



Nonperforming Loans in Malaysia's Commercial Banks: Analysis of Trend and Issues

Normah Erra Zulkifli, Zuriyati Ahmad

To Link this Article: <http://dx.doi.org/10.6007/IJARAFMS/v12-i2/12930> DOI:10.6007/IJARAFMS /v12-i2/12930

Received: 13 April 2022, **Revised:** 17 May 2022, **Accepted:** 30 May 2022

Published Online: 09 June 2022

In-Text Citation: (Zulkifli & Ahmad, 2022)

To Cite this Article: Zulkifli, N. E., & Ahmad, Z. (2022). Nonperforming Loans in Malaysia's Commercial Banks: Analysis of Trend and Issues. *International Journal of Academic Research in Accounting Finance and Management Sciences*. 12(2), 483 – 494.

Copyright: © 2022 The Author(s)

Published by Human Resource Management Academic Research Society (www.hrmars.com)

This article is published under the Creative Commons Attribution (CC BY 4.0) license. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this license may be seen at: <http://creativecommons.org/licences/by/4.0/legalcode>

Vol. 12, No. 2, 2022, Pg. 483 - 494

<http://hrmars.com/index.php/pages/detail/IJARAFMS>

JOURNAL HOMEPAGE

Full Terms & Conditions of access and use can be found at
<http://hrmars.com/index.php/pages/detail/publication-ethics>



Nonperforming Loans in Malaysia's Commercial Banks: Analysis of Trend and Issues

Normah Erra Zulkifli, Zuriyati Ahmad

Faculty of Business and Management, Universiti Teknologi MARA, Malaysia

Email: normaherrazulkifli@gmail.com

Corresponding Email: zuriy271@uitm.edu.my

Abstract

Inability of the banks to monitor the loan properly and efficiently might cause a tendency of nonperforming loans to keep rising in the banking system. This will indicate the failure of banks in managing their performance and operations. The involvement of banks in providing aggressive lending without following the proper credit assessment and negotiated credit terms when dealing with the activities can contribute to the severity of the problem of nonperforming loans in Malaysia. Therefore, this descriptive study is aimed to analyze the trend and issues of nonperforming loans in Malaysia's commercial banks. Using a descriptive method, diagram analysis, discussion and issues are used to support the study. Finding of the study indicates that bank characteristics and economic condition especially during the crises can contribute to the increasing amount of nonperforming loans in Malaysia's commercial banks. It is suggested for the banking sector to focus on the internal bank characteristics to strengthen the commercial banks and the government need to increase the stability of macroeconomic conditions to avoid the problems during the unexpected crisis. In the future research, empirical study can be done to investigate the impact of the issues on the non performing loans.

Keyword: Nonperforming Loans, Commercial Bank, Financial Crisis, Pandemic Crisis, Bank Risk

Introduction

Generally, banking systems are normally associated with the number of risks while managing their operations. It is found as a risky business that could be exposed to many risks especially in the case of default loans. Loans and advances are known as the major sources of the bank's profit and income. When the loan granted to individuals, business organizations, or government cannot be paid as per terms and conditions, those loans will turn to the case of nonperforming loans. A banking institution classifies nonperforming loans as credit risk or impaired credit where it involves the unsettling of principal, and the interest or profit of both of the credit facility is past due of three months (BNM, 2019). In order to revolve the credit facilities, the amount of outstanding balance should have remained in excess of the approved limit for a period of three months, and if it has been past due, it could exhibit weaknesses in accordance with the banking institution's credit risk measurement framework. Once the default occurs, the repayment of principal and interest or profit is scheduled at intervals of 3

months or longer. In regard to rescheduled and restructured, the banks shall only reclassify this facility as impaired when the repayments based on the revised terms which observed continuously for a period of at least six months or later periods as determined by the policy of the banking institution.

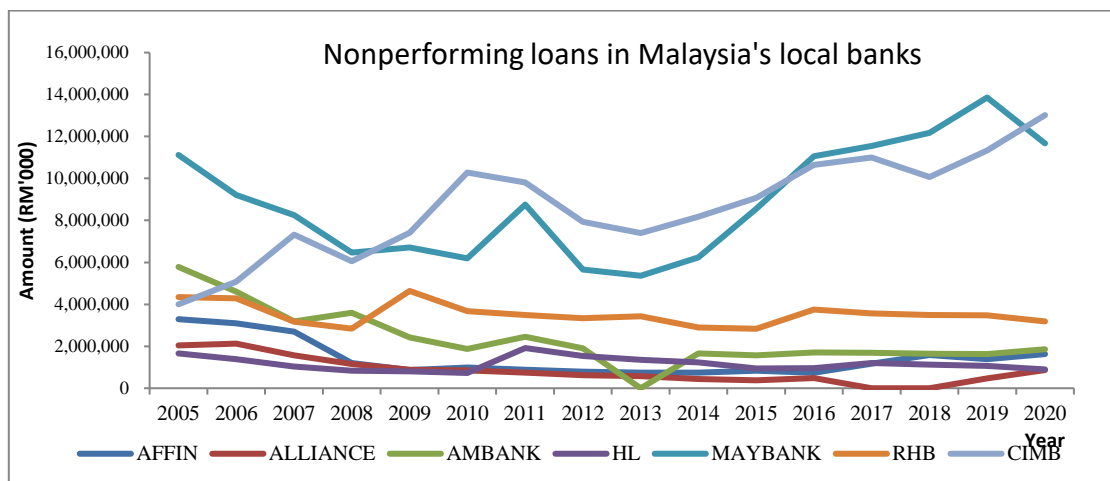
Nonperforming loans are still recognized as the major problem in the all banking sector. Although the banks have undergone remarkable changes after the recovery of Global Financial Crisis in 2008. However, the problem of nonperforming loans started to increase and continue to harm the performance of the banks. The issue of nonperforming loans has received considerable critical attention when the number of nonperforming loans in Malaysian banks shows an increasing trend. Rupa (2017) states that the ratio of gross impaired loan losses kept arise from 2.0% to 2.5% at the end of year 2017. While Ho (2017) highlights Malaysian local banks are among the banks that facing the major disruption due to the overnight policy rate that has been rise by the central banks. It has been recorded that the ratio of the nonperforming loans rises from 1.6% in 2016 to 1.8% in 2017. The increasing trend of the nonperforming loans become an issue that needed to be solved in order to prevent the more risk involved. Yamunah et al (2019) stated that the accumulation of nonperforming loans has started to rise and cause problem to the financial sector for incoming years. Against this background, this paper tries to conceptually analyze the trend and issues of nonperforming loans in Malaysia's commercial banks.

This paper is organized as follows: Section 1 highlights the introduction. Discussion on the trend of the nonperforming loans in Malaysia is carried out in Section 2. Section 3 explains on the volatility of nonperforming loans. Section 4 follows with the discussion on the issues of nonperforming loans. The last section provides the conclusion.

Trend of Nonperforming Loans in Malaysia

In Malaysia, the banking system starts to suffer from the problem of higher default risk when the economy has been hit by the unexpected crises. Previous crisis highlights the ratio of nonperforming loans, which has found an increasing trend especially in the case of household debt with the increased ratio of 24.5% from 2003 to 48.9% in 2007. The performance of the banks had deteriorated due to the massive amount of nonperforming loans that accumulated from year to year and rise continuously. The higher default of loans in the financial sectors has been reflected by the slowdown in borrowing and financing that lead banks to face a tight liquidity problem when the unexpected crises take place. It causes many problems to the banking institution regarding the massive number of bad debts accumulated.

Figure 1 shows the changes of nonperforming loans in selected local commercial banks in Malaysia, which consist of Affin Bank, Alliance Bank, Maybank, Public Bank, Hong Leong Bank, CIMB, and RHB bank. These banks are among the institutions that provided financing and loan services in Malaysia. Among these banks, Maybank, CIMB, Ambank, Alliance Bank, and Affin bank show an increasing amount in nonperforming loans compare to other banks. The higher amount in these loan losses is caused by deterioration in growth on the economy and thus gives an effect on the performance of the banking system. Besides, an increase in property and construction debts has forced several banks such as Maybank, CIMB Group, and RHB to face a deterioration in asset quality due to unsettling loans that continue to rise.



Source: Eikon Thompson, 2020

Figure 1: The number of nonperforming loans in selected Malaysia's local banks

The upward trend of nonperforming loans becomes an issue and problem to the system of banks in Malaysia (Raj, 2018). Figure 1 shows the changes of the nonperforming loans trend in several selected banks that highlighted. The movement of this trend has been varied and different from year to year. The trend illustrates that, all of the selected banks found to have an increment in the number of nonperforming loans except for RHB and Hong Leong bank. Meanwhile, Maybank is found to have a higher number of nonperforming loans compared to others. It showed that the uptick trend of this nonperforming loan has been caused by the significantly higher provision of loan losses. The higher amount of loan losses provision has been reported to be contributed by the additional number of existing impairments and part of it for new impairments (The Star Online, 2019). The number of nonperforming loans been clarified as rising from RM500.8mil to RM637.3mil.

Alliance Bank also faced a similar problem as the ratio of the nonperforming loans increased by about 1.1% due to default of three corporates (Alliance One Account (AOA) loans, SME loans, and personal financing) and higher on delinquencies from AOA loans which originated prior to a credit tightening in June 2018 (RAM, 2019). It shows the credit tightening that happened before could give a bad impact on the next performance of the bank since the amount will be carried forward. The increment of nonperforming loans also been followed by Affin Bank, where the amount of those loans sharply deteriorates the asset quality of the banks. This is indicated that the gross ratio of the loans increasing 80 basis point and known as the biggest quantum of increase compared to the other local banks (Raj, 2018). The main attribute of the rising in impaired loans is mainly due to the account of real estate and oil and gas sectors. Adding to that, the ratio of the default loans has been reported to increase from the previous year (Annual Report, 2018). The report found that higher nonperforming loans in Public Bank are highly contributed by the construction sector. The amount of all sectors is clarified as rising expectations for mining, finance, and community, social and personal services.

Table 2 shows the number of nonperforming loans in the banking system from 2016 to 2020 and it has been divided into several sectors. Based on this figure, the total nonperforming loans by all sectors are recorded as an increasing trend. There is a sharp increasing amount of

nonperforming loans in the sector of mining and quarrying, electricity, gas and water supply, wholesale and retail trade, restaurants and hotels, transport, storage and communication, finance, insurance, business activities, household sector, and other sectors. While for primary agriculture, manufacturing, and other sector, the number of nonperforming loans show a decreasing trend.

Table 1

The total of nonperforming loans in Malaysia's banking system

All sectors	Period / Year				
	2016	2017	2018	2019	2020
Primary agriculture	425.0	243.8	221.8	1099.9	1,327.6
Mining and quarrying	347.3	632.9	740.4	449.7	137.8
Manufacturing	4,413.7	4,132.0	3,133.1	3,504.7	3,907.4
Electricity, gas & water supply	112.9	139.4	190.1	135.6	188.5
Wholesale & retail trade, and restaurants & hotels	1,991.2	2,411.2	2,588.3	2,180.8	2,175.8
Construction	2,284.4	1,481.9	2,027.5	2723.2	2,265.8
Transport, storage and communication	2,028.3	2,297.3	2,451.5	1935.0	1,766.3
Finance, insurance and business activities	3,163.5	3,630.2	3,805.4	3,367.7	3,287.8
Education, health & others	315.4	249.9	313.9	461.1	904.2
Household sector 2	8,646.8	9,399.9	9,668.0	10,728.1	11,456.6
Other sector	438.2	922.2	772.2	529.9	382.2
Total non-performing	24,166.8	25,540.9	25,912.3	27,115.6	27,844.8

Source: Bank Negara Malaysia, monthly statistical bulletin, 2020.

The household sector is recorded as a major contributor to the increasing level of nonperforming loans. It is found as one of the important roles that influences the bank's level of default (Zaini et al., 2010). Report from Bank Negara Malaysia also indicates the number of debts in household sectors accounted to RM6.83 billion which contracted to the rate of 53.2% (Zukri, 2019). This sector is still found as risky to the Malaysian banks as the amount hit RM6.83 billion, which reaching an eight-year high after 2011 with RM6.91 billion. Central bank also had warned that the significant increase in the number of defaults definitely gives an impact on the level of debts in the banking system (Bank Negara Malaysia, 2018).

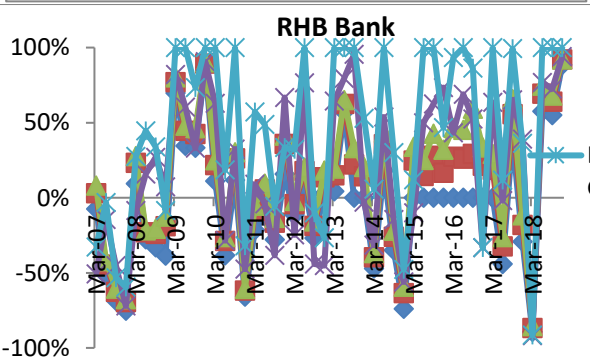
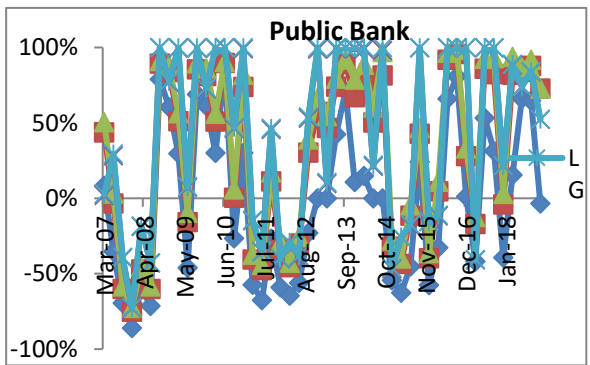
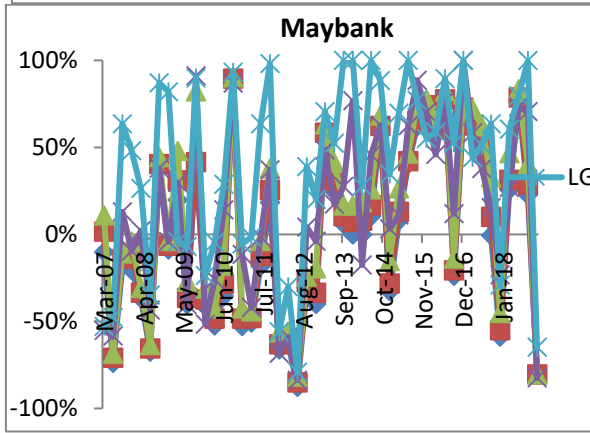
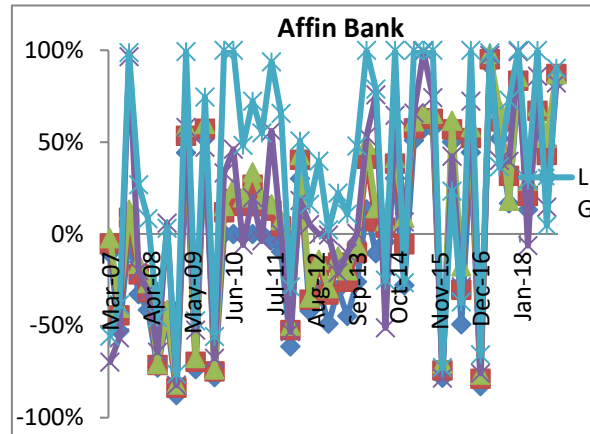
The increment in nonperforming loans has been contributed by the primary agriculture and manufacturing sectors for year 2019, thereby leads to the problem of asset quality's deterioration (Lee, 2019). In accordance to that, the increasing of price of property market

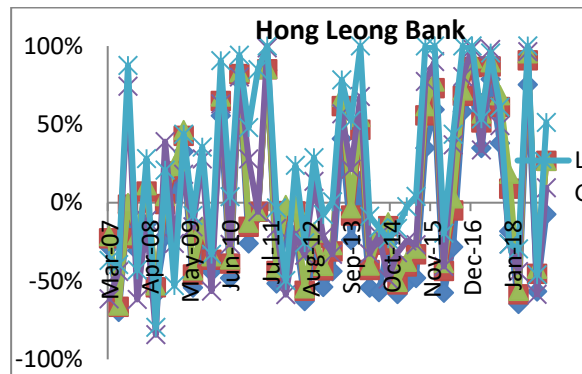
also recorded as having an impact leading to the problem of bank's soundness. It states that more than 80% of the unit price of property found as unsold and the number still increasing. Since the property market is highlighted as an element contributes to the nonperforming loans accumulated, this issue becomes quite worrying and still haunting the performance of banks and the economy in Malaysia. There is no doubt that problem of high nonperforming loans seems likely to have an extreme impact on the banking performance and also on the economic growth of the country.

Volatility in the Nonperforming Loans

The banking system starts to suffer from the problem of higher default risk when the economy has been hit by the financial crisis and Pandemic of Covid 19 Crisis. Previous crisis highlights the ratio of nonperforming loans, which has found an increasing trend especially in the case of household debt with the increased ratio of 24.5% from 2003 to 48.9% in 2007. Figure 2 illustrates the reaction of the nonperforming loans and bank internal characteristics during and after financial crisis. The figure reviews how the movement of nonperforming loans and bank characteristics changed over a certain period. Within the year selected, the year 2008 to 2010 were found as years that affected by the financial crisis. While year 2020 is shown as year that had been affect by the pandemic crisis. It highlighted that the volatility line for nonperforming loans and bank characteristics give the diverse reaction and respond before and after the year of crisis. Therefore, to see the implication on the bank characteristics and nonperforming loans during and after crisis attacks, the volatility of these variables depicted in Figure 2. Since commercial banks acts as country's economic agent and source of incomes that contribute to the smooth economic cycle, the study therefore highlights an investigation into this problem by focusing on the case of Malaysian commercial banks.

The movement of loans growth, return on asset, loan to asset, and non-interest income on behalf of bank characteristic's indicators graphically shown in Figure 2. The volatility line for bank characteristics and nonperforming loans that change differently during and after the period of crises. The magnitude of the variables implied through this volatility is found an inconsistent trend of direction.





Source: Eikon Thompson One, 2020.

Figure 2: Volatility of nonperforming loans and bank characteristics for selected banks during and after financial crisis.

The direction of nonperforming loans and changes in bank characteristics will be depending on the condition of the economy itself. Any disruption that occurs in the economy such as financial, economic, or even pandemic crisis commonly changes the reaction in the bank characteristics through the ability of banks in minimizing the problem. Carlos et al (2020) claim that the way of banks reacts in lending activities caused by the unexpected crises is different and able to change the number of nonperforming loans.

It is however show that all the selected banks illustrated in Figure 2 will face abrupt changes in nonperforming loans contributed by bank characteristics and unforeseen crises. It is due to the majority of the banks at that time faced a huge burden in liquidity problem and it at once encouraged the development of large amount of nonperforming loans (Ariff & Abubakar, 1999; Rajha, 2016; Ozili, 2019; Olusegun, 2019). Nevertheless, the direction of bank characteristics and nonperforming loans for these banks are found to differ from each other. It is indicated by the line movement in the graph that changes according to the period during and after the crises.

Issues on the Nonperforming Loans

The issues on the nonperforming loans have dragged the country's economy into bad condition through many aspects. The problem might be worse if it cannot be solved immediately (Zaini et al., 2010). In ensuring the solution regarding the problem can be achieved, an assessment in terms of the causal factors that may contribute to this problem should be emphasized.

a. Weaknesses in Banking Characteristics

The characteristics that possessed by the banks literally engages with the number of the nonperforming loans. The reaction of bank characteristics reflects in the way banks manage and operates their businesses. As stated by several researchers, the lower management and practices provided by the banks will lead to the distraction in the function of the banks (Berger and Deyoung, 1997; Campbell, 2007; Boudriga et al., 2009; Ozili, 2017; Hada et al., 2020). The distraction incurred contributes to the changes in the bank characteristics, especially in the case of loan demand, bank's asset quality, loan reserve, and provision.

The past decisions of the banks in changing the loan user have witnessed the distraction happened in the banking sector that triggered the accumulated of outstanding loans. The

decision takes place to protect the banks from dealing with risky business activities. The changes in loan user from the productive sector (manufacturing) to the unproductive sector (household sector) is considered as a way to minimize the risk. However, the situation does not go according to their plan when it became more chaotic where the household sector started to fluctuate when involved in a downturn related to economic disruption.

Commercial banks believe the loan granted to the household sector is more secured than manufacturing because the viability of the manufacturing is based on the project. However, this statement has been argued by various studies stated that the household sector could adversely turn into unsecured loans once the unexpected crises start to burst in the economy (Zhang, 2011; Rajha, 2016; Bernanke, 2018). When the crisis attacked, the value of the collateral will be dumped like what happened in past events. It depends on the situation and how these banks facing this situation. Bernanke (2018) has noted that the financial fragility is mainly caused by the high loan exposure to asset price inflation. The tendency of banks to be insolvent are high since it involves a lot of risks, especially in liquidity. Past experiences claim that some changes in the bank characteristics could drag the tendency of nonperforming loans to rise through the change of loan user.

The biggest challenge in deal with a higher amount of nonperforming loans is when the asset quality of the banks is recorded as decline. The higher cost of living and inability to commit the loan repayment therefore leaves a mark on the banking system on how the quality of the banks continue to deteriorate. It has automatically turned the amount of outstanding loan to the amount that cannot be generated. Ibish et al., (2018) agree that the asset quality in the banks deteriorates due to the huge amount of failure of borrowers to pay back their loans. Although the lower quality in bank's asset is found to increase as total default increase, however, the consequences in lower asset quality also can adversely turn the level of nonperforming loans rise. As asset quality deteriorates, banks will lower the loan's creditability in order to attract more people to get involved in granting loans. That is the only way for them to increase their income by providing more loans. Nevertheless, the high exposure of loans to people without following the proper creditability and evaluation can result in more risk to be exposed especially in the case of default risk.

Slower pace of return on asset and equity characteristics also drags the problem of nonperforming loans to increase. Return of assets are found to be lowered and distracted when the banks make some adjustments in the financial guidelines that cause the lower demand for bank loan financing (BNM, 2019). The banking institution indicates that the more loans provided, the higher profit that they will get. While in another perspective, the lower bank's profit will encourage the banks to lower their credit qualification in order to generate more income by providing more loans to the borrowers. These banks will willingly take the riskier unproductive exposures in order to get the higher profit quickly and thus lead to the increased financial fragility (BNM, 2019). Therefore, the mismanagement of banks in granting the loans easily to the borrowers can lead to the instability of the bank.

b. Disruption of Unexpected Crises

In year 2008 has witnessed that Malaysia banks face the unexpected crises known as global financial crisis that had been dragged by disruption in the United States. The crisis began when the deregulation in the financial industry allows the banks to engage with the hedge

fund trading of derivatives. As the demand for these derivatives grows strongly, the banks and mortgage brokers start to offer home loans to anyone including subprime borrowers (who have higher default risks or have missed the loan repayment in the past). Since the lenders charge the higher interest rates in order to provide more return for the greater risk, the advent of interest only has been introduced to their borrowers. It helps the sub-prime borrowers afford to settle their loan repayment by using the advent of interest-only loans which could lower the monthly payments.

Besides, by providing the loans, banks and other lenders do not closely evaluate and assess the abilities of the borrowers in regard to loan repayments. It thus resulting the percentage of subprime mortgages being recorded as drastically rise up to 14% from 6%. With the cheap loans, many people start taking the opportunities to buy and sell their houses as investments. The price of housing keeps rising as the demand for housing and mortgages. However, the fact that many borrowers do not realize is when the rates will be reset in the incoming of three or five years. The rates rise to 2.25% at the end of the year 2004 and been increased again in 2005 where it hits to 4.25%. The quick rising in rates causes chaos since many homeowners unable to settle their payments and no longer afford to paid loans due to aggressive amount rise in few years. Since the initial rates had been reset after several years, it increased the lenders' risk and caused the banking institutions to engage with the riskier investment and became heavily reliant on borrowing liquidity in the open financial market.

On the other side, homebuilders also had been hit hardly by this situation. It is due to the slower demand of the house as compared to before. When the demand is low, the supply surpasses the demand and causing the price of housing started to drop drastically. At the end of 2006, the Federal Reserve System (Fed) raises the rate again to 5.25% (Steve, 2018). The increasing rates are much faster than the past fund rates. In the meanwhile, the bubble of housing burst in the market has been speeded to the other countries and creates more bad loans to be accumulated in the banking institution. The complexity of mortgage-backed security led to the rapid deterioration in the housing property sector in the US since it is linked to the liabilities that caused the problem of liquidity begins to quickly dry up and bring down the global financial system.

Sundarajan et al (2002) claims that the spreading of this crisis normally related to the global connection of the banking system. This is due to the well-connected banking system across the world that makes this contagion effect of the crisis easily transfer from US countries to other countries. The major disruption faced by Malaysia's economy during that time is due to the much of growth in household debt which driven by an increase in house prices. With half of household disposable income in Malaysia servicing household debt, the raised interest rate could result in default and a rise in the number of nonperforming loans (Muhammad, 2020).

Impairment of assets causes many banks to face the problem of liquidity since they provide lending system using properties as the basis of collateral. Banking lending practices in Malaysia relied on collateral-based rather than credit assessment and cash flow analysis (Chang, 2000). During the property boom, there are a number of banks that actively provided loans and accepted properties as their collateral without worrying about the risks of default. However, once the bubble burst of property hit the globe, these banks realized that the

massive fallout has causing their loans to be under-provisioned. Regarding the case, many banks face impairment in the capital base due to the accumulated amount of nonperforming loans on the balance sheet. It also causes these banks to become illiquid and fail to recapitalize their capital to avoid insolvency.

Comparing to the 2008 crisis, the outbreak of pandemic crisis recently however poses the different challenges and problem to the banking system. IMF (2020) justified the pandemic crisis as having no different with the past crises since the effect gives the greater impact to the economy and banking institution worse than previous one. It becomes more challenging when the banks had been reported as facing distraction in their performance and stability during this pandemic. The outlook of several banks deteriorates and leads to the changing of bank's credit rating from stable to negative (S&P Global Rating, 2020). As stated by Goh (2020); Lee (2020), many banks especially local banks have been suffering from the huge amount of outstanding loans during the implementation of loan moratorium. The tendency of these loan to become nonperforming after the moratorium ends has caused concern to banks.

Conclusion

The objective of the paper is to analyze the trend and issues of nonperforming loans in Malaysia's commercial banks. Malaysia had experienced significant deterioration in the economy and financial system in many years, however, due to structural reformation introduced by the government, the economy and banking sector had been recovered over the years. Even the process of recovery has been taken, but the system of banks still unable to resolve the problem of default entirely due to inevitable risks that available. It is suggested for the banking sector to focus on the internal bank characteristics to strengthen the commercial banks and the government to increase the stability of economics to avoid the problems during the economic crisis.

References

- Ariff, M., & Abubakar, S. Y. (1999). The Malaysian financial crisis: Economic impact and recovery prospects. *The Developing Economies*, 37(4), 417-438.
- Bank Negara Malaysia. (1998). Banking measures. Retrieved from http://www.bnm.gov.my/index.php?ch=en_press&pg=en_press&ac=2999&lang=en
- Berger, A. N., & DeYoung, R. (1997). Problem loans and cost efficiency in commercial banks. *Journal of Banking & Finance*, 21(6), 849-870.
- Bernanke, B. (2018). The Real Effects of Disrupted Credit: Evidence from the Global Financial Crisis. BPEA Conference Drafts, September 13-14, 2018, 1-90.
- Boudriga, A., Boulila Taktak, N., & Jellouli, S. (2009). Banking supervision and nonperforming loans: A cross-country analysis. *Journal of Financial Economic Policy*, 1(4), 286-318. <https://doi.org/10.1108/17576380911050043>
- Campbell, A. (2007). Bank insolvency and the problem of nonperforming loans. *Journal of Banking Regulation*, 9(1), 25-45.
- Chang, H. (2000). The hazard of moral hazard: Untangling the Asian crisis. *World Development*, 28(4), 775-788.
- Goh, J., & Lee, E. (2020, May 4). Malaysia's banking system can handle COVID-19 challenges, says BNM deputy governor. *The Edge Markets*.

- <https://www.theedgemarkets.com/article/malaysias-banking-system-can-handle-covid19-challenges-says-bnm-deputy-governor>.
- Hada, T., Misu, N., Iuga, I. C., & Wainberg, D. (2020). Macroeconomic Determinants of Nonperforming Loans of Romanian banks. *Sustainability*, 12(18), 1-19.
- Ho, S. (2017). Non-performing loans to rise- S&P. *The Edge Market*. <https://www.theedgemarkets.com/article/nonperforming-loans-rise-%E2%80%94sp>
- Ibishi, M., Fisnik, M., Valdrin, M., Jonathan, V. S., & Simon, G. (2018). Determinants of the level of non-performing loans in commercial banks of transition countries. *European Research Studies Journal*, XXI(3), 3-13.
- Lee, E. (2019). The state of the nation: Is current asset quality a cause for concern? *The Edge Markets*. <https://www.theedgemarkets.com/article/state-nation-current-asset-quality-cause-concern>.
- Muhammad, K. A., Asima, A., & Zahid, S. (2020). Determinants of non-performing loans in the banking sector in developing state. *Asian Journal of Accounting Research*, 5(1), 135-145.
- Olusegun, O. O. (2019). Determinants of Non-performing Loans of Deposit Money Banks in Sub Saharan Africa. Unpublished Doctoral Thesis, Kwaha State University, Nigeria.
- Ozili, P. K. (2017). Non-Performing Loans and Financial Development: New Evidence. *University of Essex Working Paper*, 1-26.
- Ozili, P. K. (2019). Non-performing loans and financial development: New evidence. *The Journal of Risk Finance*, 20(1), 59-81.
- Raj, A. P. (2018). All eyes on Affin bank's asset quality. *The Edge Markets*. <https://www.theedgemarkets.com/article/all-eyes-affin-banks-asset-quality>
- Rajha, K. S. (2016). Determinants of Non-Performing Loans: Evidence from the Jordanian Banking Sector. *Journal of Finance and Bank Management*, 4(1), 125-136.
- RAM ratings reaffirms alliance bank's A1 rating. (2019, November 22). Landing Page - RAM Holdings Berhad. <https://www.ram.com.my/pressrelease/?prviewid=5181>
- Rupa, D. (2017, December 6). Malaysian banks to remain stable in 2018: Standard & Poor's. *New Straits Times*. <https://www.nst.com.my/business/2017/12/311555/malaysian-banks-remain-stable-2018-standard-poors>
- Steve, F. (2018). What was the Subprime mortgage crisis and how did it happen? *The Street*. <https://www.thestreet.com/personal-finance/mortgages/subprime-mortgage-crisis-14704400>
- Sundararajan, V., Enoch, C., Jose, A. S., Hilbers, P., Krueger, R., Moretti, M., & Slack, G. (2002). Financial Soundness Indicators: Analytical Aspects and Country Practices. Occasional Paper, IMF Washington DC.
- Yamunah, V., Sanil, S. H., & Tang, S. P. (2019). The study on factors that influencing banks' non-performing loans in Malaysia. *International Journal of Engineering and Advanced Technology*, 8(5C), 1289-1297.
- Zaini, M. K., Chan, S. G., & Sallahuddin, H. (2010). Bank efficiency and non-performing loans: Evidence from Malaysia and Singapore. *Prague Economic Papers*, 19(2), 118-132.
- Zhang, W. (2011). The role of banks in transition economies: a case study of China with an emphasis on non-performing loans. Unpublished Doctoral Thesis, Loughborough University United Kingdom