

Unlocking Financial Stability: Exploring Internal Factors in Malaysian Commercial Banks

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Abstract

In an era of global financial uncertainty, this study examines the internal determinants of financial stability within Malaysian commercial banks, leveraging a dataset comprising 160 bank-year observations sourced from Eikon Thompson Reuters. Employing rigorous multiple regression analysis, our investigation reveals the pivotal roles of capital adequacy, profitability, and bank size in shaping financial stability. Capital adequacy, measured through the Capital Adequacy Ratio (CAR), emerges as a cornerstone driver, emphasizing the critical importance of well-capitalized banks in withstanding economic shocks. Profitability, reflected in the Return on Asset (ROA), plays a significant role, showcasing the link between profitability and stability within the banking sector. Larger banks also exhibit heightened stability, likely attributed to economies of scale and effective risk diversification. The findings provide valuable insights that can guide policymakers and banking institutions in strengthening Malaysia's banking sector's resilience. This, in turn, contributes to maintaining economic stability amidst the ongoing global financial uncertainties.

Keywords: Financial stability, Internal-bank factors, Commercial banks in Malaysia, POLS

Introduction

Global financial conditions tightened in the second half of 2022 due to aggressive policy rate hikes by major central banks and persistent inflation. These developments triggered volatility in global markets, impacting various financial sectors, including those in Malaysia. Recent banking system strains in some advanced nations have led to increased volatility in the global bond and stock markets. These worldwide developments also had an impact on the Malaysian financial markets, resulting in increased volatility in the foreign exchange, bond, and money markets. (Bank Negara Malaysia, 2023). Central banks, such as Bank Negara Malaysia (BNM), play a crucial function in monetary and financial stability maintenance. They accomplish this

by regulating and supervising financial institutions, ensuring the dependability of payment and settlement systems, and promoting the efficiency of financial markets. This commitment to financial stability is essential for sustaining the economy's resilience and fostering long-term growth. Bank Negara Malaysia (BNM) is entrusted with enhancing Malaysia's financial system. It accomplishes this by protecting the integrity of financial institutions, enhancing the resilience of the banking sector to withstand economic cycles and shocks, preventing unwarranted disruptions in the intermediation process, and instilling confidence in the financial system. BNM's efforts are primarily focused on the regulation and supervision of licensed financial institutions, the maintenance of essential payment and settlement systems, and the promotion of a robust financial market.

Despite heightened volatility in global markets, Malaysian financial markets have demonstrated remarkable resilience in the face of the global market. According to the BNM (2023), the Financial Market Stress Index (FMSI) for the years 2020 to 2023 revealed an increase in market stress due to developments in the global banking sector. However, domestic market stability has been maintained by financial institutions' proactive market risk management and hedging strategies, the existence of deep and liquid domestic markets, and the resiliency of domestic institutional investors. In addition, Malaysian banks have consistently maintained healthy capital and liquidity buffers, which have supported their function as financial intermediaries and facilitated economic recovery. What is the reason behind this situation? Are there possible bank-specific factors that contributed to Malaysia's commercial bank stability?

Banks play an important role in most countries, particularly developing ones in financing their economies and encouraging economic progress. As a result, there is a need to assure their stability. Various research has been conducted in recent years (Hassan et al, 2019; Brei et al. 2020; Pessarossi et al 2020; Yuan et al. 2022) investigating the factors that secure or undermine the stability of banks. The impact of bank competition on stability has long been the subject of debate and argument among researchers and policymakers. According to Yuan et al. (2022), bank competition is thought to have the greatest impact on stability in three ways: franchise value, borrowing costs, and operating behavior. However, the impact of these three approaches might vary in terms of direction, degree, and individuality depending on the period and environment. The main points of contention are 'competition-fragility,' 'competition-stability,' and a nonlinear link between competition and stability.

Against this backdrop, this study aims to investigate the factors contributing to the stability of Malaysia's commercial banks during a period of heightened global financial uncertainty. Understanding the unique stability determinants in the Malaysian banking sector is essential for maintaining the nation's financial system's resilience. While previous research has examined the determinants of bank stability in a variety of contexts, there is a significant gap in the literature regarding the specific factors influencing the stability of Malaysian commercial banks. Understandably, a great number of additional research have studied the determinants of bank stability in a cross-section of countries and time periods. (Diaconu and Oanea, 2014; Wang and Luo, 2021; Safiullah, 2021; El Moussawi and Mansour, 2022). While numerous studies have examined bank stability, only a limited number have focused on the specific determinants of stability within both commercial and Islamic banks in Malaysia. The majority of existing research has concentrated on broader cross-national and cross-temporal analyses. Therefore, our study aims to bridge this gap and provide valuable insights into the relationship between bank-specific characteristics and stability in the Malaysian banking landscape.

Literature Review

Financial Stability

Financial stability is characterized by bank stability. According to Djebali and Zaghdoudi (2020), a bank is deemed stable in general if it achieves two essential requirements which are enhancing economic performance and minimizing imbalances produced by endogenous variables of unplanned or unwanted events from various banking risks. Schinasi (2004), defined financial stability as the capacity to facilitate and enhance economic processes, manage risks, and withstand shocks. Furthermore, financial stability is viewed as a continuum, subject to change over time and consistent with multiple combinations of finance's constituent elements.

Many studies support the effectiveness of using the Z-score model by Altman (1968) for measuring and evaluating financial stability, soundness, bankruptcy risk, and solvency in the banking sector. Karim et al. (2018) used two methods of measuring bank stability, Z-Score and CAMELS variables. Using a dataset of 50 banks in Malaysia, the results suggested that both local Islamic and conventional banks are ranked favorable in overall average bank stability score, sensitivity to market risk, asset quality, earnings, and profitability, but local conventional banks recorded favorable rankings in liquidity. Khan (2022) assessed financial stability by aggregate Z-Score and the volatility of private credit to GDP ratio. Employing a two-step dynamic panel to macroeconomic data from 48 developing nations, the results revealed a bell-shaped relationship between bank competition and macroeconomic stability. Ledhem (2022) employed a Z-score model, the optimal model for measuring IBs' financial stability, and measuring sukuk market development by total Sukuk holdings issued. His findings demonstrated that sukuk market development positively affects the financial stability of Islamic banks, by expanding complementarity between Islamic banks, encouraging them to maintain stability.

Size

A bank's total assets have been extensively employed as a proxy for the size effect. (Khan, 2022; Gulati et al., 2023; Amidu & Wolfe, 2013; Anginer, Demirguc-Kunt & Zhu 2013). There are two points of view on the effects of bank size and bank stability. One body of research contends that the idea that huge banks are "too big to fail" encourages them to take on excessive risk since they may expect to be bailed out in the event of a crisis. (Stern et al. 2004). According to another thread (Beccalli et al., 2015), huge banks can benefit from economies of scale, which strengthens the stability of banks. Berger, Klepper, and Turk-Ariss (2008) revealed anomalous findings that larger banks carry significantly fewer NPLs and, consequently, have a higher quality loan portfolio than smaller banks; they also experience greater overall stability despite their lower capitalization.

Previously, Zhou (2012) investigated the crucial role of bank size in financial stability considering the global financial crisis. The study demonstrates conclusively that larger institutions are more resilient and less susceptible to financial distress during times of crisis. This demonstrates the stabilizing effect bank size has on the financial system. Hakenes and Schnabel (2010) examined the relationship between bank size and credit risk management and found that larger banks excel at credit risk management, which contributes to financial stability. This study examines how the size of a bank's credit risk management positively influences its stability. Nevertheless, Gulati et al. (2023) found a significant negative impact of bank size on financial stability. This revealed that despite having smaller total assets

possessed, smaller banks in the Indian subcontinent region seem to be more stable. Greater exposure to corporate lending and riskier projects puts larger banks at risk of losing stability.

Capital Adequacy

The capital adequacy ratio measures the level of risk capital that banks must maintain in relation to the risks they undertake. Theoretically, higher capital requirements ensure that banks have sufficient capital to absorb unanticipated losses when they occur (Diamond and Rajan, 1999). Consequently, the higher the capital requirement, the more risk-capital banks must set aside to cover losses resulting from their excessive risk-taking activities (Bertay et al, 2013), thereby enhancing bank stability. According to Ledhem (2022), a higher capital adequacy ratio indicates that banks are adequately capitalized, thereby ensuring their financial stability. In the Middle East and North African region, Ghenimi et al. (2017) found a significant positive relationship between the capital adequacy ratio and bank stability. This result demonstrated that capital serves as a safety net for banks during times of crisis, thereby decreasing the likelihood of bank failure. The study by Berger and Bouwman (2013) reveals that well-capitalized banks with higher Capital Adequacy Ratios (CARs) exhibit remarkable resilience during economic crises. These institutions are exceptionally adept at absorbing financial shocks, thereby ensuring their stability. This finding highlights the importance of robust capitalization in maintaining financial stability, particularly in times of economic volatility. Al-Malkawi and Al-Malkawi (2017) emphasize the importance of adequate capital in the financial industry. Their research indicates that banks with higher Capital Adequacy Ratios (CARs) are more stable. This emphasizes that well-capitalized banks are better able to withstand financial challenges, highlighting the central role of adequate capital in maintaining overall financial stability in the banking industry.

Credit Risk

Banks are vulnerable to a variety of risks. These include credit risk, liquidity risk, and interest rate risk. Nonetheless, credit and liquidity risks are not only the most significant risks that banks face; they are also inextricably tied to what banks do and why banks fail. Djebali and Zaghdoudi (2020) stated that the argument regarding the relationship between credit risks and bank stability is inconclusive since empirical results contradict one another. Their most recent findings can be divided into three categories. The first confirms that these two risks negatively influence bank stability. The second type, on the other hand, shows that both risks positively impact bank stability. The third body of literature suggests that liquidity and credit risks have little impact on bank stability.

The ratio of total loans to total assets is commonly used as a measure of credit risk as suggested by Curak *et al.*, 2012. Rupeika-Apoga (2018) investigated the factors that influence bank stability in Latvian banks using data from 2003 to 2016. The findings indicated that credit risk is adversely associated with bank stability, implying that decreasing lending standards impair stability. On the other hand, Gulati et al. 2023 measured the credit risk using the growth of credit as suggested by Schaek and Cihak (2014). The results reported that the growth of credit is significantly negative and affects bank stability for a region. This finding is consistent with Rupeika-Apoga (2018) and Jimenez et al. (2006).

Return on Asset

The profitability of a bank, as measured by returns on assets (ROA), is a key performance indicator that is extensively employed. (Berger et al., 2009; Gulati et al., 2023). Rupeika-

Apoga (2018) discovered a positive and statistically significant correlation between ROA and bank stability, indicating that rising profitability enhances bank stability. This is evident because, all else being identical, an increase in profits would provide the bank with additional funds to cover unforeseen events. Profitability is essential to the operation of commercial banks because a profitable financial system is better able to withstand negative shocks. Gulati et al. (2023) highlight the positive correlation between Return on Asset (ROA) and financial security. According to their research, institutions with a higher ROA are inherently more stable. Profitability provides banks with the necessary reserves to withstand economic volatility and maintain their financial health.

Data and Methodology

In this empirical study, we examined the association between bank-specific characteristics and financial stability by analyzing an unbalanced panel of 160 bank-year data retrieved from Eikon Thompson Reuters. The sample is comprised of fourteen commercial banks and two Islamic banks that are listed on the Bursa Malaysia. Using the Stata 14 program, multiple regression analysis was carried out on the data, and the correlation coefficient was validated for the purpose of achieving this objective. The variables that were used in this analysis can be found listed in Table 1, along with their associated measurements based on previous research.

Table 1: Variables used, description, measurements, and sources.

Variables/ Label	Description	Measurement	Sources
Financial stability (FS)	The Z-score can be defined as the number of profit standard deviations that must be less than the average value for a bank to fail (Roy, 1952). The Z-score can also be interpreted as the probability of bank failure in reverse. Therefore, a higher Z-score indicates greater overall bank stability or a reduced likelihood of exposure to bankruptcy.	$Z_{i,t} = \frac{ROA_{i,t} + EA_{i,t}}{\sigma ROA_{it}}$	Djebali et al. (2020); Ledhem et al. (2022); Gulati et al.(2023)
Size (SZ)	"Too big to fail" (TBTF) is a theory in banking and finance that asserts that certain corporations, especially financial institutions, are so large and interconnected that their failure would be catastrophic to the greater economic system, and therefore should be bailed out by the government when they face potential failure.	Log of Total Assets	Safiullah (2021); Wang and Luo (2021)
Credit risk (CR)	Credit risk is the quality of a bank's assets that can be measured	Loan-to-ratio	value Curak et al. 2012

	through loan-loss provisions. Higher provisions are anticipated to have a negative impact on profitability, as they indicate a greater risk and likelihood of nonperforming loans.		
Return on Asset (ROA)	Profitable banks are more averse to risk, as they can lose more value if downside risks occur. This contradicts the risk-return tradeoff, where higher profits occur only if investors accept losses.	Return on asset (ROA)	Pessarossi et al. (2020)
Capital adequacy ratio (CAR)	CAR measures a bank's ability to meet obligations, comparing capital to risk-weighted assets, and assessing risk of failure.	Total Tier 1 and Tier 2 capital by the risk-weighted assets.	Ledhem (2020); Karim et al. (2018)

Model Estimation

Model (1) is utilized to assess the extent to which bank-specific characteristics influence bank stability, as evaluated by the Z-score. The Pooled Ordinary Least Square (POLS) method was employed in this study, following the approach of Djebali et al. (2020), Ledhem et al. (2022), and Gulati et al. (2023), who assessed bank stability using the Z-score. The structure of the estimating model can be expressed as follows:

$$\text{Financial Stability}(FS)_{i,t} = \alpha + \beta_1 (\ln \text{Size}) + \beta_2 (\text{Credit risk}) + \beta_3 (\text{Return on asset}) + \beta_4 (\text{Capital adequacy ratio}) + \varepsilon_{i,t} \quad (1)$$

Where;

Financial stability (FS) _{i,t}	: Z-Score for bank _i time _t
Size (SZ) _{i,t}	: Bank Size (natural logarithm of total assets) for bank _i time _t
Credit risk (CR) _{i,t}	: Credit risk (loan-to-value ratio) for bank _i time _t
Return on asset (ROA) _{i,t}	: Return on asset for bank _i time _t
Capital adequacy (CAR) _{i,t}	: Capital adequacy ratio for bank _i time _t
α	: Constant intercept
β	: The Coefficient Representing the Independent Variables.
$\varepsilon_{i,t}$: Error Terms for bank _i time _t .

Empirical Results

Descriptive statistics

Table 2: Descriptive statistics

Stats	Obs	Z-score	Size	CAR	Credit	ROA
Max	160	176.008	8.34e+11	0.4663	0.9966	0.0211
Min	160	15.3487	2.20e+09	0.1212	0.0289	-0.0157
Mean	160	60.23448	1.32e+11	0.1864175	0.5924	0.0097125
Std. dev	160	29.39843	1.77e+11	0.0533835	0.1678	0.0045473

Table 2 shows a summary statistic of 16 commercial banks data compiled from Thomson Eikon Reuters. The mean of the Z-Score is 60.23448 indicating the presence of high financial stability and low risk by the commercial bank. A higher Z-score signifies that there is a greater

level of bank stability and indicates that there is a lower risk of the bank going bankrupt. Meanwhile, the size that is represented by total assets showed that commercial banks in Malaysia maintained at least 132 billion total assets on average. The mean capital adequacy ratio is 0.1864 meaning that the bank's capital is 18.64% of its risk-weighted assets. In other words, for every RM100 of risk-weighted assets, the bank has RM18.64 in capital. A CAR of 0.1864 (18.64%) is relatively high and generally indicates that the bank is well-capitalized and has a strong financial position. The credit risk exhibited an average of 0.5924, indicating that the entire value of loans held by the bank accounts for approximately 59.24% of its total assets. A greater ratio may imply an elevated degree of credit risk due to a larger proportion of the bank's assets being allocated to loans, which are susceptible to potential default. Banking institutions that possess a high ratio may encounter difficulties in the event of extensive loan defaults, as their asset base could be substantially impacted.

Correlation analysis

Table 3: Correlation analysis

	Z-Score	Size	CAR	Credit	ROA
Z-Score	1.0000				
Size	0.3813	1.0000			
CAR	-0.2158	-0.2628	1.0000		
Credit	0.2737	0.2796	-0.4725	1.0000	
ROA	0.3246	0.2212	-0.5579	0.2428	1.0000

The correlation study shows the associations between financial variables in Malaysian commercial banks, illustrating their dynamics in the banking industry. First, there is a positive correlation between Size and Z-Score (0.3813), indicating that larger financial institutions tend to have higher Z-Scores, which indicate greater financial stability. Second, the negative correlations between CAR and Size (-0.2628), CAR and Credit (-0.4725), and CAR and ROA (-0.5579) suggest that institutions with higher Capital Adequacy Ratios (CAR) are typically smaller, have higher credit quality, and may experience reduced returns on assets (ROA). These findings may suggest a cautious approach to capital sufficiency that prioritizes stability over profitability. Lastly, the positive correlations between Credit and Size (0.2796) and Credit and Z-Score (0.2737) suggest that, in general, larger institutions have superior credit quality and higher Z-Scores, both of which are essential for financial stability.

Multiple regression

Table 4: Pooled Ordinary Least Square (OLS) Regression

Z-Score	Coef	Std Error	t	P > t	[95% Conf. Interval]
Size	.1057433***	.0300636	3.52	0.001	.0463372 .1651494
CAR	.4440858**	.211457	2.10	0.037	.026244 .8619275
Credit	.0716262	.0641603	1.12	0.266	-.0551554 .1984078
ROA	.1839728***	.0744814	2.47	0.001	.0367966 .3311491
_cons	3.069195	.9102829	3.37	0.001	1.270464 4.867926

Notes: ***Significant at 1%, ** Significant at 5%, * Significant at 10%

The multiple regression analysis was conducted to explore the association between bank-specific characteristics and financial stability, as measured by the Z-score, within Malaysian commercial banks. The results of the Pooled Ordinary Least Square (OLS) regression model are presented in Table 4.

Size (SZ)

The coefficient for Size is 0.1057 (significant at the 1% level), indicating a positive relationship between bank size and financial stability. This suggests that larger commercial banks in Malaysia tend to have higher Z-scores, reflecting greater financial stability. This finding aligns with the 'too big to fail' concept, which implies that larger banks might benefit from economies of scale, enhancing their stability.

Capital Adequacy Ratio (CAR)

The coefficient for CAR is 0.4441 (significant at the 5% level), suggesting a positive relationship between capital adequacy and financial stability. Banks with higher capital adequacy ratios tend to exhibit greater financial stability. This result is consistent with the notion that well-capitalized banks are better prepared to absorb unexpected losses, thus enhancing their overall stability.

Credit Risk (CR)

The coefficient for Credit Risk is 0.0716, although it is not statistically significant (p -value > 0.10). This suggests that the relationship between credit risk and financial stability is not statistically significant in this analysis.

Return on Asset (ROA)

The coefficient for ROA is 0.1840 (significant at the 1% level), indicating a positive relationship between bank profitability (measured by ROA) and financial stability. Banks with higher returns on assets tend to exhibit greater financial stability. This finding is in line with the idea that profitability provides banks with more resources to withstand adverse events, enhancing their stability.

Intercept (_cons)

The intercept is 3.0692 (significant at the 1% level), representing the baseline financial stability when all other independent variables are zero.

Analysis of Findings

The results of the multiple regression analysis provide valuable insights into the determinants of financial stability in Malaysian commercial banks. Firstly, the positive relationship between Size and financial stability suggests that larger banks tend to enjoy greater stability, potentially due to their ability to benefit from economies of scale and diversify risks. This aligns with the 'too big to fail' argument but also underscores the importance of regulatory oversight for large institutions to prevent excessive risk-taking. This finding is consistent with Zhou (2012) suggested that larger banks are less prone to financial distress during a crisis. This suggests that larger banks have a stabilizing effect on the financial system. Moreover, Hakenes and Schanabel (2010) also found that larger banks are better at managing credit risk, which contributes to overall financial stability.

Secondly, the positive relationship between the Capital Adequacy Ratio (CAR) and financial stability highlights the critical role of capital in ensuring bank stability. Well-capitalized banks are better equipped to absorb shocks and maintain stability, reducing the likelihood of financial distress. This finding is similar to Berger and Bouwman (2013) who also found that

higher CARs are associated with greater financial stability during economic crises. They suggested that well-capitalized banks with higher Capital Adequacy Ratios (CARs) exhibit greater financial stability during economic crises, as they can absorb shocks effectively and maintain stability. Al-Makawi and Al-Makawi (2017) also reported the same result suggesting that banks with higher CARs are more stable, emphasizing the importance of capital adequacy in maintaining financial stability.

Thirdly, although not statistically significant in this analysis, Credit Risk's positive coefficient suggests that there might be some influence of credit risk on stability. Further research with a larger data set may be needed to explore this relationship more thoroughly.

Lastly, the positive relationship between Return on Asset (ROA) and financial stability underscores the importance of profitability for banks' overall stability. Profitable banks have more resources to navigate challenges and maintain their financial health. According to Rupeika-Apoga (2018), a higher ROA has a positive effect on bank stability. Banks that were profitable were better able to maintain their financial health and stability. As stated by Gulati et al. (2023), banks with a greater ROA are inherently more stable. Profitability provides banks with the necessary reserves to withstand economic volatility and maintain their financial health.

Conclusion

This study shed light on the key determinants of financial stability within Malaysian commercial banks amid global financial uncertainty. The findings highlight the central positions of adequate capital, profitability, and bank size in determining the resilience of these financial institutions. Capital adequacy, as determined by the Capital Adequacy Ratio (CAR), emerged as a crucial factor. Banks with adequate funding are better able to withstand economic disruptions and maintain stability. To prevent excessive risk-taking, regulatory authorities must continue to monitor and enforce capital adequacy standards. Profitability, as measured by Return on Assets (ROA), emerged as an additional crucial factor.

The symbiotic relationship between profitability and stability is exemplified by the fact that profitable institutions have the resources to navigate obstacles effectively. Without sacrificing prudent risk management, policymakers and institutions must prioritize profitable operations.

The size of the bank also played a significant impact, with larger banks exhibiting greater stability on average, possibly due to economies of scale and risk diversification. However, regulatory oversight is essential to prevent larger institutions from taking excessive risks. These insights provide policymakers and finance institutions with valuable guidance for preserving Malaysia's economic prosperity. Essential is a balanced approach that emphasizes capital sufficiency, profitability, and prudent risk management. Collaborative efforts may foster a thriving environment for financial institutions while preserving the domestic and international stability and integrity of the Malaysian banking sector.

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