriches our understanding on the influence of ownership on the non-performing loans of Islamic banks, which is lacking in existing literature. Result from this study indicates that foreign Islamic banks have significant higher non-performing loans than domestic Islamic banks. Therefore, as Islamic banks continue to grow, this study recommend that Islamic bankers, especially those looking to expand into other countries to look into the non-performing loans which can affects risk of a foreign Islamic banks. Thirdly, by evaluating both conventional and Islamic banks, this study adds to the existing non-performing loans and ownership literature. Although this study did not find significant different in non-performing of conventional and Islamic banks, further analysis shows that the influence of ownership can differ for conventional and Islamic banks. Therefore, this shows the importance of not generalising studies on conventional banks into Islamic banks, and that Islamic banks deserve its own analysis.

This study, like any other piece of research, has limitations. This study only represents Islamic and conventional banks at the present moment. As Islamic banks continue to expand, get more experience, and become more efficient, the differences in non-performing loans between conventional and Islamic banks can change. Hence, we suggest more study to explore non-performing loans in the future. This study also suggests looking into cooperative Islamic banks, which are available in Malaysia and are not receiving enough attention despite having the potential to outperform other Islamic banks. Lastly, this study also proposes looking at cooperative Islamic banks, which are accessible in Malaysia and are underutilised despite having the potential to outperform other Islamic banks. Finally, this study recommends that more research be conducted on non-performing loans made by international Islamic banks. According to the findings, international Islamic banks have significantly larger non-performing loans than domestic banks. As a result, we may investigate further by looking at home country characteristics such as economic and cultural differences between the home and host countries.

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APPENDIX

Table 1A Further Robustness Tests

Bank Type	CB & IB	CB & IB	CB	IB
Model	(a)	(b)	(c)	(d)
Dependent Variable	NPLTA	NPLTA	NPLTA	NPLTA
Bank Type	0.0426	0.167		
	(0.0931)	(0.178)		
Ownership	-0.244***	0.204	-0.0152	0.483**
	(0.0124)	(0.145)	(0.189)	(0.221)
Bank Size	0.107***	0.0508	0.0135	0.0404
	(0.0376)	(0.0400)	(0.0563)	(0.0558)
Liquidity Risk	-0.00888	0.00281	0.00391**	0.000597
	(0.00765)	(0.00206)	(0.00186)	(0.00355)
GDP Growth	-0.0113	-0.00482	-0.0103	-0.00511
	(0.00914)	(0.00796)	(0.00868)	(0.0173)
Inflation	0.00312	-0.00550	0.0116	-0.0265
	(0.0203)	(0.0185)	(0.0236)	(0.0300)
Constant	-0.0442	-0.384	0.0752	0.0527
	(0.237)	(0.453)	(0.733)	(0.583)
Time Effect	Present	Present	Present	Present
Bank-Specific Effect	Present	-	-	-
R-squared	0.735	0.2352	0.3143	0.2511
Observations	316	307	182	129
Number of code		38	22	15

Notes: Regression (a) and (b) provide further robustness to regression (i) and (ii), while regression (c) provide further robustness to regression (iii) and (iv), and regression (d) provide further robustness to regression (v) and (vi). Robust standard errors in parentheses. Regression (a) used LSDV model while the others used RE model. *** p<0.01, ** p<0.05, * p<0.1