

THE INFLUENCE OF FINANCIAL RISK ON BANK STOCK RETURN IN MALAYSIA

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ABSTRACT

This study investigates how financial risk influences the stock returns of Malaysian banks listed on Bursa Malaysia from 2015 to 2024. Using a multivariate Generalized Least Squares regression model, the effects of credit risk, market risk, liquidity risk, and capital risk on quarterly bank stock performance were examined. The analysis leverages data from nine major listed banks, controlling for multicollinearity, heteroscedasticity, and autocorrelation. The findings reveal that among the four risk measures, only the capital-to-asset ratio has a statistically significant positive impact on stock returns, indicating that stronger capitalization enhances investor confidence. Credit, market, and liquidity risks do not show significant effects, suggesting market efficiency in incorporating public information. These results offer insights for investors, bank management, and regulators to improve risk mitigation strategies and bolster financial stability in Malaysia's banking sector.

Keywords: *Financial Risk, Stock Return, Credit Risk, Liquidity Risk, Market Risk, Capital Risk*

INTRODUCTION

The banking sector holds a central role in Malaysia's economic development, functioning as both a facilitator of monetary transactions and a provider of essential credit services to firms and households (Bourke, 1989). Over the past decades, the sector has undergone significant transformation, particularly since the 1990s, as globalization and technological advances spurred the introduction of more sophisticated investment products and financial instruments. In this environment, maximizing investor returns while managing financial risk has become increasingly critical.

Malaysia's stock market, anchored by Bursa Malaysia, is a key component of the country's economic infrastructure. The exchange provides a transparent and efficient platform for trading securities, facilitating capital formation and enabling firms to raise equity financing. A well-functioning stock market contributes to effective capital allocation and wealth creation, supporting economic growth and innovation (Boubakari & Jin, 2010). The interconnectedness between banking institutions and the capital markets underscores the importance of understanding how financial risks in banks affect stock returns, which ultimately reflect shareholder wealth and market confidence.

A central concept in this context is market efficiency. The Efficient Market Hypothesis (EMH) posits that stock prices incorporate available information rapidly, making it challenging to consistently outperform the market through stock selection or timing (Fama, 1970). Under the EMH, investors can only expect higher returns by taking on greater risk. Historical evidence during the global financial crisis demonstrated that financial risks, particularly credit and liquidity risks, were associated with significant losses in market capitalization and wider economic instability (Mehri, 2015).

Financial risk in banking is multifaceted and includes credit risk, market risk, liquidity risk, and capital risk. Credit risk refers to the likelihood of borrower default (Chen & Pan, 2012). Market risk arises from fluctuations in exchange rates, interest rates, and other market variables (Basel Committee on Banking Supervision, 2011). Liquidity risk reflects a bank's capacity to meet short-term obligations without incurring substantial losses, and capital risk concerns the adequacy of financial buffers to absorb unexpected shocks. These risk factors can materially affect banks' profitability, solvency, and ultimately, their stock market performance (Dick-Nielsen et al., 2013).

Malaysia's regulatory framework incorporates Basel II and III standards alongside local guidelines enforced by Bank Negara Malaysia (BNM). The Financial Services Act 2013 and Islamic Financial Services Act 2013 establish rules governing capital adequacy, liquidity requirements, and risk management practices. These frameworks aim to safeguard financial stability, protect consumers, and promote confidence in the sector. However, despite robust regulation, Malaysian banks remain exposed to cyclical pressures, such as commodity price volatility and global economic uncertainty. This was evident during the COVID-19 pandemic, when rising non-performing loans and increased provisioning requirements affected profitability and market capitalization.

From an investment perspective, understanding how these risk factors influence stock returns is essential for portfolio optimization and risk management. Theoretical models such as Modern Portfolio Theory by Markowitz (1952), the Capital Asset Pricing Model by Sharpe (1964), and Arbitrage Pricing Theory by Ross (1976) emphasize that higher risk is associated with higher expected returns. Yet, empirical findings are mixed. For instance, some studies report that liquidity and credit risks significantly impact stock returns (Mouna & Anis, 2016). The others suggest that markets efficiently price known risks, rendering them insignificant predictors of returns (Abu-Aljarayesh et al., 2021).

Given this context, the Malaysian banking sector presents an ideal setting to examine the influence of financial risk on stock returns. With a diverse array of institutions ranging from large domestic banks to subsidiaries of global financial groups, Malaysia's market offers insights into how risk factors manifest in an emerging economy with advanced regulatory standards. This study contributes to the literature by empirically assessing the relationship between four core financial risks and the stock returns of listed Malaysian banks over a decade, helping investors, policymakers, and bank managers better understand and manage risk-return trade-offs.

The Malaysian financial market has experienced considerable volatility in bank stock returns, raising concerns about investors' ability to reliably anticipate fluctuations and effectively manage associated risks (Mouna & Anis, 2016). Although banks play a vital role in the economy as financial intermediaries, rising exposures to credit, market, liquidity, and capital risks pose serious challenges to sustaining investor confidence and optimizing profitability (Mwaurah, 2019). In the aftermath of the COVID-19 pandemic, Malaysian banks faced heightened credit risks and increased earnings volatility driven by both global uncertainty and domestic structural vulnerabilities (BNM, 2024).

Episodes of financial distress, including the threat of bank runs, have further compounded these risks. A bank run occurs when depositors withdraw funds simultaneously due to fears of insolvency, triggering liquidity crises and forcing banks to liquidate assets at depressed prices (Diamond & Dybvig, 1983). These dynamics can generate a self-reinforcing cycle in which declining stock prices and weakening investor sentiment exacerbate liquidity pressures and elevate market volatility.

While prior research has documented the link between financial risk and stock returns, the empirical evidence remains mixed, particularly in emerging markets. For example, some studies affirm that higher risk is compensated by higher returns (Bali & Peng, 2006; French et

al., 1987; Merton, 1973). Some of the other studies fail to find consistent evidence supporting this relationship (Campbell et al., 1998; Nelson, 1991). Specific studies have shown that credit and solvency risk are not always significant predictors of stock performance (Cheng & Nasir, 2010), whereas liquidity risk and earnings indicators may be more reliable determinants.

Additionally, many prior studies have adopted single-factor models, potentially overlooking the complex interplay among multiple types of financial risk. Multi-factor models are necessary to capture both systematic and unsystematic components that jointly influence stock returns (Ross, 1976). Despite the relevance of these issues, research examining the Malaysian banking sector using comprehensive multi-factor frameworks remains scarce. The moderating role of bank characteristics, such as size or capitalization, in shaping the impact of risk exposures on stock returns has also been underexplored.

This gap in empirical understanding creates challenges for investors seeking to evaluate bank stock valuations and for policymakers striving to maintain market stability. Without clear evidence, market participants may struggle to anticipate the effects of rising risk exposures or to design effective mitigation strategies. Therefore, this study aims to fill this gap by empirically examining the relationship between credit risk, market risk, liquidity risk, and capital risk and the stock returns of Malaysian listed banks over a decade. By adopting a multi-factor model, the research provides insights that can inform investment decision-making, strengthen risk management practices, and guide regulatory policy to enhance the resilience of Malaysia's banking sector.

The objective of the study is to investigate the influence of financial risk on bank stock returns in Malaysia. The specific objectives of this study are:

- i. To investigate the influence of credit risk on bank stock returns in Malaysia.
- ii. To investigate the influence of market risk on bank stock returns in Malaysia.
- iii. To investigate the influence of liquidity risk on bank stock returns in Malaysia.
- iv. To investigate the influence of capital risk on bank stock returns in Malaysia.

LITERATURE REVIEW

Modern Portfolio Theory (MPT), introduced by Markowitz (1952), posits that investors can construct an optimal portfolio that maximizes expected returns for a given level of risk through diversification. The theory emphasizes that risk should not be assessed for individual assets in isolation but in terms of their contribution to overall portfolio variance. By combining assets with imperfectly correlated returns, investors can reduce total volatility without necessarily sacrificing returns. A key contribution of MPT is the concept of the efficient frontier, representing the set of portfolios offering the highest expected return for each level of risk. This framework guides investors in balancing risk and return and underpins the principle of diversification in banking portfolios. For this study, MPT underscores how managing different types of financial risks, such as credit, market, and liquidity risks, can affect the risk-return profile of bank stocks.

Arbitrage Pricing Theory (APT), developed by Ross (1976), extends the logic of MPT by modeling expected returns as a function of multiple systematic risk factors rather than relying solely on market beta, as in CAPM. APT proposes that macroeconomic variables such as inflation, interest rates, GDP growth, and exchange rates systematically influence asset returns. The theory assumes that there is no arbitrage, meaning that investors will take advantage of any mispricing that results from differences between expected and actual returns. Then, the general form of the APT model can be expressed as:

$$E(R_{it}) = \lambda_0 + \lambda_1 b_{i1} + \lambda_2 b_{i2} + \dots + \lambda_n b_{in}$$

where $E(R_{it})$ is the expected return on the asset i during a specified period, $i = 1, 2, 3 \dots n$, λ_n represents the risk premium for factor n_i , and b_{in} denotes asset i 's sensitivity to that factor. APT is particularly relevant to this study as it accommodates multiple sources of financial risk affecting Malaysian bank stock returns. By considering credit, market, liquidity, and capital risks simultaneously, the model provides a comprehensive framework for understanding how diverse risk exposures translate into expected returns.

The Efficient Market Hypothesis (EMH), proposed by Ross (1976), asserts that financial markets are informationally efficient, meaning stock prices fully reflect all available information. The Efficient Market Hypothesis (EMH) is divided into three forms, each representing varying degrees of market efficiency. The weak form asserts that current stock prices fully reflect all historical market data, including past prices, trading volumes, and renders technical analysis ineffective. The semi-strong form posits that stock prices incorporate all publicly available information, such as financial statements, news releases, and economic indicators. The strong form of EMH claims that all information, public and private, is embedded in stock valuations, making it impossible for any investor to consistently achieve abnormal returns. Under EMH, particularly in its semi-strong and strong forms, any publicly disclosed financial risk indicators, such as non-performing loan ratios or capital adequacy, should be rapidly incorporated into stock prices, leaving little room for systematic excess returns based on these metrics. However, empirical research has revealed that markets in emerging economies may be only weakly efficient. For example, Naser et al. (2011) argue that financial risk information can still influence returns when information dissemination is incomplete or delayed. This perspective is relevant to Malaysia's banking sector, where evolving disclosure standards and investor sophistication may moderate the extent to which risk information is priced efficiently.

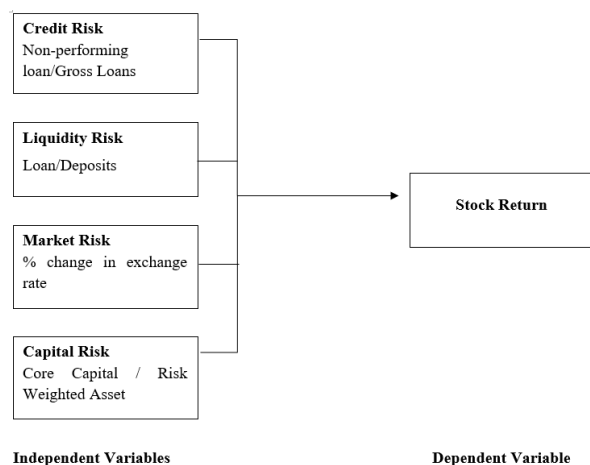


Figure 1: Conceptual Framework

Stock returns represent the gains or losses earned by shareholders, calculated as the percentage change in a stock's price plus any dividends received. According to Violita (2019), the main motivation for investing in stocks is the expectation of higher returns. Consistent returns encourage further investment, while uncertainty can undermine confidence. Modern Portfolio Theory suggests a direct relationship between risk and return, with investors demanding greater compensation for bearing higher risk (Mwaurah, 2019). Empirical evidence shows that this relationship can be dynamic, varying across economic cycles (Chiang, 2020). Studies by Singh and Tandon (2019) and Tran (2024) highlight the role of dividend policies and earnings in driving stock valuations, emphasizing that stable payouts can enhance confidence and reduce volatility. Stein (1989) argues that pressure for short-term earnings

growth can incentivize banks to take excessive risks, potentially harming long-term performance. This dynamic underlines the importance of understanding how different risk exposures impact bank stock returns. In this study, stock return is the dependent variable and is measured as the continuously compounded return following Mwaurah (2019):

$$R_{i,t} = \ln \left(\frac{P_t + Div}{P_{t-1}} \right)$$

Where:

$R_{i,t}$ = continuously compounded individual bank stock return at time t

P_t = stock price at the end of the period

P_{t-1} = stock price at the end of the previous period

Div = cash dividend during the period

Credit risk arises when borrowers fail to meet their obligations, causing potential losses to lenders (Accornero et al., 2018). It can lead to reduced cash flows, higher collection costs, and erosion of capital. The 2008 financial crisis highlighted how unmanaged credit risk can disrupt entire financial systems (Committee on Banking Supervision, 2011). Studies have examined credit risk across various contexts. Pham (2021) found that internal control factors significantly influence credit risk in Vietnamese banks. Abbas and Ali (2022) noted that loan growth can heighten credit risk in Islamic banks, while strong capital buffers help mitigate this effect. Mwaurah (2019) emphasized that the non-performing loans (NPL) ratio is a reliable measure of credit risk, as it captures the proportion of problematic loans relative to total lending. This study adopts the NPL ratio, given its availability and relevance in the Malaysian banking context.

Market risk refers to the potential for losses due to adverse movements in interest rates, exchange rates, and market prices (Sukcharoensin, 2013). Currency fluctuations can impact banks' earnings and asset values. Empirical evidence underscores the importance of market risk in shaping financial performance. Kassi et al. (2019) reported that financial leverage and market valuations affect firms' returns, while exchange rate volatility can influence bank stock returns depending on the country's economic structure. For instance, currency devaluation may erode returns in import-dependent economies but improve performance in export-driven contexts. Following Mwaurah et al. (2017), this study measures market risk as the annual rate of change between the Malaysian ringgit (MYR) and the US dollar (USD).

Liquidity risk arises when banks cannot meet short-term obligations without incurring significant costs (Diamond & Rajan, 1999). This risk often stems from mismatches between asset maturities and liabilities, and can trigger broader systemic crises if unchecked. Research has shown that liquidity risk is sensitive to macroeconomic conditions. Isa et al. (2021) found that rising interest rates in Malaysia reduce banks' ability to maintain adequate liquidity buffers. Mwaurah (2019) demonstrated that higher liquidity risk, measured by loan-to-deposit ratios, negatively affects bank stock returns. Given its significance, this study uses the ratio of loans to deposits as a proxy for liquidity risk, capturing the extent to which banks rely on short-term funding.

Capital risk refers to the possibility that a bank's capital may be insufficient to absorb unexpected losses, threatening solvency (Greuning & Bratanovic, 2020). Capital adequacy is critical for maintaining investor confidence and financial stability. Berger and Bouwman (2013) found that while capital strength supports bank performance, its importance is heightened during periods of market turbulence. Mwaurah (2019) emphasizes that maintaining adequate reserves is vital to absorb shocks and avoid insolvency. Accordingly, the Basel III framework requires banks to hold higher-quality capital to withstand stress events. In this study, capital

risk is measured as the ratio of core capital to risk-weighted assets, reflecting the bank's capacity to absorb losses.

Hypotheses Development

Credit Risk and Stock Return

Research has produced mixed findings on whether credit risk significantly affects bank stock performance. Karim et al. (2018) found that higher non-performing loans (NPLs) negatively impact Malaysian banks' profitability, suggesting that credit risk erodes value. Similarly, Chandra et al. (2019) reported a significant negative relationship between NPLs and profitability across ASEAN banks. Siddique et al. (2022) also observed an inverse link between NPLs and financial performance in South Asia, highlighting that poor credit management reduces returns. However, Abu-Aljarayesh et al. (2021) found no statistically significant relationship between credit risk and stock returns among Jordanian banks, indicating that markets may efficiently incorporate credit information without affecting valuations. Yoewono and Ariyanto (2022) suggested that audit quality can moderate this relationship, ensure better credit risk controls and support higher stock returns.

Market Risk and Stock Return

Market risk, including interest rate and exchange rate volatility, can create uncertainty for investors and affect bank valuations. Mwaurah (2019) revealed that market risk has a strong negative impact on commercial bank stock returns because rising interest rates and currency volatility reduce earnings. Similarly, Isuwa et al. (2021) found that net interest margin, as a proxy for market risk, positively influenced Nigerian banks' stock returns. By contrast, Handayani et al. (2019) and Yoewono and Ariyanto (2022) reported that market risk did not significantly impact stock returns in Indonesia, suggesting that investor perceptions and market structures can moderate this effect. Rafiq et al. (2019) found a positive relationship between market risk and bank stock performance in Pakistan.

Liquidity Risk and Stock Return

Liquidity risk reflects a bank's capacity to meet obligations without incurring losses. Mwaurah (2019) observed that higher liquidity risk, proxied by illiquid asset ratios, negatively impacts stock returns. Similarly, Abu-Aljarayesh et al. (2021) found that liquidity risk significantly reduced bank stock performance in Jordan, while Vasquez-Tejos and Fernandez (2021) reported an inverse relationship in Latin American markets. Godfrey (2019) highlighted that investors demand a premium for illiquidity risk, which can affect valuations. Alkhazali et al. (2021) underscored the importance of effective liquidity management for sustaining financial performance.

Capital Risk and Stock Return

Capital risk concerns a bank's ability to absorb unexpected losses. Chandra et al. (2019) found that stronger capital buffers enhance resilience and performance, especially during crises. Mwaurah (2019) reported that higher capital risk, reflected in lower capital adequacy ratios, reduces stock returns in Kenyan banks. Conversely, Yoewono and Ariyanto (2022) found that capital adequacy did not significantly influence stock returns in Indonesia, suggesting that investors may prioritize other risk factors. Chandra et al. (2019) concluded that while capital structure affects profitability, it may not directly translate into stock returns if firms maintain consistent earnings.

H1: Credit risk has a significant negative effect on bank stock return

- H2: Liquidity risk has a significant negative effect on bank stock return
H3: Market risk has a significant negative effect on bank stock return
H4: Capital risk has a significant negative effect on bank stock return

METHODOLOGY

Data and Sample

This study examines the influence of financial risks on the stock returns of Malaysian banks listed on Bursa Malaysia. Secondary data were used, drawn from quarterly reports and publicly available financial statements spanning Q1 2015 to Q4 2024. The target population included all banks licensed by Bank Negara Malaysia and listed on Bursa Malaysia as of December 31, 2024. A purposive sampling technique was applied to select nine banks with consistent financial reporting and data availability over the study period. The sample comprises AFFIN Bank Berhad, Alliance Bank Malaysia Berhad, AMMB Holdings Berhad (AmBank), Bank Islam Malaysia Berhad, CIMB Group Holdings Berhad, Hong Leong Bank Berhad, Malayan Banking Berhad (Maybank), Public Bank Berhad, and RHB Bank Berhad. The inclusion criteria required banks to be licensed by the central bank, to have been listed continuously from 2015 to 2024, and to provide complete quarterly data on key financial risk indicators, including non-performing loans, capital adequacy ratios, and liquidity measures. Banks with incomplete data or those involved in mergers, acquisitions, or delisting during the study period were excluded to avoid inconsistencies.

Variable Descriptions and Measurements

This section outlines the key variables used in the study and how each of them is measured. The variables are selected based on their theoretical and empirical relevance to unit trust performance. The dependent variable is the bank stock return, which represents the overall performance delivered to investors over a given period. The study includes credit risk, market risk, liquidity risk, and capital risk as independent variables. Credit risk is proxied by the ratio of non-performing loans to gross loans (NPL). Market risk is measured as the annual percentage change in the MYR/USD exchange rate (ER). Liquidity risk is proxied by the loans-to-deposits ratio (LDR). Capital risk is measured as the ratio of core capital to risk-weighted assets (CWA). Table 1 provides detailed measurements for the variables.

Table 1: Variables Description and Measurement

Variables	Type	Proxy Variable (s)	Symbol	Relationship
Stock Return (SR)	DV	Stock Return	SR	
Credit Risk (CR)	IV	Non-Performing Loan to Gross Loan	NPL	Positive/Negative
Market Risk (MR)	IV	% change on MYR to USD	ER	Positive/Negative
Liquidity Risk (LR)	IV	Loans to Deposit Ratio	LDR	Positive/Negative
Capital Risk (CAR)	IV	Core Capital to Weighted Assets	CWA	Positive/Negative

Estimation Models

To analyze the relationship between financial risk factors and stock returns, the study used a multivariate Generalized Least Squares (GLS) regression model. This method is appropriate for addressing heteroscedasticity and autocorrelation commonly observed in financial panel data. The model is specified as follows:

$$R_{it} = \alpha_0 - \beta_1 NPL_{it} - \beta_2 ER_{it} - \beta_3 LDR_{it} - \beta_4 CWA_{it} + \varepsilon_{it}$$

Where:

R_{it} = Stock Returns

NPL_{it} = Ratio of Non-Performing Loans to Gross Loans (credit risk)

ER_{it} = Rate of change of the exchange rate between MYR and USD (market risk)

LDR_{it} = Ratio of Loans to Deposits (liquidity risk)

CWA_{it} = Ratio of Core Capital to Risk-Weighted Assets (capital risk)

ε_{it} = Error term

α_0 = Constant

β = Coefficient of independent variables

Data analysis was conducted in several stages. First, descriptive statistics were calculated to summarize central tendencies and variability in stock returns and risk indicators. Correlation analysis examined the strength and direction of bivariate relationships and assessed potential multicollinearity. Next, GLS regression was used to estimate the effects of credit, market, liquidity, and capital risks on stock returns, with significance tested using p-values at the 5% level. Panel data models further accounted for individual bank effects over time, and lagged stock returns were included to evaluate potential persistence in return behavior.

To ensure the reliability and robustness of the regression results, this study includes several diagnostic tests. These tests are essential to detect potential econometric issues that may affect the accuracy of the model. Diagnostic tests are an essential component of empirical financial research since they are used to measure the model's validity and stability. Specifically, the study performs the Breusch-Pagan Lagrange Multiplier (LM) Test, Multicollinearity Test, Heteroscedasticity Test, and Autocorrelation Test. These tests each address a unique regression analysis assumption and aid in determining the accuracy of the selected estimate model.

Breusch-Pagan Lagrange Multiplier (LM) Test

To ascertain whether the REM is more suitable for panel data analysis than the POLS model, the Breusch-Pagan Lagrange Multiplier (LM) test is implemented in this investigation. This test is crucial for determining whether there is substantial variation across individual units, like unit trust funds, that should be modelled using random effects rather than being disregarded under the pooled regression approach. When the LM test value surpasses the tabulated chi-squared value, the random effect model is superior to the pooled model. In other words, if the test result is statistically significant, it confirms the existence of unobserved heterogeneity among the panel units, which justifies the use of the REM over POLS. By applying the LM test, this study ensures that the most suitable model is chosen based on the characteristics of the data, thus enhancing the validity and consistency of the regression results in identifying the key determinants of stock return performance in Malaysia.

The LM test is based on the following hypotheses:

H_0 : The Pooled OLS model is appropriate.

H_a : The Random Effects model is more appropriate.

The multicollinearity test is a method that determines whether two or more independent variables in the regression model are significantly correlated. Multicollinearity occurs when predictor variables share a strong linear relationship, which can compromise the validity of the model. In the presence of multicollinearity, it is challenging to determine the individual impact of each independent variable on the dependent variable, as changes in one variable may be closely correlated with those in another. Addressing multicollinearity is essential to ensure that the model provides stable and reliable coefficient estimates. To detect multicollinearity in this study, the Variance Inflation Factor (VIF) is used. The VIF quantifies how much the variance of a regression coefficient is inflated due to the presence of multicollinearity. There is certainly multicollinearity among the independent variables when the VIF score is 10 or above. In order to prevent redundancy and distortion in the model, each variable that exceeds this threshold should be examined, taken into consideration for removal, or adjusted.

The test of multicollinearity is based on the following hypotheses:

H_0 : Multicollinearity does not exist in the regression model.

H_a : Multicollinearity exists in the regression model.

The heteroscedasticity test is conducted in this study to examine whether the variance of the error terms remains constant across all levels of the independent variables. In an ideal regression model, the residuals should have constant variance; this condition is known as homoscedasticity. When this assumption is violated, and the variance of residuals differs across observations, the problem of heteroscedasticity arises. The presence of heteroscedasticity indicates that the model may be inefficient, and standard errors could be biased, leading to incorrect conclusions regarding the statistical significance of coefficients. To detect heteroscedasticity, this study uses tests such as the Breusch-Pagan, which assess whether the variance of the residuals is dependent on the values of the independent variables. If the test results are significant, it implies that the model suffers from heteroscedasticity, and corrective measures, such as using robust standard errors, may be needed.

The heteroscedasticity test is based on the following hypotheses:

H_0 : The variance of error terms is homoscedastic.

H_a : The variance of error terms is heteroscedastic.

The serial correlation test is employed to determine whether the residuals of the regression model are correlated over time. Serial correlation, also known as autocorrelation, happens when the error terms in a panel data regression model are not independent from one period to another. This is a violation of one of the key assumptions of classical regression models, which can result in inefficient estimates and misleading statistical inferences. In the context of panel data, serial correlation can arise due to the repeated observations of the same unit over multiple periods. Serial correlation has the potential to significantly compromise the validity of regression results if neglected, producing skewed conclusions and wrong predictions. This makes it essential to test for and correct any presence of autocorrelation in the data.

The hypotheses for the serial correlation test are as follows:

H_0 : The error terms are not serially correlated.

H_a : The error terms are serially correlated.

DATA ANALYSIS AND DISCUSSIONS

Descriptive Analysis

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Y SR	360	0.012	0.089	-0.246	0.459
X1 NPL	360	0.018	0.01	0.002	0.044
X2 ER	360	-0.006	0.035	-0.111	0.091
X3 LDR	360	0.898	0.083	0.695	1.182
X4 CWA	360	0.128	0.015	0.082	0.159

Table 2 above presents the mean, standard deviation, minimum, and maximum value for each variable based on the 360 observations collected from the selected Malaysian bank over 10 years. The mean stock return (SR) is 0.012, or 1.2%, indicating a rather low average return across Malaysia's banks. However, the standard deviation of 0.089 represents a wide range of stock performance, with returns ranging from -24.6% to 45.9%, indicating high volatility in bank stock prices over the research period. The non-performing loan (NPL) ratio averages 1.8%, with a standard deviation of 1%. This demonstrates that banks maintain low credit risk levels on average, while the maximum value of 4.4% indicates that certain banks are more exposed to defaulted loans, which may impact their profitability and investor perceptions. The exchange rate (ER), which is calculated as the percentage change in the MYR/USD exchange rate, has a mean of -0.006 (or -0.6%), indicating a small average depreciation of the Malaysian Ringgit over the observed time. The standard deviation of 0.035 and a range of -11.1% to 9.1% indicate that the currency fluctuated moderately, which could have an impact on bank earnings, particularly for banks with USD-denominated assets and liabilities. The loan-to-deposit ratio (LDR) is 89.8%, indicating that Malaysian banks utilize a substantial portion of their deposit base for lending activities. The standard deviation of 0.083 and maximum of 118.2% indicate that some banks use aggressive lending tactics, which may exacerbate liquidity and funding issues. The capital-to-asset ratio (CWA) averages 12.8%, with a comparatively small standard deviation of 1.5%. This implies that the banks have consistent capital adequacy, with the lowest and largest capital buffers of 8.2% and 15.9%, respectively. A higher CWA ratio typically indicates a stronger financial situation and greater risk absorption capacity.

Correlation Analysis

Table 3: Correlation Matrix

Variables	SR	NPL	ER	LDR	CWA
(1) Y_SR	1				
(2) X1_NPL	0	1			
(3) X2_ER	0.058	0.02	1		
(4) X3_LDR	-0.067	-0.269	0.066	1	
(5) X4_CWA	0.118	0.162	0.102	-0.067	1

The correlation analysis seeks to determine the strength and direction of linear correlations between the dependent variable (stock return) and the independent variables (NPL, ER, LDR, and CWA). The Pearson correlation coefficients are shown in Table 3. The findings show that the connection between stock return and the chosen independent factors is relatively low. The correlation between SR and NPL is 0.000, indicating there is no linear relationship between stock returns and non-performing loans. This suggests that the degree of credit risk, as measured by NPLs, may have no direct impact on the short-term performance of bank stocks. The correlation coefficient between SR and ER is 0.058, which is weakly positive. This implies that a modest depreciation of the Malaysian Ringgit against the US Dollar may relate to an increase in bank stock returns; however, the association is not substantial. Similarly, SR and LDR have a modest negative correlation of -0.067, implying that banks with greater loan-to-deposit ratios may see somewhat poorer stock returns, presumably due to increased liquidity or financing risk. CWA has the strongest connection with SR of any independent variable, with a coefficient of 0.118. This modest positive association implies that banks with stronger capital holdings have slightly higher stock performance, most likely due to enhanced investor trust in their financial stability. In terms of the correlations between the independent variables, NPL and LDR have the strongest correlation (-0.269). This weak-to-moderate negative connection suggests that banks with more lending compared to deposits have lower non-performing loan ratios, which could represent better credit risk management or more efficient loan portfolio strategies. CWA also has weak positive correlations with NPL (0.162) and ER (0.102), as well as a weak negative correlation with LDR (-0.067), indicating that these financial indicators have limited linear relationships. Overall, all correlation values are substantially below the widely accepted threshold of 0.70, showing no significant multicollinearity among the independent variables. As a result, all variables are appropriate for inclusion in the following regression analysis.

Diagnostic Test

Breusch And Pagan Lagrangian Multiplier Test

Table 4: Breusch-Pagan Test

		Decision
Chi ²	2.2	Do not reject null hypothesis. POLS is chosen.
Prob > Chi ²	0.0689	

The Breusch and Pagan Lagrangian Multiplier (LM)⁴⁴ test was used to select the proper model specification for the panel data analysis, which was either a random effects model or a

pooled OLS regression. This test evaluates whether the panel-specific error component (u_i) is significantly different from zero. If the variance of the panel-level impact is statistically significant, it indicates that the random effects model is preferable to the pooled OLS. The test used the 5% level of significance. The test statistic is 2.20 with a p-value of 0.0689. Since the p-value is greater than the significance of 0.05, and fail to reject the null hypothesis. This implied that there is no significant panel-level variance. Therefore, the random effects model is not statistically superior to the pooled OLS model. In other words, the use of pooled OLS may be preferred over random effects on the dataset, as the inclusion of random effects does not improve model performance significantly.

Multicollinearity Test

Table 5: Variance Inflation Factor

		Decision
Mean VIF	1.061	Do not reject null hypothesis.

To discover multicollinearity among the independent variables, the Variance Inflation Factor (VIF) test was used. Multicollinearity occurs when the independent variables in a regression model are highly correlated, distorting the predicted coefficients and reducing the model's reliability. From Table 5, the mean VIF value for the study was 1.061, which is well below the commonly accepted threshold of 10. Since 1.061 is close to 1, it suggests that the variable with this VIF is not significantly correlated with other predictors in the model, and therefore, multicollinearity is not a concern. Therefore, the result leads to the decision not to reject the null hypothesis, which assumes that there is no multicollinearity problem among the explanatory variables.

Heteroscedasticity Test

Table 6: Heteroscedasticity Test

		Decision
Chi ²	174.68	Reject null hypothesis.
Prob > Chi ²	0.0000	

The heteroscedasticity test was conducted to examine whether the variance of the residuals in the regression model is constant across all levels of the independent variables. From Table 6, the test resulted in a Chi-squared value of 174.68, with a p-value of 0.0000. Because the p-value is less than the 0.05 level of significance, the null hypothesis of homoscedasticity (constant variance) is rejected. This suggests heteroscedasticity in the model, which means that the error variances do not remain constant across observations. As a result, standard OLS estimations may no longer be efficient, and the presence of heteroscedasticity implies that robust standard errors are needed to adjust for the issue and maintain proper statistical inference.

Serial Correlation Test

Table 7: Wooldridge Test for Autocorrelation

		Decision
F (1,8)	4.568	Do not reject null hypothesis.
Prob > F	0.0650	

The Wooldridge test was used to detect the presence of serial correlation (also known as autocorrelation) in the panel data model. Serial correlation happens when the residuals in the model are correlated with time, violating one of the regression model's classical assumptions and potentially leading to wasteful estimates. The test returned an F-statistic of 4.568 and a p-value of 0.0650. Because the p-value is bigger than the 0.05 significance level, the study does not reject the null hypothesis of no first-order autocorrelation. As a result, the panel data does not show any substantial indication of serial association. This implies that the residuals are independent over time; therefore, no corrective procedures for autocorrelation are necessary in this model.

RESULTS AND DISCUSSION

Table 8: Full Model Regression Model

Predictors	Dependent Variables: Stock Returns				
Y SR	Coefficient Value	Standard Error (S.E.)	t-value	p-value	Sig
X1 NPL	-0.3430	0.487	-0.7	0.482	
X2 ER	0.1300	0.118	1.1	0.271	
X3 LDR	-0.0790	0.059	-1.35	0.179	
X4 CWA	0.6940	0.332	2.09	0.037	**
Constant	0.0020	0.084	0.02	0.985	
R-squared		0.021			
F-Stat		2.846			
Prob > F		0.024			
Observations		360			

Based on the POLS robustness test, the study tested the collective influence of financial risk on stock returns of Malaysian banks from 2015-2024. The model established among the influence of credit risk (NPL), market risk (ER), liquidity risk (LDR), and capital risk (CWA), only the capital risk, capital-to-asset ratio (CWA) is the only variable that is statistically significant at the 5% level, with the coefficient of 0.6940 and p-value 0.037. This positive and significant relationship suggests that higher capital adequacy is associated with increased bank stock returns, indicating that investors may perceive well-capitalized banks as more stable and financially sound, thereby increasing their market valuation. The remaining independent variables, Non-Performing Loan (NPL), Exchange Rate (ER), and Loan-to-Deposit Ratio (LDR), were determined to be statistically insignificant with the p-values of 0.482, 0.271, and 0.179, respectively. Specifically, NPL has a negative coefficient (-0.343), implying that increased credit risk may diminish stock returns; however, this effect is not statistically confirmed. ER has a positive coefficient (0.130), showing that MYR depreciation may

modestly increase stock returns; nonetheless, the link is not statistically significant. Similarly, LDR has a negative connection (-0.079), implying that increased lending activity compared to deposits may increase risk exposure, but this effect is likewise statistically insignificant. The constant term is not statistically significant ($p = 0.985$), indicating that when all independent variables are held at zero, the stock return does not significantly differ from zero.

The influence of capital risk and stock return

The results show a statistically significant positive link between the Capital-to-Asset Ratio (CWA) and Stock Returns (SR), as indicated by a coefficient of 0.6940 and a p-value of 0.037. This 5% significance level shows that increased capital sufficiency relates to higher bank stock returns. This finding is consistent with the principles of signaling theory, which posits that well-capitalized banks convey a strong signal of financial strength, stability, and reduced risk to both investors and the broader market (Bellemare, 2024). Such favorable signals often boost investor confidence, raise demand for the bank's equity, and result in higher market valuations and returns. This finding is corroborated by several contemporary studies. For instance, Olawale (2024) stated that capital adequacy has a considerable favorable impact on bank profitability and stability, thereby influencing investor sentiment and stock performance. Similarly, Awad et al. (2024) demonstrate that strong capital adequacy considerably increases company worth in the MENA region. According to Witanty and Sukoco (2025), higher capital adequacy ratio for Islamic banks in Malaysia and Indonesia boosts profitability, thereby adding to market valuation. Jamaluddin (2022) investigates Bank Central Asia and concludes that the capital adequacy ratio has a big beneficial effect on the share price. These findings support the trade-off theory, which states that careful capitalization enables banks to attain long-term stability and competitive advantage. The implementation of Basel III criteria has increased investor trust in capital-strengthened institutions (Jheng et al., 2018).

The influence of credit risk and stock return

The Non-Performing Loan (NPL) variable had a negative coefficient of -0.3430. However, it was found to be statistically insignificant ($p\text{-value} = 0.482$). While the negative sign theoretically implies that an increase in credit risk, as measured by NPLs, should reduce stock returns, this effect was not statistically proven for Malaysian banks throughout the review period. This is consistent with economic concepts such as adverse selection and moral hazard in lending, where elevated NPLs typically reflect poor credit quality and increased default risk, which would theoretically put downward pressure on stock prices as investors anticipate lower profitability and potential write-offs. However, the observed insignificance may stem from several contributing factors. One of the factors might be that Malaysian banks may have comprehensive loan loss provisioning policies and efficient recovery mechanisms in place to effectively reduce the immediate impact of NPLs on reported earnings and market sentiment, reducing the direct link to stock returns (Mohamed et al., 2021). Other than that, the market might have already incorporated a certain level of NPLs into pricing, or more significant macroeconomic forces might overshadow the direct effect of NPLs on stock returns. Mohamed et al. (2021) stated that a high unemployment rate and high inflation rate will cause an increase in the non-performing loans, then affect the profitability by reducing the net profit. According to Ahmed et al. (2021), indicated that the influence of NPLs on stock returns could vary depending on the banking sector's overall resilience and economic stability, suggesting that a well-regulated and stable banking sector might attenuate the statistical significance of NPLs on stock returns. Furthermore, Iskandar et al. (2023) found that the NPL-stock return link is mediated by profitability, meaning that credit risk affects equity exclusively through profit.

Thus, although the direct effect on SR was not significant in this sample, NPL may influence stock returns indirectly via its impact on bank earnings.

The influence of market risk and stock return

The Exchange Rate (ER) variable, with a coefficient of 0.1300, has a positive but statistically insignificant connection with Stock Returns ($p = 0.271$). This positive coefficient implies that a depreciation of the Malaysian Ringgit (MYR) could slightly boost stock returns. Currency fluctuations, according to portfolio theory, have the potential to affect bank stock returns via a variety of channels, including the valuation of foreign currency-denominated assets and liabilities, as well as the financial performance of export-oriented clients. A declining local currency could, in theory, increase the profitability of banks with significant foreign currency holdings or those that provide finance to export-oriented sectors, hence indirectly benefiting stock performance. Despite the positive indication, the lack of statistical significance indicates that exchange rate variations were not a statistically significant predictor of Malaysian bank stock returns throughout the study period. This conclusion could be attributable to banks' use of successful hedging strategies to minimize currency risks or to the predominantly local structure of Malaysian banks' revenue streams, which makes them less vulnerable to foreign exchange rate changes. According to Zarei et al. (2019), exchange rate fluctuations have a large impact on stock indices in countries with floating regimes, while this effect is less obvious in limited regimes like Malaysia. According to Juhro (2023), emerging markets such as Malaysia rely on central-bank tools to stabilize foreign-currency liquidity, which reduces the direct impact of ER on bank stock returns. Similarly, the presence of hedging by banks may have mitigated currency exposure during the 2015–2024 period (Prymostka et al., 2024).

The influence of liquidity risk and stock return

Finally, the Loan-to-Deposit Ratio (LDR) had a negative correlation of -0.0790, showing that an increase in lending activity relative to deposits could somewhat diminish stock returns; nevertheless, this association was statistically insignificant ($p\text{-value} = 0.179$). Within the context of liquidity risk management, a higher LDR generally indicates a bank's greater reliance on its deposit base to fund loan growth, which can lead to reduced liquidity and increased exposure to funding risk if deposits are volatile or loan demand exceeds deposit accumulation. Theoretically, increased liquidity risk should lead to less investor confidence and, thus, poorer stock returns. The observed insignificance implies that, for Malaysian banks throughout this period, the LDR was not a statistically significant factor influencing stock performance. This could imply that banks efficiently manage their liquidity levels by using alternate funding sources, interbank markets, or maintaining appropriate liquid asset buffers, avoiding LDR variations from having a large influence on investor perception. Furthermore, it is possible that investors do not see LDR as a main indicator of risk or performance for Malaysian banks, or that other variables mitigate its impact. Iskandar et al. (2023) find that while LDR alone does not exhibit a statistically significant relationship with stock returns, its influence emerges through the mediating role of profitability (ROA). This implies that investors evaluate LDR's impact primarily based on how effectively banks translate lending activities into profits. Similarly, Jamaluddin (2022) reported that LDR did not significantly affect the stock price, though the capital adequacy did. Amira (2023) also reported that liquidity risk (LDR) showed no significant effects; this might indicate that the impact of LDR on bank performance is frequently context-dependent, with well-managed banks being capable of sustaining high LDRs without significant adverse effects on their market valuation.

CONCLUSION AND RECOMMENDATIONS

This study set out to evaluate how key financial risk indicators, which are capital risk, credit risk, market risk, and liquidity risk, affected the stock returns of Malaysian banks over the period 2015 Q1 to 2024 Q4. The findings provide important insights into how investors perceive different dimensions of financial risk in an emerging market banking environment. The results showed that among the four financial risk factors analyzed, only capital risk, measured through the capital-to-asset ratio, demonstrated a statistically significant and positive relationship with bank stock returns. This evidence underscores the critical role of robust capitalization in maintaining investor confidence, sustaining market valuation, and signaling financial resilience, consistent with signaling theory and the expectations of Modern Portfolio Theory (Markowitz, 1952). In contrast, credit risk, proxied by the ratio of non-performing loans to gross loans, displayed a negative but statistically insignificant association with stock returns. The result is similar to Abu-Aljarayesh et al. (2021). This suggests that while higher credit risk could potentially reduce profitability, Malaysian banks may have successfully managed credit exposures, or that investors assessed credit risk alongside other performance metrics. Market risk, captured by fluctuations in the MYR/USD exchange rate, showed a positive but insignificant relationship with stock returns. This finding implies that exchange rate movements were not a decisive driver of stock price variations, likely due to hedging or the domestic focus of banks' operations. Liquidity risk, measured by the loan-to-deposit ratio, demonstrated a negative but statistically insignificant impact. Although higher liquidity risk theoretically increases funding uncertainty, this study indicates that effective liquidity management practices and regulatory safeguards helped mitigate its influence on share performance. Overall, the results show that, in the Malaysian context, capital adequacy is the most significant driver of market views and valuation, even if financial risks are intrinsic to banking.

This research reinforces the importance of capital adequacy as the primary determinant of Malaysian bank stock returns during the 2015–2024 period. The significant positive impact of the capital-to-asset ratio underscores the role of strong capitalization in promoting investor confidence and supporting higher market valuations. In contrast, credit risk, market risk, and liquidity risk did not demonstrate statistically significant direct effects on stock returns. While the study provides valuable evidence on the relationships between financial risks and bank stock performance, several limitations must be acknowledged. First, the research focused only on four financial risk indicators and excluded other potential determinants such as profitability measures (e.g., ROA, ROE), operational efficiency, and macroeconomic shocks, which could have influenced results. Second, the study period included exceptional events, notably the COVID-19 pandemic and geopolitical uncertainties, which may have impacted bank performance in ways not fully captured by the model. Third, the model's explanatory power was relatively low ($R^2 = 2.1\%$), suggesting that additional variables or non-linear modeling approaches could enhance predictive accuracy. Finally, while the study included both Islamic and conventional banks, it did not examine differences in risk-return relationships between these banking systems, leaving this as a gap for future research. Despite these limitations, the study contributes to a deeper understanding of financial risk factors in emerging markets and offers practical insights for stakeholders seeking to strengthen bank performance and stability.

Based on the findings, several recommendations are offered for practitioners, policymakers, and researchers. For bank management, it is essential to prioritize maintaining strong capital buffers to reinforce market perceptions of stability and resilience. Enhancing transparency in risk management disclosures and improving communication with investors, especially during periods of heightened volatility, can further strengthen confidence. For regulators and policymakers, the continued enforcement of robust capital adequacy

requirements aligned with Basel III is crucial to safeguarding systemic stability. Developing policies that encourage clearer disclosures of risk exposures will also help support informed investment decisions and promote market discipline. Investors are encouraged to give greater weight to capital adequacy ratios when evaluating bank stocks for portfolio inclusion, while also considering complementary indicators such as profitability, governance quality, and broader macroeconomic conditions. Finally, future research should incorporate additional explanatory variables, such as return on assets, bank size, and measures of operational efficiency, to improve model precision. Comparative studies between Islamic and conventional banks could uncover important nuances in risk-return dynamics. Employing advanced econometric techniques, such as dynamic panel models or machine learning approaches, may further enhance predictive power. Replicating similar research across other emerging markets would also help validate and extend the generalizability of these findings.

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