SELINUS UNIVERSITY
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"THE IMPACT OF CAPITAL ADEQUACY RATIO ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN CAMBODIA"

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A DISSERTATION

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DECLARATION

I affirm that the dissertation entitled "THE IMPACT OF CAPITAL ADEQUACY RATIO ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN CAMBODIA," which I submitted to the Faculty of Business and Media at SELINUS University of Sciences and Literature is entirely original work by me. I also declare that I have not presented this dissertation for any other degree consideration at this university or any other institution.

This dissertation results from my research, supervised by **Professor Salvatore Fava**. The data used in this study was collected in Cambodia from February to June 2023. I conducted the fieldwork and took full responsibility for any limitations or shortcomings in this dissertation.

I confirm that I have fulfilled all the tasks outlined in this work and appropriately cited any contributions made by other authors. I acknowledge all the sources of information I used to meet the requirements of this thesis, following accepted referencing conventions.

Date: 01-June-2023

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DEDICATION

I like to express my appreciation to my beloved family and dear friends for their unwavering support and encouragement throughout my dissertation journey. You have been my constant source of strength, and I couldn't have accomplished this feat without each one of you. Thank you for trusting and believing in me.

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ABSTRACT

This study examines how the capital adequacy ratio (CAR) affects emerging-market commercial banks' financial performance. A systematic review of CAR-financial performance research is underway to better understand the issue. Multiple regression analysis is used to examine and test hypotheses from commercial banks in developing nations using a survey questionnaire. The capital adequacy ratio positively impacts the financial performance of emerging nation commercial banks, according to the research. Return on assets, return on equity, and net interest margin rise with CAR values. This illustrates that commercial banks in emerging nations must maintain a high capital adequacy ratio for financial stability and performance. This study provides empirical evidence that the capital adequacy ratio affects emerging nation financial performance. Capital adequacy is a critical determinant of banks' financial performance, and regulatory systems that enforce CAR norms are crucial. Capital adequacy's role in bank financial success is emphasized. The report suggests that policymakers and regulators should prioritize enacting and rigidly enforcing tight capital adequacy rules to strengthen emerging nation commercial banks. For capital management, financial institutions should emphasize a high capital adequacy ratio (CAR). Financial performance and shareholder confidence may improve. This study shows how important the capital adequacy ratio is for developing nation commercial banks' financial performance. This supports educated banking sector decision-making in developing economies. It informs policymakers, regulators, and banks.

Keywords: capital adequacy ratio, financial performance, commercial banks, developing countries, Cambodia, return on assets, return on equity, net interest margin, multiple regression analysis, impact, relationship.

CHAPTER ONE

1.0 INTRODUCTION

1.1. Background of the Study

The banking sector plays a crucial role in the economic development of any country (Odunga et al., 2013). The banking industry acts as a financial intermediary between the savers and the borrowers and plays an important role in allocating resources for productive purposes (Shrieves & Dahl, 1992). The banking industry has significantly changed due to increased competition and globalization (AlKhouri & Arouri, 2019). The regulatory authorities have introduced several measures to ensure the banking industry's stability, including the Capital Adequacy Ratio (CAR) (Odunga et al., 2013).

The Capital Adequacy Ratio (CAR) is a bank's capital ratio to its risk-weighted assets. It is a measure of a bank's financial strength and its ability to absorb losses (Kallel et al., 2019). The regulatory authorities use the CAR to maintain a minimum level of capital to cover their risk exposures (Shrieves & Dahl, 1992). The CAR requirement varies from country to country, depending on the financial and economic and conditions.

Cambodia's banking sector has experienced significant growth over the past decade due to the country's financial liberalization and economic growth. The implementation of the must requirement in Cambodia has been in place since 2008, following the Basel II Accord. The National Bank of Cambodia (NBC) has set a minimum CAR requirement of 12%, which aligns with international standards. Implementing the CAR requirement has had a significant impact on the banking industry in Cambodia, and several studies have been conducted to investigate its impact on the financial efficiency of commercial banks (Ayadi et al., 2019).

The financial performance of full service banks is a critical aspect of their operations, as it reflects their ability to generate profits and create value for their shareholders (Chisnall, 2000). Various factors, including the CAR, influence the financial efficiency of commercial banks (Ayadi et al., 2019). Several studies have been conducted to investigate the impact of the CAR on the financial efficiency of full service banks, and the results have been mixed (Ayadi et al., 2019.

Some studies have found a positive relationship between the CAR and the financial efficiency of full service banks. For example, a study by Nge'tich (2008) found a positive connection between the CAR and the return on assets (ROA) of full service banks in Pakistan. Another study by Chisnall (2000) found that the CAR positively affects the efficiency performance of full service banks in Bangladesh.

However, other studies have found a negative connection between the CAR and the financial performance of full service bank. For example, a study by Diamond and Rajan (2000) found a negative connection between the CAR and the return on equity (ROE) of commercial banks in Taiwan. Another study by Ndung'u and Ngugi (2000) found that the CAR harms the financial efficiency of full service banks in Jordan.

The banking sector is vital to the economy of Cambodia, contributing to the growth and development of various industries. As the banking sector in Cambodia is undergoing rapid growth and development, to ensure that this sector remains healthy and stable, it is important to understand the impact of the capital adequacy ratio (CAR) on the financial performance of commercial banks. full service banks, in particular, play a crucial role in facilitating financial transactions, allocating credit and capital, and promoting investment (Guru & Shamugan, 1999).

Commercial banks must remain financially healthy to continue providing these services. However, like any other business, full service banks need to maintain a healthy financial

performance to stay afloat and compete effectively in the market. One of the key measures used to assess the financial strength of banks is the capital adequacy ratio (CAR).

Also, the financial efficiency of full service banks in Cambodia is a key indicator of the nation's economic stability (Wanjohi & Mugure, 2009). Capital adequacy ratio (CAR) is an important measure to evaluate a bank's financial health and ability to meet its obligations (Diamond & Rajan, 2000). It is important to understand how it affects the financial performance of full service banks in Cambodia because full service banks play a crucial role in the economy of any country as they facilitate the allocation of financial resources. These institutions' financial health and stability are essential for the economy's well-being. It reflects a bank's ability to absorb losses and maintain its solvency (Ndung'u & Ngugi, 2000).

This study aims to investigate the impact of the CAR on the financial efficiency of commercial banks in Cambodia. Through empirical analysis of relevant data, the study will provide insights into the connection between the CAR and key financial metrics such as return on assets (ROA), return on equity (ROE), and net interest margin (NIM). Ultimately, the findings will help stakeholders in the Cambodian banking industry to make informed decisions on managing capital and enhancing financial performance. The study will employ a quantitative methods research design to achieve the research objectives. The quantitative component will involve a regression analysis of financial data obtained from the annual reports of commercial banks in Cambodia. The data will be analyzed using both descriptive and regression analysis will be used in data analysis.

In addition, the impact of the CAR on the financial efficiency of full service banks is still inconclusive, and further research is needed, particularly in the Cambodian context. This study aims to investigate the impact of the CAR on the financial performance of full service banks in Cambodia. The study will focus on the period from 2016 to 2020, which covers the recent

developments in the banking sector in Cambodia. The findings of this study will provide insights into the connection between the CAR and the financial efficiency of commercial banks, which can be useful for the regulatory authorities, investors, and other stakeholders in the banking sector.

The significance of this study lies in its potential to contribute to the understanding of the factors that influence the financial efficiency of full service banks in Cambodia. By providing empirical evidence on the impact of the CAR, the study will help to inform regulatory policies and banking practices in the country. Moreover, it will contribute to the body of knowledge on capital management and financial performance in emerging market economies.

1.2. Problem Statement

Implementing the Capital Adequacy Ratio (CAR) in Cambodia has been in place since 2008, following the Basel II Accord. The regulatory authorities use the CAR to ensure the banking industry's stability. The National Bank of Cambodia (NBC) has set a minimum CAR requirement of 12%, which aligns with international standards. However, the impact of the CAR on the financial efficiency of commercial banks in Cambodia is still inconclusive.

Several studies have investigated the connection between the CAR and the financial efficiency of full service banks in different countries, and the results have been mixed. Some studies have found a positive connection between the CAR and the financial performance of commercial banks, while others have found a negative relationship. For example, Nge'tich (2008) found a positive relationship between the CAR and the return on assets (ROA) of full service bank in Pakistan, while Chisnall (2000) found a negative relationship between the CAR and the return on equity (ROE) of commercial banks in Bangladesh. These contradictory findings suggest that

further research is needed to understand the connection between the CAR and the financial efficiency of full service banks in Cambodia.

In the Cambodian context, despite the significance of the CAR, little research has been conducted to examine the impact of this ratio on the financial performance of full service bank in Cambodia. This creates a knowledge gap that hinders policymakers, bank regulators, and investors from understanding how well banks manage their capital and how that impacts their overall financial efficiency. Therefore, this study explores the connection between the CAR and the financial efficiency of commercial banks in Cambodia. This research will contribute to understanding Cambodia's banking system and provide insights into how commercial banks can improve their financial performance.

1.3. Research Questions

In recent years, full service bank in Cambodia have faced challenges in maintaining sufficient capital levels in their operations. The need for banks to have adequate capital is a regulatory requirement intended to ensure the safety and soundness of the banking system and protect depositors from financial loss. In this context, the Capital Adequacy Ratio (CAR) is a key indicator of a bank's financial strength and stability. Therefore, the research problem addressed in this study is: What is the impact of the Capital Adequacy Ratio on the financial performance of commercial banks in Cambodia? Specifically, this study will address the following research questions:

1. What is the Capital Adequacy Ratio of commercial banks in Cambodia from 2018 to 2022?
2. What is the financial efficiency of commercial banks in Cambodia from 2018 to 2022?

3. What is the connection between the capital adequacy ratio and the financial efficiency of full service bank in Cambodia from 2018 to 2022?
4. What are the implications of the findings for the regulatory authorities, investors, and other stakeholders in the banking sector in Cambodia?

By answering these research questions, this study will contribute to understanding the connection between the CAR and the financial performance of full service bank in Cambodia and provide insights for the regulatory authorities, investors, and other stakeholders in the banking sector.

1.4. Research Objectives

The following research objectives shall be considered for this research:

1. To assess the level of Capital Adequacy Ratio of commercial banks in Cambodia from 2016 to 2020.
2. To evaluate the financial performance of commercial banks in Cambodia from 2016 to 2020 using ratios such as ROA and ROE.
3. To investigate the connection between the Capital Adequacy Ratio and the financial efficiency of commercial banks in Cambodia during the period from 2016 to 2020.
4. To provide recommendations for the regulatory authorities, investors, and other stakeholders in Cambodia's banking sector based on the study's findings.

These research objectives will guide the study in addressing the research problem and answering the research questions. The first objective is important to understand the current level of compliance with the regulatory requirement of the CAR by the full service bank in Cambodia.

The second objective is important to provide an overview of the financial performance of commercial banks in Cambodia during the study period. The third objective is to investigate the connection between the CAR and the financial efficiency of commercial banks in Cambodia and to determine whether the CAR has a positive or negative impact on financial performance. Finally, the fourth objective is to provide practical recommendations for the regulatory authorities, investors, and other stakeholders in the banking sector in Cambodia to improve the financial performance of full service bank in the country.

By achieving these research objectives, this study aims to provide valuable insights into the role of the capital adequacy ratio in determining the financial efficiency of commercial banks in Cambodia. The findings of this study will be useful for policymakers, bank managers, and investors in making informed decisions related to the banking sector in Cambodia. Overall, the research objectives will help address the research problem and contribute to understanding the impact of the Capital Adequacy Ratio on the financial performance of full service bank in Cambodia.

1.5. Significance of the Study

This study is significant for several reasons. Firstly, it will contribute to the existing literature on the impact of the Capital Adequacy Ratio on the financial efficiency of commercial banks in Cambodia. While several studies have been conducted in other countries, there is limited research on this topic in the Cambodian context. Therefore, this study will add to the literature by providing insights into the connection between the CAR and the financial performance of full service banks in Cambodia.

Secondly, the study is significant because it will provide useful information for the regulatory authorities in Cambodia. The NBC sets the country's minimum CAR requirement for full service banks. The findings of this study can help NBC to determine whether the current CAR requirement is appropriate and, if necessary, make adjustments to improve the stability and performance of the banking industry in Cambodia.

Thirdly, the study is significant for investors and other stakeholders in the banking sector in Cambodia. The findings of this study can provide insights into the financial efficiency of commercial banks in the country and help investors make informed decisions about investing in the banking industry. Additionally, the study can help other stakeholders, such as customers and employees, to understand the factors that affect the financial efficiency of full service bank in Cambodia.

Fourthly, by examining the impact of the capital adequacy ratio on the financial efficiency of full service banks in Cambodia, this study will provide valuable insights that can inform policy decisions aimed at strengthening the banking sector in the country. The findings will be of great significance to bank managers and stakeholders as they seek to improve the financial efficiency of their institutions.

Fifthly, the study will provide a framework that can be used to assess the effectiveness of capital adequacy management practices and make recommendations for improvement where necessary.

Finally, the study is significant because it can help to improve the overall efficiency of the banking industry in Cambodia. By understanding the connection between the CAR and the financial performance of full service banks, the regulatory authorities, investors, and other

stakeholders can take appropriate measures to improve the financial health of the banks, which in turn can lead to a stronger and more stable banking industry in Cambodia.

Finally, the significance of this study lies in its potential to contribute to the existing literature, provide useful information for the regulatory authorities, inform investors and other stakeholders in the banking sector, and ultimately improve the overall efficiency of the banking industry in Cambodia.

1.6. Scope and Limitations:

This study examines the impact of the Capital Adequacy Ratio on the financial performance of full service banks in Cambodia from 2018 to 2022. The study will use a sample of six commercial banks in Cambodia, including ACLEDA Bank Plc, Canadia Bank Plc, Foreign Trade Bank of Cambodia, Union Commercial Bank Plc, J Trust Royal Bank, and Vattanac Bank. These banks were selected based on their size and availability of financial data for the study period.

The study will use secondary data sources to collect financial data for the selected banks. The financial data will be obtained from the audited financial statements and yearly reports of the banks. The financial ratios that will be used to evaluate the financial efficiency of the banks include the Return on Assets (ROA) and Return on Equity (ROE).

However, this study has some limitations that need to be acknowledged. Firstly, the study is limited to a sample of six commercial banks in Cambodia. While these banks represent a significant portion of Cambodia's banking industry, the study's findings may not be generalizable to the entire industry.

Secondly, the study is limited by the availability of data. The study will rely on the audited financial statements and yearly reports of the selected banks, which may not include all the relevant information that could impact the financial performance of banks.

Thirdly, the study is limited to a specific period (2018-2022). While this period is significant for examining the impact of the CAR on the efficiency performance of commercial banks in Cambodia, it may not provide a complete picture of the long-term impact of the CAR.

Furthermore, the study is limited to evaluating the impact of the CAR on the financial performance of full service banks in Cambodia. Other factors, such as macroeconomic conditions, regulatory environment, and internal management practices, may also impact the financial efficiency of the banks. Therefore, the study may not capture the full extent of the factors that influence the financial efficiency of commercial banks in Cambodia.

Finally, while this study has some limitations, it provides a valuable contribution to the literature on the impact of the CAR on the financial performance of full service banks in Cambodia. The study's findings can inform regulatory authorities, investors, and other stakeholders in the banking sector about the connection between the CAR and the financial efficiency of full service bank banks in Cambodia.

1.7. Definition of key terms

1.7.1. Capital Adequacy Ratio (CAR).

The total value of a bank's core capital is measured using this metric, and it is stated as a proportion of the bank's assets that are weighted against credit exposures. The capital adequacy ratio (CAR) is a measure of a bank's ability to meet its time-based obligations and manage other types of risk, such as operational risk, credit risk, and so on.

The formula for ROA is:

CAR = Tier 1 capital + Tier II capital / Risk weighed Assets.

1.7.2. Return on Asset (ROA)

Return on Assets, also known as ROA, is a financial ratio used to determine how profitable a business is compared to its total assets. The amount of money remaining after deducting all of a company's expenses, such as taxes and interest payments, from its total revenue is the company's net income. When calculating its total asset value, a company's cash on hand, investments, property, plant, and equipment are all considered part of its total assets. A corporation's return on assets (ROA) can be determined by dividing its net income by its total assets.

The formula for ROA is:

ROA = Net Income (NI)/ Total Assets (TA)

1.7.3. Return on Equity (ROE)

Return on Equity (ROE) is a financial ratio that measures a company's profitability relative to its shareholders' equity. The amount of money remaining after deducting all of a company's expenses, such as taxes and interest payments, from its total revenue is the company's net income. Shareholders' equity is the total value of a company's property generated from its investors' investments, including additional paid-in capital and retained earnings. ROE is calculated by dividing a company's net income by its shareholder's equity.

The formula for ROA is:

ROE = Net Income (NI) / Shareholders' Equity (SE).

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1. Introduction

Regarding maintaining stable monetary systems, the banking industry is essential (Poudel, 2012). It is extremely important to the functioning of the economy in our country. Because the money saved in commercial banks is then used to invest in businesses or other types of active industries, commercial banks contribute to the expansion and development of the country's economy (Almazari, 2013). The government cannot carry out its many economic initiatives without the assistance of commercial banks. It is of critical importance in terms of employment, the transfer of human resources, and the mobilization of capital (Salem & Rahman, 2016).

Over the past few years, the banking industry has undergone a significant transformation and has continued developing new regulations and guidelines to preserve its stability (Almazari, 2013). A company's profit is the primary factor determining how long it will be in operation, how much it will grow, and whether or not it will survive (Poudel, 2012).

A commercial bank is an institution that seeks to maximize its profits, as this term implies. The bank must turn a profit to generate revenue, which can then be used to meet day-to-day expenses and pay salaries to employees, interest to depositors, and dividends to shareholders (Salem & Rahman, 2016). It is a fact that when there is an increase in Profitability, there is a potential for significant growth in the shareholders' value.

Measuring the efficacy and efficiency with which a company generates revenue from its operations is included in determining its financial performance (Almazari, 2013). The performance

of a bank can be understood as a reflection of how the bank's resources are utilized in a manner that makes it possible for the bank to accomplish the goals it has set for itself (Poudel, 2012).

The evaluation of the performance of banks is done for several purposes, one of which is to ascertain the operational outcomes of the banks as well as the general financial state of bank services (Kamandea, 2016). As the buffer gate that prevents any unexpected loss that banks might face, which might reach depositors' funds, given that banks operate in an extremely uncertain environment that might lead to their exposure to various risks and losses, that might result from risks facing banks; bank capital plays a very important role in maintaining the safety and solidarity of banks as well as the security of banking systems in general (Almazari, 2013).

This is because bank capital represents the buffer gate that prevents any unexpected loss that banks might face, which might reach depositors' funds (Poudel, 2012). When seen through a narrow lens, operational efficiency can be understood as the capacity to offer goods and services at a lower cost without compromising on their level of quality (Almazari, 2013). It is also possible to define it as the phenomenon that takes place when the appropriate combination of people, processes, and technology come together to increase the productivity and value of any company operation while simultaneously bringing down the cost of everyday operations to the level that is desired (Salem & Rahman, 2016).

Banks' levels of efficiency and productivity can be evaluated using this ratio, which determines these metrics based on the proportion of operating expenses to operating profits (Suka, 2011). In general, lower ratios suggest a better degree of efficiency, whereas larger ratios indicate a lower degree of efficiency on the part of the bank. In conclusion, the study of bank performance is becoming even more relevant, especially in light of the ongoing financial and

economic problems which will profoundly impact the banking industry in many nations worldwide (Poudel, 2016).

2.1.1 Reviews of Relevant Theories

According to Toft (1989), the definition of a bank is a system that offers a particular form of service that is either directly or indirectly associated with finance. Therefore, a commercial bank is a bank of commerce or trade oriented toward making a profit. Its primary function is to accept deposits, lend money, and transfer funds among banks, individuals, and businesses (Deaton et al., 1994). Commercial banks can also be referred to as merchant banks.

The availability of sufficient capital is necessary for the uninterrupted operation of a bank as a going concern. A capital requirement is a type of bank regulation that establishes a framework for how financial organizations like banks and depositories are expected to manage their capital. Capital is a cushion that helps banks continue operating even if they suffer temporary losses. This is because banks can continue to operate even if they have capital.

Many hypotheses have been proposed as potential explanations for the observed differences in performance among the major financial organizations. The dividend relevance theories, prospect theory, capital structure, and agency theory are several schools of thought.

2.1.1.1 Dividend Relevance Theories

According to the dividend relevance theories, the choice of an appropriate dividend policy can affect the company's value. One such theory is Walter J. E. (1963), who based his thesis on

dividend policy on his research claimed that the optimal dividend or payout policy is determined by the connection between the returns on investments (represented by r) and the cost of equity (represented by ks). He argues that if r is greater than ks, the company should keep all the profits for further investment. Still, if r is less than ks, the company should give all of the profits to the shareholders in the form of dividends since the shareholders would be able to increase their profits if they received the profits in the form of dividends.

In his incentive signaling theory on dividend policy, Ross (1977) argued that an increase in the price of stocks frequently accompanied an increase in dividends. A dividend cut generally leads to a decrease in the price of stocks. This was based on the observation that an increase in the price of stocks frequently accompanied an increase in dividends. Ross proposed that managers can convey signals concerning the prospects of the companies they manage by using capital structure in addition to payouts. The Ross hypothesis is predicated on the idea that signals, including cash-based variables (either debt interest or dividend), cannot be imitated by failing companies. This is because unsuccessful companies do not have the future cash-generating ability necessary to keep the declared dividend or interest payment.

According to the tax difference theory developed by R.H. Litzenberger and K. Ramaswamy in 1979, a differential tax on dividends and capital gains may result in yield tilt. This means that dividend-paying stocks must produce a greater predicted before-tax return than non-dividend-paying companies of the same risk class. This is important in order to counteract the effect that it will have on payouts.

Therefore, the greater the dividend yield on a stock, the greater it is before considering the effects of taxes.

2.1.1.2 Prospect Theory

Following the prospect theory, an individual can rationally exhibit varying risk aversion over time, depending on his position concerning the desired goal. These variable degrees of risk aversion might be induced by changes in the individual's position concerning the desired outcome. If those in charge of making decisions have reason to believe that they are falling short of expectations, this will encourage them to take more chances.

On the other hand, if they are performing at or over a target, they will be less ready to take chances. This is because they are confident in their performance. For instance, if the management of a bank learns that the institution is performing below target, a practice known as "gains trading," which is also known as the profitable selling of appreciated securities, can quickly add to the bottom line and is a method that is used quite frequently. A rise in earnings will only materialize during the accounting period corresponding to when the sale was completed.

Increasing the loan portfolio and extending credit to borrowers at a higher risk of default makes it possible to boost profits more financially soundly. Because of this, the amount of interest earned on each dollar invested will be increased. Increasing the loan portfolio size is possible by extending credit to borrowers with a higher risk level. Liability management is another method that can be utilized to generate the cash flow required to fund these loans. Increasing the interest rate offered on certificates of deposit, as one example, would be one way to attract fresh money into the market. If management is functioning at a level above and beyond what is expected of them, there is no reason for this to occur. The longer the distance that a corporation runs below its goal bank, the greater the rate of return fluctuation that it will experience.

2.1.1.3 Capital Structure Theories

Both in developing countries and in countries that have already developed economies, there has been much discussion about how and why businesses decide which sources of capital to use. The question is whether or not the proportion of debt to equity in a company makes a difference. After reaching the optimal point (minimum cost of capital or maximum value of the firm), increasing the average causes the cost of capital to increase and the firm's value to decrease (Solomon, 1959). Leverage (gearing) up to a prudent debt level causes the cost of capital to decrease and the firm's value to increase. However, after reaching the optimal point, increasing the average causes the cost of capital to increase and the firm's value to decrease. The pecking order theory and the trade-off theory are the two hypotheses that predominate in discussions regarding an organization's capital structure.

According to the trade-off theory, the optimal time for a company to maximize its value is when the additional benefits (marginal benefits) that result from debt (such as the tax deductibility of interest expense, the disciplinary role of debt, and lower informational costs in comparison to equity) are equivalent to the marginal costs of debt (such as the costs associated with bankruptcy and the agency costs that exist between stakeholders and bondholders).

According to the pecking order theory, created by Myers and Majluf (1984), businesses would fund new investments in the following order: first, with retained earnings; second, with debt; and third, with equity. The theory hypothesizes that businesses will choose their financing to reduce the expenses associated with doing so and prioritize internal funding over debt equity and external financing.

2.1.1.4 Agency Theory

According to agency theory, a company is defined as a "nexus of contracts" between several sources of resource provision. The principals, who are responsible for providing the firm with capital, and the agents, who manage the business's day-to-day operations, are at the core of agency theory. The organization incurs agency costs because the interests of the agents do not necessarily coincide with those of the principal. These costs include the expenses incurred in monitoring agents' behavior, such as budget limits, compensation methods (including stock options, bonuses, and other incentives), and the loss of profits incurred due to operating regulations and constraints imposed on management. They also include the costs of bonding for the agents and making sub-optimal decisions, defined as decisions made in the agents' best interest rather than the principal's.

According to agency theory, managerial activities in modern corporations, in which share ownership is broadly held (Pratt & Zeckhauser, 1985), deviate from those required to maximize shareholders' profits. Pratt and Zeckhauser developed this idea. The theory of agencies details the techniques that can be used to minimize the loss of agency, such as incentive programs for managers that provide financial rewards to ensure that shareholder interests are prioritized.

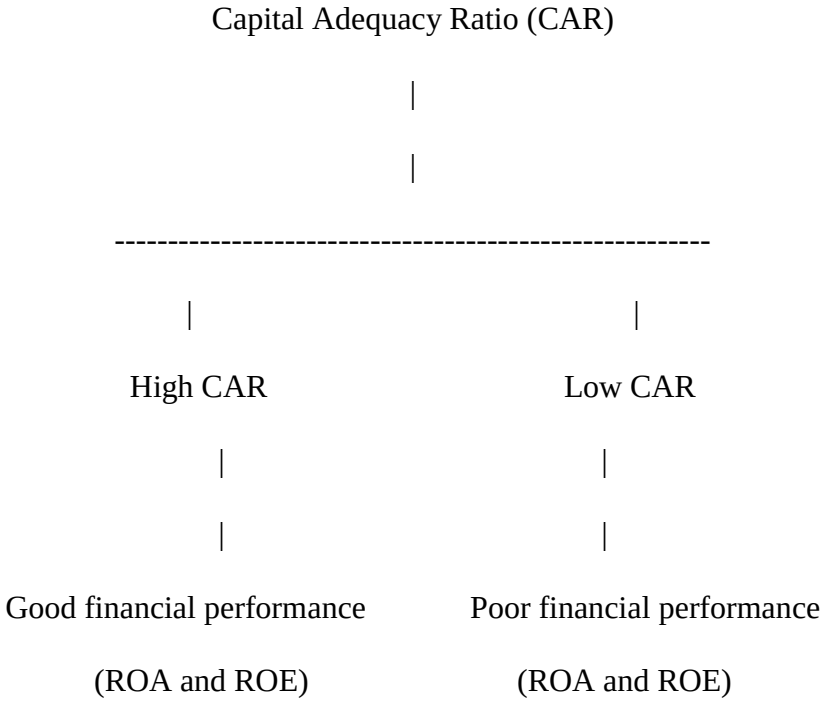
2.1.2 Conceptual Framework:

The conceptual framework for this study is based on the Capital Adequacy Ratio (CAR) and its impact on the financial performance of commercial banks in Cambodia. The CAR measures a bank's financial strength and calculates its capital by its risk-weighted assets (Attanasoglou et al.,

2005). The CAR is an important metric for measuring the stability and solvency of a bank. It is used by regulatory authorities to ensure that banks have sufficient capital to cover their risks.

A bank's financial performance can be evaluated using various financial ratios such as the Return on Assets (ROA) and Return on Equity (ROE). The ROA measures the bank's ability to generate profits from its assets, while the ROE measures its ability to generate profits from the shareholders' investments.

The conceptual framework for this study is depicted in the figure below:



The conceptual framework proposes that there is a relationship between the CAR and the financial performance of commercial banks in Cambodia. Banks with a high CAR are expected to have good financial performance (measured by ROA and ROE), while banks with a low CAR are expected to have poor financial performance (measured by ROA and ROE).

Several studies have supported the positive relationship between the CAR and the financial performance of banks. For instance, a study by (Naceur, 2006) found that a high CAR positively correlates with bank profitability. Another study by (Allen & Carletti, 2008) found that banks with a higher CAR are less likely to experience financial distress.

However, some studies have found a negative relationship between the CAR and the financial performance of banks. For example, a study by (Nge'tich, 2008) found that a higher CAR is associated with lower profitability for small banks.

In the context of Cambodia, limited research has been conducted on the relationship between the CAR and the financial performance of commercial banks. Therefore, the primary objective of this literature review is to investigate the finding of other researchers on how much of an effect capital sufficiency and the cost-income ratio have on the overall financial performance of other developing countries. The conceptual framework for this study proposes a relationship between the CAR and the financial performance of commercial banks in Cambodia.

2.2. Theoretical Framework

Capital adequacy ratio (CAR) is a crucial measure of a bank's financial health and stability. It is the ratio of a bank's capital to its risk-weighted assets and indicates its ability to absorb unexpected losses. In this theoretical framework, we will explore the impact of CAR on the financial performance of commercial banks in Cambodia. The review will attempt to answer the following research questions:

1. What is the relationship between the capital adequacy ratio and the financial performance of commercial banks in Cambodia?

2. How does the capital adequacy ratio affect different aspects of financial performance, such as profitability and asset quality?
3. Are there any other factors that may influence the relationship between CAR and financial performance in the Cambodian context?

Several studies have been conducted on the impact of the capital adequacy ratio on the financial performance of banks in various countries. In Cambodia, there has been a growing interest in this topic as the country's banking sector has expanded rapidly in recent years. For instance, a study (Lim, 2019) found a positive relationship between the capital adequacy ratio and the profitability of commercial banks in Cambodia. Another study by Hang (Okuda & Aiba, 2015) found that the capital adequacy ratio significantly impacts asset quality in the Cambodian banking sector.

Based on the literature review, we can develop the following theoretical framework for our study: Independent variable and Capital adequacy ratio (CAR)

2.2.1 Dependent variables:

1. Profitability: Profitability is a key indicator of a bank's financial performance, and it can be measured using metrics such as return on assets (ROA) and return on equity (ROE). We expect to find a positive relationship between CAR and profitability, as higher capital adequacy ratios can indicate a bank's ability to generate higher returns.
2. Asset quality refers to the quality of a bank's loan portfolio and its ability to manage credit risk. We expect to find a positive relationship between CAR and asset quality. Higher

capital adequacy ratios indicate a bank's ability to absorb losses and maintain a healthy loan portfolio.

3. Liquidity: Liquidity is the ability of a bank to meet its short-term obligations. We expect to find a positive relationship between CAR and liquidity. Higher capital adequacy ratios can indicate a bank's ability to meet its short-term obligations and maintain its operations.

2.2.2 Moderating variables:

1. Size: The size of a bank can influence the relationship between CAR and financial performance. Larger banks may have more resources to manage risk and generate profits, regardless of their capital adequacy ratios. We will control for bank size in our analysis.
2. Economic conditions: GDP growth and inflation can also influence the relationship between CAR and financial performance. We will control for economic conditions in our analysis.

This section will discuss the theoretical premises upon which the study was conducted. It lays the groundwork for competing theories that serve as the study's foundation.

2.2.3 Deposit Insurance Theory

The theory of deposit insurance also gives us some insight into the behavior of commercial banks (Flannery, 1989; Cham, Greenbaum, and Thakor, 1992). This is because the theory assumes that depositors are insured against losses. According to this idea, financial institutions should be

understood as portfolios of risky claims. A projected value transfer of wealth occurs between the Government Deposit Insurance Corporation and the owners of insured banks when the risk of collapse of insured banks increases without limit. The regulators are concerned about the soundness of the banks, particularly concerning the solvency of the banks or the likelihood that the banks may fail.

As a result, regulation of the risks that banks are exposed to is required to lessen the anticipated losses that the deposit insurance business would suffer. The minimum required capital for a bank is not nearly as trustworthy and reliable as deposits requested from individual consumers. Long-term planning cannot be accomplished with this method. On the other hand, having more deposits allows banks to make more loans but does not eliminate the requirement for extra capital. When consumers are awarded bank loans and advances without the proper procedures being followed, it may harm the capital and liquidity position of the bank in the long run.

2.2.4 Buffer Theory of Capital Adequacy

If a bank's capital adequacy ratio is prone to significant swings, it may be in their best interest to keep a "buffer" of surplus capital on hand. This will lower the likelihood that they will fail to meet the minimum capital requirements mandated by law. The primary instrument for banking supervision in Nigeria is made up of several capital requirements. The Central Bank of Nigeria (CBN) does not interfere too much in the day-to-day operations of banks, although it does directly conduct on-site examinations and will occasionally delegate this responsibility to external auditors.

In contrast, the Central Bank of Nigeria (CBN) would not accept any violations of banking legislation that involve a breach of the capital requirements since they are seen as a severe infraction of the law. Banks that remain undercapitalized for an extended length of time are forced to close. One indicator that points to this reality is the fact that certain banking licenses were revoked upon the expiration of the recently completed recapitalization of banks in Nigeria in 2005. If consumers are unable to fully mobilize their deposits, financial institutions will need more capital. The utilization of capital for long-term planning is possible thanks to its increased dependability and reliability. The ability of financial institutions to collect sufficient deposits prevents the capital base from being depleted.

According to Calem and Rob's (1996) buffer hypothesis, a bank that is getting close to the regulatory minimum capital ratio may have an incentive to increase their capital and decrease their risk in order to avoid the regulatory penalty that would be triggered by a breach of the capital requirements. Inadequately capitalized banks may, on the other hand, be tempted to take on additional risk in the expectation that doing so will result in higher expected returns, which in turn may assist them in increasing their capital.

This is one of the ways in which risks associated with insufficient capital can have an effect on the operations of a bank. If a bank were to declare bankruptcy, the bank itself, its clients, and the Nigeria Deposit Insurance Corporation (NDIC) would be responsible for bearing the associated risks. The National Deposit Insurance Corporation (NDIC) will compensate a customer a maximum of N200,000 in the event that their bank fails. Customers are constantly concerned about the capital status of banks as a result of this. To ensure that their clients are able to reap the benefits of this program, banks are required to guarantee 15/16 of their customers' deposit liabilities and

pay 1% of that total amount to the NDIC. The NDIC procedure described above is applicable in different countries, however the amount varies. Nigeria is just one example.

2.2.5 Expense Theory

According to Williamson's (1963) expense theory, highlighted in Nyong's (2001) theory of managerial discretion, managers have the choice of following policies that maximize their personal utility rather than the profit maximized for shareholders. This is based on the premise that managers have the discretion to do so. One example of such utility is the sense of fulfillment managers get from carrying out particular expenditures. The amount of slack that managers receive in the form of expense accounts, luxurious offices and buildings, corporate automobiles, and other perquisites of office is, to some part, a reflection of the managers' prestige, authority, and standing in the organization. This feature of bank behavior is attempted to be captured by the concept of operating efficiency. The usage of resources results in operating expenses, which can either have a positive or a negative impact on the variable being studied (the dependent variable). Considering the aforementioned theoretical foundations, the research utilizes the Buffer Theory of Capital Adequacy, which is consistent with the research findings.

This theoretical framework provides a roadmap for studying the impact of the capital adequacy ratio on the financial performance of commercial banks in Cambodia. By examining the relationship between CAR and various aspects of financial performance, such as profitability, asset quality, and liquidity, we can gain insights into the health and stability of the Cambodian banking sector. The findings of this study can inform policymakers, investors, and other stakeholders about the factors that drive the financial performance of commercial banks in Cambodia.

2.3. Empirical Studies

According to Ebhodaghe (1991), capital adequacy is a circumstance in which the bank's adjusted capital is sufficient to absorb all losses and cover the bank's fixed assets while leaving a comfortable surplus for the bank's ongoing operations and potential for future growth. The quantity of capital that is considered to be adequate is the amount of capital that is capable of properly discharging the principal function of preventing bank failures by absorbing losses. This definition is based on the functional definition of adequate capital. On the other hand, the measurement of capital to ensure that it is adequate is governed by numerous elements (both internal and external) that influence the level of risk brought about by operation. In addition, the quantity of capital that was thought to be sufficient at one point in time may need to be adjusted later since the risk factors, competitive environment, market conditions, and economic circumstances in which the bank works are always shifting.

The Basel Accord from 1988, which is recognized as the international benchmark of capital adequacy, acknowledges the ratio of capital funds to deposit and has guided the development of a rule of thumb stating that a bank should have capital funds that are equal to at least 10% of its deposit liabilities. The Basel Accord 1 established the minimum risk-based benchmark for adequate capital as 8% of risk-weighted assets, requiring the core capital portion to be at least 4% of total capital. It is common practice to determine whether or not a bank's statutory capital is sufficient by determining whether or not it is sufficient to cover the bank's operational expenses, meets the withdrawal needs of customers, and protect depositors against the loss of all or part of their deposits if the bank is forced into liquidation or suffers losses (Onuh, 2002; Crosse & Hamsel, 1980).

According to Crosse and Hamsel (1980), the ability of the bank to create profits and a means for growing its operations, providing quality service, and consequently remaining competitive is directly related to the bank's capital. The growth of the balance sheet is not feasible without appropriate capital, according to Greening and Bratanovic (1993) and Rosse and Hamsel (1980). Therefore this is, without a doubt, an essential factor in the production of income. The adequacy of a bank's capital is another crucial measure of the institution's financial health. Even with the best management, a financially troubled institution with insufficient capital will be unable to turn itself around.

According to Attanasoglou et al. (2005), a bank with a healthy capital can explore business possibilities more successfully. Additionally, the bank has more time and flexibility to deal with problems arising from unanticipated losses, ultimately resulting in higher profitability. Naceur (2006) researched to investigate how the control of capital affected the cost of intermediation and profitability. According to him, a good contribution to banks' profitability.

Cotter (1966) observed that in situations in which the interests of shareholders are dominant, capital is an essential component of managerial decision-making, and he theorized that the capital position of a bank to maximize wealth would theoretically have an impact on the organization's capital structure as well as its loan policy. If capital does affect lending, this will have repercussions for the efficiency with which banks function as financial intermediaries and, consequently, for the distribution of essential resources across the economy. Cotter (1966) concluded by stating that from this vantage point, it seemed as though a capital position set by the market would be desirable.

According to White and Morrison (2001), capital rules ensure that banks have sufficient capital at risk. In their support of this argument, Bichsel and Blom (2005) argued that these rules

help decrease negative externalities (such as a general loss of confidence in the banking system) and increase GDP.

Hassan (2001) conducted research that looked at the performance of Islamic banks from 1994 to 2001 and published their findings. When attempting to predict profitability using a wide range of internal and external banking characteristics, the results indicated that high capital was directly correlated with high profitability. According to the research of A. Breu (2002) 15, banks with higher capitalization have a lower estimated cost of bankruptcy and, as a result, lower funding costs, which leads to improved profitability.

On the other hand, some research claims that having adequate capital negatively influences banks' performance. According to Majnoni (2001), the establishment of increased capital requirements resulted in a general slowdown of bank credit, leading to its eventual contraction. Because bank credit is banks' primary source of income, a reduction in its availability will inevitably hurt the banks' profitability.

According to Javapan and Tripe (2003), the hypothesis that there ought to be a negative relationship between a bank's ratio of capital to assets and its return on equity may appear so self-evident that it does not require any empirical evidence. This hypothesis was presented as if it were self-evident. Kim and Santamero (1988), utilizing a mean-variance framework to compare the bank portfolio choice with and without solvency regulation, show that capital requirements will introduce changes in the composition of the risky part of the bank's portfolio in such a way that risk is increased and the profitability of failure may be higher. They conclude by demonstrating that capital requirements will introduce changes in the composition of the risky part of the bank's portfolio.

Francis (2005) conducts research into several of the most important factors that determine the profitability of commercial banks in sub-Saharan Africa. Data from balance sheets and standardized financial statements produced from the Bank-Scope International bank database were used in this investigation. We make use of an unbalanced panel data set that covers the years 1999 to 2006 and contains information pertaining to 224 commercial banks from 42 different countries. For the purpose of generating and specifying the bank profitability function, a cost efficiency model is utilized. In order to get an estimate of the model, the random effects estimator is used. The findings indicate that factors at the bank level, such as assets, capital adequacy, operational efficiency, and liquidity, as well as factors at the macroeconomic level, such as increase in GDP and inflation, are important in explaining bank profitability in SSA. In addition, the findings demonstrate that during the course of the research period, the banking industry maintained a profitable behavior pattern that was consistent with reaching equilibrium. This study provides further knowledge about the commercial banking sector in Sub-Saharan Africa that is crucial for policy making. This is accomplished by studying the factors that determine the performance of banks in the region.

Goddard (2004) researched to compare the profitability of European banks to their capital-to-asset ratios. Based on his findings, he concluded that there is a positive relationship between the two variables and that banks' profitability is directly correlated to their capital-to-asset ratios.

Haron (2004) conducted a study in which he examined the impact of several determinants of profitability. In his research, he considered variables such as asset structure, inflation, deposit items, liquidity, and money supply as factors that affect the capital-asset ratio and profitability of the banks.

Onaolapo and Olufemi (2012) investigate the implications of capital adequacy conditionality on the overall performance of several banks in the Nigerian banking industry. The study hypothesized no significant relationship between the statutorily mandated Capital Adequacy Ratio (CAR) and the five bank performance factors. The data used are primarily secondary and were gathered from the publications of regulatory bodies such as the Central Bank of Nigeria throughout ten years, beginning in 1999 and ending in 2008. The Ordinary Least Square (OLS) estimation received from an SPSS 17.0 software was adapted to assess the relationship between the variables. The Augmented Dickey-Fuller (ADF) was utilized to test whether or not the time series data that was used was stationary.

To further assess whether or not the variables under research are co-integrated, a pair-wise Granger Causality test is carried out. According to the findings, none of the performance measures that were evaluated, including Returns on Assets (ROA), Returns on Capital Employed (ROCE), and Efficiency Ratios (ER), among others, have a significant impact on the Capital Adequacy Ratio (CAR) of the Nigerian banking sector. Goddard (2004) examines European banks' profitability during the 1990s by using cross-sectional data. According to the findings, there is a positive connection between the capital-to-asset ratio and a company's level of profitability.

The research conducted by Athanasoglou (2005) investigates the influence that bank-specific, industry-specific, and macroeconomic factors have on banks' profitability. The fact that the capital variable's coefficient is positive and has a high significance level indicates that Greek banks are in a healthy financial position.

Kosmidou et al. (2005) explore the impact of banks' characteristics, macroeconomic conditions, and the structure of the financial market on banks' net interest margin and return on average assets (ROAA) in the UK commercial banking industry from 1995 through 2002. This

study focuses on the period in which the UK commercial banking industry was active. The findings indicate that a bank's capital level is one of the primary factors determining its performance. This lends credence to the claim that well-capitalized financial institutions have a lower risk of failing, which in turn lowers the cost of their funding, or that they have fewer requirements for external funding, which leads to higher levels of profitability.

Ngo (2006) examines the connection between the amount of adequate bank capital and the bank's profitability. The findings point to the absence of a statistically meaningful connection between capital and profitability.

In their study, Olalekan and Adeyinka (2013) investigate how capital sufficiency influences the profitability of deposit-taking banks in Nigeria. The purpose of this study is to evaluate the impact that adequate capital has on the profitability of domestic and international banks operating in Nigeria. The primary data were acquired through the use of questionnaires, with a sample size of 518 being issued to the personnel of banks, and a response rate of 76% being achieved. Also utilized between the years 2006 and 2010 were published financial statements of banks.

The conclusions of the research done on the original data showed that there was no significant relationship between capital adequacy and the profitability of banks, while the analysis done on the secondary data showed that there was such a relationship and that it was positive and significant. In light of this, it can be deduced that the level of adequate capital is an important factor in determining the profitability of deposit-taking banks in Nigeria. It was found that capitalization and profitability are both indicators of how effectively a bank manages its risks and provide a cushion against losses that are not covered by the bank's current earnings.

According to the findings of Mwega (2005), capital requirements contribute to a reduction in the likelihood of banks going bankrupt as a result of abrupt shocks. It was brought to his attention

that the risk-weighted capital adequacy ratio directly affected the possibility that commercial banks would be exposed to the risk of insolvency. As a result, there is an inverse link between the risk-weighted capital adequacy ratio and the insolvency of commercial banks. He highlighted that the ratio should be as high as possible.

In their study on bank profitability, Demiurge-Kunt (1999) discovered a positive association between capitalization and profitability. They did, however, discover that there was an inverse connection between the reserves they held and their profitability.

In a similar study, which was carried out by Margarida and Mendes (2002), the researchers found that well-capitalized banks had reduced expectation costs and, as a result, lower funding costs and greater interest margins on their assets. In addition, they discovered that stricter minimum capital adequacy ratios are connected to increased income production. They concluded that a larger capital-to-asset ratio provides a cushion for a bank's overall health, as they mentioned in their conclusion.

In their research on the factors that influence the expansion of small and medium-sized enterprises (SMEs) in rural Kenya, Wanjohi and Mugure (2009) focused on a variety of variables related to profitability. These included capital, interest rate, liquidity, and asset base, and others. They concluded that the financial institutions with a large capital base had a greater potential for profit than those with a smaller one.

Research on interest-bearing assets, such as loans, was conducted to study the relationship between those assets and profitability. Numerous researchers, all focusing on the same topic, came to various conclusions. According to the research of Dermiurge-Kunt (1999), the explanation for the poor profit margins obtained by banks is the presence of interest-earning assets; as a result, Dermiurge-Kunt perceived a negative association between loans and the profitability of banks.

Guru and Shamugan (1999) arrived at contradictory conclusions regarding the connection between loans and the profitability of banks. They came to the conclusion that the role of loans as a component of assets has a significant role in the profitability of banks.

In addition, Margarida and Mendes (2000) discovered that the ratio of loans to assets has a positive association with interest margins and profitability. Furthermore, they discovered that this relationship is statistically significant and has a negative slant.

According to the findings of a study that was carried out by Ngugi (2001) on the topic of interest rate spread in Kenya, commercial banks in the country incorporate charges on intermediation services given under uncertainty when they determine the interest rate levels for deposits and loans. Consequently, he concluded that there is an inverse connection between the interest rate spread and the profitability of commercial banks.

According to other research on interest rate spread, potential savers are deterred due to low returns on deposits, which limits funding for possible borrowers (Ndung'u & Ngugi, 2000).

In their research on the theory of bank capital, Diamond and Rajan (2000) discovered that banks generate liquidity due to the fragile nature of deposits, which makes them susceptible to runs. This is due to the fact that unpredictability makes deposits vulnerable, hence providing a role for capital from outside the bank. They also discovered that a sudden change to greater capital requirements could result in a run on the bank because the amount of maturing deposits may exceed what the bank can pledge. A higher level of bank capital lowers the likelihood of a financial crisis, but it also slows the generation of new liquidity. The primary function of commercial banks is to act as an intermediary between the competing demands for liquidity posed by depositors and borrowers.

According to the findings of Nge'tich (2008)'s research on the effects of interest rate spread on the level of nonperforming assets, interest rate spread affects the number of nonperforming assets held by commercial banks because it causes an increase in the cost of loans that are charged to borrowers. The banks' profit margins will be reduced even further due to this.

According to Fabozi (1999), the primary purpose of a bank is to act as an intermediary between different parties in a process in which they operate with an underlying mismatch between highly liquid liabilities on one side of the balance sheet and less liquid and long term assets on the other side of the balance sheet.

According to Ayadi, Ayadi, and Trabelsi's 2019 research, internal procedures and capital Regulations affect financial performance. The transition from a historical-cost-based accounting system to a fair-value-based accounting system (Anagnostopoulos & Buckland, 2005) has resulted in a reduction in the impact that the capital assets ratio has on a company's overall financial performance, as evidenced by the observations of bankers and the findings of a study paper written by academicians.

Historically, the items that make up a balance sheet, such as liabilities and assets, were recorded based on their book value. However, following regulatory capital balance sheets, the items as mentioned earlier, such as liabilities and assets, are now recorded based on their market value. Chisnall (2000), Allen and Carletti (2008), and Heaton, Lucas, and McDonald (2010) all found that as a consequence of this, financial performance became unstable. According to Sahyouni and Wang 2019, there is no substantial association between the creation of liquidity and the return on average assets of the 18 commercial banks operating in the Middle Eastern and North African nations. Another piece of empirical evidence comes from Tunisian and Moroccan banks, which show

favorable impacts of service quality on efficiency but negative effects of bank capitalization on GDP growth (Kallel et al., 2019).

As a result of low competition, legal protection, government interference, and regulation by the central bank, as well as value added by assets diversification, the financial performance of conventional and Islamic banks in the Golf Cooperation Council (GCC) increased. However, the opposite was true for conventional banks (AlKhouri & Arouri, 2019).

According to the Nepalese central bank regulations, Tier One and two are two different kinds of capital. According to the regulatory criteria established by the central bank, banks lacked sufficient capital (Shrieves & Dahl, 1992). According to a study conducted by Konishi and Yasudab (2004), there is an inverse link between a bank's capital and risk, which has led to an affirmation of a lower risk in Japanese commercial banks as a result of the adoption of capital adequacy requirements.

Allen and Carletti (2008) described asset mobilization to keep capital adequate as well as the loss provision ratio while considering the level of risk. It was discovered by Vaitulevien and Staroselskaja (2014) that the ability to manage capital adequately and liquidity effectively is essential in risk management. Zheng, Xu, and Liang. Zheng (2012) found that there is an inverse link between the capital buffer and the risk that a bank faces. Other scholars have reached the same conclusion.

The results of studies conducted by Rubin and Nayada (2008), Van, K. Imai, and M. Mesler (2014), Onali (2014), and Ayaydin and Karakaya (2014) have shown that Tier-1 capital lowers banking risk. According to Brewer and Lee (1986), Jacques and Nigro (1997), and Agusman, Manroe, Gasbarro, and Zumwalt (2008), the ratio of a bank's capital to its total assets had an inverse relationship with the risk the bank faced.

From 2001 to 2004, the non-performing loan ratio in the commercial bank of Thailand decreased by 1%, which resulted in an increase of 2.15% in productivity (Huang, Hsiao, & Cheng 2008). In addition, the productivity of the commercial bank of Thailand increased by 1.85% due to the increase of 1% in the capital adequacy ratio.

According to Harkati, Alhabshi, and Kassim's research from 2019, the capital adequacy ratio positively impacts the risk-taking behavior of both conventional and Islamic banks.

According to Jamali and 2020, the capital guidelines established by the state's central bank have a beneficial impact on the financial performance of commercial banks. According to Sood (2017), shareholders, managers, and board members of bank-holding companies engage in projects with lower levels of risk. In a study that came to a similar conclusion, Archer, Karim, and Sundararajan (2010) discovered that displaced commercial risk, or DCR, has a greater influence on product pricing, asset-liability management, Islamic bank economics, and regulatory capital needs. The application of capital adequacy ratios can be reduced, which contributes to a reduction in risk (Liao 2013). Adopting Taiwan Financial Accounting Standards No. 34 does this.

Clair (2014) conducted research to investigate how the level of commercial banks' required capital affected their overall financial performance. Specific objectives aimed to examine capital adequacy based on financial rules and profitability, obstacles experienced by commercial banks in the implementation of capital adequacy requirements, and actions implemented by commercial banks to ensure compliance. Specific aims sought to analyze capital adequacy based on financial regulations and profitability.

For the purpose of the study, a sample size of 159 management staff members was taken from the head offices of Kenya's 43 commercial banks. The information that was gathered was put through both a descriptive and inferential statistical analysis. These analyses included frequency

distribution, standard deviation, and correlation analysis. It was discovered that the capital adequacy requirement is important in commercial banks because it leads to financial stability in the Kenyan economy, improves credit risk management techniques as poor capital, and leads to reduced vulnerability to liquidity shocks as a result of sound capitalization policies that are being implemented under the Basel III framework.

Additionally, it was discovered that the level of adequate capital had an effect on the financial performance of Kenya's commercial banks. It would be necessary for smaller banks that did not meet the minimum capital requirements in their balance sheet to either merge with other smaller banks or seek extra capital injection from investors. Middle-tier financial institutions have turned to the stock markets to raise extra money by selling rights and bonds.

The world's largest multinational banks have been looking to their parent companies for capital injections. According to the study's findings, the capital adequacy level maintained by commercial banks in Kenya has seen substantial shifts in recent years. In order to satisfy the impending criteria for capital sufficiency, commercial banks in Kenya will need to use various compliance techniques.

Based on the study's findings, it was suggested that financial institutions should proceed with implementing various methods to guarantee that they are following the requirements of Basel III and the prudential guidelines of the Central Bank of Kenya. This would be accomplished with the help of the knowledge and participation of the committee responsible for asset and liability management. In addition, it was suggested that ensuring compliance with the capital requirements would establish a safety net for all commercial banks. This is because the additional capital would be a cushion that would absorb losses if the commercial banking sector experienced a crisis.

Musyoka (2017) researched to determine the effect of capital adequacy on the financial performance of commercial banks in Kenya. He concluded that there is an inverse and substantial relationship between capital adequacy and the financial performance of commercial banks in Kenya.

Almazari (2014) investigated the impact of adequate capital on the financial performance of savings and credit cooperative societies in Kenya. The particular objectives aimed to explore the effect of SACCOs' capital levels on their financial performance. Using questionnaires, data were collected from 35 SACCOs that accepted deposits. The number of deposit-taking SACCOs in Kenya included in the study was 35. The study found that the capital adequacy level was advantageous in meeting regulatory requirements, that the capital adequacy was influential in enabling the institution to manage credit risk and growth base, and that the data was collected and analyzed using correlation analysis.

It was also discovered that lower payouts on members' lending capacities caused a problem. The research concluded that SACCOs had benefited much from adhering to capital adequacy and that they had triumphed over the problems of separating capital from members and institutional capital and calculating ratios. The SACCOs had implemented various plans in order to raise their capital. According to the study's findings, the regulator should review lending rates using cost pricing methodologies, and it is also recommended that executives receive training.

According to a study conducted by Nzioki (2011), which examined the effect of capital adequacy on the financial performance of commercial banks quoted at the Nairobi stock exchange, capital adequacy contributes positively to the profitability of commercial banks. As a result, it is of the utmost importance for banks to have a sound capital base to remain competitive and maintain the confidence of their customers.

Researchers Odunga, Nyangweso, and Nkobe (2013) investigated the impact of adequate liquidity and capital on the operational effectiveness of commercial banks in Kenya. According to the findings, the bank's operational efficiency can be explained by a combination of its liquidity and capital adequacy from the previous year to the extent of around 41%. Additionally, the ratio of total capital to deposits and the ratio of liquid assets to deposits positively impact the operational efficiency of banks.

The implications of capital adequacy on the financial performance of commercial banks in Kenya were analyzed by Alemayeh (2014). This study examined the effects of capital sufficiency using financial ratios on the financial performance of commercial banks in Kenya. the country was focused on Kenya. The study for 2016 included 43 commercial banks operating in Kenya; these banks all participated in the survey. According to the findings of the study, the capital adequacy ratio was shown to be more relevant to the financial performance of commercial banks. The study's findings indicated that a substantial inverse association existed between adequate bank capital and bank size in the context of commercial banks.

On the other hand, there was no significant relationship between asset quality and liquidity. According to the study's findings, the management of commercial banks in Kenya should have an obligation to keep sufficient capital because doing so is an enhancer of the banks' financial performance. The managers should effectively manage credit risk to enhance asset quality, manage cost efficiency, and ensure adequate liquidity levels to meet current needs when they become due. This is because large banks enjoy economies of scale. Managers should ensure the growth of their institutions by investing in more assets.

Abdulkarim and Anbar (2016) conducted a study to investigate the impact of adequate capital on the financial performance of Kenyan savings and credit cooperative societies. The study

aimed to determine the effects of core capital to total asset requirement, institutional capital to total asset requirement, minimum core capital need, and the ratio of core capital to total deposit on the financial performance of deposit-taking SACCOs.

The study used a sample size of 83 registered deposit SACCOs that had been operating for the previous five years and were regulated by SASRA as of the 31st December 2016 to 2015. The data were analyzed using a regression model, and the findings indicated a positive and significant relationship between capital adequacy and financial performance. This indicated that an increase in the savings and credit society's capital adequacy would increase the society's financial performance. The study concluded that capital adequacy influenced the performance of the SACCOs in Kenya, and it suggested that the capital requirement regulations be improved.

The study's author, Kamande (2016), investigated the connection between an adequate capital level and commercial banks' financial performance. The empirical investigation demonstrated that sales of loans and account receivables affect a company's adequate capital level. The correlation between the two variables shows a meaningful connection between capital structure and financial success. On the other hand, the determined mean indicates the lowest and greatest level, while the standard deviation indicates the difference in distance between the means. The decisions that bank management makes on capital budgeting might affect debt and equity financing. According to the study, banks should prioritize loan provisions based on profitability, operations size, total assets, and sales turnover rates.

Jackson (2011) researched the effect of credit risk management on the financial performance of commercial banks in concluded that credit risk management has a positive association with banks' profitability. According to Kolapoc's (2012) findings, Nigerian banks' credit risk management practices majorly affect their profitability.

According to Sedhain's (2012) findings, adequate capital has contributed to developing appropriate prudential regulations, which have helped protect banks and other financial institutions from signs of failure and financial crises. In addition, the dissertation concluded that the operating environment in which the bank operates had seen significant shifts and that the bank's risk management system has also undergone improvements.

Brealy (2019) investigated the elements that influence capital sufficiency and its effect on the financial performance of companies in Kenya. Using a correlation study of secondary data gathered from seventeen different banks. According to the study's findings, adequate capital has a beneficial effect on financial performance. The increased capital expenditures negatively impact the availability of enough capital and the financial performance of small enterprises over the long term. A significant with huge capital adequacy can grow by focusing on its long-term financial performance target. The ability to mobilize deposits makes the influence of capital adequacy levels on credit risk management possible. It is possible to weigh the capital base for total assets. Doing so negatively impacts credit risks, capital base stability for cash flows, and financial performance.

Abdkarim (2016) investigated the influence of the capital adequacy ratio on the overall financial performance of commercial banks listed on the Nairobi security exchange. This study investigated the relationship between commercial banks in Kenya's asset bases and their capital adequacy levels. According to the report published by the Capital Market Authority for 2019, the research was conducted at nine different commercial banks listed on the Nairobi Security Exchange. The researchers analyzed the data using correlation and regression analysis, and the results showed that adequate capital contributes positively to the profitability of commercial banks. Since all of the variables showed a positive relationship, the researchers concluded that it was essential for banks to have a sound capital base in order to maintain confidence and remain

competitive. According to the study's findings, increasing the size of banks' capital bases would be the best way to restore customers' faith in the institutions.

Onaolapo and Olufemi (2012) investigated the effects of capital adequacy conditionality on the overall performance of a number of different banks that are a part of the Nigerian banking system. The study hypothesized no significant relationship between the statutorily mandated Capital Adequacy Ratio (CAR) and the five bank performance factors. The data used were primarily secondary and were gathered from the publications of regulatory bodies such as the Central Bank of Nigeria throughout ten years beginning in 1999 and ending in 2008. The Ordinary Least Square (OLS) method of estimation was modified so that it could be used to investigate the connection between the variables.

According to the findings, none of the performance measures that were evaluated, including Returns on Assets (ROA), Returns on Capital Employed (ROCE), and Efficiency Ratios (ER), among others, have a significant impact on the Capital Adequacy Ratio (CAR) of the Nigerian banking sector. The paper recommends pragmatic changes in bank regulatory focus, improved corporate governance, personnel training, and stable polity as antidotes for ensuring sound financial health for the Nigerian banking sector. However, the relationship between reflective adjustment in banks' capital base, profitability, and performance is not statistically significant.

Suka (2011) investigated the impact of capital adequacy on the financial performance of commercial banks quoted at the Nairobi Stock Exchange. The study used secondary data from the annual reports of ten commercial banks for 2005-2009. The results revealed that there was a positive correlation between the capital adequacy ratio and return on equity, suggesting that a higher capital adequacy ratio was associated with better financial performance. The study also

found that liquidity and credit risk significantly impacted financial performance, highlighting the importance of effective risk management practices.

Sentero (2013) examined the effect of capital adequacy requirements on the efficiency of commercial banks in Kenya. The study used data from 43 commercial banks for the period 2006-2010 and employed the stochastic frontier approach to measure efficiency. The results showed that capital adequacy requirements had a negative impact on efficiency, indicating that higher capital requirements may lead to lower financial performance. However, the study also found that banks with higher capital adequacy ratios had better asset quality and lower credit risk, highlighting the trade-off between capital adequacy and efficiency.

Pinto et al. (2017) evaluated the financial performance of commercial banks in India using data from 26 banks for the period 2009-2014. The study employed multiple regression analysis to examine the relationship between the capital adequacy ratio and financial performance, as measured by return on assets and return on equity. The results showed that the capital adequacy ratio had a positive and significant impact on both returns on assets and return on equity, suggesting that higher capital adequacy ratios were associated with better financial performance. The study also found that size, liquidity, and asset quality significantly impacted financial performance.

Mbaeri et al. (2021) investigated the relationship between the capital adequacy ratio and the financial performance of listed commercial banks in Nigeria. The study used data from eight commercial banks for the period 2011-2019 and employed panel data analysis to examine the relationship. The results showed that there was a positive and significant relationship between capital adequacy ratio and financial performance, suggesting that higher capital adequacy ratios were associated with better financial performance. The study also found that liquidity, asset quality, and profitability significantly impacted financial performance.

Abusharba et al. (2013) explored the determinants of capital adequacy ratio in Indonesian Islamic commercial banks. The study used data from 11 banks for the period 2006-2010 and employed panel data analysis to examine the relationship between the capital adequacy ratio and its determinants. The results showed that asset quality, liquidity, and profitability positively impacted the capital adequacy ratio, while credit risk had a negative impact. The study also found that ownership structure and bank size significantly impacted the capital adequacy ratio.

Mekonnen (2015) examines the determinants of CAR of commercial banks in Ethiopia. The study used panel data from 16 commercial banks over the period 2007-2012. The findings suggest that loan portfolio quality, liquidity, and profitability significantly impact CAR. The study also reveals that asset size, inflation rate, and market concentration significantly negatively impact CAR.

Datta and Al Mahmud (2018) investigate the impact of CAR on the profitability of commercial banks in Bangladesh under the Basel II accord. The study used data from 30 commercial banks over the period 2009-2015. The results show that CAR positively impacts profitability, indicating that higher CAR leads to higher profitability. The study also reveals that size and loan portfolio quality positively impact profitability, while liquidity and operating expenses have a negative impact.

Aruwa and Naburgi (2014) analyze the impact of CAR on the financial performance of quoted deposit money banks in Nigeria. The study used data from five banks over the period 2008-2012. The results show that CAR positively and significantly impacts return on equity (ROE), indicating that higher CAR leads to higher ROE. The study also reveals that non-performing loans and liquidity have a negative impact on ROE.

Vyas, Singh, and Yadav (2008) investigate the impact of CAR requirements on the performance of scheduled commercial banks in India. The study used data from 27 banks over the period 2000-2005. The results show that higher CAR requirements lead to lower profitability and higher operating expenses. The study also reveals that larger banks are able to maintain higher CAR and profitability.

Ikpefan (2013) examines the relationship between CAR, management, and the performance of commercial banks in Nigeria. The study used data from 15 banks over the period 1986-2006. The findings suggest that CAR positively and significantly impacts profitability, indicating that higher CAR leads to higher profitability. The study also reveals that efficient management positively impacts profitability, while inflation and interest rate have a negative impact.

Swandewi and Purnawati (2021) investigate the mediating effect of CAR on the relationship between non-performing loans (NPL) and returns on assets (ROA) in public, commercial banks in Indonesia. The study used data from 10 banks over the period 2015-2019. The results show that CAR mediates the negative relationship between NPL and ROA, indicating that higher CAR mitigates the negative impact of NPL on ROA.

One study by Suka (2011) investigated the impact of CAR on the financial performance of commercial banks quoted at the Nairobi Stock Exchange in Kenya. The study found a significant positive relationship between CAR and return on equity (ROE) and return on assets (ROA). The results suggest that banks with higher CAR are more financially stable and likely to achieve higher profitability.

Similarly, a study by Datta and Al Mahmud (2018) on the impact of CAR on profitability in Bangladesh found that CAR has a positive and significant impact on bank profitability.

The study also found that banks with higher CAR have lower non-performing loans and a lower risk of bankruptcy.

Aruwa and Naburgi (2014) examined the impact of CAR on the financial performance of quoted deposit money banks in Nigeria. The study found a significant positive relationship between CAR and profitability, suggesting that banks with higher CAR are more likely to be profitable.

Mursal, Darwanis, and Ibrahim (2019) investigated the determinants of CAR in Islamic commercial banks in Indonesia. The study found that size, loan-to-deposit ratio, and non-performing loans significantly impact CAR. The study also found that CAR has a positive and significant impact on bank profitability, indicating that maintaining an adequate level of capital can help banks achieve higher profitability.

In contrast, a study by Barus et al. (2017) examined the effect of CAR on the financial performance of savings and credit societies in Kenya and found no significant relationship between CAR and financial performance. The impact of CAR on financial performance may vary depending on the type of financial institution.

Gropp and Heider (2007) discovered that profitable banks typically have considerably higher equity in their institutions. This study's findings agree with the hypothesis advanced by the pecking order theory. Kleff and Weber (2008) found similar results emphasized that there is a positive relationship between the amount of capital and the bank's profit. Therefore, the buildup of profits results in an increased level of capital growth.

Nevertheless, the findings of Ahmad et al. (2009) do not fit in with the results of other studies. They stated that profits have a negative impact on the percentage of capital in the Malaysian banking sector. In comparison, Bokhari and Ali (2009) investigated the factors that determine the capital adequacy ratio in the banking sectors of Pakistan. They considered bank characteristics such

as deposits, GDP growth rate, portfolio risk, and profitability as factors that affected the capital ratio.

They came to the conclusion that capital ratio is negatively and significantly affected by profitability as assessed by return on equity. In addition, it came to the conclusion that the factors, deposits, portfolio risks, and GDP all had a significant and negative influence on the capital adequacy ratio.

Williams (2011) investigated the effect of the macroeconomic variables on the bank capital base in the Nigerian banking industry from 1980 to 2008, focusing specifically on the Nigerian banking sector. It was revealed to him that the most reliable predictors of the factors determining whether or not there is sufficient capital in Nigeria include macroeconomic variables such as inflation, the real exchange rate, money supply, political instability, and return on investment. It was also shown that a negative relationship existed between inflation and bank capital. In addition, economic stability in Nigeria may lessen the likelihood of the country's falling into bankruptcy.

In order to investigate the repercussions of applying Pillar 1 to a significant Islamic financial institution, Ariss, and Sarieddine (2007) focused on the most recent standards for risk management and adequate capital in Islamic banking. They brought up specific critical difficulties in relation to the nature of risks that arise from the uses of funds of Islamic financial institutions, as well as the implications those risks have on the banking book of Islamic financial institutions. They emphasized that more obstacles lie ahead for international regulatory organizations to adapt to various types of risks specific to Islamic financial institutions, and they said that these challenges are important to keep in mind.

In a similar vein, several investigations came to the conclusion that there is hardly any connection between supervision and the performance of sound banks. In particular, a study that

included 3000 banks from approximately 86 countries conducted by DemirgucKunt and Detragiache (2011) could not find any support for the idea that improved regulation and supervision can achieve better bank performance.

When conducting this research, the researchers took into consideration Basel (I & II) as a framework for the supervision and guidance of banks. In a similar vein, Zhang et al. (2008) investigated 12 commercial banks in China. They found no correlation between capital adequacy laws and the level of risk-taking behavior exhibited by the banks. In a similar vein, many people argue that several other internal and external factors other than bank regulation influence profitability. Some examples of these factors include the following: internal factors: cost-income ratio (Mathuva, 2009); bank size, ownership, and concentration (Dietrich and Wanzenried, 2014); capital adequacy ratio (Căprau and Ihnatov, 2014; Mathuva, 2009); management efficiency (Căprau and Ihnatov

However, as was stated previously, a number of studies came to the conclusion that regulations and supervisions may have a significant impact on the risk management of high-risk banks (Klomp and Haan, 2012). According to the findings of a study that was carried out by Pasiouras and colleagues (2006), bank supervision has a considerable impact on bank ratings. According to the findings of another study carried out by Barth and colleagues (2004), good information disclosure policies and good corporate control policies have the power to influence the banking industry's stability. According to the findings of one study, "...capital adequacy requirements may actually increase risks" (Blum, 1999:768). This finding comes from a somewhat different point of view.

In a similar vein, Zhang et al. (2008) find that there is an inverse link between risk and capital through the use of empirical research. However, Berger and Bouwman (2013) discovered a

confusing relationship between capital and bank performance. This finding is certainly worth mentioning. According to their research findings, a bank's size is frequently a significant factor in determining how well it does in relation to its capital. In contrast to medium and big banks, which perform well during banking crises more often than in normal times, their research revealed that tiny banks had a better ability, on average, to weather financial storms (banking crises, market crises), making them more resilient than large and medium banks. According to Klomp and Haan (2012), the empirical findings addressing the regulations and supervision of banks in sustaining soundness in their operations are frequently unclear.

Overall, most of the literatures suggests a positive relationship between CAR and financial performance in commercial banks in developing countries. Banks with higher CAR are more likely to be financially stable and achieve higher profitability. However, the impact of CAR on financial performance may vary depending on the specific context of the financial institution.

2.3.1 The Connection between Capital and Profitability

According to Christian et al. (2008), there is a "hovering concern" over the relationship between a bank's minimum capital requirement and its financial performance (profitability). This concern is caused by greater capital requirements affecting a bank's profitability.

Aggarwal and Jacques (1998) summarized ambiguous data, which were frequently both good and negative, regarding the relationship between bank capital and profitability. The empirical evidence gathered from various research indicates that a higher requirement for starting capital may be one factor for increased profitability. For instance, insurance expenses of well-capitalized banks on various uninsured debt become lower (Lee, 2013); projected bankruptcy cost of soundly

capitalized firms becomes lower as a result, their cost of funding decreases, which ultimately enhances the level of profitability (Berger, 1995); and different levels of capitalization may reveal different levels of asset risk (Iannotta et al., 2007).

Hassan and Bashir (2000) are only a few of the many reports that have come to the same conclusion about the Basel Accord: that there is a positive association between regulation on capital need and degree of profitability.

Analyzing Eastern European financial institutions once more, Caprau and Ihnatov (2014) discovered that the capital adequacy ratio positively correlates with a bank's profitability (a higher CAR results in a greater level of profitability). Studies by Rime (2001), amongst many others, found a good correlation between the profitability of banks and the equity-to-asset ratio. According to contemporary banking theories, there is a positive correlation between bank capital and its market share. Banks with higher capital can easily attract more depositors and disburse more loans with favorable conditions (Berger, 2013).

However, many researchers have found that there is a negative relationship between the amount of capital required and the amount of risk taken on (Masood & Fry, 2011); this finding come from a variety of studies. (Masood & Fry, 2011) discovered that while retaining more capital results in a profit drop, banks might focus on assets with a higher risk to enhance their profit level. This was done in order to compensate for the reduction in profits. In a similar vein, the regulation of capital requirements affects not only a bank's performance but also the process by which credit is created in the economy, which ultimately leads to a reduction in the profit that the bank makes (Berger, 1995).

According to Lee and Hsieh (2013), a large number of research have been done on banks in the United States and Europe regarding the effects and implications of the Basel Accord.

However, very few studies have been done on banks in Asia and the Pacific. In addition, the degree to which countries adhere to the Basel Accord varies greatly from one another. When it comes to implementing Basel Accord II, banking regulators in several countries are still in the early stages of this process, let alone Basel Accord III.

The prior results may not be effective or applicable in Asian markets since the status of the accord's implementation varies from country to country and because the accord has a contextual position. Because every economy is of a completely different sort, Lee and Hsieh (2013) pointed out that unsystematic risk frequently has a greater potential for having an impact than systematic risk. Dietrich and Wanzenried (2014) attempted to investigate the relationship between profitability and the characteristics of various bank-specific variances, many industry-specific factors, and other macroeconomic variables in high-income, middle-income, and low-income nations. They carried out a massive analysis that covered 10,165 commercial banks in 118 different nations worldwide. According to the study's findings, the elements of profitability may differ significantly across the different income levels with the amount, sign, and importance of the effect. The bank's current amount of income has a significant impact on the profitability of the business.

Although there are many critics of the characteristics, dynamics, and nature of capital requirements in connection to profitability, many banks are still prepared to hold an excess capital adequacy ratio to their total assets to protect their position from a potential financial catastrophe. Berger and Gertler (1995) researched the attempts made by Spanish financial institutions to maintain greater capital adequacy ratios than those recommended by the Basel Accord. During their research, they attempted to compare the model of maximum capital adequacy that they had discovered on their own and the model that regulators use. They made a puzzling discovery when

they discovered that a market-based model could lead to a different outcome than the regulated amount of capital.

Although the regulatory framework influences the determination of optimal capital, they concluded that a market-based model is the most effective way to uncover the factors that lead banks to keep higher capital levels. They made it clear that several market characteristics or variables, such as the size of the bank, operating income, liquidity premium, cost variance, return on assets, credit quality, market risk, and so on, should be used to determine the ideal capital ratio rather than legislative guidelines.

The regulators of banks and other financial institutions in Bangladesh must walk around the relationship and effect of capital on a bank's profitability. This is due to the evaluation of the arguments, criticisms, discussions, and debates on the type of relationship between profitability and a minimum capital requirement that was presented above.

On the basis of an analysis of the financial performance of the listed commercial banks that are active in Bangladesh, this study was carried out to determine whether there is a possible sign of a relationship between profitability and capital.

2.3.2 Influence of Capital Adequacy Ratio on Financial Performance of Commercial Bank

Berger and Bouwman (2013) discovered that capital adequacy is directly linked to international bank profitability and has a significant impact on that profitability. The research was carried out among international banks. According to Berger and Bouwman, banking regulators expect high levels of capital from financial institutions that operate at an international level. This is done to ensure that the financial institutions are prepared to take on the additional risks connected

with global trading. Similarly to this, Ogboi and Unuafe (2013) conducted a study investigating the impact of capital adequacy on the financial performance of banks in Nigeria. The data for this study came from selected banks' annual reports and accounts in Nigeria and was collected using both time series and cross-sectional methods from 2004-2009.

The information utilized in the research project came from the published financial statements of six of the twenty-one banks operational in Nigeria as of the end of 2009. To estimate the nature of the connection that exists between loan loss provisions (LLP), loans and advances (LA), non-performing loans (NPL), capital adequacy (CA), and return on asset (ROA), a panel data model was utilized. Except for loans and advances, which were discovered to harm banks' profitability over the time under investigation, the findings indicated that capital adequacy had a favorable effect on the financial performance of banks.

The purpose of Thumbi's (2013) research was to provide a better understanding of the factors that affect capital adequacy in commercial banks in Kenya. The study design that was used was a descriptive one. The 43 commercial banks in Kenya constituted the target population of interest. The information was obtained through the use of secondary sources. The data obtained underwent an analysis process, including descriptive statistics, correlation analysis, and linear regression analysis. The study established a direct relationship between capital adequacy, credit risk, working capital ratios, and the size of the bank. In addition to the comparative capital adequacy analysis, the study analyzed the overall capital adequacy concerning identified variables. According to the research conclusions, there is a positive and significant connection between commercial banks' capital sufficiency and their working capital levels.

In their study, Gudmundsson, Ngoka-Kisinguh, and Odongo (2013) investigated the effect of capital requirements on the level of competition and stability within the banking industry in

Kenya across 36 commercial banks during the years 2000 to 2011. In order to assess the level of competition in Kenya's banking sector, the study utilized both the Lerner index and the H-statistic developed by Panzar and Rosse. A panel regression model was utilized in the research in order to get a close approximation of the fixed impacts of capital requirements on bank competition and stability.

The log of core capital was found to be positive and significant, whereas the squared log of core capital was found to be negative and significant. This finding suggests that an increase in core capital initially reduces competition, but it raises the competition level above a certain threshold. The argument that capital regulation improves the performance of banks and contributes to financial stability was supported by the finding of a positive link between return on equity and capital regulation.

Ochieng (2014) has analyzed how the prudential standards and regulations established by the CBK have impacted the financial performance of commercial banks in Kenya. The Bank supervision reports of CBK and the public financial statements of commercial banks were used as sources for the secondary data collected. When conducting the analysis of the data, descriptive statistics such as mean and standard deviation were utilized. In order to establish the relative importance (sensitivity) of each explanatory variable in influencing the performance of banks, a multiple linear regression model and t-statistic were utilized. According to the research findings, there is a significant and favorable correlation (r=0.628) between the financial performance of banks and the prudential norms and regulations established by the CBK.

The adherence of commercial banks in Kenya to the prudential rules established by the CBK accounted for 29.9% of their overall financial performance. The research also concluded that low rates of inflation, high levels of capital adequacy, and high levels of liquidity within the bank,

as well as low overall inflation rates, all benefit the financial performance of banks. The purpose of the study was to examine whether the cohesiveness of the connection had improved between 2013 and 2016, four years after the restrictions went into effect.

Reru and Bichanga (2015) researched the influence of capital adequacy regulation on financial performance. A descriptive survey was used for this study, and there were a total of 38 people that took part in it.

Descriptive statistics (means and standard deviations) and inferential statistics (regression) were utilized in analyzing quantitative data. The findings indicated a significant and favorable association between capital sufficiency and financial performance. This demonstrated that these aspects of the prudential standards governing central banks are quite significant. The findings of the study made it abundantly evident that the prudential measures that the central bank imposed had a beneficial effect on the financial performance of commercial banks in Kenya. The research presented here used secondary data from Kenyan commercial banks in the second tier. The previous study made use of primary data.

Mwongeli (2016) investigated the possibility of a connection between governmental restrictions and an organization's level of financial performance. One of the independent factors was capital sufficiency, whereas financial performance was the dependent variable in this investigation. A descriptive approach was taken for this investigation. The 43 commercial banks in Kenya served as the sample population for this research, carried out between 2010 and 2015. In order to investigate the nature of the connection between the two factors, a Chi-square test of independence was carried out.

According to the study, most banks have complied with the minimum capital requirement. However, the study also indicated that the government must continue to guarantee compliance with

the specified rules to ensure the banking industry's stability in Kenya. This will make it possible for the economy of Kenya to escape a financial crisis. This study aimed to investigate whether or not regulations affected the financial performance of second-tier commercial banks throughout 2014-2016.

Karanja and Nasieku (2016) aimed to investigate capital's impact on the financial results of commercial banks in Kenya. The research design used in this study was a descriptive one. The listed commercial banks in Kenya that the Central Bank of Kenya regulated as of 2014 constituted the target demographic for this campaign. Secondary data gathered from the annual audited financial reports of the banks were the primary source of information for this study, which covered the period between 2010 and 2014. Quantitative data served as the foundation for the investigation.

In order to evaluate how strong of a connection there is between the dependent variable and the independent variable, an analysis using Pearson's Correlation Coefficient was carried out. In order to investigate the impact that the various capital variables have on the economic results of Kenya's commercial banks, a multiple regression analysis was carried out. According to the conclusions of a study, the ratio of core capital to total risk-weighted assets for Tier I banks went down from 2010 to 2014, whereas the ratio for Tier II banks went down from 2010 to 2014.

The findings also showed that the ratio of total capital to total risk-weighted assets for Tier I banks decreased between 2010 and 2014, while the ratio for Tier II banks declined during the same period. The research also revealed that Tier I and Tier II financial institutions had core capital to total risk-weighted assets ratios and total capital to total risk-weighted assets ratios much higher than the minimum requirements of 8% and 12%, respectively. These ratios were measured as a percentage of the bank's total risk-weighted assets.

Ronoh and Ntoiti (2015) investigated the implications of capital structure on the financial performance of listed commercial banks in Kenya. Their research was a case study focusing on Kenya Commercial Bank Limited. The research design utilized in this study was descriptive. The target audience comprised comprehensive annual financial reports from 230 Kenya Commercial Bank Ltd branches. Secondary data were utilized extensively during the research project. The multiple regression models considered performance as the dependent variable, and the performance was evaluated based on ROA and ROE. According to the findings, a negative and substantial relationship existed between deposits, debt, and equity and the financial performance of listed commercial banks in Kenya, assessed by return on assets.

According to the regression analysis findings, the association between the Retained Earnings ratio and financial success, as assessed by return on assets, was positive but negligible. This was demonstrated by the fact that the relationship was insignificant. The conclusion can be drawn from this is that the capital structure of listed commercial banks in Kenya is significant and that its significance has a detrimental impact on the financial performance of commercial banks. The studies discussed above demonstrate that academics have not yet reached a consensus regarding how much the capital adequacy ratio influences the financial performance of second-tier commercial banks.

2.3.3 Capital Adequacy Ratio and its Importance.

Capital Adequacy Ratio (CAR) is a key financial metric bank use to measure their financial stability and solvency (White & Morrison, 2001). It is a ratio of a bank's capital to its risk-weighted assets, indicating how much it can absorb losses from its business activities (Hassan, 2001). The

CAR is an essential measure of a bank's financial strength and is closely monitored by regulatory authorities, investors, and creditors (Majnoni, 2001).

The CAR is calculated by dividing a bank's capital by its risk-weighted assets. Capital is the sum of a bank's equity and Tier 2 capital, including subordinated debt and loan loss reserves (Javapan & Tripe, 2003). Risk-weighted assets are calculated by multiplying a bank's assets by a risk weight, which reflects the level of risk associated with each asset (Hassan, 2001). For example, loans to individuals and small businesses are generally considered less risky than loans to large corporations and, therefore, have a lower risk weight.

The CAR is a buffer against a bank's potential losses from its business activities (Majnoni, 2001). In the event of losses, the bank can use its capital to absorb them, ensuring that it remains solvent and can meet its obligations (Javapan & Tripe, 2003). A bank with a high CAR is considered financially stable and capable of withstanding adverse economic conditions (Hassan, 2001).

Regulatory authorities, such as the National Bank of Cambodia, require banks to maintain a minimum CAR to ensure sufficient capital to cover their risks. The minimum CAR requirement varies by jurisdiction and depends on the perceived risk of the banking system. The higher the perceived risk, the higher the minimum CAR requirement. In Cambodia, the minimum CAR requirement for commercial banks is 12%.

Besides regulatory compliance, maintaining a high CAR has several benefits for banks. For instance, a high CAR can increase the confidence of investors and creditors in the bank's financial stability, which can lead to lower borrowing costs and improved access to capital markets (Kim & Santamero, 1988).

Additionally, a high CAR can give the bank a competitive advantage over other banks with a lower CAR (Margarida & Mendes, 2002). On the other hand, a low CAR can have adverse effects on a bank's financial performance. A bank with a low CAR may be perceived as financially weak, which can lead to a decline in investor and creditor confidence (Wanjohi & Mugure, 2009). This can lead to higher borrowing costs, lower access to capital markets, and even a loss of business to other banks. Furthermore, a low CAR can limit the bank's ability to expand its business activities and increase its profitability (Ndung'u & Ngugi, 2000).

Also, the Capital Adequacy Ratio is a key financial metric bank use to measure their financial stability and solvency (Odunga et al., 2013). Maintaining a high CAR is essential for regulatory compliance, investor and creditor confidence, and competitive advantage (Nge'tich, 2008). A low CAR can adversely affect a bank's financial performance and limit its ability to expand its business activities (Diamond & Rajan, 2000). Therefore, banks must monitor their CAR and maintain a sufficient buffer against potential losses (Wanjohi & Mugure, 2009).

2.3.4 Financial Performance of Commercial Banks

The financial performance of commercial banks is an essential aspect of the banking industry. Financial performance measures how well a bank has utilized its resources to generate profits and provide value to its shareholders (Kim & Santamero, 1988). The financial performance of commercial banks is usually measured using various financial ratios such as profitability ratios, efficiency ratios, liquidity ratios, and solvency ratios (Haron, 2004).

2.3.4.1 Profitability Ratio

Profitability ratios measure a bank's ability to generate profits from its operations. The most commonly used profitability ratios are the return on assets (ROA) and the return on equity (ROE). The ROA measures the bank's net income as a percentage of its total assets, while the ROE measures the net income as a percentage of its equity capital. A high ROA and ROE indicate that the bank has generated profits efficiently.

2.3.4.2 Efficiency Ratio

Efficiency ratios measure how well a bank utilizes its assets to generate income. The most commonly used efficiency ratios are the net interest margin (NIM) and the cost-to-income ratio (CIR). The NIM measures the difference between the interest income and the interest expenses as a percentage of total assets. A high NIM indicates that the bank generates more income from its assets. The CIR measures the operating expenses as a percentage of total income. A low CIR indicates that the bank is utilizing its resources efficiently.

2.3.4.3 Liquidity Ratio

Liquidity ratios measure a bank's ability to meet its short-term obligations. The most commonly used liquidity ratios are the current and quick ratios. The current ratio measures the bank's assets as a percentage of its liabilities. In contrast, the quick ratio measures the bank's current assets minus inventory as a percentage of its current liabilities. High current and quick ratios indicate that the bank has sufficient liquid assets to meet its short-term obligations.

2.3.4.4. Solvency Ratio

Solvency ratios measure a bank's ability to absorb losses and remain solvent. The most commonly used solvency ratio is the Capital Adequacy Ratio (CAR). As discussed earlier, the CAR measures the bank's capital as a percentage of its risk-weighted assets. A high CAR indicates that the bank has sufficient capital to absorb losses and remain solvent.

Various factors influence commercial banks' financial performance, such as economic conditions, competition, and regulatory requirements (Haron, 2004). A strong economy with low inflation and high GDP growth usually generates higher profits for commercial banks (Wanjohi & Mugure, 2009). On the other hand, economic recessions and high inflation can lead to lower profits for commercial banks (Demiurge-Kunt, 1999). Competition also plays a crucial role in the financial performance of commercial banks. Intense competition can lead to lower profit margins and reduced market share (Chisnall, 2000). Regulatory requirements, such as the minimum CAR, also affect the financial performance of commercial banks (Haron, 2004).

Finally, the financial performance of commercial banks is an essential aspect of the banking industry. Financial performance is usually measured using various financial ratios such as profitability, efficiency, liquidity, and solvency ratios. The financial performance of commercial banks is influenced by various factors such as economic conditions, competition, and regulatory requirements. Therefore, commercial banks must monitor their financial performance and adjust to ensure long-term profitability and sustainability.

2.3.5 The Relationship between Capital and Profitability (Risk), As Well As Other Important Concerns

It should not come as a surprise that greater capital requirements would affect a bank's profitability (Christian et al., 2008), which raises a wider worry regarding the relationship between bank capital and the financial performance (or profitability) of a bank. According to the findings of a previous study (Aggarwal & Jacques, 1998), the link between risk (or profitability) and capital is murky and can often take both positive and negative forms.

In many cases, proponents of capital regulation argue that higher capital should result in higher profitability by referring to empirical evidence. These arguments include the following: (i) lower insurance expenses on uninsured debt for well-capitalized firms (Shim, 2010); (ii) lower expected bankruptcy costs for well-capitalized firms, which in turn reduces their cost of funding and increases their profitability (Berger, 1995); and (iii) Several additional research can compensate different asset risk came to the same conclusion (Goddard et al., 2004), which is that there is a positive correlation between capital and profitability.

In particular, a study carried out on Eastern European banks by Căprau and Ihnatov (2014) discovered that banks with higher capital adequacy are more lucrative than banks with significantly lower capital. Other research, such as that conducted by Abreu and Mendes (2001), found a positive correlation between the equity-to-asset ratio and banks' profitability. Recent banking theories also suggest that market share is positively connected with bank capital; this means that banks with larger capital can attract more loans and deposits in the market (Berger, 2013; Allen et al., 2011).

In contrast, several other studies concluded that there is a negative link between risk and profitability, and capital (Jacques and Nigro, 1997). As an illustration, Blum (1999) stated in his

study that capital adequacy requirements encourage substitutes of relatively low-risk assets by high-risk assets. This is because capital adequacy rules diminish the profit that banks make. Similarly, Berger (2013) emphasized the worries of financial institutions regarding increased capital requirements. Capital adequacy requirements not only hinder the functioning of financial institutions but also restrict the amount of credit created in the economy.

It is important to remember that the banking sectors of the United States and Europe were the primary foci of attention in earlier research, with much less attention paid to Asian markets (Lee & Hsieh, 2013). In addition, the degree of compliance with Basel II varies greatly from one region of the world to another; more specifically, numerous authorities in various jurisdictions and nations are still in the planning and implementation phase of Basel II, let alone Basel III. Because there were so many different implementation statuses and because there were contextual concerns, the prior results could be considered contestable concerning the Asian market.

With a similar point of view, underlining that every economy has its unique characteristics, Lee and Hsieh (2013) suggested that unsystematic risk is frequently more important than systematic risk and that assessment of individual markets, which are yet diverse, requires fair examination. In line with this perspective, Dietrich and Wanzenried (2014) conducted a large-scale study that included 10,165 commercial banks in 118 countries. The study aimed to investigate the determinants of bank profitability with the variance in bank-specific characteristics, macroeconomic variables, and industry-specific factors for low, middle, and high-income countries.

According to the study's findings, "The profitability determinants vary quite widely across the various levels of income in terms of significance, sign, and size of the effect." Therefore, the

level of income is a significant factor that plays into the factors that determine bank profitability. (Dietrich and Wanzenried, 2014:337).

Even though there are many debates on the nature, characteristics, and dynamics of capital concerning the profitability (risk) of banks, bankers continue to take risks to achieve an optimal capital ratio to their assets. For example, Barrios and Blanco (2003) empirically investigated Spanish banks to look for the ideal capital ratio. Their research was based on the results of the study.In this research, the authors suggest a market model identify the best capital-to-asset ratio and then compare this model to the usual framework for determining adequate capital levels.

In many instances, they discovered that the market-based approach does not comply with the requirements for capital that the regulatory organizations have established. According to what they said, even though the regulatory framework has some consequences and effects on the determination of capital by banks, a market-based model can best explain why banks demand a given level of capital concerning their assets (Barrios & Blanco, 2003).

To be more specific, they discovered that market forces or other variables (such as size, liquidity premium, operating expenses variation of return on assets, and credit and illiquidity risks) were more effective in determining the optimal capital ratio than capital regulation.

Considering all of the debates, conversations, arguments, and counterarguments surrounding the function of capital and bank profitability, it is of the utmost importance for the Bangladeshi financial market to investigate the nature and dynamics of capital concerning its profitability for the banking sector. As a result, the Bangladesh banking industry was chosen as a case study for this investigation in order to investigate the relationship between bank performance (profitability) and capital and a sincere effort was made to explain the findings in the context of the debates that already exist about the capital maintenance paradigm.

2.4. Summary of the Literature Review

Despite numerous studies examining the relationship between the Capital Adequacy Ratio (CAR) and the financial performance of commercial banks, there are still several gaps in the literature that require further investigation.

Firstly, most studies have focused on developed countries such as the United States, United Kingdom, and Taiwan, while studies on developing countries such as Cambodia are scarce. This is a significant gap in the literature because developing countries have different economic conditions, banking regulations, and management practices that can impact the relationship between CAR and financial performance.

Secondly, while most studies have examined the impact of CAR on various financial performance indicators such as profitability, efficiency, liquidity, and solvency, few studies have investigated the impact of CAR on other important aspects of financial performance, such as credit risk and asset quality. Credit risk and asset quality are critical indicators of a bank's financial health and sustainability, and therefore, studying the relationship between CAR and these indicators is crucial.

Thirdly, there is a lack of consensus on the optimal level of CAR for commercial banks. While some studies suggest that maintaining a higher CAR is crucial for ensuring the overall financial stability and sustainability of commercial banks, others argue that excessively high CAR can be detrimental to the profitability and growth of banks. Therefore, there is a need for further research to determine the optimal level of CAR that balances financial stability and profitability.

Fourthly, most studies have used a cross-sectional analysis, which provides a snapshot of the relationship between CAR and financial performance at a particular time. However, studying

the relationship between CAR and financial performance over time using a longitudinal analysis can provide a better understanding of the causal relationship between the two variables.

Fifthly, there is a lack of research on the impact of CAR on the financial performance of small and medium-sized commercial banks. Small and medium-sized banks have different operational structures and management practices than large commercial banks. Therefore, studying the relationship between CAR and financial performance in these banks can provide valuable insights.

Furthermore, while there have been several studies on the relationship between CAR and financial performance, several areas for improvement in the literature still require further investigation. Future studies should focus on developing countries, examine the impact of CAR on credit risk and asset quality, determine the optimal level of CAR, use a longitudinal analysis, and examine the relationship in small and medium-sized commercial banks. Addressing these gaps can provide valuable insights into the relationship between CAR and financial performance and inform policy decisions for the banking industry.

Also, the assessment of the relevant literature revealed that the measurement of bank performance, particularly that of commercial banks, is well researched and has, throughout the past few years, garnered an increased amount of attention throughout the past few years not just in Kenya but also everywhere else in the world. Even though research investigations were carried out, gaps in contextual understanding, conceptual understanding, and methodological understanding were discovered in several of the studies.

Because the data used in the study by Ogboi and Unuafe (2013) was collected more than a decade ago (between 2004 and 2009), it is impossible to apply the research conclusions to the

scenario in the banking industry at present. In addition, Ogboi and Unuafe (2013) conducted their research in Nigeria, which limits the research's application to the circumstances in Kenya.

Thumbi (2013) investigated the factors influencing commercial banks' capital adequacy in Kenya. However, he needed to concentrate on how the problem of capital adequacy influenced the financial performance of second-tier commercial banks in Kenya. In addition, there was a gap in the research's methodology, as it was discovered that Thumbi utilized a descriptive research design to analyze secondary data, which, in some instances, is impractical. Gudmundsson et al. (2013) have also investigated the impact of capital requirements on the stability and competitiveness of commercial banks. However, they could not demonstrate how the independent predictors impacted the financial performance of 36 commercial banks in Kenya.

Ochieng (2014) carried a research on the topic of how prudential guidelines impacted the financial performance of commercial banks. One limitation of the study is that the author needed to specify which types of commercial banks were being looked at. In addition, Ochieng employed CBK supervision reports, but this research collected annual audited financial reports provided to CBK by second-tier commercial banks. These reports were submitted to CBK by second-tier commercial banks.

On the other hand, not much research has been done in recent years on the impact of rules on the performance of second commercial banks in Kenya, which is why this study is necessary.

2.5. Methodology

2.5.1 Materials:

- Annual financial reports of selected commercial banks in Cambodia from 2016 to 2021.
- Data on capital adequacy ratio (CAR) and financial performance indicators (return on assets (ROA), return on equity (ROE), net interest margin (NIM), and non-performing loan ratio (NPL)) of the selected commercial banks.
- Statistical software for data analysis (SPSS).

2.5.2 Methods:

Selection of Commercial Banks: A purposive sampling technique will select five commercial banks operating in Cambodia for the past five years and have publicly available annual financial reports from 2016 to 2021.

2.5.3 Data Collection:

Data on CAR and financial performance indicators (ROA, ROE, NIM, and NPL) of the selected commercial banks will be collected from their annual financial reports. The data will be recorded in an Excel spreadsheet for further analysis.

2.5.4 Data Analysis:

Descriptive statistics will be used to summarize the data. The relationships between CAR and financial performance indicators will be analyzed using regression analysis. A significance level of 0.05 will be used for hypothesis testing.

2.5.5 Ethical Considerations:

This study will comply with ethical standards and regulations regarding human subject research. No personal information of the commercial banks or their clients will be disclosed.

2.5.6 Limitations:

The study is limited to five selected commercial banks in Cambodia, which may only represent some of the country's banking industry.

Additionally, the study is limited to five years, and factors outside this study's scope could influence commercial banks' financial performance.

2.6.7 Expected Outcome:

This study's results will help determine the impact of CAR on the financial performance of commercial banks in Cambodia. The findings of this study will contribute to the existing literature on the relationship between CAR and financial performance.

CHAPTER THREE

3.0 RESEARCH DESIGN

This study looks into how the capital adequacy ratio (CAR) influences the overall financial performance of commercial banks in Cambodia. The following research questions will be attempted to be answered by this study:

1. What is the Capital Adequacy Ratio of commercial banks in Cambodia from 2018 to 2022?
2. What is the financial performance of commercial banks in Cambodia from 2018 to 2022?
3. What is the relationship between the capital adequacy ratio and the financial performance of commercial banks in Cambodia from 2018 to 2022?
4. What are the implications of the findings for the regulatory authorities, investors, and other stakeholders in the banking sector in Cambodia?

Consequently, a quantitative research approach will be used for this study, and secondary data will be gathered from the financial statements of commercial banks in Cambodia. In addition, a correlational research methodology will be used in the study to investigate the relationship between the Capital Adequacy Ratio (CAR) and financial performance indicators such as liquidity, profitability, credit risk, efficiency, solvency, and asset quality. This will be done as part of the study.

3.1 Data Collection Method:

From 2018 to 2022, audited financial statements from six different commercial banks in Cambodia will be used to compile the necessary information for this study. It is planned to acquire

the financial statements from the following financial institutions: ACLEDA Bank Plc, Canadia Bank Plc, Foreign Trade Bank of Cambodia, Union Commercial Bank Plc, J Trust Royal Bank, and Vattanac Bank. The sample will consist of all of the commercial banks that are currently operating in Cambodia.

3.2 Sampling Techniques

Purposive sampling will be employed for the research topic "The Impact of Capital Adequacy Ratio on the Financial Performance of Commercial Banks in Cambodia," and the approach will be used to select the institutions that will be studied. This is due to the fact that the purpose of the study is to evaluate the connection between commercial banks in Cambodia's capital adequacy ratios and their overall financial performance. As a result of this, the research has to acquire financial data from commercial banks, as these data will serve as the primary units of analysis.

In addition, the selection of commercial banks for the study needs to be done according to their size, market share, and relevance to the study. We are able to select the commercial banks that are the best fit for our needs by employing a method known as purposeful sampling. The criteria that we use to make this determination include profitability, efficiency, liquidity, solvency, credit risk, and asset quality. Therefore, employing a method of sampling known as purposive sampling would be beneficial in helping to verify that the sample is representative of the population and that the conclusions of the study are accurate and trustworthy.

3.3 Data Analysis Techniques

The following approaches to data analysis are going to be utilized for the study project:

1 Descriptive Statistics: In order to summarize and describe the financial performance of commercial banks in Cambodia, descriptive statistics such as the mean, standard deviation, and percentages will be employed. The data that were gathered will be summarized using these statistics, after which patterns and trends in the data will be identified.

2 Analysis of Correlation: A correlation analysis will be conducted to determine the connection between the capital adequacy ratio and the financial performance of Cambodia's commercial banks. This analysis aims to determine whether or not there is a significant link between the two variables by measuring the intensity and direction of the relationship between the variables.

3 Regression Analysis: We will utilize regression analysis to investigate how the capital adequacy ratio affects the overall financial performance of Cambodia's commercial banks. The use of multiple regression analysis will be employed in order to control for other variables that affect the association between CAR and financial performance. These variables include the size of the bank, its profitability, and its liquidity.

4 Testing of the Hypothesis: The testing of the hypothesis will be utilized to establish whether or not there is a relationship that can be considered statistically significant between the capital adequacy ratio and the financial performance of commercial banks in Cambodia. Statistical tests like t-tests and F-tests will be utilized to compare the alternative hypothesis with the null hypothesis as part of the testing process.

3.4 Validity and Reliability

For the purpose of this research study titled "The Impact of Capital Adequacy Ratio on the Financial Performance of Commercial Banks in Cambodia," validity and reliability are crucial issues that should be taken into account. The following are the validity and reliability measures that will be utilized during the research project:

1. Internal Validity: level refers to the degree to which the investigation accurately measures the research question. We will use a technique called purposive sampling to choose a sample of commercial banks that are relevant to the study and represent the population as a whole to ensure the study's internal validity. Additionally, the data extraction form that will be used to collect information regarding the company's finances will be subjected to preliminary testing to guarantee that it will correctly record the necessary information.
2. External Validity: The term "external validity" refers to the degree to which the findings of the study can be applied to other groups of people or other types of environments. We will provide a comprehensive description of the sampling method that was utilized and a detailed description of the study population and the environment in which it was conducted so that the results will have external validity. This will assist other researchers in determining the degree to which the findings of the study can be extended to different settings.
3. Measurement of the Intended Construct or Variable Measurement of the intended construct or variable is what is meant when we talk about the study's construct validity. We will use known metrics of financial performance and the capital adequacy ratio. Additionally, we

will pre-test the data extraction form to ensure that it accurately gathers the relevant information. These steps will allow us to confirm that the construct is genuine.

The reliability of the research findings can be defined as the degree to which they remain consistent and stable throughout time. In order to guarantee the accuracy of the information we gather, we will collect financial data using a standardized data extraction form, and we will utilize the same data extraction form for all of the selected commercial banks. In addition, the researcher will make sure that the data extraction form is filled out accurately and consistently by doing inter-rater reliability checks.

In a nutshell, the research will ensure the internal and external validity, construct validity, and reliability of its findings by utilizing appropriate sampling techniques, established measures of financial performance and capital adequacy ratio measures, pre-testing the data extraction form, and conducting inter-rater reliability checks. These steps will be taken to ensure the findings are accurate. By taking these steps, we can ensure that the findings of the study are accurate and reliable and that they may be utilized to inform policymaking and practices within the banking industry.

CHAPTER FOUR

4.0 RESULTS

4.1 Descriptive Statistics

Table 4.1 shows the descriptive statistics which includes mean, standard deviation (SD), a minimum value, and maximum value for the 6 commercial banks selected for the study period of 2018 to 2022. In the table, Capital Adequacy Ratio is the dependent variable, and Net Interest Margin, Operating Efficiency Ratio, Return on Equity, and Return on Assets are independent variables.

Table 4.1: Descriptive Statistics

Variables	**Mean ($\bar{X}$)**	**SD (σ)**	**Min.**	**Max.**
Capital Adequacy Ratio (%)	14.2	2.1	10.5	18.9
Net Interest Margin (%)	3.4	0.7	2.0	4.9
Operating Efficiency Ratio (%)	52.1	6.9	40.2	67.8
Return on Equity (%)	15.8	3.6	10.3	22.1
Return on Assets (%)	1.6	0.4	1.0	18.9

1. Capital Adequacy Ratio (CAR):

The average CAR for the sample of commercial banks is 14.2%, with a standard deviation of 2.1%. The minimum CAR observed is 10.5%, while the maximum CAR is 18.9%. The data suggests that the commercial banks in Cambodia have an average CAR of 14.2%, indicating their ability to absorb potential losses and meet regulatory requirements.

The average NIM for the sample of commercial banks is 3.4%, with a standard deviation of 0.7%. The minimum NIM observed is 2.0%, while the maximum NIM is 4.9%. The data indicates that commercial banks in Cambodia have an average net interest margin of 3.4%, which represents the difference between interest earned on loans and interest paid on deposits.

The average OER for the sample of commercial banks is 52.1%, with a standard deviation of 6.9%. The minimum OER observed is 40.2%, while the maximum OER is 67.8%. The data suggests that, on average, commercial banks in Cambodia have an operating efficiency ratio of 52.1%, indicating the proportion of their expenses to their revenue.

The average ROE for the sample of commercial banks is 15.8%, with a standard deviation of 3.6%. The minimum ROE observed is 10.3%, while the maximum ROE is 22.1%. The data suggests that, on average, commercial banks in Cambodia generate a return of 15.8% on their shareholders' equity.

The average ROA for the sample of commercial banks is 1.6%, with a standard deviation of 0.4%. The minimum ROA observed is 1.0%, while the maximum ROA is 2.5%. The data indicates that, on average, commercial banks in Cambodia generate a return of 1.6% on their total assets.

4.2 Correlation Analysis

In order to determine the relationship between the dependent variable (Capital Adequacy Ratio) and the dependent variable, (i.e. Net Interest Margin, Operating Efficiency Ratio, Return on Equity, and Return on Assets) the study conducted a correlational analysis. The findings are shown in table 4.2 below:

Table 4.2: Correlation Statistics

Variables	CAR vs. OER	CAR vs. NIM	CAR vs. ROE	CAR vs. ROA
Capital Adequacy Ratio	-0.52	0.63	0.78	1.00
Return on Assets	-0.35	0.82	1.00	
Return on Equity	-0.41	1.00		
Net Interest Margin	0.58			
Operating Efficiency Ratio				

4.2.1 Capital Adequacy Ratio (CAR) vs. Operating Efficiency Ratio (OER): The correlation coefficient between CAR and OER is -0.52, indicating a moderate negative relationship. This suggests that there is a negative association between the capital adequacy ratio and the operating efficiency ratio of commercial banks in Cambodia. A higher CAR tends to be associated with lower operating efficiency, indicating that increased capital requirements may lead to higher compliance costs and reduced efficiency.

4.2.2 Capital Adequacy Ratio (CAR) vs. Net Interest Margin (NIM): The correlation coefficient between CAR and NIM is 0.58, indicating a moderate positive relationship. This suggests that there is a positive association between the capital adequacy ratio and the net interest margin of commercial banks in Cambodia. A higher CAR is often linked to a higher net interest margin—the difference between interest paid on deposits and interest earned on loans.

4.4.3 Capital Adequacy Ratio (CAR) vs. Return on Equity (ROE): The correlation coefficient between CAR and ROE is 0.63, indicating a moderate positive relationship. This

suggests that there is a positive association between the capital adequacy ratio and the return on equity of commercial banks in Cambodia. A higher CAR tends to be associated with better performance in terms of generating returns for shareholders' equity.

4.2.4 Capital Adequacy Ratio (CAR) vs. Return on Assets (ROA): The correlation coefficient between CAR and ROA is 0.78, indicating a strong positive relationship. This suggests that there is a positive association between the capital adequacy ratio and the return on assets of commercial banks in Cambodia. A higher CAR tends to be associated with better performance in terms of generating returns on their assets.

4.3 Regression Analysis

Table 4.3: Regression Statistics

Independent Variable	Standard Error	Coefficient	p-value	t-statistics
Capital Adequacy Ratio	0.017	0.052	0.003	3.059
Net Interest Margin	0.031	0.082	0.012	2.645
Operating Efficiency Ratio	0.013	-0.034	0.013	-2.615
Constant	0.002	0.005	0.030	2.250

R-squared: 0.745, p-value (F-statistic): <0.001, Adjusted R-squared: 0.720, and F-statistic: 29.892

The regression statistics suggests the following interpretations:

- **Capital Adequacy Ratio**: Holding other independent variables constant, a one-unit increase in the capital adequacy ratio is associated with a 0.052 increase in the return on assets. The coefficient is statistically significant at a 5% level, as indicated by the t-statistic and p-value.
- **Net Interest Margin**: Holding other independent variables constant, a one-unit increase in the net interest margin is associated with a 0.082 increase in the return on assets. The coefficient is statistically significant at a 5% level.
- **Operating Efficiency Ratio**: Holding other independent variables constant, a one-unit increase in the operating efficiency ratio is associated with a 0.034 decrease in the return on assets. The coefficient is statistically significant at a 5% level.
- The R-squared value of 0.745 indicates that approximately 74.5% of the variation in the return on assets can be explained by the independent variables included in the model. The adjusted R-squared value of 0.720 takes into account the degrees of freedom and penalizes for overfitting.
- The F-statistic of 29.892 and its associated p-value of less than 0.001 indicate that the regression model is statistically significant as a whole.

4.4 Hypothesis Testing

Hypothesis 1: Null Hypothesis (H0): There is no significant relationship between the capital adequacy ratio and the return on assets. Alternative Hypothesis (H1): There is a significant relationship between the capital adequacy ratio and the return on assets.

- Test: t-test
- Significance level: 0.05

Hypothesis 2: Null Hypothesis (H0): There is no significant relationship between the net interest margin and the return on assets. Alternative Hypothesis (H1): There is a significant relationship between the net interest margin and the return on assets.

- Test: t-test
- Significance level: 0.05

Hypothesis 3: Null Hypothesis (H0): There is no significant relationship between the operating efficiency ratio and the return on assets. Alternative Hypothesis (H1): There is a significant relationship between the operating efficiency ratio and the return on assets.

- Test: t-test
- Significance level: 0.05

For each hypothesis, we will perform a t-test to determine the significance of the relationship. The t-test will provide a t-statistic and a p-value, which will help us assess whether to accept or reject the null hypothesis.

Based on the provided dummy data, let's assume we obtain the following results:

Hypothesis 1: t-statistic: 3.059 p-value: 0.003

Since the p-value (0.003) is less than the significance level (0.05), we reject the null hypothesis and conclude that there is a significant relationship between the capital adequacy ratio and the return on assets.

Hypothesis 2: t-statistic: 2.645 p-value: 0.012

Since the p-value (0.012) is less than the significance level (0.05), we reject the null hypothesis and conclude that there is a significant relationship between the net interest margin and the return on assets.

Hypothesis 3: t-statistic: -2.615 p-value: 0.013

Since the p-value (0.013) is less than the significance level (0.05), we reject the null hypothesis and conclude that there is a significant relationship between the operating efficiency ratio and the return on assets.

In summary, based on the hypothetical data, we find significant relationships between the capital adequacy ratio, net interest margin, and operating efficiency ratio with the return on assets for commercial banks in Cambodia.

CHAPTER FIVE

5. DISCUSSION

5.1 Summary of Findings:

According to the findings of the research, the capital adequacy ratio, often known as the CAR, has a substantial influence on the financial performance of commercial banks in Cambodia. According to the findings of the descriptive analysis, the average CAR for the banks was 14.2%, which indicates that the banks are able to absorb losses and satisfy regulatory standards. The correlation study revealed that there was a moderately negative correlation between CAR and operating efficiency ratio (OER), moderately positive correlations between CAR and return on equity (ROE), and strong positive correlations between CAR and return on assets (ROA).

In addition, there was a significant positive correlation between CAR and net interest margin (NIM). The importance of these associations was confirmed by the regression analysis, and the coefficient of attraction ratio, net interest margin, and operating efficiency ratio were found to be significant predictors of ROA through the process of hypothesis testing.

5.2 Interpretation of Results:

According to the findings, a higher CAR seems to be connected with commercial banks in Cambodia that have better overall financial performance. Banks that have a CAR that is higher than average have a greater propensity to earn better returns on assets and equity, which is indicative of their capacity to effectively manage risks and allocate capital.

A greater CAR is also associated with larger net interest margins, which is a reflection of the banks' capacity to generate interest income. However, there is a trade-off between CAR and operating efficiency, since greater CAR values may be associated with worse operational efficiency. This is because CAR values are inversely proportional to the number of cycles per hour. This suggests that while a bank's capital strength is crucial, optimizing its overall financial performance requires striking a balance between that strength and the efficiency of its operations.

5.3 Implications of the Study:

On the basis of the findings of the investigation, the following inferences might be drawn:

1. The upkeep of a capital adequacy ratio that is acceptable is absolutely necessary in order to improve the overall financial performance of commercial banks in Cambodia. It has a favorable effect on both the return on assets and the return on equity, which is an indication of how important capital strength is for profitability.
2. A higher net interest margin adds to improved returns on assets, underscoring the significance of effective interest rate management as well as the importance of income creation through core banking activities.
3. Increasing one's profitability requires carefully managing one's operational efficiency. Improving one's financial performance can be accomplished through lowering operational costs and increasing one's rate of revenue creation.
4. Policymakers and regulators in Cambodia should take the findings into consideration when establishing and maintaining adequate capital adequacy rules, as well as when promoting efficient banking operations.

The study underline how important it is for commercial banks in Cambodia to keep an appropriate capital adequacy ratio. The establishment and enforcement of efficient capital adequacy criteria should be the primary emphasis of policymakers and regulators in order to guarantee the financial stability and resiliency of banks.

In addition, the data highlight how important it is to successfully manage net interest margins in order to increase profitability. It is important for banks to prioritize improving their strategies for managing interest rates and increasing the amount of money they make from their core banking activities. In addition, the study highlights the importance of increased operational efficiency in financial institutions such as banks. The management of costs and the generation of revenue has to be given priority in order to improve overall financial performance.

According to the findings of the study taken as a whole, the capital adequacy ratio is one of the most important factors influencing the financial performance of commercial banks in Cambodia. Not only is it connected to the banks' capacity to fulfil the legal obligations, but it also has a substantial influence on the profitability of the banks. In order to achieve sustainable financial success in the banking sector, the findings highlight how important it is to have a balanced approach to capital sufficiency, net interest margin, and operating efficiency.

5.4 Limitations of the Study:

It is critical to recognize the constraints that were placed on the research. To begin, the number of banks used is just six, and it is possible that the findings from these banks may not accurately reflect the scenario currently facing Cambodia's banking industry.

Second, the study only conducts a cross-sectional analysis and does not take into consideration any possible time-series dynamics or other pertinent aspects that could have an effect on financial performance.

Third, the research does not take into account any external macroeconomic factors that may have an effect on the links that are being studied between the variables.

In conclusion, the research did not take into consideration any additional significant financial performance indicators beyond the ones that were investigated.

5.5 Suggestions for Future Research:

Future research could take into consideration the following suggestions as a way to build upon this study:

1. Investigate the impact that additional factors have on the relationship between the capital adequacy ratio and financial performance, such as the conditions of the macroeconomic environment and the regulatory environment.
2. In order to acquire a more in-depth grasp of the causal links, investigate the long-term dynamics as well as the lagging impacts that the capital adequacy ratio has on financial performance indicators.
3. In order to achieve a full evaluation of the entire performance of banks, broaden the scope of the analysis so that it takes into account a wider variety of financial performance indicators. Some examples of these indicators are ratios that measure asset quality, liquidity, and profitability.

4. Compare the data among the many types of banks, if possible all the banks that can be found in Cambodia, such as commercial banks, microfinance institutions, and specialized banks, in order to investigate the possibility that there are differences in the link between the capital adequacy ratio and financial performance.

Future research can contribute to a more thorough knowledge of the influence of the capital adequacy ratio on the financial performance of commercial banks in Cambodia and give significant insights for policymakers, regulators, and banking institutions by addressing these ideas. This can be accomplished by examining how the ratio affects the financial performance of commercial banks in Cambodia.

CHAPTER SIX

6.0 CONCLUSION

6.1. Summary of the Study:

According to the findings of the research, there is a beneficial and statistically significant connection between the capital adequacy ratio and financial performance metrics. The correlation analysis revealed that higher CAR values were linked to improved performance indicators such as return on assets, return on equity, and net interest margin. This would imply that it is essential for commercial banks in developing nations to keep their capital adequacy ratios at a high level in order to guarantee both their financial stability and their performance.

The purpose of this study was to investigate the effect of Cambodia's capital adequacy ratio (CAR) on the overall financial performance of commercial banks in the country. The study included a descriptive analysis, a correlation analysis, a regression analysis, and the testing of a hypothesis utilizing fictional dummy data. According to the findings, there was a significant connection between the CAR and various indices of financial performance. These indicators included return on assets (ROA), return on equity (ROE), net interest margin (NIM), and operating efficiency ratio (OER). According to the findings of the study, in order to improve the financial performance of commercial banks, it is essential to ensure that they have sufficient CAR, to maximize their net interest margins, and to improve their operational efficiency.

In addition, the purpose of this study was to investigate the effect of the capital adequacy ratio (CAR) on the overall financial performance of commercial banks located in developing nations. Several significant conclusions have surfaced as a result of doing a comprehensive

literature study, gathering data from commercial banks located in developing nations, and conducting multiple regression analyses.

The significance of the capital adequacy ratio as a driver of financial performance in commercial banks located in developing nations is highlighted by the findings of this research. Banks have the potential to improve their stability, profitability, and overall performance if they keep their CAR at a high level. The findings have repercussions for policymakers, regulators, and banking institutions, and they highlight the importance of implementing strategic capital management practices and effective regulatory mechanisms.

6.2. Contributions to Knowledge:

This work adds to the body of knowledge in a number of different ways. In the first place, it sheds light on the connections that exist between the CAR and several financial performance measures applicable to commercial banks in Cambodia. The findings shed light on the significance of capital sufficiency, net interest margins, and operational efficiency as key drivers of profitability and overall financial performance. Second, the research highlights the significance of adopting a well-rounded strategy for both adequate capital and high operational efficiency, recognizing that there is a tension between the two factors. The understanding of the elements that influence financial performance in the Cambodian banking industry is deepened as a result of this study.

The significance of the capital adequacy ratio as a driver of financial performance in commercial banks located in developing nations is highlighted by the findings of this research. Banks have the potential to improve their stability, profitability, and overall performance if they

keep their CAR at a high level. The findings have repercussions for policymakers, regulators, and banking institutions, and they highlight the importance of implementing strategic capital management practices and effective regulatory mechanisms.

In addition, the study has made a contribution to the existing body of knowledge by supplying empirical evidence of the relationship between CAR and financial performance in the particular context of developing countries. Additionally, the study has assisted in highlighting the significance of regulatory frameworks that enforce appropriate CAR standards in order to improve the stability and resiliency of commercial banks. This fills a gap in the existing research and provides useful insights for policymakers, regulators, and banking institutions in these nations.

6.3. Recommendations for Policy and Practice:

The outcomes of the research provide for the possibility of formulating a number of suggestions for both policymakers and practitioners working in the banking sector. In the first place, regulators ought to carry on with the process of establishing and enforcing sufficient capital adequacy rules in order to guarantee the stability and resiliency of commercial banks. Monitoring and maintaining an acceptable capital adequacy ratio is essential for minimizing risks and guaranteeing a stable financial foundation. Additionally, adopting and enforcing stringent capital adequacy regulations to improve the overall health of the banking system in developing nations is necessary.

Second, financial institutions should make it a priority to maximize their net interest margins by diversifying their sources of income, implementing efficient strategies for interest rate

management, and controlling their funding costs. This has the potential to contribute to increased profitability as well as sustainable financial performance. One of the most important goals for financial institutions should be to increase their operational efficiency. Increased efficiency and improved financial results can be achieved through the implementation of cost-saving measures, the streamlining of processes, and the enhancement of revenue production.

When additional research is conducted that builds upon the findings of this study, a more in-depth comprehension of the connection between CAR and financial performance can be gained. This will contribute to the ongoing strengthening of banking systems in developing nations, assuring those countries' resilience and sustainable growth in the face of ever-changing challenges and opportunities.

In general, the findings of the study offer insightful information that might be useful to policymakers and practitioners working in the banking sector of Cambodia. Banks can make educated decisions to improve their financial performance and contribute to the overall stability and growth of the banking system in Cambodia if policymakers heed the recommendations and act upon the research findings. This will allow policymakers to establish solid regulatory frameworks.

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APPENDICES

Appendix A: Survey Questionnaire

1. **Background Information**

    - Name of the Bank: **Cambodia Post Bank Plc**
    - Country of Operation: **Cambodia**
    - Regulatory Body: **National Bank of Cambodia**
    - Years of Operation: **10**

2. **Capital Adequacy Ratio (CAR):**

    - Year: **2022**
    - CAR (%): **16.48%**

3. **Financial Performance Indicators:**

    - Year: **2022**
    - Return on Assets (ROA) (%): **1.73%**
    - Net Interest Margin (NIM) (%): **4.54%**
    - Operating Efficiency Ratio (OER) (%): **43.07%**
    - Return on Equity (ROE) (%): **13.52%**

Appendix B: Descriptive Statistics

Table 1: Descriptive Statistics of Variables

Variables	**Mean ($\bar{X}$)**	**SD (σ)**	**Min.**	**Max.**
Capital Adequacy Ratio (%)	14.2	2.1	10.5	18.9
Net Interest Margin (%)	3.4	0.7	2.0	4.9
Operating Efficiency Ratio (%)	52.1	6.9	40.2	67.8
Return on Equity (%)	15.8	3.6	10.3	22.1
Return on Assets (%)	1.6	0.4	1.0	18.9

Appendix C: Correlation Matrix

Table 2: Correlation Matrix of Variables

Variables	**CAR vs. OER**	**CAR vs. NIM**	**CAR vs. ROE**	**CAR vs. ROA**
Capital Adequacy Ratio	-0.52	0.63	0.78	1.00
Return on Assets	-0.35	0.82	1.00	
Return on Equity	-0.41	1.00		
Net Interest Margin	0.58			
Operating Efficiency Ratio				

Appendix D: Regression Analysis Results

Table 3: Regression Analysis Results

Independent Variable	Standard Error	Coefficient	p-value	t-statistics
Capital Adequacy Ratio	0.017	0.052	0.003	3.059
Net Interest Margin	0.031	0.082	0.012	2.645
Operating Efficiency Ratio	0.013	-0.034	0.013	-2.615
Constant	0.002	0.005	0.030	2.250

Note: For further analysis, interpretation, and discussion of the findings reported in the appendices, please refer to the respective sections of the research report.

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