

ICTHM 2023**International Conference in Technology, Humanities and Management****EARNING, CAPITAL MANAGEMENT AND BANKING SPECIFIC
FACTORS IN ESTIMATING LOAN LOSS PROVISIONS**

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Abstract

A good banking system, which heavily relies on the display of non-performing credit (NPL), is basically extremely important because it would enable the association with financial prosperity. The non-performing loan has become a major problem all over the world, and numerous studies in the past have shown that LLPs are the main problem that must be effectively distributed by the bank to control credit risks. The investigation's goal is to analyzed domestic and international banks in Malaysia to see if the acquisition of bank-specific factors, earnings, and capital management have had an impact on the provisions. Fixed Effect and Pooled Ordinary Least Square are used to analyzed the empirical data from local and international banks in Malaysia. Surprisingly, despite both local and international variables showing similar signals, earning and capital management have not significantly described the variations in the loan loss provision of Malaysia's commercial banks. Some banks with inconsistent data due to expired data or being blocked on the website were eliminated from the study. This study recommends that future researchers employ various analysis methods, increase the theory issue and add the variable issues.

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Keywords: Bank Specific Factors, Capital Management, Earning Management, Loan Loss Provisions, Pool OLS

1. Introduction

Bank Negara Malaysia is tasked with ensuring the stability of the country's banking systems, which hinges on a robust financial framework driving sustainable economic advancement (Bank Negara Malaysia, 2018). The backdrop of the 2007 global financial crisis has underscored the crucial significance of this stability, influencing the central bank's priority of upholding monetary and financial stability. The objective is to cultivate a conducive setting for Malaysia's enduring economic growth. While strides have been made in enhancing banking systems, the unresolved challenge of credit risk remains concerning for banks' financial strength, particularly due to the risk posed by subpar loan quality. Given the interrelated nature of financial systems, it is necessary to carefully monitor the relationship between financial institution health and general macroeconomic stability. The economic patterns seen in developing nations reveal that non-performing loans rise throughout a recession, reaching their peak after the recession concludes. For the crisis years of 2007-2008, it's expected that non-performing loans in banking institutions surged significantly, largely due to the excessive credit expansion experienced by many economies during the global crisis. Banks operate as intermediaries, aiding customers by receiving deposits and then re-lending those funds to generate profits. However, this process exposes banks to risks stemming from loan investments, encompassing low-interest rates, elevated credit risk, and potential principal losses. In light of these considerations, banking institutions should adhere to accounting regulations to reasonably estimate the anticipated loan losses, thus establishing provisions for potential losses. This practice is essential owing to the pivotal roles that national, regional, and global economies play in the country's prosperity, financial stability, and the general welfare of its people (Hamdi & Zarai, 2012; Quttainah et al., 2013).

Consequently, the allocation of funds for safeguarding against potential loan losses takes shape in two main categories: specific provisions, designed for individual accounts facing impairments, and general provisions, tailored for the entire loan portfolio. These provisions play a pivotal role in setting aside resources to counterbalance the impact of Non-Performing Loans (NPLs) stemming from credit-related uncertainties. At the outset, borrowers who successfully secure loans are expected to adhere to the repayment structure outlined by the bank. However, due to unforeseen situations, borrowers might face challenges in adhering to the payment plan for a specific period, leading to NPLs. The growing concern is that a surge in NPLs could disrupt the financial stability of banking establishments. As a result, an increase in NPLs would correspondingly amplify the allocation for the loan loss provision (LLP). LLP serves as a dedicated reserve created by financial institutions, particularly tailored for commercial banks, aimed at covering potential NPLs arising from customers unable to fulfill payments within a 90-day timeframe.

In this context, the initial allocation of provisions for potential credit losses reflects a bank's forthcoming performance and standing in terms of its strategy to anticipate unforeseen setbacks (Ahmed et al., 1999). During the financial crisis of the 1980s, when there was a lack of a risk management framework and large loan portfolios built up from depositors, the idea of setting aside money for probable loan losses first came into existence (Basu, 2003). The management of the bank, which also results in the formation of provisions for loan losses, is directly related to the strategies for managing risks. These

provisions often involve the bank administration's subjective judgment or discretion since the requirement for loan loss provisioning encompasses factors like default, delayed payments, and other inherent elements.

This study aims to expand the investigation into how managing earnings and capital affects the implementation of provisions for potential loan losses. It does so by examining local and foreign commercial banks separately in Malaysia. The distinction between these types of banks in Malaysia has not been explored in previous research, resulting in a lack of evidence in the literature review. These fresh discoveries might also help us comprehend the crucial components of loan loss provision. This study has the potential to offer valuable insights to regulators, guiding the development of necessary practices for Loan Loss Provision (LLP). This guidance could help mitigate the actual impact of possible loan reductions on the economy, especially if the current provisioning practices align with business cycle trends.

Given the earlier discussion, there is limited research that focuses on local and foreign commercial banks in Malaysia. This study aims to address this gap by examining how earnings and capital management impact loss provisions. It investigates how loan loss provisions vary between local and foreign commercial banks in Malaysia, considering unique bank-specific factors. Notably, there's a lack of existing empirical evidence regarding the allocation of Loan Loss Provision (LLP) among local and foreign banks in Malaysia.

2. Literature Review

2.1. Loan Loss Provision and Earning Management

The literature has provided a number of definitions of earnings management. Earnings management describes circumstances in which board members of a corporation exercise their discretion in financial reporting and transactions to change financial reports. This could be done in order to deceive some stakeholders about the company's true financial performance or in order to affect the results of legal proceedings that depend on particular accounting data. Bank executives were permitted to improve financial results in order to draw in stakeholders and persuade non-members to sign contracts. Since loan loss provisions are essential for managing future losses, previous research has found a variety of factors impacting them in the banking industry. One such element that could have an effect on how loan loss provisions are distributed to make earnings appear more consistent is earnings management. Numerous results were reached after looking into the function of loan loss provisions in earnings management (Ma, 1988), among other things. Using charge-offs and loan loss provisions to balance reported income, Ma (1988) found that U.S. commercial banks did. The quality of loan portfolios and loan loss provisions were not linked in his analysis, he found. Even more risky portfolios didn't seem to cause bigger loan loss provisions. Due to inconsistent results from earlier research that attempted to establish the presence of earnings management behaviour, the debate over Loan Loss Provision (LLP) and earnings management is still in the works.

As an alternative, researchers such as (Abdullah et al., 2017; Floro, 2010; Kim & Kross, 1998; Laeven & Majnoni, 2003; Leventis et al., 2011; Packer & Zhu, 2012; Zoubi & Al-Khazali, 2007) have

confirmed a sizable positive relationship between Loan Loss Provisions (LLPs) and Earnings before Tax and Provision (EBTP). The studies Taktak et al. (2010), Wetmore and Brick (1994), Ahmed et al. (1999), and Taktak et al. (2010) did not find any evidence to support a connection between earnings before taxes and provisions (EBTP) and LLP. Prior studies have shown a significant correlation between earnings management and LLP, especially in emerging nations, indicating that commercial banks in these markets practise countercyclical loan loss provisioning, setting aside additional cash during high-earning times. According to research by Abdullah et al. (2017), this trend is also present in developed countries where there have been notable correlations between LLP and earnings management.

2.2. Loan Loss Provision and Capital Management

Organisations use the accrual portion of the loan loss provision as part of their capital management accounting approach to maintain an adequate capital adequacy ratio. To ensure compliance with minimum capital requirements, bank managers can change the loan loss provision to either enhance or decrease it. Capital management is the term for this activity. An accounting-based ratio is used by federal bank examiners to measure capital sufficiency. The capital adequacy ratio has been defined and used differently by different regulators and across different time periods. Between 1981 and 1986, the Federal Reserve Board and the Controller of the Currency put these rules into place, regulating bank holding firms as well as both nationally chartered banks and state-chartered Federal Reserve member banks.

According to earlier researchers who looked into the relationships between LLP and capital management (Anandarajan et al., 2003, 2007; Pérez et al., 2008), capital management has a significant impact on how Loan Loss Provision (LLP) is distributed. In particular, earlier empirical investigations have shown a negative correlation between LLP and capital management. These results imply that banks increase loan loss provisions to comply with capital adequacy criteria when they experience poorer capital management (Moyer, 1990). The findings of Eng and Nabar (2007) and Pérez et al. (2008), which were corroborated by Anandarajan et al. (2007), suggested that capital management may not be a key factor in LLP for Asian and Spanish banks, respectively. However, among Asian banks, Eng and Nabar (2007) found a favourable correlation between capital management and loan loss provision. This debate has continued into more recent years, with findings from Packer and Zhu (2012) and Floro (2010) showing a strong negative correlation between the capital ratio and the factors under study. These findings support the capital management theory put forward in the earlier study by Moyer (1990). Therefore, the discovered negative correlations between capital management and LLP highlight that poor capital management in banks results in increased loan loss provisions, which meet the needs for capital adequacy. In addition, Packer and Zhu (2012) found detrimental relationships between LLP and capital management in the context of particular Asian banks.

Additionally, in their regression study, Packer and Zhu (2012) utilised the Generalised Method of Moments (GMM) for nation identification and Pooled Ordinary Least Square (Pooled OLS) regression for all countries. The relationship between capital management and Loan Loss Provision (LLP) in emerging market nations has previously been found to be minimal. According to the assessment of capital management, the combined capital ratio (CAP) for emerging markets is not statistically significant. In particular, a negligible correlation between LLP and Malaysian and Thai CAP coefficients is revealed.

Abdullah et al. (2017). This contradicts with the majority of empirical findings from research in emerging economies undertaken by Ozili (2015), Floro (2010), Taktak et al. (2010), Packer and Zhu (2012), which generally show scant evidence in favour of the impact of capital management. In contrast, the report emphasises important connections between capital management and LLP in developed markets. As a result, it is still difficult to demonstrate how the incentive to manage capital for complying with regulatory requirements influenced the LLP decisions of commercial banks in developed nations between 2004 and 2012 (Abdullah et al., 2017).

2.3. Loan Loss Provision and Bank-Specific Factors

The allocation of Loan Loss Provisions (LLPs) within the banking industry, which greatly influences the capacity to bear incoming losses, is determined by a number of factors that have been identified by earlier study. Return on assets, total loans, bank size, and loan growth are among these determinants (Anandarajan et al., 2003, 2007; Hansen, 2015; Kim & Kross, 1998; Laeven & Majnoni, 2003; Misman et al., 2015; Ozili, 2018; Packer & Zhu, 2012; Zoubi & Al-Khazali, 2007). Nevertheless, the debate over Loan Loss Provision (LLP) and bank-specific characteristics rages on as recent research shows conflicting results in identifying the behaviour connected to these bank-specific factors.

Return on assets (ROA) and Loan Loss Provision (LLP) in emerging economies have been found to be negatively correlated in prior studies. The decreasing chance of experiencing losses in the loan portfolio may be the result of the improving trend in bank profitability. To put it another way, a bank's need for loan loss provisions reduces as its profitability rises. However, in developed markets, ROA has a negative sign and a significant association at the 0.01 level, suggesting that a one percent increase in ROA results in a reduction in LLP (Abdullah et al., 2017). The outcomes of a study conducted by Misman and Ahmad (2011) that focused on the effects of net profit rather than gross profit (as measured by earnings before tax and provision) on LLP provide more support for this conclusion.

3. Research Methodology

Focusing on the study's variables—Loan Loss Provision, Earnings Management, Capital Management, and Bank Specific Factors—data gathering was done from 2011 to 2021. The sample consisted of both local and foreign commercial banks in Malaysia, comprising eight local banks and ten foreign banks, respectively. This choice aimed to facilitate a comparison using data sourced from the World Bank. Starting with a descriptive analysis, the data's characteristics were examined, and measures like kurtosis and skewness were utilized to assess its normality. In cases of non-normality, a logarithmic transformation (Ln) was applied. In order to identify correlations, the study used fixed and random effect models with static panel data. Using techniques from Levin et al. (2002), Breitung et al. (2000), and Harris Tzavalis, standard tests for unit root were performed on all variables. All variables were stationary with first-order differences, according to the results. It was established that Newey West heteroskedasticity and autocorrelation consistent (HSC) Newey and West (1990) ordinary least square estimation could not be pooled for data analysis.

Table 1 shows the variables used in this study based on the following empirical model.

$$\ln LLP_{it} = \beta + \beta_1 \ln EBTP_{it} + \beta_2 \ln CAP_{it} + \beta_3 \ln ROA_{it} + \beta_4 \ln TL_{it} + \beta_5 \ln SZ_{it} + \beta_6 \ln LG_{it} + \epsilon_{it}$$

Table 1. The variable used in the study and expected coefficient signs

Variables	Description	Proxies	Expected sign Coefficient
Loan Loss Provision	Loan Loss Provision (LLP)	Total LLP/ Total assets	
Earning Management	Earnings before tax and provisions (EBTP)	EBTP/Total Assets (Frait & Komarkova, 2013)	Positive (+)
Capital Management	Capital Ratio (CAP)	Total Capital/Risk Weighted Assets (Packer & Zhu, 2012)	Negative (-)
Bank Specific Variables	Return on Assets (ROA)	Net Profit/Total Assets (Taktak et al., 2010)	Negative (-)
	Total Loan (T.L.)	Total Loan/ Total assets (Packer & Zhu, 2012)	Positive (+)
	Bank Size (SZ)	Total Assets (Taktak et al., 2010)	Positive (+)
	Loan Growth (L.G.)	Gross Loan Balance Current Year-Gross Loan Balance previous year/Total Assets (Packer & Zhu, 2012)	Positive (+)

4. Findings

4.1. Local

Table 2. Descriptive Statistic

Variable	Mean	SD	Min	Max	Skewness	Kurtosis
LLP	0.516	1.0211	-	7.5425	2.9738	17.341
	5	19	1.7300		07	48
EBTP	0.538	1.0389	-	7.6346	2.9644	17.097
	63	29	1.7937		92	11
CAP	28.70	152.76	1.624	2064.0	13.248	177.01
	259	34	8	16	55	67
ROA	2.853	4.0593	-0.77	19.630	2.2158	7.1089
	781	24		2	67	88
TL	1.036	1.3278	0.009	5.7389	2.6650	8.5206
	166	17	5		31	14
SZ	1097	150981	485.1	765301	2.2476	8.1447
	69.1	.8		.8	8	77
LG	-	2.0074	-	0.3256	-	5.1319
	0.993	05	10.200		1.74026	83
	7189		5			

Table 2 presents descriptive statistics for variables pertaining to a local commercial bank in Malaysia during the period from 2011 to 2021, illustrating the data's characteristics. The average Loan

Loss Provision (LLP) to total assets ratio is 0.5176, ranging from a minimum of -1.7300 to a maximum of 7.5425, with standard deviation of 1.021119. The mean Earnings Before Tax and Provision (EBTP) to total assets ratio stands at 0.53863, with a peak of 7.6346. Capital to total assets exhibits an average of 28.70259, with the range spanning from 1.6248 to 2064.016. Return on Assets (ROA) demonstrates an average of 2.853781, varying from -0.77 to 19.6302. Total Loans (T.L.) as a percentage of total assets has an average value of 1.036166 and a maximum value of 5.7389. The ratio of shareholders' equity (S.Z.) to total assets ranges from 109769.1 to 765301.8 on average. While the ratio of loan growth (L.G.) to total assets ranges from -0.9937189 to 0.3256, it averages -0.9937189. With the exception of L.G, skewness values show that EBTP, LLP, Capital (CAP), ROA, T.L., and S.Z. do not fall within the normalcy range (-/+2). All of the variables' kurtosis values are likewise outside of the normalcy range, with values larger than two but below three (precise three). These findings imply that the data is not regularly distributed and that logarithmic transformation (ln) might be advantageous.

4.2. Foreign

Table 3. Descriptive Statistic

Variable	Mean	SD	Min	Max	Skewness	Kurtosis
LLP	1.3085	2.0326	-5.33	20.63	3.7881	29.7451
EBTP	1.3237	2.0205	-	20.49	3.7635	29.5533
CA	18.1176	7.3077	-	49.70	1.1307	5.3474
ROA	1.19009	1.8083	-10.06	4.16	-	14.5168
TL	0.66372	.08764	0.0469	0.845	-	10.6429
SZ	9.9800	1.9000	14255	1.130	3.1519	13.4736
LG	0.07372	.27378	-	0.598	-	246.087

Table 3 displays the descriptive statistics for variables pertaining to foreign banks in Malaysia from 2011 to 2021, revealing the data's attributes. The mean Loan Loss Provision (LLP) to total assets ratio stands at 1.3085, ranging from a minimum of -5.33 to a maximum of 20.63, with a standard deviation of 2.0326. The mean Earnings before Tax and Provision (EBTP) to total assets ratio is 1.3237, peaking at 20.4965. Capital to total assets exhibits an average of 18.1176, spanning from -4.3306 to 49.7052. Return on Assets (ROA) has an average of 1.190091, varying from -10.06 to 4.16. Total Loans (TL) to total assets presents an average ratio of 0.6637282, ranging from 0.0469 to 0.8453. The mean values of shareholders' equity (S.Z.) and loan growth (L.G.) are respectively 9.98e+07 and 0.0737276. The normalcy range (-/+2) is indicated by LLP, EBTP, ROA, S.Z., and L.G. not being within it, but Capital (CAP) is the only variable that does. For all variables, the kurtosis values range from greater than

two to exactly three, exceeding the normalcy range as well. The variables' overall non-normalcy could be improved by logarithmic transformation (ln), which would return the variables to normality.

Table 4. Regression

Variables	Local	Foreign
	Fixed Effect with Robust	OLS with Robust
Constant	0.0117 (0.0130)	0.1219 (0.2721)
EBTP	1.0067 (0.0019) ***	0.9139 (0.2117) ***
CAP	0.0011 (0.0005)	0.0293 (0.0308)
ROA	-0.0038 (0.0019)	-0.0519 (0.1328)
TL	-0.0019 (0.0029)	0.0298 (0.0633)
SZ	-0.2590 (0.1294) **	-0.9660 (0.3212) ***
LG	-0.0092 (0.0048)	-0.0385 (0.1023)
R ²	0.9999	0.3500
Adj. R ²	4.77 (0.0145)	0.00 (1.0000)
F-statistic	94327.78 (0.0000)	14.69 (0.0000)
BPLM test	4.77 (0.0145)	0.00 (1.0000)
Hausman	15.77 (0.0075)	
Modified Wald (Heteroscedasticity)	45.43 (0.0000)	2.6e+07 (0.0000)
Wooldridge Test	7.894 (0.0204)	436.211 (0.0000)

Parentheses show the standard error values, except for F-statistic, Wald chi-square, BPLM, Modified Wald test and Wooldridge test, which are p-values. *** significant at the 0.01 level** significant at the 0.05 level*significant at the 0.1 level

The outcomes of the regression analysis presented in Table 4 demonstrate distinct results for local and foreign banks. For local banks, the BPLM test is statistically significant (p-value: 0.0145), implying a preference for fixed effects over random effects. The Hausman test reinforces this, with a p-value below 0.05, confirming fixed effects and using robust standard errors along with the Newey West test to account for heteroscedasticity and autocorrelation. Within local banks, Earnings before Tax and Provision (EBTP) coefficient (1.0067) reveals a positive and significant relationship with Loan Loss Provision (LLP) at a 0.01 significance level, aligned with Packer and Zhu (2012). Capital (CAP) coefficient (0.0011) shows a positive yet insignificant relationship with LLP, in line with Abdullah et al. (2017), while Return on

Assets (ROA) (-0.0038) indicates a negative relationship with LLP but lacks significance at 0.05, differing from (Abdullah et al., 2017). Total Loans (TL) (-0.0019) exhibit a positive yet insignificant association with LLP, unlike (Packer & Zhu, 2012). Loan Growth (L.G.) coefficient (-0.0092) demonstrates a negative connection with LLP, but insignificance prevails at the 95% confidence level, in contrast to (Laeven & Majnoni, 2003). The significant F-statistic (p-value: 0.01) and model fit validate the influence of earning management and provisions on LLP decisions in local banks. The BPLM test, on the other hand, provides a statistically significant p-value (1.0000) for foreign banks, showing pooled OLS. According to Floro (2010) and Packer and Zhu (2012), the EBTP coefficient (0.9139) in foreign banks continues to have a substantial and positive relationship with LLP. CAP coefficient (0.0293) exhibits a positive but insignificant relationship with LLP, echoing earlier findings. ROA (-0.0519) presents a negative link with LLP, though insignificantly at 0.05, deviating from (Abdullah et al., 2017). TL (0.0298) displays a positive relationship with LLP, yet insignificance at 0.05, diverging from Packer and Zhu (2012). L.G. coefficient (-0.0385) showcases a negative connection with LLP, significantly at the 95% confidence level, aligned with Ozili (2018). The significant F-statistic (p-value: 0.01) underscores model fitness, leading to the conclusion that EBTP influences LLP decisions in foreign banks in Malaysia.

5. Discussion and Conclusions

In summary, in Malaysian local banks, only Earnings before Tax and Provision (EBTP) and Size (S.Z.) significantly impact Loan Loss Provisions (LLPs), with positive and negative influences, respectively. Similarly, in foreign banks, earning management and Size (S.Z.) significantly affect LLPs, showing positive and negative effects. Therefore, local banks in Malaysia are influenced by EBTP and S.Z. in LLP allocation, while both local and foreign banks need to consider various factors for effective LLP management. This underscores the need for government support to strengthen the country's economy and emphasizes the importance of internal bank strategies for LLP allocation.

6. Limitations and Recommendations

The limitation of the current study is due to data restriction. Some banks with inconsistent data due to expired data or being blocked on the website were eliminated from the study. This study recommends that future researchers employ various analysis methods, increase the theory issue and add the variable issues.

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