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FACTORS AFFECTING CREDIT RISK WITH THE IMPACT OF COVID-19: A STUDY ON ISLAMIC BANKS IN MALAYSIA

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Abstract
Banks and financial institutions around the world manage the investments of countless consumers. Only a handful of consumers have excellent credit, particularly during the current pandemic of COVID-19. Hence, in the field of credit risk management, the assessment of reflecting and calibrating credit risk is very important and must be carried out accurately. It must be properly administered to survive in the banking industry's ever-increasing competitiveness. Thus, this paper examines factors affecting credit risk in Islamic banking in Malaysia. Moreover, pinpoints the relationship between COVID-19 and Islamic banking credit risk as it imposes a threat to the profitability of banks. Data from the Annual report of 16 Islamic banks were collected for nine years from 2013 to 2021, and panel data analysis was used in this study. The results show that profitability (PR), bank inefficiency (EFF), and bank capitalization (CAP) affect Islamic banks' credit, and bank inefficiency (EFF) was selected as the most important variable affecting Islamic banking credit risk during the COVID-19 pandemic. In general, this study proved that Islamic banks in Malaysia can survive COVID-19 and have good risk management to reduce losses.

Research paper

Keywords: Credit Risk, COVID-19, Panel Data, Islamic Bank, Fixed Effect

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Introduction

Risk exists in all aspects of business activities; however, for banks and financial institutions, credit risk is a key factor to manage. Credit risk refers to the possibility that the borrower or counterparty will not be able to perform its obligations following the agreed terms. The management of credit risk seems to be a difficult component that requires a complete approach in the financial sector. Research shows that the success of financial institutions depends on their ability to withstand external risks and survive difficult economic conditions to keep shareholders profitable (Chamberlain, Hidayat, & Khokhar, 2020). The country trusts the banks because they are capable of surviving this situation and are mature in risk management. According to Chamberlain et al. (2020), credit risk is very critical in the banking industry. The management of credit risk seems to be a difficult component that requires a complete approach. According to Ali, Khattak, and Alam (2021), credit risk occurs in all products given by banks to their consumers, and each bank has a distinct risk depending on how they handle the risk. Hence, credit risk is paramount when measuring the health and stability of the banking system (Ali et al., 2021). Credit risk management in banks is responsible to keep credit risk exposure within appropriate and acceptable limits. It is the process of minimizing losses by determining the sufficiency of a bank's capital and loan loss reserves at any particular time.

Non performing loans (NPLs) can be utilized as an indicator of banking crises since they have an impact on the nation’s economic growth by reducing credit development (Barra & Ruggiero, 2022). The rise of non-performing loans in banking advances is a key indicator of a monetary crisis. Following the worldwide crisis, Non-Performing Loans (NPLs) have been the

focus of government and bank management because they are associated with the loss and crises in the banking sector.

Recently, the economic crisis that was brought on by COVID-19 imposed a threat to the profitability of banks, especially Islamic banks (Kawamorita & Salamzadeh, 2021; Dana et al., 2022; Barra & Ruggiero, 2022), which in turn lowers their revenue and leads to losses since borrowers are unable to repay their debts. Following the COVID-19 outbreak, people are faced with a hard situation. Some of them might be terminated from work as some of the businesses need to stop or close their operations, not being paid their employer, and insufficient money to buy necessary items such as food and medicine. In these difficult times, the most volatile sector is the banking industry as the banks were exposed to higher credit risk when there was a total lockdown which is a movement control order (MCO). Inadequate credit risk management and the failure to grasp poor credit quality promptly may increase future bank losses and erode trust in the financial industry. Thus, the pandemic of COVID-19 has had a significant influence on them (BIS, 2022).

Since credit risk is a significant risk in the banking industry, there are a lot of studies have been conducted concerning on that particular topic. However, most of the studies focused on developed countries, and limited studies emphasized developing countries like Malaysia (Batrancea et al., 2019, 2022). Additionally, credit risk in the conventional banking sector has been exhaustively researched and has explored various determinants like macroeconomic and bank-specific factors (Ali et al., 2021). Besides that, there is only limited study on the determinant of credit risk with the impact of COVID-19. This is because previous researchers only considered other fac-

tors such as liquidity, loan ratio, and unemployment rate, not the current situation facing our country. As Malaysia has suffered significant economic losses due to the COVID-19 (coronavirus) pandemic in the past three years. Consequently, this study focuses on the factors that contributed to credit risk in the Islamic banks in Malaysia with the impact of COVID-19 (Shahul Hameed et al., 2022). It also investigates whether profitability, growth, size of the bank, bank inefficiency, bank capitalization, and COVID-19 affect the credit risk of Islamic banks in Malaysia.

This paper will be structured accordingly by providing the scenarios of Islamic banking in Malaysia during the COVID-19 pandemic. The spread of the COVID-19 virus in different countries has severely disrupted supply chains, economic shocks, and global consumer preferences (Salamzadeh & Dana, 2021, 2022; Pereira et al., 2021; Rahman et al., 2021; Dheer & Salamzadeh, 2022). Furthermore, the pandemic has exacerbated instability in the financial sector, which in turn has adversely affected the banking sector. Thus, situation of the Islamic banking in Malaysia must be understood before proceeding to the next session. Followed by a literature review, methodology used, findings, conclusion, limitations, and recommendations.

The Scenario of Islamic Banking in Malaysia during the Covid-19 Pandemic

Islamic banking is the practice of conducting financial transactions following Shariah principles (Islamic law). The sharing of profit and loss, as well as the prohibition on lenders and investors collecting and paying interest, are two essential concepts in Islamic banking (Alizz Islamic Bank, 2022). The Islamic banking sector is a financial management system based on Sharia law.

The fundamental concept is to prevent the collection of interest and its use for business gain. Muslim banking is a financial saving system based on Islamic law, often known as Shariah law, and directed by Islamic financial affairs. The notion is based on two essential principles which are the sharing of profit and misfortune. Islamic law prohibits gathering interest or *Riba*.

The first Islamic bank was established in 1983. Under the Islamic Banking Scheme (IBS), commercial banks, merchant banks, and financial institutions were permitted to provide Islamic banking products and services beginning in 1993. To avoid the mixing of funds, these organizations must separate the assets and operations of Islamic banking from those of conventional banking. In addition, the number of Malaysian banks that sell Islamic products has increased to 16 (as of 2015). In addition to banks, non-bank intermediaries that provide syariah-based products include Malaysia Building Society Berhad (MBSB) and cooperatives regulated by the Malaysian Cooperative Commission (SKM). However, this study used 16 Islamic banks in Malaysia that are listed with Bank Negara Malaysia (BNM).

According to N Berger, Demirgüç-Kunt, Moshirian, and Saunders (2021), Basel III reforms and country-specific upgrades to bank supervision and regulation have made the banking system more resistant to the COVID-19 crisis. They claim that national government actions have contributed to the stability of the banking industry and mitigated the economic impact of the pandemic on its fundamental operations in several countries.

According to Darjana (2022), since March 2020, the intermediate role of the banking sector has been limited, resulting in a decline in credit growth. Due to the uncertainty during the pandemic era, the financial industry associates it with credit risk, and banks tend toward conservatism and risk aversion

in their lending practices. Simultaneously, bank deposits have risen, showing depositors' reluctance to spend money in consideration of uncertain economic circumstances. However, if a more persistent pandemic causes a deeper and longer recession, as well as renewed disruptions in the financial system and another round of currency depreciation, nonfinancial corporate performance may deteriorate further, and banks may face a significant increase in non-performing loans (NPLs), putting their profitability and capital adequacy under renewed pressure (Darjana, 2022).

Finally, there were surrounding physical shocks to the banking and financial sectors. Thus, it is critical to investigate the consequences of this epidemic on the global financial industry's stability. (Elnahass, Trinh, & Li, 2021) studies the impact of COVID-19 on performance and financial stability before and during the pandemic using accounting-based, market-based, and risk-based variables. The study covers 1090 banks from 116 countries from the first quarter of 2019 to the second quarter of 2020. The COVID-19 problem, according to the statistics, drastically decreased bank profitability, financial stability, cost efficiency, and the values of the stock market.

Theoretical Literature

The 5C's of credit analysis is a method used by lenders to assess the creditworthiness of potential borrowers. The methodology considers five borrower characteristics and loan terms to assess the probability of default and, therefore, the lender's risk of financial loss. The 5Cs include character, capital, capability, condition, and collateral (Regal, 2021).

The 5C's method of credit evaluation includes these two evaluation criteria. Lenders may verify an applicant's credit report, credit score, income

statement, and other financial information. The lender can also evaluate information about the loan itself. Every lender has its method for determining a borrower's creditworthiness, although the 5 C's (Characteristics, Capability, Principal, Collateral, and Conditions) are commonly used in personal and business loan applications. A credit report shows a borrower's total debt, current amount, credit limit, and associated default and bankruptcy history (Team, 2022).

Credit Risk

Several scholars have studied the factors that influence credit risk in the banking industry. Most of the studies will compare Islamic and conventional banks. Louzis, Vouldis, and Metaxas (2012) examined the key credit risk characteristics in the Greek banking sector utilizing non-performing loans (NPL) of various loan categories as the dependent variables. The study discovered that macroeconomic variables such as gross domestic product (GDP), unemployment, and interest rate heavily influence Greek bank NPLs.

According to a prior study by How, Karim, and Verhoeven (2005), Islamic banking institutions face significantly lower credit risk than non-Islamic financing banks. It was also demonstrated that the size of Islamic banks and conventional banks has a significant impact on credit risk (Akram & Ur Rahman, 2018; Moghadam & Salamzadeh, 2018). Ahmad and Ahmad (2004) investigated the key elements impacting the credit risk of Malaysian Islamic banking and determined that risk-weighted assets, size, and management efficiency all had a significant impact on Malaysian Islamic banking's credit risk. They also emphasized the similarities and differences in credit risk variables between conventional and Islamic banks. It can be concluded that there

are a lot of variables that affect the credit risk of a bank. Some variables that most of the authors have discovered are the size of the bank, the quality of the loan, the credit risk management, and the efficiency of the bank in order to get back their money from the borrowers.

As a result, based on the previous study by Majeed and Zainab (2021), the authors used an equity-to-liability ratio. The equity-to-liability ratio (ELR) measures the ability of shareholders' equity to absorb a potential loss due to the credit risk of a bank's financing portfolio. A higher ratio suggests that the bank can handle more loan losses. The ELR is one of the methods that can be used by all the banks especially in Malaysia to reduce the risk of credit.

However, due to the nature of financing mechanisms (modes), credit risk may be more important for Islamic banking to manage (Čihák & Hesse, 2010; Incekara & Çetinkaya, 2019; Tajpour et al., 2021). Differ from Majeed and Zainab (2021) perspective, where based on Misman and Bhatti (2020), the researcher discovered that Islamic banking provides funding through a variety of models; for example, some modes of financing are based on the profit and loss sharing (PLS), while others are based on debt or trade financing modes (non-PLS). As a result, credit risk may occur in various conditions based on a distinct PLS versus non-PLS financing mechanism. The size of non-performing loans (NPL) is used to assess credit risk.

Independent Variable

Loan Growth

According to Maryem Naili and Younès Lahrichi (2022), previous research has indicated that loan growth has a considerable impact on a bank's

non-performing loans. Loan growth was one of the primary causes of the current financial crisis (Maryem Naili & Younes Lahrichi, 2022). In conclusion, according to Maryem Naili and Younes Lahrichi (2022), the influence of loan growth is shown to be less significant in the Middle East and North Africa (MENA) developing countries that were studied. The current state of knowledge about this topic suggests that, in comparison to other macroeconomic factors, the slight and negligible increase (decrease) in loan growth in the sampled countries may be responsible for the insignificance of this association. This is corroborated by the knowledge of this subject's current state.

Profitability of the Bank

The majority of a bank's revenue is derived from fees associated with providing banking services and interest on its assets. One of the largest expenses is the interest charged on its debt. Related to the current COVID-19 pandemic, this affects the profitability of banks as well. The governments had to enact several containment measures, including lockdowns, social distancing, and commercial closures, to stop the virus from spreading, however, these actions harmed the economy of businesses and individuals (Duan, El Ghoul, Guedhami, Li, & Li, 2021). The bank's profitability, capital, and solvency will all be negatively affected by the consequences, which will lead to an increase in non-performing loans and a decrease in income. Another potential downfall of a lack of income from non-interest activities may be a decrease in demand for financial services, which would negatively impact the profitability of banks.

Size of the Bank

The size of a bank is measured by the percentage of its total assets it possesses. When banks possess a large portion of their assets, they are in a position to provide more financial assistance at a lower cost. Islamic banks have a greater propensity to take on credit risk than conventional banks, as interest rates are forbidden. Numerous investigations of the variables that influence credit risk in Islamic banks have focused on the bank's asset size as one of the variables. Alzoubi and Obeidat (2020), reported that the size of conventional banks has a significant negative effect on credit risk, but the size of Islamic banks has a slightly positive effect on the risk. Additionally, according to Maudos and Solís (2009), the larger the bank, the greater the volume of transactions, which increases the risk and yields higher profits. Though, Rajhi (2013) discovered that the larger the Islamic bank, the more stable the bank. Čihák and Hesse (2010), noted that the size of an Islamic bank plays a significant role in its stability, with larger Islamic banks finding it more difficult to adjust their credit risk control systems than smaller Islamic banks, implying that the size of the bank harms the bank's credit risk.

Bank Capitalization

Capital is crucial to the bank's risk management. Bank earnings that are retained and common shares are the capital of banks. Banks typically possess more capital to mitigate the risk of bankruptcy and to offset losses caused by unforeseen events. Regulators in the banking industry oversee the amount of capital necessary to maintain banks in management. In reality, bank regulators mandate that banks maintain a specific level of capital to promote stability and safety. The Basel Committee on Banking Supervision (BCBS),

which was created in June of 2006, is a capital requirement for banks that is part of BASEL II. Its purpose is to limit or eliminate the bank's risk-taking. The BCBS established a minimum capital requirement for all banks in commercial activity. Tier I and Tier II capital is part of this capital that is regulated. All banks that operate commercially must have a minimum total capital of 8% of their risk-weighted assets (RWA) (Basel 2001). The capital adequacy ratio (CAR) is the most significant ratio in determining the bank's capital adequacy. It's a beneficial instrument for managing the risk of losing assets, specifically credit-related risk (Sukmana, 2015).

Bank Inefficiency

According to Vouldis and Louzis (2018), the increasing popularity of nonperforming loans would negatively impact the effectiveness of banks, which would lead to financial crises. The NPLs will diminish the amount of interest income, limit the investment potential, and cause financial system troubles, leading to a bankruptcy crisis and a detrimental economic system (Salamzadeh et al., 2013; Salamzadeh & Markovic, 2018). Therefore, it is important to understand the variables that influence NPLs to reduce NPL levels for financial stability and economic objectives (Stijepović, 2014). Additionally, the effectiveness of managing risk assets is crucial to minimize credit risk by enhancing internal processes and limiting adverse selection to increase credit risk effectiveness within Islamic banks (Zolkifli, Uda, & binti Janor, 2018). The ability of Islamic banks to deal with different types of dangers has been studied over the past decade, in particular during and after the 2008 financial crises (specifically, during and after the liquidity risk in Islamic banks

by (Alzoubi, 2017), and a significant body of literature has developed to assess the stability and efficiency of Islamic banks (Čihák & Hesse, 2010).

COVID-19

Financial institutions have a unique perspective on the COVID-19 situation, which affects credit risk management and mitigation. According to the findings of the data study (Hardiyanti & Aziz, 2021), COVID-19 has a significant relationship with non-performing loans. In the last three months, banks have been adapting to the changing circumstances and researching possible solutions to the issues. Developing a comprehensive and accurate understanding of a client's financial performance has a significant impact on the banks (Paramba et al., 2023). Banks will be able to make better credit risk-based loan underwriting decisions. Also, they will then be able to more accurately analyze risk costs and the effect of the crisis.

Methodology

Based on the source of Bank Negara Malaysia, there are sixteen (16) Islamic banks being listed and all of them will be used in this study since all bank's data are available from 2013 until 2021. Data are gathered from the banks and the world bank's annual reports using panel data The data from the banks were collected for the recent nine years. Thus, this study was conducted using panel data. Furthermore, this study also used the financial ratio to look at the bank’s performance and whether it is affected by COVID-19 or not. The below table shows the proxy for each variable in this study.

Table 1. Variables and methods of computation

Variables	Methods of computation (proxies)
Dependent Variables	
Credit Risk	NPL= non-performing loans / total loans
Independent Variables	
Loan growth	(Loan financing$_1$ – loan financing$_0$) / loan financing$_0$
Profitability	ROA = Net Income / Total Asset
Size of the banks	Natural Logarithm of total asset
Bank inefficiency	Operating expenses / operating income
Bank capitalization	(Tier 1 – tier 2) / Risk-weighted assets
COVID-19 (Dummy)	Year with COVID-19 = 1 Year without COVID-19 = 0

Regression Model

$$Y_{i,t} = \alpha_1 + \alpha_2 GRO_{i,t} + \alpha_3 ROA_{i,t} + \alpha_4 SIZE_{i,t} + \alpha_5 INEFF_{i,t} + \alpha_6 CAR_{i,t} + \alpha_7 COV_{i,t} + €_{i,t}$$

Where;

Yi,t = credit risk of Islamic bank i at year t

GROi,t = Loan growth of Islamic bank i at year t

ROAi,t = ROA (Profitability) of Islamic bank i at year t

SIZEi,t = Natural logarithm of total asset of Islamic bank i at year t

INEFFi,t = Bank inefficiency of Islamic bank i at year t

CARi,t = Bank capitalization of Islamic bank i at year t

COVi,t = COVID-19 in Islamic bank i at year t

€i,t = error term

Empirical Result and Discussion

Descriptive Statistic

Table 2. Descriptive Statistics

	CR	G	PR	S	CAP	EFF	COV
Mean	3.114306	29.99312	0.899375	17.04847	11.07998	2.764301	0.222222
Median	2.950000	9.450000	0.770000	16.95215	10.01750	1.227900	0.000000
Maximum	8.580000	2971.100	6.500000	20.04930	36.89430	66.21650	1.000000
Minimum	0.000000	-28.90000	-0.910000	14.68670	0.147200	-13.30030	0.000000
Std. Dev.	2.285371	247.1198	0.996461	1.109823	5.432489	7.012916	0.417191
Skewness	0.209234	11.82889	3.823582	0.447107	2.034744	6.017220	1.336306
Kurtosis	1.854117	141.2876	20.65124	3.439416	8.968164	50.50689	2.785714
Jarque-Bera	8.928975	118099.0	2220.273	5.956229	313.0783	14410.40	43.13265
Probability	0.011511	0.000000	0.000000	0.050889	0.000000	0.000000	0.000000
Sum	448.4600	4319.010	129.5100	2454.980	1595.517	398.0594	32.00000
Sum Sq. Dev.	746.8777	8732750.	141.9896	176.1342	4220.207	7032.883	24.88889
Observations	144	144	144	144	144	144	144

Note: Credit Risk (CR), Loan Growth (G), Profitability (PR), Size of the bank (S), Bank Capitalization (CAP), Bank inefficiency (EFF), COVID-19 (COV)

Table 2 represents a summary of statistics for all the variables in this study meant for 16 Islamic banks from 2012-2021. The mean value for credit risk is 3.114306, which is considered low since only 3% of loans in Malaysia are defaulting. This demonstrates the Islamic banking team's prudent approach to selecting and granting customers with high quality. The median for credit risk is estimated at 2.950000. Meanwhile, the maximum and minimum values are 8.588000 and 0.000000, respectively. The standard deviation of the credit risk is 2.285371, which indicates that the data is uneven and spread out around the mean. Next, by looking at the loan growth, the mean is stated as 22.99312 which is 22.9%. Whereby, the median, maximum value, and minimum value, it is stated as 9.450000, 2971.000, and -28.90000 respectively. This indicated that Islamic banks in Malaysia were aggressively doing their business and managed to achieve good financial growth of more than 10% per annum. There was also one Islamic bank that manage to secure very tremendous financing growth of 2971% which attribute to a high standard

deviation for loan growth which is 247.1198, the highest among those variables. Meanwhile, the mean of the profitability measure is only 0.899375, which is the lowest of the other six variables. Yet, it suggests that on average, all of the Islamic banks in Malaysia were financially successful during the period examined. While for bank capitalization, the mean value is 11.07998 which indicates 11.1%. The median for bank capitalization stated 10.01750. While the maximum and minimum value shows 36.89430 and 0.147200 respectively. The standard deviation for these variables is 5.432489. Ultimately, the COVID-19 variable has a mean value of 0.222222, which is 0.2%. This outcome indicated that COVID-19 has a limited effect on the risk of bank credit in Malaysia. The median value of COVID-19 is 0.000000. Among all the variables, the size of the banks obtained the highest median value. with a value of 16.9%.

Regression Model

Table 3. Likelihood ratio test

Redundant Fixed Effects Tests
Equation: FEM
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	14.609451	(15,122)	0.0000
Cross-section Chi-square	148.071898	15	0.0000

The result of the Likelihood Test is shown in table 3. It indicates that the p-value shows that the prob. value is 0.0000 which is less than the significant level of 5%. Thus, the Null Hypothesis is rejected. As a result, the Random Effect Model is chosen. Hausman Test was then conducted, and the result is as below.

Table 4. Hausman Test

Correlated Random Effects - Hausman Test
Equation: REM
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.787822	6	0.5713

Based on table 4 above, the Hausman Test result shows the p-value is 0.5713 which is higher than the significant level of 5%. Hence, the Null Hypothesis is considered to be rejected. As a result, the Random Effect Model is chosen for this study as it best suits the sample data.

Table 5. Random effect model of Islamic Banks

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.117878	4.431013	-0.703649	0.4828
G	-0.000600	0.000502	-1.194613	0.2343
PR	0.037137	0.148126	0.250713	0.0241
S	0.408998	0.250848	1.630459	0.1053
CAP	-0.073233	0.033538	-2.183581	0.0307
EFF	0.013494	0.018534	0.728076	0.0467
COV	0.081420	0.310851	0.261928	0.7938
Effects Specification				
			S.D.	Rho
Cross-section random			1.880538	0.6617
Idiosyncratic random			1.344667	0.3383
Weighted Statistics				
R-squared	0.682673	Mean dependent var		0.722062
Adjusted R-squared	0.042498	S.D. dependent var		1.373120
S.E. of regression	1.343626	Sum squared resid		247.3302
F-statistic	2.057816	Durbin-Watson stat		1.140387
Prob(F-statistic)	0.052139			
Unweighted Statistics				
R-squared	0.063172	Mean dependent var		3.114306
Sum squared resid	699.6960	Durbin-Watson stat		0.403107

Note ***, ** denote significance at 1% and 5%, respectively

Table 6. Summary of the result

Independent Variables	Result	Relationship
G	Not significance	No relation
PR	Significance at 5% level	Positive relation
S	Not significance	No relation
CAP	Significance at 5% level	Negative relation
EFF	Significance at 5% level	Positive relation
COV	Not significance	No relation

Table 6 indicates that only three variables are significant at the 1% level, and have a relationship with credit risk. These variables include profitability, bank capitalization, and bank inefficiency. As can be seen from the table above, there is a positive relationship between profitability and credit risk. This means that as profitability increases, so does credit risk. The result is consistent with Khan, Siddique, and Sarwar (2020). Next is bank capitalization (CAP). The above table shows that due to the impact of COVID-19, there is a negative relationship between capitalization and credit risk of banks, which is significant at the 1% level. Credit risk is significantly negatively correlated with banks with low regulatory capital. This explains why undercapitalized banks may not be able to process risky loans, leading to increased credit risk. The third variable that shows a positive relationship with credit risk is Bank Inefficiency (EFF). According to Vouldis and Louzis (2018), the increasing trend of nonperforming loans will have an impact on bank efficiency, resulting in financial crises. NPLs will reduce interest revenue, limit investment options, and generate liquidity issues in the financial system, leading to a bankruptcy crisis and a weak economic system. As a result, understanding the variables that drive NPLs is critical to lower NPL levels for financial stability and economic purposes (Stijepović, 2014).

On the other hand, the other variables are not significant with credit risk. The first variable is Credit Growth (G), the result is supported because most Islamic banks in Malaysia have strong risk management systems. Even with high credit growth rates, they can still manage customers to pay on time. Furthermore, several studies have found that when risks are effectively managed, credit growth reduces bank risk when high capital mobilization capacity offsets bank liquidity (Amador, Gómez-González, & Pabón, 2013). That is the rationale behind no relationship between loan growth and credit risk in Islamic Banks in Malaysia.

Next is the size (S) of the bench. Again, this variable is proven to have no relationship with the credit risk of Malaysian Islamic banks during the COVID-19 pandemic. In this study, bank size is calculated as the natural logarithm of total assets. Larger banks are more diversified, which allows them to reduce credit risk because they can diversify their asset portfolio and financing mix (Islamic financing instruments such as Musharakah, Mudarabah, Murabaha, Ijarah, and Istisna'). Therefore, the size of a bank has nothing to do with credit risk

Last but not least is COVID-19 (COV). This variable has proven no relationship with credit risk. This is because the Malaysian government has imposed a six-month credit moratorium on all individuals during the COVID-19 pandemic. Hence, it can be concluded that the moratorium on bank approval is successful until it fails to affect the credit risk assumed by the bank. Furthermore, according to the Bank Negara Malaysia (BNM) website, they said that additional regulations for Islamic banking institutions have been put in place to significantly ease the financial hardship and operational burden of consumers seeking payment assistance. The bank's Shariah advisory council

has prohibited the capitalization of accrued profits from restructured and re-arranged facilities as part of financial assistance to customers affected by COVID-19. This is based on the Shariah principle of Ihsan (beneficence). The ruling is intended to ease the overall financial burden of restructuring and debt restructuring for consumers already suffering from the pandemic.

Conclusion

This study was conducted to achieve three main objectives, namely, to examine factors affecting the credit risk of Islamic banks in Malaysia, to identify the relationship between COVID-19 and the credit risk of Islamic banks, and to identify the most influential variables that affect the credit risk in Islamic banks. According to the results, only three variables were found to be significant in explaining factors affecting credit risk, namely, profitability (PR), bank inefficiency (EFF), and bank capitalization (CAP). Meanwhile, the other three are insignificant and have no impact on credit risk factors in Islamic banks in Malaysia. Profitability (PR) is positively related to credit risk. This is because most Islamic banks in Malaysia were profitable in the years studied. Furthermore, Bank Inefficiency (EFF) has a positive relationship with credit risk. A previous study has shown that the efficiency of the banking industry will also affect credit risk (Hidayat, Sakti, & Al-Balushi, 2021). The researcher concluded that the concept of "poor management", whereby inefficient banks incur higher charges due to inadequate credit monitoring and poor control of operating expenses. Cost and revenue efficiencies are bound to decline before bank risk increases due to operational, market, and reputational issues. Bank Capitalization (CAP) shows a negative relation

to credit risk in Islamic banks in Malaysia. The finding is rationale with (Priyadi, Utami, Muhammad, & Nugraheni, 2021), increased credit risk allows banks to distribute more financing, resulting in a higher NPF trend. The study also found that banks with a high capital ratio as a proportion of risk-weighted assets have lower loan losses.

To meet the second objective of this research, it can be concluded that there is no relationship between COVID-19 and credit risk in Islamic banks because the results are insignificant. Because of the widespread of the COVID-19 virus, the government of Malaysia has imposed a moratorium on all individual loans for six months. As a result, the findings of this study allow us to conclude that the effort by banks to grant a moratorium is effective up to the point when it does not influence the credit risk of the bank.

Finally, the third objective is to identify the most important variables affecting the credit risk of Islamic banks. It can be seen that among the selected 6 independent variables, only profitability (PR), bank inefficiency (EFF), and bank capitalization (CAP) are significant. Profitability (PR) and bank inefficiency (EFF) show a positive relationship, while bank capitalization (CAP), although important, is negatively correlated with the credit risk of Malaysian Islamic banks. To achieve the third objective, bank inefficiency (EFF) was selected as the most important variable affecting Islamic banking credit risk during the COVID-19 pandemic.

Limitations and Recommendations

The results of this study lead to some suggestive recommendations. First, determine the creditworthiness of the bank. According to Graydon (2016), accurately assessing the creditworthiness of a potential borrower is

far more successful than tracking overdue payments after the fact. Chasing late payments wastes valuable financial and human resources that could be used to grow new businesses. Also, there is always the possibility of a net loss due to late payments. Therefore, Islamic financial institutions in Malaysia require special consideration, making these institutions more susceptible to credit risk.

Secondly, there is the process of performing due diligence. During this process, there are specific procedures that increase the credit assessment function considerably. Always double-check the customer's company profile and scrutinize any financial documents when determining the customer's ability to pay on time. It's crucial to assess the success of the company by contrasting the financial statements from the previous three years with those from the previous year (Graydon, 2016).

Lastly, this study recommends future researchers include other related macroeconomic variables that may influence credit risks, such as GDP growth and inflation, which may be investigated since earlier studies have discovered significant relationships between these variables and credit risk. Moreover, future research may also consider widening the scope of the study by including more countries and conventional banks, as current research only focuses on Islamic banks in Malaysia.

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