Pre- Pandemic Evidence from Conventional Banks in Malaysia on the Causes of Bank Specific Factors of Defaulting Loans

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Abstract
This article examines Malaysian commercial bank non-performing loan causes. This study examines bank and macroeconomic factors causing non-performing loans. Eight Malaysian commercial banks are used in this study. Data from 2009–2018 annual report and FitchConnect database. Panel data was used to analyze the data. All determinants were regressed against non-performing loans using STATA 14. This study found that capitalization negatively correlated with non-performing loans and the real effective exchange rate positively correlated. This report emphasizes key non-performing loan factors for banks and financial organizations. The real effective exchange rate, a novel macroeconomic variable, is crucial for non-performing loans in this study. Thus, this study adds a variable to the model to determine what causes non-performing loans.
Keywords: Non-Performing Loans, Conventional Bank, Bank-Specific, Macroeconomic, Panel Data

Introduction
A financial intermediary refers to an institution that facilitates and manages financial transactions. Investments, deposits, and loans exemplify financial transactions. In accordance with the findings of Chinweoke et al (2014), a key function of financial institutions, such as banks, is to act as intermediaries between the surplus and deficit sectors of the economy. The financial intermediary assumes the role of an intermediary entity that gathers deposits from surplus units (savers) and seeks for appropriate deficit units (borrowers) to lend to on behalf of institutions, afterwards receiving interest payments.In general, commercial banks derive earnings from customer deposits, which are funds retained or saved within the bank. Customers deposit their funds into a designated bank account and thereafter accrue interest based on the prevailing interest rates offered by the specific bank they have chosen (Saini & Sindhu, 2014). By accumulating greater savings, individuals have the potential to generate increased returns through the interest rates provided by financial institutions.

Currently, the commercial bank utilizes the funds deposited in its accounts to engage in lending operations, so generating profits through the accrual of interest. The commercial bank will accept deposits and thereafter extend loans to those who apply for borrowing services. The individuals who avail of financial services are commonly referred to as borrowers, while the entity providing the funds is typically a commercial bank. There exists a diverse array of loan options, encompassing both long-term and short-term durations. Non-performing loans, also referred to as non-performing financing, represent a highly significant concern within banking institutions. In certain instances, the borrower may encounter difficulties in fulfilling their repayment obligations within the agreed-upon timeframe stipulated by the lending institution. Such loans are categorized as non-performing loans (NPLs). In relation to the International Monetary Fund (IMF), non-performing loans (NPLs) are defined as loans where the borrower has not made a payment for a period exceeding 90 days, or when the interest on the loan has been renegotiated, deferred, or promoted for a period exceeding 90 days. Alternatively, NPLs can also refer to loans where the installments are less than 90 days past due but are no longer expected to be repaid (Chavan and Gambacorta, 2016).

The increasing prevalence of non-performing loans (NPLs) poses a significant risk to commercial banks, as it adversely impacts their overall performance. A high number of NPL cases indicates a large pool of debtors who are unable to fulfill their repayment obligations, hence jeopardizing the financial stability of the bank. Additionally, it has been noted by Karim, Chan, and Hassan (2010) that banks with significant non-performing loan (NPL) issues tend to experience reduced cost efficiency. Consequently, commercial banks are required to allocate a designated portion of their profits towards loan loss provisions in order to safeguard against and mitigate various circumstances they may encounter. In order to uphold its reputation, the bank can mitigate volatility and decrease the likelihood of poor performance. This study is centered on examining the factors that may impact non-performing loans (NPL) in commercial banks.

Literature Review

Banks in the commercial (or conventional) sector get their money by borrowing it largely from savers and then lending it out to businesses and individuals. Profit was generated by taking advantage of the spread between borrowing and lending rates. They also provide banking services including guarantees and letters of credit. A percentage of their profit is derived from the low-cost money obtained from demand deposits. Commercial banks are not permitted to trade, and their shareholding is tightly restricted to a small percentage of their net worth. However, there are significant issues with bank lending that make it inefficient. Borrowers are typically more knowledgeable about their own businesses than lenders.

Trends of the non-performing loans in Malaysia

In the context of Malaysia, the banking system encounters an elevated default risk when the economy experiences unforeseen shocks. The preceding crisis has brought attention to the escalating trend of nonperforming loans, particularly in relation to family debt. The ratio of nonperforming loans had a significant rise, growing from 24.5% in 2003 to 48.9% in 2007 (Zulkifli & Ahmad, 2022). The banks' performance has experienced a decline as a result of the substantial accumulation and continual increase in nonperforming loans over time. The financial industry has experienced an increase in loan defaults, which has resulted in a decrease in borrowing and financing activities. Consequently, banks have encountered challenges in maintaining sufficient liquidity during unanticipated crises. The banking organization faces numerous challenges due to the significant accumulation of non-performing loans.

Bank Specific Factors

Numerous studies have indeed demonstrated the correlation between bank-specific variables and the occurrence of problem loans. As indicated in the survey conducted by Hue (2015), the study reveals that the expansion rate of loans, the aggregate assets of financial institutions, and the preceding non-performing loans (NPLs) exhibit a favorable impact on NPLs during the most recent period. A study conducted by Hu et al (2006) examined the correlation between banks' ownership structure and non-performing loans (NPLs), and it confirmed that banks with greater government ownership tend to exhibit lower levels of NPLs. There are indeed several factors, specific to banks, that can have an impact on non-performing loans (NPLs). However, for the purpose of this study, we will focus on three key factors that researchers have identified as having the greatest influence on NPLs.

The Size of Banks

Prior research has unearthed insights regarding the variability observed in non-performing loans (NPLs). The majority of studies have indicated that there exists a positive relationship between the size of a bank and the likelihood of defaulting, as evidenced by the works of Sheefeni (2015); Geletta (2012); Misra and Dhal (2010); Delis and Papanikolaou (2009), as well as (Khemraj and Pasha, 2009). While it has been observed in other studies that there exists a negative relationship between the size of banks and non-performing loans (NPLs). The research conducted posits that larger banks exhibit a lower incidence of loan defaults, as evidenced by the works of (Hu et al., 2006; Rajan and Dhal, 2003; Salas and Saurina 2002). The potential negative impact on bank size may stem from the presence of a less concentrated portfolio, as larger banks often possess greater opportunities for diversification.

Capitalization

The majority of prior research has indicated that capitalization is among the factors that exert influence on non-performing loans (NPLs). Extensive research has revealed that a decline in bank capitalization is associated with a corresponding increase in non-performing loans (NPLs). Therefore, it can be observed that there exists an inverse correlation between capitalization and non-performing loans, as evidenced by the studies conducted by Chaibi (2016); Salas and Saurina (2002), as well as Berger and DeYoung (1997). Nevertheless, it is worth noting that certain studies present contrasting results, indicating that banks with substantial capitalization are more prone to experiencing elevated levels of non-performing loans (NPLs) in comparison to their counterparts with lower capitalization (Laryea, Ntow-Gyamfi, and Alu, 2016; Agoraki, 2011; Boudriga, 2009). In the interim, the research conducted by Fajar and Umanto (2017) suggests that there exists no substantial correlation between capitalization and non-performing loans (NPLs). This finding is further reinforced by the investigations carried out by Louzis (2012) as well as(Khemraj and Pasha, 2009).

Net interest margin

The net interest margin refers to the difference between the interest income generated by a financial institution and the interest expenses it incurs. Based on the empirical evidence, it has been suggested that there exists a positive correlation between the interest margin and non-performing loans (NPLs). Various studies conducted by Angbazo (1997); Demirguc-Kunt and Huizinga (1999); Mendes and Abree (2003); Carbo and Rodriguez (2007) have identified a positive correlation between interest margins and non-performing loans (NPLs). This relationship suggests that when banks face a significant proportion of problem loans, they may opt to raise their interest margins as a means to offset potential default risks.

Methodology

Variables

This empirical research project's goal is to investigate the causes of bad loans. Accordingly, seven factors have been included, with one serving as the dependent variable and the others serving as exploratory variables. Bank-specific and macroeconomic causes of non-performing loans make up the independent variables. The ratio of gross non-performing loans to total loans serves as the dependent variable for this study. The internal components of the bank are what ultimately determine the dependent variables. In this empirical analysis, we focus on three internal factors as potential causes of NPLs inside individual banks:

Banksize

The natural logarithm of a bank's total assets is a common measure of its size in academic finance literature. Recent research confirms that there is a negative correlation between bank size and effectiveness (Smirlock, 1985).

Capitalization

Capitalization is determined by dividing the bank's equity by its total assets as a ratio. This is the standard measure of capitalization strength. It is predicted that this ratio will correlate negatively with the occurrence of bad loans. In other words, banks with plenty of capital will have fewer loans go bad (Zain, Ghazali and Wan Daud, 2018, 2020 & 2022).

Net Interest Margin

The net interest margin is calculated by dividing the amount of interest earned by the total amount of assets. Profit from interest operations are the primary emphasis of this metric, which calculates a bank's net interest spread (Zain, et.al , 2018, 2020 & 2022)

Data and Method

The study utilizes an unbalanced panel dataset comprising eight local commercial banks in Malaysia, examined from 2009 to 2018, resulting in a total of 80 observations. The majority of bank-specific variables are obtained from the income statements and balance sheets of banks, which are sourced from their annual reports and the FitchConnect database. The macroeconomic variables, namely the growth rate and inflation rate, were acquired from the data stream database. The data for real effective exchange rates is obtained from the United Nations Conference on Trade and Development (UNCTAD).In order to investigate the factors influencing non-performing loans, a panel data methodology is employed. A collection of data that encompasses both time series and cross-sectional components is sometimes referred to as a panel of data or longitudinal data. Panel data models use a dataset of n cross-sectional units, represented as i = 1,2,..., N (where N corresponds to 8 commercial banks), observed during T time periods, indicated as t = 1,2,...,T (with T equal to 10). Thus, the total number of observations in this study is calculated as the product of n and T, resulting in 80 observations (8 x 10 = 80 observations). The fundamental structure for panel data is established based on the regression model as outlined by (Brook, 2019).

$$y_{it} = \alpha + \beta' x_{it} + u_{it}$$

where:
y_{it} = dependent variable
α = intercept term
β = parameters to be estimated on the exploratory variables

x_{it} = observations on the exploratory variables

Either a fixed effects or a random effects model is used for the estimation of panel data. To find the best fitting models, the Hausman test is applied. Based on the outcomes of the Hausman test, the random effects model is implemented.

Results
Empirical Results from Panel Data Analysis

Table 1 presents the estimated parameters and corresponding t-statistics derived from the implementation of a random-effects model, with non-performing loans (NPLs) as the dependent variable. According to the findings, it can be observed that there exists a negative relationship between capitalization (CAP) and non-performing loans, with a significance level of 5%, in the context of bank-specific determinants. The inverse correlation observed indicates that a decrease in the capital adequacy ratio has detrimental effects on loan defaults. The analysis of bank-specific determinants, namely bank size and net interest margin, reveals a lack of significant impact on non-performing loans (NPLs).

Table 1
Determinants of Non-performing Loans (NPLs)

	Coef.	Std. Err.	t	P>|t|
BNKSZ	-0.2216	0.1635	-1.36	0.175
CAP	-1.7709	0.8295	-2.13	0.033**
NPM	-0.2403	0.2009	-1.20	0.0232**
Constant	-11.4937	7.2987	-1.57	0.115

Note: ***,**, and *indicate significance level of 1*, 5% and 10% respectively.

Discussion

The results of our regression model, which was calculated by employing a random effect estimator, are detailed and summarized in Table 1. The value of the variable BNKSZ, which refers to the size of the bank, is negative and unimportant. This evidence contradicts the findings of earlier research conducted by (Sheefeni, 2015; Geletta, 2012; Misra and Dhal, 2010; Delis and Papanikolaou, 2009; Khemraj and Pasha, 2009). Because of this, the findings of this study may be summed up by stating that the less the number of loan defaults, the larger the size of the bank. It is also possible to draw the conclusion that the larger banks are not necessarily better at screening loan applicants than the smaller banks.The result demonstrates a negative significant correlation between capitalization (CAP) and non-performing loans Chaibi (2016); Salas and Saurina (2002); Berger and DeYoung (1997), which is consistent with the findings of earlier research (Chaibi, 2016; Salas and Saurina, 2002). According to the findings of this study, the number of loans that are considered to be non-performing would rise whenever there is a decline in the capitalization of the bank. According to the results of the net interest margin (NIM), which reveal that they are negative and considerable. There is a contradiction between the evidence presented here and the findings of (Angbazo, 1997; Demirguc-Kunt and Huizinga, 1999; Mendes and Abree, 2003; Carbo and Rodriquez, 2007).

Conclusions

In this empirical analysis, we endeavored to ascertain the determinants that may exert an influence on the incidence of non-performing loans within the domestic commercial banking sector of Malaysia. To achieve the research objective, the panel data approach, specifically the random-effects model, was employed to estimate the data. The dataset comprises the financial statements of eight banks spanning

the period from 2009 to 2018. Our empirical analysis reveals a noteworthy inverse relationship between capitalization (CAP) and the incidence of non-performing loans. In alternative terms, an elevated level of capitalization indicates that banks possess ample capital, thereby leading to a decline in loan defaults and a subsequent decrease in the non-performing loan rate.

Limitations and Areas for Future Research

While conducting this study, it is important to acknowledge certain limitations that were encountered during the preparation phase. Our esteemed study has exclusively centered its attention on the magnificent nation of Malaysia. Hence, this journal lacks the necessary depth and breadth to adequately address the study conducted by Malaysia. Nevertheless, we have managed to acquire valuable insights from esteemed international sources, such as articles and journals from a foreign country. These invaluable resources serve to bridge any gaps in our understanding of the Malaysian market. The accessibility of the data is also a constraint in this study as there is a lack of a suitable platform to acquire the necessary information. As a trusted and reliable financial institution, we understand the paramount importance of adhering to strict regulations and maintaining the utmost confidentiality of our valued customers' information. Consequently, it has come to our attention that certain data released by banks may have exhibited inconsistencies and incompleteness. Leveraging the comprehensive data extracted from the meticulously prepared annual reports of various esteemed financial institutions, coupled with the invaluable insights procured from the esteemed Fitchconnect database, a discernible variance has been observed between the two aforementioned sources. Therefore, it is imperative for the esteemed authors to exercise utmost diligence and precision in managing the data, ensuring that the collected data remains impeccably consistent throughout the process. Experience the convenience of accessing comprehensive reports spanning from 2009 to 2018.Henceforth, this study duration is limited to a period of ten years.

To further enhance the scope of this research, it is recommended to explore additional internal variables within banks that exert a substantial influence on non-performing loans. Additionally, investigating the role of insurance or takaful in mitigating the risk of bankruptcy associated with NPLs would be beneficial. Previous works by Ghazali (2012a, 2012b, 2015, 2017, and 2019) provide valuable insights in this regard. As a commercial banker, you have the opportunity to extend the duration of your study. In order to optimize efficiency, we have utilized a yearly data basis due to time constraints. For optimal precision and reliability, it is recommended to utilize semi-annual or monthly data in this study, as it may yield more accurate outcomes. However, it is important to note that this particular study solely concentrated on a singular nation and exclusively examined the traditional banking sector. Hence, for prospective academic endeavors, the researcher may consider incorporating the dynamic Islamic banking system or expanding the scope of the study to encompass a broader range of countries.

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