

**THE IMPACT OF BANK CORPORATE GOVERNANCE ON NON-
PERFORMING LOANS: EVIDENCE FROM MALAYSIAN
COMMERCIAL BANK**

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Abstract

This study examines the impact of corporate governance on non-performing loans (NPLs) in the commercial banks in Malaysia. The data used in this study are unbalanced panel data of 24 commercial banks regulated by Bank Negara Malaysia (BNM) between 2015 and 2024, which amounts to 215 bank-year observations. Least Squares Dummy Variable (LSDV) and Random Effects (RE) models are used to examine the influence of corporate governance, bank-specific and macroeconomic variables on the NPL of commercial banks. The empirical findings indicate that board size and board independence have a positive relationship with NPLs, while audit committee size negatively affects NPLs. However, there is no statistical relationship between board meetings, audit committee independence and audit committee meetings. From the empirical results, the study suggests that banks should control board size. Instead of increasing the number of directors, commercial banks should focus on getting the right directors, especially those with expertise in managing non-performing loans. Aside from that, when appointing independent directors and audit committee members, professional competence and industry experience should be the primary consideration, rather than merely meeting regulatory independence quotas. In addition, banks must transform their risk management model from a passive response to active prevention. Instead of holding more meetings after NPLs rise, the board and audit committee should regularly conduct pre-risk assessments for lending businesses, establish a full-cycle monitoring system for loans, and identify potential default risks at an early stage.

Keywords: Commercial Banks, Corporate Governance, Malaysia, Non-Performing Loans, Random Effects

1. Introduction

1.1 Background of Study

The banking industry can be seen as an important part of the economy, serving as an intermediary to channelise money from depositors to areas that can assist in business and economic growth (Ibrahim et al., 2018; Sadaa et al., 2023). The industry is seen as the major intermediate pillar and plays a significant role in sustainable economic growth, job creation and fostering entrepreneurship. To attain sustainable economic growth, the banking industry provides money to deficit entities (Ahmad et al., 2016). Banks in emerging countries, like Malaysia, serve as the main external finance sources for businesses and are crucial for sustainable economic growth and job creation (Mullineux, 2006).

In Malaysia, commercial banks form the backbone of the financial system and are subject to strict regulation by Bank Negara Malaysia (2022) to ensure systemic stability. However, the problem of non-performing loans (NPLs) remains a persistent challenge facing banks globally, including in Malaysia. Non-performing loans (NPLs) typically refer to loans overdue for 90 days or more, which can reduce a bank's profitability, weaken capital buffers, and ultimately may threaten financial stability (Beck et al., 2015). Even though NPL ratios for the industry overall are still relatively low, there are disparities among banks in the level of exposure to credit risk. Considering this, the examination of those factors contributing to good asset quality continues to be an area worth researching. Monthly data indicate that Malaysia's NPL ratio stood at 1.4% in May 2026, while the historical peak reached 9.5% in Feb 2006 (CEICdata.com, 2018). BNM official statistics show that the gross impaired loan ratios stood at about 1.4% and the net impaired loan ratios at about 0.9% in mid-2025. This indicates the continuation of credit risk management challenges in a dynamic environment (Asian Banking & Finance, 2025).

Previous studies have identified both macroeconomic and bank-specific factors as determinants of credit risk (Klein, 2013; Nkusu, 2011). Among bank-specific factors, there is increasing focus on corporate governance because of its effects on banks' risk-taking behaviour and credit quality. Accordingly, corporate governance is an important internal factor that affects banks' risk-taking behaviour and credit quality. Good corporate governance increases internal control and reduces agency problems (Jensen & Meckling, 1976).

The Asian financial crisis and the global financial crisis show that weaknesses in the bank governance structure, such as ineffective boards, a lack of independence, and inadequate supervision, may lead to excessive risk-taking and loan defaults (Laeven & Valencia, 2018). The 2023 global banking turmoil further emphasised the importance of internal governance and risk culture, including the collapses of Silicon Valley Bank and

Credit Suisse. These incidents indicate that even if macroeconomic conditions are stable, weak corporate governance and insufficient risk culture may still expose banks to higher credit risks (Fagetan, 2023; Trapanese et al., 2025). Although Malaysia has not faced a systemic crisis like this, this global experience emphasised the importance of board oversight, the role of the audit committee, and a top-down risk culture in maintaining banking stability and reducing non-performing loans.

1.2 Problem Statement

Non-performing loans (NPLs) have always been among the key measures used to determine credit risk and the stability of the banking system. High levels of non-performing loans can pose risks by undermining the profitability, capital adequacy, and lending capacity of banks and eventually jeopardise the stability of the entire financial system (Beck et al., 2015; Nkusu, 2011). While the NPL ratio of Malaysia is still relatively low when compared with that of many other countries, credit risk continues to be a major issue. Recent data reveal that there is still the presence of impaired loan ratios in the Malaysian commercial banking sector, indicating the importance of ensuring asset quality as far as Malaysian banks are concerned. In addition, significant disparities in terms of credit risk can be noted among banks operating in the same macroeconomic context.

Corporate governance is crucial for providing oversight and monitoring of management's decision-making processes and preventing risky behaviour within an organisation. Good corporate governance effectively helps manage credit risk and improve asset quality because it enhances monitoring and accountability mechanisms (Jensen & Meckling, 1976). A bank's governance structure includes factors such as board size, board independence, board meetings, audit committee size, audit committee independence, and audit committee meetings. Poor corporate governance is closely associated with excessive risk-taking and higher credit risk, especially during financial crises such as the Asian financial crisis and the global financial crisis (Laeven & Valencia, 2018).

Despite growing international interest in the relationship between corporate governance and credit risk, existing empirical findings remain inconclusive. Some studies report that stronger governance mechanisms reduce NPLs, while others find positive or insignificant relationships (Akter et al., 2021; Hossain et al., 2025; Ben Saada, 2018; Ojeka et al., 2021). These inconsistent findings suggest that the effectiveness of governance mechanisms may depend on institutional and regulatory environments. Furthermore, most existing evidence originates from developed economies or other emerging markets, while studies focusing specifically on Malaysian commercial banks

remain limited. Empirical evidence examining how board characteristics and audit committee attributes influence bank credit risk in Malaysia is still relatively scarce. In addition, Malaysia provides a unique banking environment whereby there is a highly regulated banking system, with various types of ownership structures that include foreign and domestic commercial banks. Therefore, the empirical results from other countries cannot be directly extended to the banking industry in Malaysia.

In addition to being one of the most important issues facing banks, credit risk is also significant to the assessment of the health of the banking system by investors, regulatory authorities, and international financial institutions (Sen, 2022). A decline in asset quality could indicate problems in loan management procedures, poor risk assessment mechanisms, or deficiencies in governance practices, thus leading to a lack of confidence in the banking industry (Hossain et al., 2025). Credit risk has the potential to have negative implications on profitability, borrowing ability, and financial stability in the banking sector, and can even impact the desirability of the local banking system in the eyes of foreign investors and other financial institutions.

Given the importance of maintaining banking stability and the limited evidence in Malaysia regarding factors related to credit risk governance, further research is necessary. Understanding whether internal governance mechanisms contribute to reducing credit risk can provide valuable insights for regulators, policymakers, and banks seeking to strengthen their risk management practices. Thus, this research will analyse the link between board of directors and audit committee characteristics and credit risk of Malaysian commercial banks in the years 2015 – 2024 by taking into consideration other variables related to banks and macroeconomics. The results will contribute empirically to the understanding of how corporate governance can enhance credit risk management in Malaysia.

2. Literature Reviews

This study is based on two primary theoretical frameworks, which are agency theory and resource dependence theory. These two theories provide a solid theoretical foundation for analysing the link between bank corporate governance, risk-taking behaviour and non-performing loans (NPLs) ratios. Banks have extremely high leverage, information that is hard to find, and banks are important to the financial system (Beck et al., 2015). So, good governance is especially important for reducing credit risk (John et al., 2016; Mullineux, 2006).

2.1 Agency Theory

Agency theory was developed by Jensen and Meckling (1976) fundamental for understanding corporate governance. Agency theory, refers from Sadaa et al. (2023), shows conflicts of interest arising from the separation of ownership and control between shareholders (principals) and managers (agents). Especially since managers serve as agents for shareholders, but they may pursue their own interests over those of the shareholders, creating agency problems. These conflicts can happen between managers and shareholders, but also between controlling shareholders and minority shareholders. The purpose of corporate governance procedures is to balance management and shareholders' interests and reduce these agency problems (Nyor, 2013).

Muniru et al. (2025) highlight that agency theory is often used to explain the impact of corporate governance on risk management in the banking sector, particularly the level of non-performing loans (NPLs). For example, board size can affect the efficacy of monitoring. Larger boards may have coordination difficulties and weak oversight, thus delaying the response to credit risks and increasing NPLs. The inclusion of independent directors enhances board objectivity and monitoring capabilities, hence increasing oversight of lending choices and decreasing NPLs (Hakimi et al., 2025).

According to agency theory, a weak governance framework provides managers with increased freedom to participate in high-risk lending or related-party activities, hence increasing the probability of loan deterioration and an increase in the non-performing loan ratio. Consequently, agency theory offers a strong framework for examining the correlation between corporate governance measures and non-performing loans in Malaysian commercial banks.

2.2 Resources Dependence Theory

Resource dependence theory (RDT) explains how organisations depend on external resources for survival and how they manage these dependencies (Pfeffer & Salancik, 1978). RDT is typically complementary to agency theory; it serves to analyse the significance of corporate governance structures in acquiring and utilising critical resources, thereby assisting organisations in effectively managing risk. RDT emphasises that a bank's board should possess or acquire valuable internal resources, such as specialised expertise and diverse perspectives, to effectively mitigate risk and maintain competitive advantage. RDT highlights that to successfully reduce risk and maintain a competitive edge, bank boards need to have or acquire important internal resources, such as knowledge and a range of viewpoints (Hakimi et al., 2025).

For board size, Alena (2024) believes that large boards have benefits, as they can pool expertise and knowledge across diverse fields. Hossain et al. (2025) support the idea that a larger board can bring in diverse professional knowledge, thereby helping to mitigate risks and control non-performing loans (NPLs). Moreover, research indicates that a larger committee is perceived as possessing greater resources to address issues, consistent with the perspective of resource dependence theory (Alena, 2024). Next, RDT emphasises that increasing the proportion of independent directors on the board enhances its objectivity and oversight capabilities (Hakimi et al., 2025). The value of independent directors lies in the experience, capabilities and expertise they bring (Alena, 2024). Their external perspective and specialised knowledge help strengthen risk assessment, thereby enabling more prudent credit management and contributing to a reduction in non-performing loans (Hakimi et al., 2025). RDT contends that a higher proportion of independent directors on the Audit Committee can enhance the quality of financial reporting and elevate the bank's reputation, thereby contributing to a reduction in non-performing loans. The presence of independent directors on the committee provides objective oversight and professional expertise, thereby strengthening risk management (Hossain et al., 2025). In summary, the resource dependency theory indicates that good corporate governance will be able to give the bank knowledge and expertise, which in turn will assist in better credit risk management and lower the NPL ratio.

2.3 Hypothesis Development

2.3.1 Board Size and Non-Performing Loans

According to Balagobei (2019) and Alena (2024), the board of directors plays a crucial role in fostering cooperation between a company and its management. The empirical relationship between board size and non-performing loans (NPLs) is unclear because board size may reduce NPLs through stronger monitoring, but it may potentially increase NPLs due to coordination problems. From a resource dependence perspective, larger boards may provide greater knowledge, enhanced advising capabilities, and access to external resources that strengthen risk governance and increase lending control, potentially decreasing NPLs (Coles et al., 2008; Pfeffer & Salancik, 1978). De Andres and Vallelado (2008) and Adams and Mehran (2012) found that the banking sector is an environment of complexity and a need for specialised knowledge in risk monitoring, and that the structure of the board is believed to influence governance effectiveness, potentially resulting in changes in risk-taking and asset quality. However, agency theory states that excessively large boards may impair monitoring through protracted decision-making, diffusion of responsibility, and diminished accountability, which can facilitate managerial risk-taking and lax credit discipline, potentially increasing NPLs (Jensen &

Meckling, 1976; Jensen, 1993; Yermack, 1996). Several studies, such as Laeven and Levine (2008) and Pathan and Faff (2013), show that bank governance suggests that governance structures interact with regulations, influencing risk-taking incentives and outcomes, indicating that board size may impact risk-taking and finally affect NPLs.

Empirical research shows the negative effect of board size on non-performing loans (NPLs). Alena (2024) found this relationship in commercial banks operating in Pakistan, while Tarchouna et al. (2017) found the same pattern in 184 US commercial banks. Some studies argue for a negative impact on NPLs because larger and more effective boards, according to a few studies, can improve credit risk management oversight and possibly lower credit risk. Research from Tanzania (Budotela et al., 2023), Nigeria (Adegboye et al., 2020), and the US (Birindelli et al., 2018) also supports this negative impact.

However, some empirical research shows the positive effect of board size on non-performing loans (NPLs), such as Ahmad et al. (2016), Budotela et al. (2023), and Hakimi et al. (2025). Nevertheless, Khatun and Ghosh (2019) argue that smaller boards improve communication and decision-making, enhancing risk management. Nyor (2013) shows an insignificant effect on NPLs, which means board size cannot be trusted to address Nigerian banks' non-performing loan issue. Based on the literature, we hypothesise:

H1: Board size is significantly associated with NPLs in Malaysian commercial banks.

2.3.2 Board Independence and Non-Performing Loans

Board independence has been viewed as reducing credit risk and non-performing loans (NPLs) through improved oversight; nevertheless, empirical findings may vary depending on whether independence primarily facilitates risk mitigation or promotes stricter recognition and transparency. The agency theory posits that board independence mitigates management opportunities and excessive risk-taking by improving oversight, promoting credit discipline, and averting substandard underwriting practices that may lead to future non-performing loans (Fama & Jensen, 1983; Jensen & Meckling, 1976; Shleifer & Vishny, 1997).

In alignment with monitoring perspectives, present global banking evidence indicates that a greater degree of board independence is negatively and significantly correlated with NPLs. For example, Ramadhanti et al. (2021) in Indonesian Commercial banks find that an increase in board independence decreases NPLs, but is significant only for domestic banks, not for foreign banks. Research from Pakistan (Ahmad et al., 2016) and MENA countries (Hakimi et al., 2025) indicates the negative effects of board independence on non-performing loans (NPLs), meaning that independent governance

may enhance oversight quality and decrease bad loans. Additionally, Ben Saada (2018) from Tunisia indicates that board independence decreases non-performing loans (NPLs), while data reveal that the presence of foreign directors influences credit risk. Indeed, these directors have more power and are equipped with superior technology expertise compared to local administrators. They possess greater control and may reduce the issue of potentially harmful loans.

However, some empirical research typically shows the positive effect of board independence on non-performing loans (NPLs). Khatun and Ghosh (2019) studied 30 listed commercial banks in Bangladesh, indicating that board independence has a positive effect on NPL outcomes. These studies found independence may not ensure effective monitoring if independent directors lack banking expertise, depend significantly on management information, or encounter constraints that restrict their capacity to influence risk choices—conditions under which an anticipated negative relationship may not be applicable. Furthermore, several studies report insignificant effects of board independence on NPLs. Alena (2024) observes that board independence does not significantly affect non-performing loans (NPLs) in publicly traded commercial banks, suggesting that independence ratios may fail to reflect true governance efficacy. Similarly, Balagobei (2019) also found that board independence does not influence non-performing loans (NPLs) in their empirical analysis, indicating the limited explanatory capacity of independence metrics under certain circumstances. In summary, although previous findings differ by country and bank type, the prevailing theoretical expectation from agency-based supervision is that enhanced board independence should mitigate credit risk and non-performing loans (NPLs). Based on the literature, we hypothesise:

H2: Board independence is significantly associated with NPLs in Malaysian commercial banks.

2.3.3 Board Meetings and Non-Performing Loans

The frequency of board meetings can be utilised as an indicator of board diligence and monitoring effectiveness, potentially impacting a bank's credit risk and NPLs (Vafeas, 1999). From an agency theory perspective, increased frequency of board meetings might reduce information asymmetry and enhance oversight of management, curbing opportunistic behaviour and excessive risk-taking in lending, thus reducing the probability of future non-performing loans (Jensen & Meckling, 1976). From a resource dependence perspective, board meetings can function as a mechanism for organising and coordinating board resources such as knowledge, counsel, and external connections to

facilitate more effective monitoring of lending strategy and risk governance (Pfeffer & Salancik, 1978).

Empirical research typically shows the negative effect of board meetings on non-performing loans (NPLs). Alena (2024) found this relationship in commercial banks operating in Pakistan, while Hossain et al. (2025) found the same pattern in 29 banks listed on the Dhaka Stock Exchange. Certain empirical research indicates that an increased frequency of board meetings correlates with reduced non-performing loans (NPLs), suggesting that active boards enhance credit risk governance and boost lending regulation. Research from Tanzania (Budotela et al., 2023) also supports this negative impact.

However, some empirical research typically shows the positive effect of board meetings on non-performing loans (NPLs), as board meetings may rise in response to anxiety, resulting in reverse causality. In the context of banking and non-performing loans (NPLs), research from Indonesia (Nurkhin et al., 2024) indicates that a higher frequency of board of directors' meetings correlates with increasing NPLs, aligning with a "distress-response" explanation. Moreover, certain research indicates no significant effects of board meeting frequency on non-performing loans (NPLs). Empirical research from Sri Lanka banks (Balagobei, 2019) suggests that the frequency of board meetings does not significantly influence non-performing loans (NPLs), indicating that the number of meetings may reflect quantity rather than the quality of oversight and implementation. Based on the literature, we hypothesise:

H3: Board meetings are significantly associated with NPLs in Malaysian commercial banks.

2.3.4 Audit Committee Size and Non-Performing Loans

The size of the audit committee (ACSIZE) is sometimes utilised as a governance indicator that may impact the effectiveness of monitoring regarding internal controls, risk governance, and financial reporting processes, therefore influencing banks' credit risk and NPLs (Dixon & Coy, 2006). From an agency theory standpoint, a larger audit committee can reduce information asymmetry and enhance management oversight by designating additional members to evaluate internal control quality, compliance, and risk-related reporting, thus reducing opportunistic behaviour and constraining excessive risk-taking that could result in future non-performing loans (Jensen & Meckling, 1976). The broad audit committee literature by Abbott et al. (2004) indicates that enhanced audit committee structures and oversight capabilities correlate with superior reporting quality and governance results, thereby reinforcing the monitoring justification for larger or more

effectively organised committees. From a resource dependence perspective, Hossain et al. (2025) and Poudel and Hovey (2012) argue that a larger committee may provide a greater variety of knowledge and advisory resources, such as accounting, banking, and compliance, to lower NPLs risks.

Empirical research typically shows the negative effect of audit committee size on non-performing loans (NPLs). Hossain et al. (2025) found the same pattern in 29 banks listed on the Dhaka Stock Exchange. Nguyen (2022) from contexts aligns the effectiveness of audit committees with risk-related outcomes, suggesting that enhanced audit committee capability may lead to improved oversight and, consequently, reduced credit risk. This perspective suggests that a larger audit committee signifies enhanced oversight capability, which may decrease non-performing loans (NPLs) by improving the monitoring of lending controls and provisioning practices.

However, ACSIZE can show a positive relationship with NPLs when larger committees encounter coordination costs, diffusion of responsibility, or protracted decision-making, hence undermining effective challenge and prompt intervention, thereby increasing NPLs. Boachie (2021) shows that a larger audit committee can be less focused and less active compared to a smaller committee, thereby increasing NPLs. Empirical research from Tunisian commercial banks (Ben Saada, 2018) suggests that the ACSIZE does not significantly influence non-performing loans (NPLs), indicating that the committee's effectiveness may not be fully captured by size alone. Based on the literature, we hypothesise:

H4: Audit committee size is significantly associated with NPLs in Malaysian commercial banks.

2.3.5 Audit Committee Independence and Non-Performing Loans

The independence of the audit committee (ACIND) is seen as an essential governance instrument that can affect banks' credit risk and non-performing loans (NPLs) by enhancing oversight of internal controls, the quality of financial reporting, and regulatory compliance. From an agency theory perspective, independent audit committee members are anticipated to mitigate information asymmetry and limit managerial discretion by enhancing oversight, augmenting the reliability of risk-related disclosures, and deterring opportunistic conduct that may lead to inadequate credit discipline and prospective loan impairment (Jensen & Meckling, 1976; Fama & Jensen, 1983; Shleifer & Vishny, 1997). From a resource dependency perspective, suggests that an increased ratio of independent directors enhances financial reporting and improves a bank's reputation, therefore reducing NPLs risk (Hossain et al., 2025).

Empirical research typically shows the negative effect of audit committee independence on non-performing loans (NPLs). Research from Bangladesh indicates that enhanced independence of audit committees correlates with reduced non-performing loans (NPLs), aligning with improved monitoring and control mechanisms (Akter et al., 2021; Sen et al., 2022). AL Zobi et al. (2019) found the same pattern in Jordanian commercial banks. This suggests that greater independence may enhance oversight quality, potentially reducing credit risk, thereby reducing NPLs. Research from Khatun and Ghosh (2019) and Switzer and Wang (2013) also supports this negative impact, indicating that enhanced independence mechanisms and professional, non-executive oversight can improve loan quality and mitigate risk outcomes. While independent directors on the audit committee lack direct and precise control over the bank lending process, the independence of the board, as stated by Fiador and Sarpong-Kumankoma (2020), improves the potential to implement an independent oversight and supervisory function regarding managerial actions.

However, some empirical research typically shows the positive effect of audit committee independence on non-performing loans (NPLs). For example, Ghosh et al. (2020) found that the existence of an independent audit committee chairperson was associated with higher non-performing loans (NPLs), indicating that independent oversight may not consistently lead to improved loan management in Bangladesh. Furthermore, Ojeka et al. (2021) provide evidence of statistically insignificant associations, indicating that independence ratios may not adequately reflect the true effectiveness of audit oversight in specific institutional contexts. Based on the literature, we hypothesise:

H5: Audit committee independence is significantly associated with NPLs in Malaysian commercial banks.

2.3.6 Audit Committee Meetings and Non-Performing Loans

The frequency of audit committee meetings (ACM) indicates the level of activity of the audit committee in monitoring the bank. Increased meeting frequency can enhance oversight of internal controls, financial reporting, and risk management, potentially leading to a reduction in credit risk and non-performing loans (NPLs). Frequent meetings, viewed through the lens of agency theory, mitigate information asymmetry between management and the board by facilitating a more thorough examination of loan quality, provisioning, and adherence to risk policies. Enhanced monitoring can mitigate opportunistic behaviour and excessive risk-taking, potentially reducing future non-performing loans (Jensen & Meckling, 1976). From a resource dependence perspective,

regular audit committee meetings facilitate the sharing and integration of members' expertise and advice. The bank's governance is enhanced, enabling the committee to identify early indicators of credit quality deterioration more rapidly (Pfeffer & Salancik, 1978).

Empirical research typically shows the negative effect of audit committee meetings on non-performing loans (NPLs). Akter et al. (2021) analyse data from all listed banks in Bangladesh between 2013 and 2017, concluding that increased frequency of audit committee meetings contributes to a reduction in non-performing loans (NPLs), thereby reinforcing the monitoring and diligence perspective of audit committee meetings (ACM). Budotela et al. (2023) analyse data from all listed commercial banks in Tanzania between 2011 and 2020, concluding that increased frequency of audit committee meetings contributes to a reduction in non-performing loans (NPLs), thereby reinforcing the monitoring and diligence perspective of audit committee meetings (ACM). AL Zobi et al. (2019) also support the negative trend, showing that governance mechanisms of monitoring and credit risk management correlate with enhanced credit risk outcomes, aligning with the anticipated function of active committee oversight in Jordanian banks. Evidence from Bangladesh (Amin et al., 2019) also supports this trend.

However, some research studies may have generated inconsistent or unclear findings due to focusing only on the quantity of meetings, overlooking the quality of those meetings, which consequently contributed to an increase in NPLs. Moreover, several studies indicate an insignificant effect, implying that the frequency of meetings may represent the amount of oversight rather than its quality. For example, Hossain et al. (2025) in Bangladesh, using a dynamic endogeneity-aware design, indicate that audit committee meetings do not significantly impact non-performing loans (NPLs). Evidence from Nigerian deposit banks by Ojeka et al. (2021) indicates a negative yet statistically insignificant coefficient for audit committee meetings when the non-performing loan (NPL) ratio serves as the risk proxy. Based on the literature, we hypothesise:

H6: Audit committee meetings are significantly associated with NPLs in Malaysian commercial banks.

3. Data and Methodology

3.1 Sample Selection and Data Sources

This research is conducted on a panel of 24 commercial banks under the regulation of Bank Negara Malaysia (BNM), from 2015 to 2024. These years cover the development of corporate governance systems in the current times, as well as recent macroeconomic trends in the Malaysian banking industry. The full list of selected banks based on the

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classification criteria by BNM is given in Table 1. After removing observations with missing values, the final unbalanced panel dataset contains 215 observations. Data on non-performing loans, bank size, and loan-to-deposit ratio were obtained from the annual reports of the commercial banks, while data on GDP growth and inflation were collected from the World Bank.

Table 1: Commercial Banks

No	Commercial Banks
1	Affin Bank Berhad
2	Alliance Bank Malaysia Berhad
3	AmBank (M) Berhad
4	Bangkok Bank Berhad
5	Bank of America Malaysia Berhad
6	Bank of China (Malaysia) Berhad
7	BNP Paribas Malaysia Berhad
8	China Construction Bank (Malaysia) Berhad
9	CIMB Bank Berhad
10	Citibank Berhad
11	Deutsche Bank (Malaysia) Berhad
12	Hong Leong Bank Berhad
13	HSBC Bank Malaysia Berhad
14	Industrial and Commercial Bank of China (Malaysia) Berhad
15	J.P. Morgan Chase Bank Berhad
16	Malayan Banking Berhad
17	Mizuho Bank (Malaysia) Berhad
18	MUFG Bank (Malaysia) Berhad
19	OCBC Bank (Malaysia) Berhad
20	Public Bank Berhad
21	RHB Bank Berhad
22	Standard Chartered Bank Malaysia Berhad
23	Sumitomo Mitsui Banking Corporation Malaysia Berhad
24	United Overseas Bank (Malaysia) Berhad

Source: Bank Negara Malaysia (2025)

3.2 Variables Definition and Measurement

Table 2 presents a list of dependent, independent, and control variables along with their measurement bases.

3.2.1 Dependent Variable

In this research, non-performing loans (NPLs) serve as the dependent variable. The NPL ratio is the most used measure of credit risk in the banking literature (Akter et al., 2021). This indicator directly addresses the core research question concerning the relationship between corporate governance and bank loan quality. This measure is crucial to capture the extent of credit risk faced by the sampled commercial banks. According to IFRS 9, banks are required to recognise expected credit losses when credit risk has increased significantly or when loans become credit-impaired (BIS, 2017). As the level of non-performing loans increases, expected credit losses generally increase, resulting in higher loan impairment charges. Therefore, although this study uses the NPL ratio as the empirical proxy for credit risk, loan impairment charges provide the accounting recognition of deteriorating loan quality and are associated with NPLs (Bholat et al., 2017).

3.2.2 Independent Variables

The independent variables include board size, board independence, board meetings, audit committee size, audit committee independence and audit committee meetings. Based on previous literature, six corporate governance variables were selected as independent variables because these governance mechanisms are usually related to the quality of bank loans and credit risks.

The above-mentioned variables were considered based on their theoretical as well as regulatory justifications. Firstly, based on corporate governance regulations formulated by Bank Negara Malaysia (BNM), both the board of directors and the audit committee serve as the main internal supervisory authorities within commercial banks. Both their numbers and independence, as well as the frequency of their activities, have been specified by the relevant regulations. Secondly, it is empirically proven that the board of directors' and audit committee's characteristics are among the determining factors influencing risk management by commercial banks (Ojeka et al., 2021; Vafeas, 1999).

3.2.3 Control Variables

The control variables comprise bank-level and macroeconomic indicators. Bank size and the loan-to-deposit ratio capture the operational characteristics of each commercial bank, while annual GDP growth and inflation account for macroeconomic conditions. Following established banking literature such as Alena (2024) and Hossain et

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al. (2025), these variables are critical determinants that significantly influence bank credit risk.

Table 2: Variables and Measurements

Variable	Labels	Measurement
Dependent Variable		
Non-Performing Loans	NPLs	Ratio of non-performing loans to total gross loans, calculated annually for each bank (Akter et al., 2021; Hossain et al., 2025)
Independent Variables		
Board Size	BSIZE	Total number of directors on the board, recorded annually (Alena, 2024; Hossain et al., 2025)
Board Independence	BIND	Percentage of independent non-executive directors out of total board members (%), calculated per year (Alena, 2024; Hossain et al., 2025)
Board Meetings	BM	Total number of board meetings held per fiscal year (Vafeas, 1999; Alena, 2024; Hossain et al., 2025)
Audit Committee Size	ACSIZE	Total number of audit committee members, recorded annually (Alena, 2024; Hossain et al., 2025)
Audit Committee Independence	ACIND	Percentage of independent members out of total audit committee members (%), calculated per year (Ojeka et al., 2021; Hossain et al., 2025)
Audit Committee Meetings	ACM	Total number of audit committee meetings held per fiscal year (Ben Saada, 2018; Ojeka et al., 2021; Hossain et al., 2025)
Control Variables		
Bank Size	SIZE	Natural logarithm of total bank assets, computed annually (Alena, 2024; Hossain et al., 2025)
Loan to deposit ratio	LDR	Ratio of total loans to total deposits (%), calculated per year (Alena, 2024)

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Annual GDP Growth rate	GDP	(Current year GDP – Previous year GDP) / Previous year GDP (%), calculated yearly (Alena, 2024; Hossain et al., 2025)
Annual Inflation rate	INF	(Current year CPI – Previous year CPI) / Previous year CPI (%), calculated per year (Alena, 2024; Hossain et al., 2025)

3.3 Econometric Model Specification

The baseline empirical analysis considers three static panel specifications, which are Pooled Ordinary Least Squares (OLS), Random Effects (RE), and Fixed Effects (FE). Although Pooled OLS serves as a benchmark, it restricts bank-specific heterogeneity to zero, which routinely yields biased and inconsistent estimates in the presence of unobserved bank characteristics (Baltagi, 2005; Wooldridge, 2010). The Breusch–Pagan LM test is employed to determine whether the Random Effects model is preferred over the Pooled OLS model specification (Breusch & Pagan, 1980). Subsequently, the Hausman specification test is conducted to determine whether the Random Effects or Fixed Effects model is more appropriate (Hausman, 1978).

The baseline static panel regression model is specified as follows:

$$NPL_{it} = \alpha + \beta_1 BSIZE_{it} + \beta_2 BIND_{it} + \beta_3 BM_{it} + \beta_4 ACSIZE_{it} + \beta_5 ACIND_{it} + \beta_6 ACM_{it} + \gamma_1 Size_{it} + \gamma_2 LDR_{it} + \gamma_3 GDP_{it} + \gamma_4 INF_{it} + \mu_{it} + \varepsilon_{it}$$

Where:

NPL_{it} = The non-performing loans, i = Bank, t = Time period, α = Intercept or Constant term, β 's = Slope parameters or regression coefficients, $BSIZE$ = Board size, $BIND$ = Board independence, BM = Board meeting, $ACSIZE$ = Audit committee size, $ACIND$ = Audit committee independence, ACM = Audit committee meeting, $Size$ = Bank Size, LDR = Loan-to-Deposit Ratio, GDP = GDP Growth, INF = Inflation, γ = Coefficients of the control variables, μ = Time-invariant bank-specific effects and ε = Error term

4. Results and Discussion

4.1 Descriptive Statistics

Table 3: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
NPLs	225	266.015	606.993	-382.9	4587.3
BSIZE	227	6.837	2.213	4	13
BIND	227	64.254	10.087	33.3	100
BM	227	10.203	4.263	5	21
ACSIZE	227	3.419	.695	3	6
ACIND	227	91.381	16.371	33.3	100
ACM	227	8.383	4.622	3	24
SIZE	237	11.791	4.71	7.841	27.02
LDR	236	94.476	52.688	3.386	319.177
GDP	238	4.008	3.517	-5.457	9.032
INF	238	1.863	1.373	-1.139	3.871

The descriptive statistics presented in Table 3 provide a comprehensive summary of the variables utilised in this study, spanning bank-level corporate governance indicators and macroeconomic control variables for a sample of 24 commercial banks regulated by Bank Negara Malaysia (BNM) from 2015 to 2024. The dependent variable, NPLs, presents a mean of 266.015 with a substantial standard deviation of 606.993 (ranging from -382.9 to 4587.3), underscoring a wide disparity in asset quality across the sampled banks. Regarding corporate governance, the sampled banks maintain an average board size (BSIZE) of 7 members (ranging from 4 to 13) and a high level of board independence (BIND) at 64.254%. On average, boards meet 10 times annually (BM). The audit committees show high regulatory compliance, averaging 3 members (ACSIZE), 91.381% independence (ACIND), and 8 meetings per year (ACM). For bank-specific controls, the average bank size (SIZE) is 11.791, while the loan-to-deposit ratio (LDR) averages 94.619%. Finally, the macroeconomic environment remains stable, with an average GDP growth rate (GDP) of 4.008% and an inflation rate (INF) of 1.863%. Collectively, these statistics highlight notable heterogeneity in bank characteristics and loan provisions against a fluctuating macroeconomic backdrop.

4.2 Results and Robustness

Table 4: Panel Data Analysis

Variables	Random Effect (i) NPLs	LSDV (ii) NPLs
<i>Corporate Governance Variables</i>		
BSIZE	77.11** (38.90)	31.48* (15.55)
BIND	5.744** (2.558)	4.085* (2.098)
BM	18.79 (15.63)	12.07 (9.712)
ACSIZE	-78.86** (37.04)	-62.89* (36.53)
ACIND	-0.270 (1.050)	-0.123 (0.684)
ACM	1.900 (11.05)	-4.427 (11.00)
<i>Controlled Variables</i>		
SIZE	8.108 (13.07)	3.326 (3.369)
LDR	-1.524* (0.785)	-0.222 (0.212)
GDP	-50.20*** (15.15)	-47.94*** (15.34)
INF	39.14*** (11.10)	36.90*** (11.46)
Constant	-370.6 (234.9)	-174.0 (155.5)
Observations	215	215
Bank Dummy		Yes
R-squared	0.3664	0.798
Number of id	24	24

Notes: Robust standard errors in parentheses*** p<0.01, ** p<0.05, * p<0.1

Table 4 shows result of panel regression using both Random effect with robust standard error and LSDV. Results from both regressions are robust when we compare the

core variables such as board size and percentage of independent variables. The empirical findings are as follows: Board size and the proportion of independent directors significantly increase NPL, validating hypotheses H1 and H2; audit committee size significantly reduces NPL, validating hypothesis H4. However, the frequency of board meetings, audit committee independence, and the number of audit committee meetings are not significantly associated with NPL; hypotheses H3, H5, and H6 are not supported.

A significant positive influence of board size on NPLs is consistent with the implications of agency theory. As per agency theory, an excessively large board can lead to communication and coordination frictions, dispersed authority and responsibility, delayed risk-related decisions, and weakened oversight of high-risk lending practices (Jensen & Meckling, 1976; Hakimi et al., 2025). While resource dependence theory suggests that a large board can provide diverse professional resources to hedge risk, results from the regressions may suggest that the directors appointed by commercial banks in Malaysia can be lacking in handling non-performing loans.

Proportion of independent directors shows to have significant positive influence on NPLs, which indicates indicating that regulatory mandates for a certain percentage of independent directors only achieve formal compliance and fail to achieve substantive risk oversight. This result is the same with Khatun and Ghosh (2019). Most independent directors hold part-time positions, making it difficult for them to access complete internal credit data and lack practical experience in the banking industry, thus hindering their ability to constrain aggressive lending decisions. The frequency of board meetings has no significant effect on credit risk. The number of meetings does not represent the quality of oversight.

The frequency of board meetings has no significant effect on credit risk same with Balagobei (2019) from Sri Lanka banks. The number of meetings does not represent the quality of oversight. Most board meetings only discuss routine administrative and macro-strategic issues and do not conduct in-depth special reviews of credit asset quality, thus failing to curb the accumulation of non-performing loans (Balagobei, 2019; Nurkhin et al., 2024).

Consistent with resource dependence theory, larger audit committees can significantly reduce credit risk. Larger audit committees bring together expertise from accounting, internal audit, and compliance fields, strengthening oversight of NPLs and internal control systems, and restraining management from excessively risky lending practices (Hossain et al., 2025).

The independence of the audit committee has no significant influence on NPLs. The strict and uniform governance rules of Bank Negara Malaysia result in a highly convergent proportion of audit committee independence across all sample banks, with almost no differences between banks, making it impossible to establish a statistical effect.

Furthermore, audit committees can only supervise financial statements retrospectively and have no authority to intervene in the front-end loan approval process, making it difficult to prevent high-risk lending at the source (Fiador & Sarpong-Kumankoma, 2020; Ojeka et al., 2021).

Similarly, the frequency of audit committee meetings has no significant influence on NPLs. The meeting focused on compliance verification and financial audit after loan disbursement but lacked a borrower risk screening process before loan disbursement; risk remediation only occurred after asset quality deteriorated, and it was impossible to prevent the occurrence of non-performing loans in advance (Akter et al., 2021; Hossain et al., 2025).

In case of controlled variables, Bank size has no significant influence on NPLs. Macroeconomic variables align with classical theoretical expectations, which is that rising GDP increases the repayment capacity of businesses and households, reducing the probability of default; inflation compresses real income for households and businesses, increasing the risk of debt default (Klein, 2013; Nkusu, 2011).

5. Conclusion

This study uses unbalanced panel data from 24 commercial banks under the supervision of Bank Negara Malaysia (BNM) from 2015 to 2024 to explore the impact of board and audit committee governance characteristics on non-performing loans. This paper employs RE and LSDV models. Through the analyses, this study indicates that several corporate governance variables have significant influence on NPLs. These variables include board size, the proportion of independent directors, and audit committee size. This further establishes corporate governance as important variables to the importance of corporate governance variables for commercial banks in Malaysia.

Based on the empirical findings, this study puts forward targeted implications for Bank Negara Malaysia (BNM), commercial bank management, and industry practitioners. First, BNM should revise the existing corporate governance assessment standards for commercial banks. Current regulations emphasize quantitative indicators such as board size, independence ratio and meeting frequency. Regulators should shift the evaluation focus from formal compliance to substantive governance effectiveness. Instead of simply requiring a high proportion of independent directors, authorities should set stricter qualification criteria for independent directors and audit committee members, prioritising candidates with rich banking, credit risk and financial supervision experience.

For bank management, it is essential to restructure internal governance mechanisms. Banks should control board size to reduce coordination costs and improve supervision efficiency. When appointing independent directors and audit committee

members, professional competence and industry experience should be the primary consideration, rather than merely meeting regulatory independence quotas. In addition, banks must transform their risk management model from a passive response to active prevention. Instead of holding more meetings after NPLs rise, the board and audit committee should regularly conduct pre-risk assessments for lending businesses, establish a full-cycle monitoring system for loans, and identify potential default risks at an early stage. Furthermore, it is imperative that financial institutions change the traditional approach to risk management from reactive measures to proactive ones. Banks need to move away from increasing their number of meetings once non-performing loans have increased, to conducting preventive assessments prior to risk, before issuing any loans and putting in place a comprehensive loan monitoring mechanism.

5.1 Limitations of the Study

First, this study only includes structural governance indicators, neglecting soft factors such as directors' financial expertise, gender diversity, and institutional risk culture. Second, the static panel framework cannot eliminate the endogeneity and reverse causality between corporate governance and credit risk. Third, the sample is limited to licensed commercial banks, the findings cannot be generalised to other types of financial institutions in Malaysia.

5.2 Recommendations for Future Research

Future research could incorporate demographic characteristics of directors, such as financial expertise and gender diversity, to explore the effects of heterogeneous governance. Dynamic panel GMM estimation could be used to mitigate endogeneity issues. Samples could be segmented by domestic and foreign ownership to compare governance effectiveness under different ownership structures. Furthermore, ASEAN banking datasets could be used to test the generalizability of current empirical findings in similar emerging market regulatory environments.

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Appendix

Table 5: Matrix of Correlations

Variables	(1) npls	(2) bsize	(3) bind	(4) bm	(5) acsize	(6) acind	(7) acm	(8) size	(9) ldr	(10) gdp	(11) inf
(1) npls	1										
(2) bsize	0.562	1									
(3) bind	0.222	0.008	1								
(4) bm	0.428	0.643	0.144	1							
(5) acsize	0.264	0.479	0.106	0.414	1						
(6) acind	0.13	0.021	0.214	0.126	-0.172	1					
(7) acm	0.527	0.678	0.106	0.785	0.498	0.059	1				
(8) size	0.182	0.348	-0.075	0.356	0.263	0.236	0.451	1			
(9) ldr	-0.052	-0.078	-0.065	0.119	-0.046	0.105	0.042	-0.06	1		
(10) gdp	-0.204	0.01	-0.033	0.036	-0.026	-0.052	0.035	0.009	-0.055	1	
(11) inf	-0.133	-0.03	0.005	0.046	-0.043	-0.104	-0.003	0.001	-0.062	0.798	1