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COLLEGE OF BUSINESS AND ECONOMICS

THE EFFECT OF BRANCH EXPANSION ON BANK FINANCIAL PERFORMANCE IN THE CASE OF ADDIS INTERNATIONAL BANK S.C

A THESIS SUBMITTED TO THE COLLEGE OF BUSINESS AND ECONOMICS OF ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR MASTERS OF SCIENCE DEGREE IN INTERNATIONAL BUSINESSA RESEARCH PROPOSAL SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE DEGREE IN INTERNATIONAL BUSINESS

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ADDIS ABABA ETHIOPIA

JANUARY, 2023

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Approval Sheet

THE EFFECT OF BRANCH EXPANSION ON BANK FINANCIAL PERFORMANCE IN:

The Case of Addis International Bank S.C

Esmael Yaregal

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DECLARATION

I, Esmael Yaregal, declare that this thesis entitled "***The Effect of Branch Expansion on Bank Financial Performance: The Case of Addis International Bank S.C***" is my original work. I have undertaken the original research paper work independently with the guidance and support of the research advisor. This study has not been submitted for any degree or diploma program in this or any other institutions and that all sources of materials used for the thesis has been duly acknowledged.

Name: **Esmael Yaregal**

Signature: _____

Date: 28/01/2024

IV

ABSTRACT

This study is aimed to evaluate branch expansion's effect on bank's financial performance in case of Addis International Bank S.C. For this purpose explanatory research design was employed and quantitative approach was used. Branch expansion was measured by number of branches and financial performance of bank was measured by NIM, ROA and ROE. Secondary data was collected from annual reports, yearly magazines, departmental reports and various journals of the bank for a period 2012-2023. The stationary, coitegration, autocorrelation and normality tests were deployed and linear regression is conducted for the purpose of examining the effect of independent variable on each dependent variables. As regression result shows number of branch has insignificant positive effect on ROA while it is significant positive effect on ROE and NIM. In general, the result of this study indicates that branch expansion's effect on AdIB's financial performance is significant as well as positive. Based on this, the researcher recommend managers and stakeholders of AdIB to open more branches and the bank's return on its equity and asset as well as net interest margin will increase. The researcher also recommends other research performers to study branch expansion's effect on non-financial performance of the bank.

Key Words: - Branch expansion; financial performance

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LIST OF ACRONYMS AND ABBREVIATIONS

AdIB	Addis international bank SC
ROA	Return on asset
ROE	Return on equity
NIM	Net interest margin
MP	Market power
ES	Efficiency structure
RMP	Relative market power
EVA	Economic value added
NBE	National bank of Ethiopia

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CHAPTER ONE

1. INTRODUCTION

This chapter introduced background of study, problem statement, research questions, objective of the study, research hypothesis, significance of study, limitation and scope of the study, organization of the study and limitation of the study.

1.1 BACKGROUND OF THE STUDY

Ethiopian financial sector includes the banking industry, microfinance institutions, insurance companies, credit and saving unions (Zerayehu et.al 2013). Among other financial institutions, banks are most important financial intermediaries.

Channeling of resource from surplus units which are depositors to deficit units that are borrower or those have better investment opportunities is mainly the role of banks and this is a key for improving economic efficiency (Zerayehu, Kagew & Teshome, 2013). Thus, this financial activity helps to run financial system and or the economy smoothly and efficiently. Depositors and various investors use financial institutions as an intermediaries between them. The effect of globalization and rapidly growing economy have made the world as a village. Especially telecommunications technology development results an advance to the computerization of services. This had brought an electronic banking growth and financial service using internet and facilitates fund transfer between surplus units and deficit units. Thus, knowing the performance of surplus units as well as deficit unit is important for playing an intermediary role (Guru, Shanmugan and Staunton, and, 2002). Playing an important intermediary role in financial activities make banks the backbone of the economy and their performance is very essential to the economy.

Reducing transaction cost and increasing convenience in payment and trade system is another key role of banks. Therefore, financial markets which are well-functioning and financial intermediaries are crucial to economic health (Mishkin, 2004). According to Dereje (2015) the role of financial institutions in growth of any economy of the world is very high. Therefore, the well-being of banking sector is a direct reflection of the well-being of economy and vice versa.

Because organizations exist as open systems, there are always interactions with in the environment which they operate. Furthermore, in an era of ever changing global economy, every business seeks gaining competitive advantage as change presents both opportunities and challenges. (Johnsonetal, 2003) argue that old acquired competencies are rapidly being eroded by changes in the external and internal environment, and organizations need to find ways to act through the development of new competencies. One of its ways to become a competitive racer is to expand its sphere of use or branches.

According to (Harimaya and Kondo, 2012) branch networks can increase profits. Moreover, branch networks are essential to ensure the mother company is connected to other organizations. According to Berger and Black (2006) small institutions create extensive term personalized links with their clients and in utilizing soft information in making decisions related to credit by using their branches and this helps them to get competitive advantage over large firms.

In addition costs and loan losses which are unrelated to interest can be reduced by branch networks Chandler (2002). (Cebenoyan and Strahan, 2004) proved bank performance has improved due to branch network restriction removal. Moreover, institutions consolidation can be gained through branch expansion as per several researchers. When a large bank which is out of markets acquired one of the branch of local financial institutions, cost efficacy of the local financial institutions may

improve. This is because the strong brand images of acquiring banks can help the acquired bank in expanding its market shares Evanoff and Ors (2008).

Evaluation of banks performance is essential in providing information about the operating performance, its net worth and to understand the organization competitiveness and its potentials. Therefore, all stakeholders, internal and external users, like creditors, managers, stockholders, regulatory agencies and potential investors can use information for decision making (Muhabie, 2015). For this purpose, the management and stakeholders of banks should understand what factors are influencing the profitability of the bank to formulate policies and improve the sector Sufian (2008).

Thus, this study evaluates the effect of branch expansion on financial performance of Addis international bank share company and helps the managements and stakeholders of the bank to make decision regarding expanding the branches of the bank.

1.2 STATEMENT OF THE PROBLEM

According to Yigermal (2017), Ethiopia has a low bank branches penetration both geographically and demographically. Although bank branches number has increased significantly since 1995, most people in rural areas have to travel very long distances to access a bank branch. Many Ethiopian bank have opened more of their branches in Addis Ababa. (Yigermal, 2017) found that commercial banks (both private and state owned) were investing excessively in branch expansion, and bank branches opened were less than 400 in 2004 while it was greater than 2,700 in 2015 and 8,944 in 2022.

Moreover, in 2017 several Ethiopian banks faced challenges from different aspects of the country's financial economy; Issues such as foreign exchange problems and national political instability. Despite all these problems, Ethiopia's economy is booming and Ethiopian banks have recorded the highest rate of growth in the last six years and bank branches expansion has accelerated. (Yigermal, 2017)

On one hand, Sony Sunaryo and Hery Prasetyo found that increased number of branch do not have any significant effect to the change of NIM, ROA and ROE ration in 2011-2012. According to Adewotan and Oshadar 2016, branch network growth (branches situated in rural, urban areas, and domiciled in foreign countries) has no systematic effect on performance of bank.

On the other hand (Nyatika 2017) found a significant effect of Branch expansion on commercial banks's financial performance in Kenya. (Tuwei 2016) also found that bank branches have a direct significant effect over organizational performance. In addition (Musyoka 2011), found that Bank branches have a direct significant effect on commercial banks' financial performance in Kenya in the years' understudy. Furthermore, (Haileyesus, 2016) found that branch network is positively related to Ethiopian private commercial bank's financial performance measured as ROA and positively and significantly with NIM.

On the other hand, Melis (2018) also found that branch network has significant negative effect on Ethiopian banks return on asset.

Based on the numerous empirical studies discussed above, objective studies on the growth of branches and financial results are inconclusive. Few observational studies have found negative outcomes while most others have reported positive results. In this way, one cannot say explicitly with certainty that branch expansions effect is positive or not on financial performance. Based on

these findings, there is a need to do an in depth study on the subject. Hence, the study tried to examine the effect of branch expansion on financial performance of bank and add the findings to the present learning set.

1.3 OBJECTIVES OF THE STUDY

1.3.1 GENERAL OBJECTIVE

In general, this study aims to examine branch expansion's effect on bank financial performance in case of Addis International Bank S.C.

1.3.2 SPECIFIC OBJECTIVES

This study has following specific objectives;

1. To explain the effect of number of branches on return on investment (ROA).
2. To explain the effect of number of branches on return on equity (ROE).
3. To explain the effect of number of branches on net interest margin (NIM).

1.4 RESEARCH HYPOTHESIS

The researcher has developed and tested different hypothesis in order to achieve the objective of study which is examining branch expansion's effect on AdIB's financial performance based on different empirical researches. These hypothesis were formulated as follows;

H_1: Branch expansion has significant positive effect on ROA

H_2: Branch expansion has significant positive effect on ROE

H_3: Branch expansion has significant positive effect on NIM

1.5 SIGNIFICANT OF THE RESEARCH

Expansion of a bank industry is the indication of growth that activity relies on branch expansion and Addis International Bank S.C has an aim to be leading bank in Africa. As a result, this study would provide enlightenment on the given company based on the previous researches and actual practices related to Bank financial performance. It could also serve as a reference material for those who are interested to conduct further study in the area.

1.6 SCOPE AND LIMITATION

Since the researcher is engaged in full time employment at AdIB, the data collection process has taken place by using online collection mechanisms and or the bank's internal communication system to carry out the research. The study is concerned only with explaining the significant branch expansion effect on the bank financial performance for Addis International bank. Specifically the researcher has collected data to establish causal relationship between variables. The data sources were secondary sources from banks publications and reports.

1.7 ORGANIZATION OF THE STUDY

The research report contains five chapters. The first chapter encompasses introduction, study background, statement of problem, research questions, and objectives of the study. The second chapter contains literature review. The third chapter contains research methodology including research design, source of data, sampling technique, sample size, total population, data collection method, method of data analyses and interpretation, summery of the methodology. Chapter four contains analyses and interpretation of data. The last chapter comprises three sections, which include summary of findings, conclusions, and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 THEORETICAL REVIEW

2.1.1 BANK PERFORMANCE

Commercial bank's financial performance has been the interest of many academic studies since 1940s great depression (Ongore and Kusa, 2013). However, according to (Levine, 1997), the process of examining bank performance become more systematic since 1980s as a result of using useful financial tasks for economies, supply and demand equilibrium of financial market and provide payment means.

Banks are intermediaries for most economies by providing market transparency and dealing with various financial instruments (Alper and Anbar, 2011). The effectiveness of banks may affect economic growth positively or negatively. The way financial system is developing can be used to forecast economic growth accurately because economic development can be affected significantly by financial development (Admasu, 2014).

Banks have been attracting various stakeholders because of their higher financial results and these stakeholders worried about bank performance. Banks performance is viewed in different angles by stakeholders. For example, managing long term savings is depositors view; shareholders worries about making a profit; and the ability of banks to settle their obligation worries debt holders (European Central Bank, 2010),.

As it attracts various stakeholders, banking also has an impact on those involved in it. Among those stakeholders, institutional investors including pension funds, hedge funds, and mutual funds are included. These investors support the growth of the capital market, which has significantly

improved the banking industry. Bank activities have a contribution to economic growth through influencing the economy's liquidity and spending power. Collecting deposits from consumers and providing the collected deposit to investors as a credit are the main activities of banks. These activities encouraged banks to support economic growth, effectiveness of the financial system, stabilizing and maximize benefits, and necessitating stringent oversight (Antonio, 2015).

Commercial banks performance have been evaluated by different researchers by using internal and external factors. The internal factors are controlled by management while external factors are beyond management's control (Rao, 2012). Banks profitability is highly affected by the environment which surrounds them. Banks should have a capacity to face negative shocks and contribute to the stability of the financial system. As a result, commercial bank's role in national economic growth is important (Athanasoglou, Brissimiss & Deliss, 2005).

Among internal factors operating efficiency is most important factor that affects the profitability of banks. However, measuring operational efficiency requires a deep understanding of management systems (Tesfaye, 2014). Banks should use risk integrated approach and an appropriate level of knowledge of board members and proactive awareness of negative developments and challenges is very important in addition to governance impact on bank performance (European Central Bank, 2010). However, according to (Wheelock, 1995) management quality can take many forms and is difficult to measure directly. On the one hand, excessive making payment and using physical assets and labor excessively, or paying excessive interest rates for deposits are some indications of management inefficiencies. Therefore, poorly managed banks are believed to be at default risk. Beside these, banks that are heavily indebted, have low liquidity, risky asset portfolios or low returns can fail easily (Wheelock, 1995).

Other important factor to explain profitability of banks is capital. In addition, operational cost control and improved labor productivity also have impacts on bank's performance. Besides, external bank profitability determinants, such as inflation, affect bank profitability (Athanasoglou, Brissimiss & Deliss, 2005). Banking institutions are becoming more complex, but profitability, efficiency, risk appetite, and leverage remain key drivers of bank performance and industrial concentration affects profitability of banks the (European Central Bank, 2010).

Profitability is ratio of income to balance sheet size and indicates the relative ability of an asset to generate income and maintaining the generated profit from year to year (Ajao and Solomon, 2012). It measures management efficiency in using organizational resources to add value to the company. According to (Shen et al., 2010) profitability is ability to generate profit from operating activities of a business, firm, or legal entity.

The quality of management, the soundness of banking system and competitive position can be indicated by profitability. Profitability is the efficiency of a bank's earnings measured by the rate of return. Thus, banks generate profits from the difference of interest paid to its depositors and interest collected from its borrowers, and by charging customers for the provision of various services (Hubbard, 2002). Therefore, making profit is a matter of survival any business organization.

According to (Koller, 2011) profitability is important indicator of company ability to increase its income. Therefore, a profitable bank can get the ability of resisting adverse impacts and contribute to the stability of financial system. Therefore, the organization's profitability undoubtedly contributes to economic development of the country and provides the Ministry of Finance (sovereign wealth fund) with additional employment, investment, savings and tax revenue. In

addition, it contributes to investors' income through increased dividends, leading to an improvement in people's living standards.

According to (UBPR, 2013) Performance of banks may differ based on their size which is due to the market they are operating in and government regulations. In the period earlier 1980s, small banks were gaining higher ROAs with low risk. However, this has changed now because of high competition and different economic events. Banks are classified as wholesale which are serving commercial customers and retail banks which focuses on consumers (UBPR, 2013). Profitability of banks measured by both ROA and ROE is changing from time to times. For example, the 10 largest banks which were in losses in 1987/1989 has recorded profits in 1995/1996. Moreover, net interest margin of small banks is higher than large ones which indicates small banks has generated higher profit with lower cost. Noninterest expense is also less for small size banks this decreases the ability to generate noninterest income. Furthermore, since it is difficult to diversify loan portfolios for small banks, there is high problem on asset quality of these banks. (UBPR, 2013).

2.1.2. MARKET-POWER HYPOTHESES FOR BANK PERFORMANCE

(Olweny and Shipho, 2011) began a more systematic study of performance of bank in the late 1980s by applying efficiency structure and market power theories (Athanasoglou, Brissimiss & Deliss, 2005). As per the MP theory increasing external market forces lead to profits and only a company should have well-differentiated products and large market share in order to win the competition and achieve monopoly profits. The relative market power (RMP) hypothesis suggests that banks need to lower their capital ratios if they want to increase leverage and increase profits. Other theories suggesting bank profitability determinants are market power and efficiency structure. Market power suggests that a bank's performance is determined by the industry's market structure while Efficiency theory states that banks make more money than their competitors

because they operate their businesses more efficiently (Olweny and Shipo, 2011). The final results of these theories are lower operating costs and higher profits (Mensi and Zouari, 2010).

2.1.3. MEASURE OF BANK PERFORMANCE

2.1.3.1 ECONOMIC VALUE ADDED AND PROFIT-BASED MEASURES

US consulting firm called Stern and Stewart Company developed EVA by explaining that successful performance metrics measure what is a performance of an organization towards its goals. Now a days maximizing shareholders wealth is become the main goal of all profit based organizations. Earning based metrics are used by different companies in order to measure their financial performance. However, profit ignores equity financing cost while considering cost of debt financing. A company that can produce higher return than investors demand will create wealth. Therefore, accounting standards used to calculate profit do not consider the generated wealth (ACCA Student, 2015).

According to Stewart (1982), economic value added as an overall measure of organizational performance, is a specific measure of performance. Similarly, it is the basis for greater performance measurement framework. EVA is financial performance measure directly related to shareholder value creation over the long term. EVA aims to provide information to management and motivation to make decisions that maximize shareholder wealth as much as possible.

2.1.3.2 BANK PERFORMANCE INDICATORS

Various researchers used three or two instruments to classify performance indicators. Among them internal factors, industry factors and external factors are considered to be the three factors classified as the determinants of profitability (Rachdi 2013) and (Athanassoglou, Brissimiss &

Deliss 2005). Besides, according to (Ongore and Kusa, 2013) the determinants can be classified as internal, external, and property identities.

Furthermore, bank performance indicators are divided based on the control of managements: internal idiosyncratic factors and external idiosyncratic factors. Internal factors are controlled and influenced by bank management and the board of directors. However, external factors are independent of business control and depend on the external environment studies by (Cekrezi, 2015; Alper and Anbar, 2011; International Monetary Fund, 2009; Admus, 2014; Frederick, 2014; Sufian, 2008).

Naturally, the profit of large firm is greater that of the small one. Hence, profitability is measured mainly by the amount of earning per investment. Return on asset, return on equity and also net interest margin are common measures of profitability (Bodie, Kane and Marcus, 2014)

Return on Asset: This implies how a company is efficiently used its asset in order to generate revenue and it is important indicator of bank profitability (Krawish, 2011). It measures bank's ability of generating revenue while using the corporate assets. Besides, it shows how efficiently company resources are used for generating revenue. It measures the return the bank generated from its asset during the given period. The higher this ration implies the bank is generating high ratio from its total asset (UBPR, 2013).

According to (Krawish, 2011) ROA can be calculated as net income over total assets (NI/TA).

Return on Equity: This is a ratio which measures the efficiency of a given company to generate a profit from each unit of capital or net worth or assets minus liabilities. It focus on how the invested equity is profitable? It measures net income of shareholders generated by the investment

in a firm. It is a well-known approach and analyzes profitability of banks by combining income statement and balance sheet figures. It measures return made by investment of stockholder in percent. The higher this ration means the higher the return is made on stockholder's investment (UBPR, 2013). From a shareholder perspective, ROE is the main summary measure of a firm's performance. Whereas ROE measures the return on investment made by a firm's shareholders, ROA measures the return earned on each dollar invested by the firm in assets (Sunil and Peter, 2016).

Net Interest Margin: It is a measures the profit of a company that can be obtained from the difference of interests received from lending by the bank and interest paid to the bank's depositor. The performance of bank whether its investment decisions are favorable to its debt decision can be indicated by this ratio. When a bank made unfavorable decision, this ration can have negative value because the interest paid will be higher than the return on investment.

2.1.4 BRANCH EXPANSION

Recently, branch network expansion has attracted academic attention. According to (Tuwei, 2016) and (Aladwan, 2015), branch network expansion is expected to increase the customer base, strengthen market control, reduce costs, increase profits and risks, and increase the availability of banking products. It also includes services that increase the profitability efficiency of banks, regardless of the associated costs or available distribution channels. (Athanasoglou and Gioka, 2007) added that branch network expansion could provide larger network of branch to improve accessibility and access to banking products and services which support banking growth.

According to a CBN report (2018), Nigeria's banking industry is expanding its branches for market power, gain broad access to credit facilities, expand its customer base and ensure a sustainable

financial base. And most branches opened in urban and semi-urban areas of the country. In another study, (Edward, 2010 and Peterson, 2008) proved the main reasons for the decline of rural bank branches were high operating costs which exceeded profits, poor security, low-income rural populations, reportedly due to bad banking habits; Population of rural residents, illiteracy, lack of commercial activity in rural areas, high business risks, lack of effective mobile warehouses, mobilization and accumulation strategies, and other bottlenecks hindering industrial networking in rural areas of the country.

Geographic expansion improves the ratings of financial institutions through various channels. For example, a high degree of geographical diversification reduces the risk of region-specific shocks (Goetz et al., 2016) and increases management efficiency (or X efficiency). And you get the benefits of economies of scale. However, lower valuations for financial institutions may exist because of geographic diversification. Inefficiencies can arise when poor management practices are spread across larger resource pools or when management skills cannot be transferred to new regional markets (Berger and De Young, 2001). The difficulties associated with managing large, geographically dispersed organizations can create disadvantages at scale. The greater the physical distance between headquarters and branches, the more difficult and costly it becomes to monitor the local business environment. Geographical dispersion can also worsen agency problems, bring difficulties for outsiders to monitor and effectively operate a company (Goetz et al., 2016). Geographic diversification, from cross-border perspective, brings additional benefits and challenges for financial institutions. Internalization theory posits that companies become multinational in response to various market failures. Specifically, companies should seek to combine firm-specific advantages, such as proprietary technology and superior managerial skills, with such advantages as access to large consumer markets and country-specific advantages.

Internationalization occurs when a country crosses national borders and internalizes the middle market. However, international expansion also makes companies subject to “foreign liability” (LOF). In other words, "additional costs incurred by companies operating in foreign markets that would not be incurred by domestic companies", mainly related to environmental unfamiliarity, cultural, and economic differences. (Zaheer, 1995).

According to internalization theory, knowledge market failures in particular create the strongest incentives for internal market organization. Therefore, multinationals by their skill, knowledge and strength of communication expected to dominate the banking sector (Williams, 1997). However, compared to multinational corporations, financial services firms are more competitive in their internationalization strategies due to the information density and institutional sensitivities of the industry and the difficulty in coordinating the strategic requirements of different products and national markets.

Geographic and cultural distances between headquarters and local offices make it difficult for financial institutions to collect and share sensitive information (Stein, 2002; Mian, 2006). The complexity and size global banks tend to make management and corporate governance issues more prominent. Similarly, differences in customer demand characteristics and regulations in domestic markets increase the need for local market adjustments, leading to limited access and higher transaction costs to cross-border economic reach. As a result, the transfer of competitive advantage (based on organizational capabilities and resources) from home forces to foreign militaries is a major source of the benefits of internationalization (Grant and Venzin, 2009). In this sense, geographic, cultural and institutional variations (in addition to economic ties) between host and home countries may affect the cross-border presence of banks as they reflect information problems

and transaction-related learning costs. It can influence your decision. It is said to be affected by proximity. National structures differ (Galindo et al., 2003).

Expanding across foreign markets can be derived by portfolio diversification, regulatory and tax arbitrages, access to market growth and higher margin and internationalizing existing customer's relationships (Focarelli & Pozzolo et al., 2005). Due to these drivers, many literatures give insights on internationalization and performance improvement.

Branch expansion may have benefits in spreading idiosyncratic risks, increasing efficiency, improving corporate valuations, reducing agency cost, reducing region specific shocks and improving market valuations (Diamond, 1984). On the other hand, corporate managers may face challenges to supervise branches due to distances from head office (Deng & Elyasiani, 2008). Therefore, this may lead to distance-related conflicts between agents and banks.

Banks can survive easily and increase their success if they are able to adopt and operate efficiently in new environment. However, changes in the banking industry have significantly increased the importance of efficiency and geographical and product deregulation can lead to increased competition.

Currently, NBE is encouraging private commercial banks to expand their branches in cities and provinces across the country. Due to this Ethiopia's commercial banks have experienced strong expansion in recent years. However, banks should consider the level of competition, deposit availability, local income, and road and vehicle availability while deciding to expand their branches (Erna & Eki, 2004).

2.1.5 BRANCH EXPANSION AND ORGANIZATIONAL PERFORMANCE

According to Boland (2009) many banks are performing with many branches and following highly transactional model. Due to this, they are facing high cost and complexity with no return. This is mainly because the timing to open branches.

Banks often went to open branches to cope up with the growing market without studying the demographics, competition and environment of their branches and they failed in hiring right people to run the branches. They also failed to put the right manager to their branches. The role of manager is very important and requires a knowledge about the business as well as creating customer value. However, banks often put young people in charge, manning people who act more like postal workers than customer service representatives. These decisions were made hastily as banks grew, but have had long-term implications (Boland, 2009).

Some banks prefer online services than opening branches. However, Boland (2009) argues that this is wrong because of two main reasons. First a closing branches or having few branches may sends a bad signal to the market. Second banks may miss an opportunities that can be obtained from direct contact with customers at their branches (Boland, 2009).

According to Bradach (2003) branch expansion gives benefits for many private companies operated both in franchises and company owned branches. Moreover, (Porter, 2008) emphasizes understanding the firm's value chain and then determining the configuration and coordination of activities that must take place to serve different markets, focusing on the manager's role in deciding activities to concentrate and dispersed based on nature and extent of activities and coordinating them across their locations or tailoring them autonomously is importance important.

Researches have been paid their attention to branch expansion given the many challenges of it within a corporate context. On the contrary, Dees, Anderson, and Skillern (2004) argued that branch expansion has benefit which can compensate its cost beside its challenges.

Oster (2002) argued that branches alleviate many of the organizational and economic problems faced by multi-site nonprofits. She then showed that the keiretsu model was more common than wholly-owned branches in large organizations, with more sites operating in different geographic locations on average. (Bradach, 2003) pointed out that the benefits that commercial franchisors derive from maintaining some branches as controlled reference locations may also apply to the non-commercial sector. Branches serve as models, testing grounds for new ideas, and channels through which headquarters can align their service offerings, while subsidiaries enable faster growth and foster innovation.

2.2 EMPIRICAL REVIEW

Few studies have addressed the effect of overall branch expansion on financial performance. This is because of the lack of enough branch data for many institutions. Zardhoohi and Kolari (1994) studied a Finnish store network and found that store-level efficiency increases when number of stores increases in the network, but this effect flattens out for small network sizes. Hensel (2003) found large European banks were less likely than smaller banks to achieve additional cost savings from branch networks expansion. Seale (2004) states that US commercial bank branches are associated with lower costs, higher profitability, and higher fee income. However, his analysis primarily explores differences between institutions with less than 30 branches and not between institutions with large branches.

Nyatika (2017) examined the branch network expansion on commercial banks financial performance in Kenya's and found that branch network expansion had a significant impact on financial performance of Kenya's commercial banks. Operational efficiency also drives branch network construction and ROA, but bank size, bank customer base and capital adequacy do not affect branch network construction and ROA.

Melis (2018) in his study examined the branch expansion and ROA of commercial banks in Ethiopian and found that branch expansion had Negative and significant impact on ROA of thus banks. Haileyesus (2016) examined determinants for Ethiopian commercial banks financial performance and found that branch expansion has significant positive effect for NIM while positive effect for ROE. Mehmet & Suleiman also measured economies of scale by conducting SWOT analysis in 2011, conducting research to drive performance models to improve the financial capacity of bank branches. They also looked at the productivity and profitability of bank branches and found that both bank size and economies of scale were moving in the same direction. However, efficiency decreases as the bank size increases.

Sufian (2008) investigated bank profitability determinants in Philippine over the period from 1990 to 2005. Empirical results suggest bank profitability is impacted by all bank-specific factors significantly. As per the result, bank size, credit risk, and spending preferences have negative impact on bank profitability, while non-interest income and total capital have a positive impact. As per the result, inflation had negative impact on bank profitability during the study period.

Alper and Anbar (2011) find that non-interest income and asset size have significant positive impact on profitability of bank. Whereas, the size of loan portfolios and loan balances had

significant negative impact on banks' profitability. However, one macroeconomic variable, the real interest rate, has a positive impact on bank performance.

Devinaga Rasiah (2010) considers the number of stores to be one of the explanatory variables in his profitability studies. However, number of stores does not affect profitability as found in his study, which can be captured by other variables such as the amount of the down payment and extended credit.

Beverly (2005) assessed the impact of these developments by examining a set of simple industry performance indicators and asking how they change. He suggest banks with medium-sized branch networks may bring branch activity competitive disadvantage, and branch network size has systematic relationship with overall bank profitability. This is likely because banking organizations are optimizing their branch size networks as part of their strategy that includes both branch as well as non-branch based activities. He used cross-sectional data and descriptive analysis techniques with mean and median variables to make cross-industry comparisons.

In their paper, Konzo and Kazumine (2011), from the performance indicators perspectives using probabilistic marginal analysis, investigated the effects of the branch expansion of Japanese regional banks in fiscal 2009 on cost and revenue efficiency. Cost efficiency will improve if branch network is not expanded, but regional banks that have expanded branch network to some extent have high cost efficiency. Conversely, regional banks with strong regional ties have low profitability. Based on their findings, they suggest that appropriate branch expansion can have positive effect on revenue and cost efficiency of regional banks by diversifying bank portfolios and lowering deposit costs.

Furthermore, (Kazufeng, 2017) concludes that, from regional banks' cost performance perspective, maintaining a large number of branches and large-scale branch networks may have negative impact on regional banks.

2.3 CONCEPTUAL FRAMEWORK

In this study financial performance of the bank is dependent while the independent variable is branch expansion of the bank; number of branches. The factors were selected after careful review of several articles.

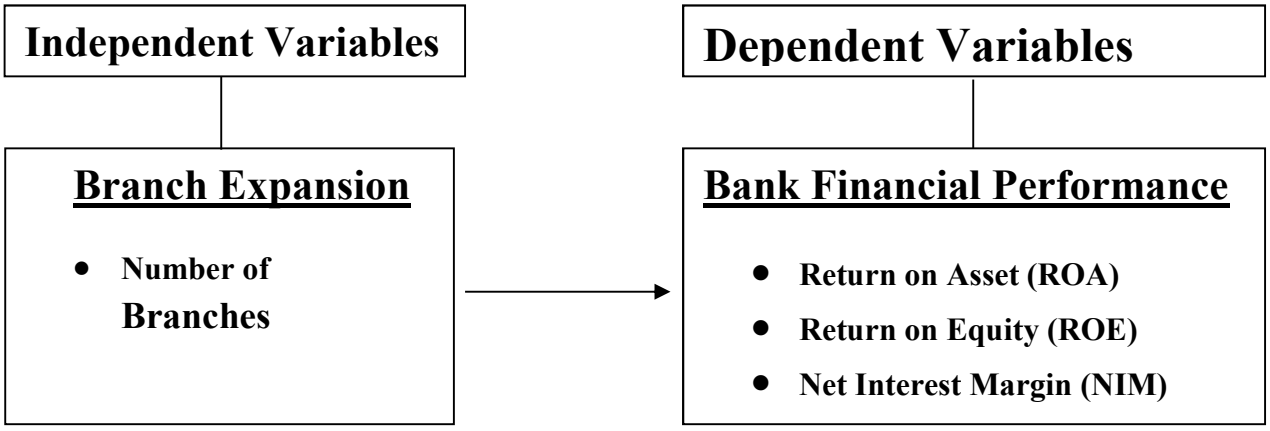


Figure 2.1: Conceptual framework

CHAPTER THREE

RESEARCH DESIGN AND METHODS

3.1 RESEARCH METHODOLOGY

The researcher has adopted explanatory research design as the study is intended to assess and explain branch expansion's effect on bank financial performance. The research has also implemented a quantitative research approach. Creswell (2009) noted that quantitative approach employs strategies of inquiry such as experiments and surveys, and collect data on predetermined instruments that yield numeric data that can be analyzed using statistical procedures. It is a mechanism for examining objective theories through testing the relationship between variables. It is advantageous as it, procedurally, follow scientific approach, tests reliability and validity of the instrument. It minimizes bias from the researcher's influence and employs large sample size. Hence, the results can be believed on and generalized to larger population. However, it is not capable to address issues which cannot be quantified. So that, it may has limited scope. The researcher also adopted linear regression analysis.

3.2 SOURCES OF DATA COLLECTION

The study has incorporated secondary data sources for data collection purpose. The sources of the secondary data was written materials like annual reports, yearly magazines, departmental reports and various journals of AdIB.

3.3 TARGET POPULATION AND SAMPLING DESIGN

3.3.1 TARGET POPULATION OF THE STUDY

AdIB is one of a share company that was established on February 21, 2011 G.C with birr 109.4 million of paid up capital. There are one hundred thirty three (133) branches including city and

outline branches of ADIB. Within the branches including its head office, as at June 30, 2022, total number of employees of the bank was 1060.

Therefore, the researcher has used twelve years consecutive financial data (from July 2011 to June 2023) of AdIB to conduct the research.

3.4 DATA ANALYSIS & PRESENTATION

The process of data analysis involves making sense out of text and figures. It involves preparing the data for analysis, conducting different analysis, moving deeper into understanding of data, representing the data and making interpretations from it (Creswell, 2009).

For this particular study purpose the collected data was analyzed using quantitative method. Since the collected data were secondary time series data, the stationary of data is checked using the most commonly used method which is ADF (Augmented Dickey-Fuller) test method. Once the stationary of the data checked, cointegration test was performed using Johansen's multivariate approach in order to check if there is a long-run relationship among variables. Furthermore, normality test is conducted by using Jarque-Bera test in order to determine whether there is normal distribution of error term. Finally, linear regression is performed for each dependent variables against the independent variable to draw their effect. The researcher used tables and figures to present the result and discussion of analysis conducted.

CHAPTER FOUR

RESULTS AND DISCUSSION

In this chapter, the result of the analysis of the secondary data obtained from annual report of AdIB has presented. First, the stationary of data is checked according to ADF (Augmented Dickey-Fuller) test. Once the stationary of the data confirmed, a descriptive statistics, correlation, diagnostic test and regression analysis are employed for three measurements of AdIB's financial performance which are ROA, ROE and NIM.

4.1 STATIONARY TEST OF VARIABLES

Since the collected data were time series data, stationary test of variables is deployed using Augmented Dickey-Fuller (ADF) test method in order to check whether the data changes its statistical properties over time. The result is presented as follow 4.1.

The null hypothesis is developed as follows;

H_0= the series has unit root and it is non-stationary.

Table 4.1 Unit root test

Variables	*ADF*	*Critical Value*	*Prob.*
**BRNC	-3.7504	-3.2598	0.0251
ROA	-3.6313	-3.1753	0.0244
ROE	-4.3013	-3.1753	0.0086
**NIM	-3.5534	-3.2598	0.0331

Source: Researcher's computation on e-views 12
*** At second difference*

As shown the above table the selected variables has no unit root since ADF (Augmented Dickey-Fuller) test are greater than critical value at 5%. Moreover, the p-values of all variables were less than 0.05 at 5%. Hence, null hypothesis is rejected. Additionally, cointegration test was performed

using Johansen's multivariate approach in order to check if there is a long-run relationship among variables even though they are stationary. For this, cointegration test results are presented in table below;

Table 4.2 Johansen Cointegration Results

Variables	*Eigenvalue*	*Trace Statistic*	*0.05 Critical*	*Prob.***
BRNC	0.5296	8.2964	3.8414	0.0040
ROA	0.5943	9.9247	3.8414	0.0016
ROE	0.6727	12.2870	3.8414	0.0005
NIM	0.4847	7.2944	3.8414	0.0069

Source: Researcher's computation on e-views 12

H_0 = the series has no cointegration

4.2 MODEL SUMMARY

R-square explains how much the independent variable explained the dependent variable. The independent variable explained Return on asset by 4 %, net interest margin by 12 %, and return on equity by 65 % as presented in the under table.

Table 4.3 Model Summary

Dependent	*R*	*R Square*	*Adjusted R*	*Durbin-Watson*
Return on Asset	0.363	0.132	0.045	1.128
Return on Equity	0.698	0.487	0.435	1.232
Net interest	0.768	0.590	0.549	0.725

Source: SPSS Output from Financial Statements of AdIB, 2012 -2023

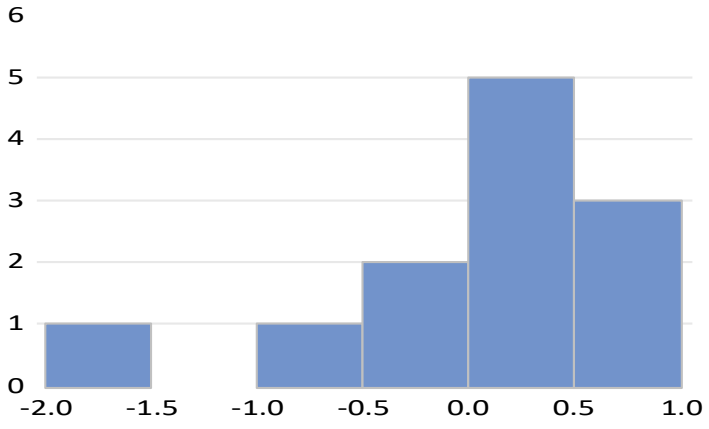
4.3 AUTOCORRELATION

Autocorrelation test is performed by using Durbin-Watson test in order to check the degree of correlation of the same variable across time intervals. As table 4.3 shows, the Durbin-Watson test result is fom 0 up to 2 for all variables. As it implies there is a positive autocorrelation between variables.

4.4 NORMALITY TEST

After the stationary of data is tested and autocorrelation of data in the long time is checked, normality test is undertaken in order to determine whether error term is distributed normally or not by using Jarque-Bera test. Brooks (2008) noted that the Jarque-Bera statistic would not be significant for disturbance to be normally distributed around the mean. The purpose of Jarque-Bera is to make sure that the data set is well modeled by a normal distribution. The hypothesis for the normality test was formulated as follow:

H_0: Error term is distributed normally
H_1: Error term is not distributed normally
$\alpha = 0.05$



Series: Residuals	
Sample 2012 2023	
Observations 12	
Mean	-6.01e-16
Median	0.143889
Maximum	0.634487
Minimum	-1.624861
Std. Dev.	0.679804
Skewness	-1.333536
Kurtosis	3.838569
Jarque-Bera	3.908235
Probability	0.141689

Figure 4.1: Normality test result - ROA

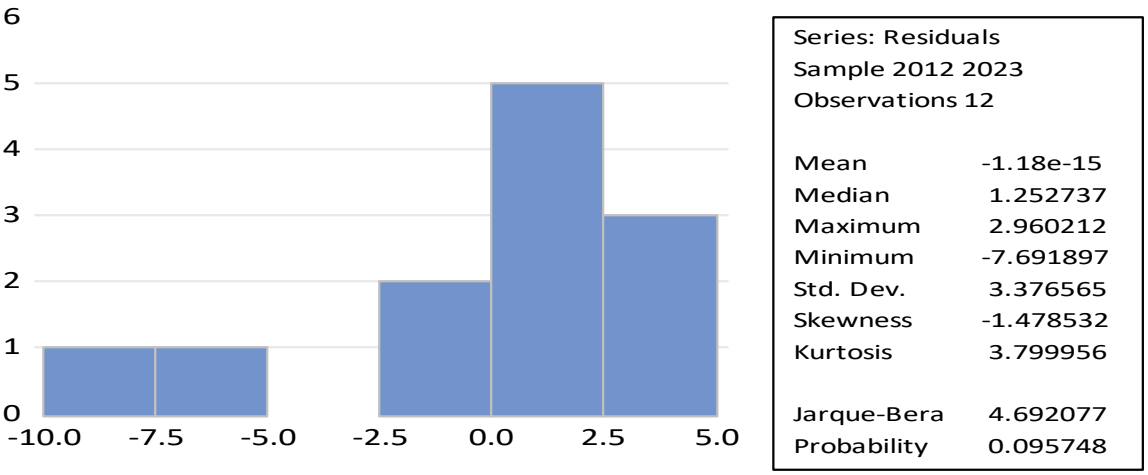


Figure 4.2: Normality test result - ROE

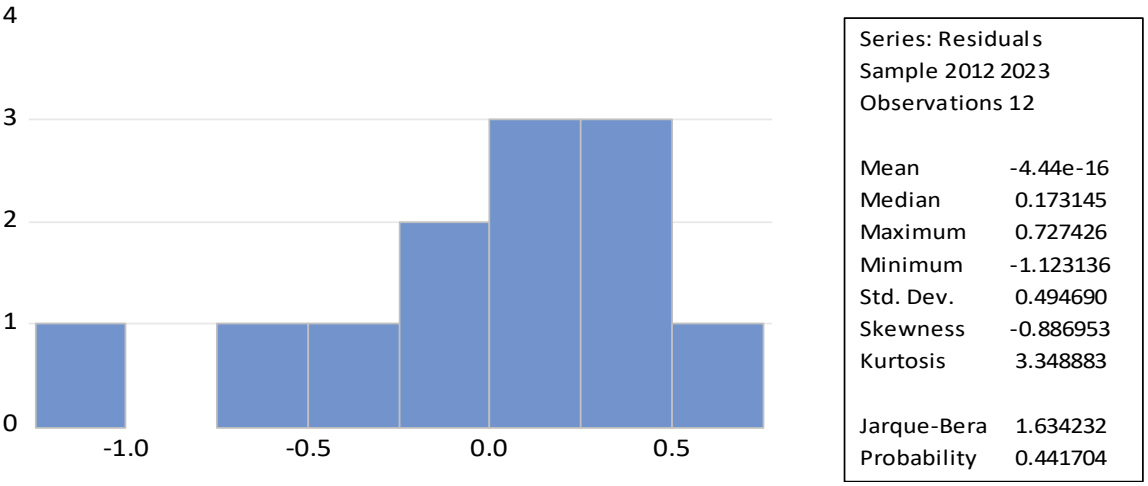


Figure 4.3: Normality test result - NIM

As it can be shown from the above figures, the Jarque-Bera statistic of all variables has a P-value of greater than 0.05 for all variables which indicates a normal distribution in the data. Hence, the null hypothesis that the data is normally distributed is accepted.

4.5. DISCUSSION OF REGRESSION RESULTS

For examining effect of explanatory variables on profitability measures, linear regression analysis were employed and the results are presented.

4.5.1 BRANCH EXPANSION AND ROA

$$ROA = \beta_0 + \beta 1\ BRE + \varepsilon$$

Where,

ROA = return on asset

BRE= No of branches

ε = error term

H_1: Branch expansion has positive significant effect on ROA

Table 4.4: Regression result of number of branches and ROA

Model	***Constant***		***T***	***Sig***
	B	***Std. Error***		
(Constant)	2.673	0.310	8.632	.000
BRE	0.005	0.004	1.231	.247

Source: Researcher's computation using SPSS

As it can be shown in the above table 4.4, branch expansion has insignificant positive effect on AdIB's financial performance measured using ROA. According to Konzo and Kazumine (2011) the positive effect implies that the branch has adequate level of branches because both cost and profit efficiencies impacted positively by adequate branch expansion level whereas the impact is negative when there is excessive branch expansion. Therefore, the result implies the bank has adequate branches.

Therefore, the result is not consistent with Melis (2018) and Sufian (2008). Melis (2018) found significant and negative branch expansion's effect on ROA and he sated this is due to excessive branch expansion of Ethiopian private banks. Sufian, (2008) also found that branch size has negative effect on profitability of bank.

4.5.2 BRANCH EXPANSION AND ROE

$$ROE = \beta_0 + \beta 1\ BRE + \varepsilon$$

Where,

ROE = return on equity

BRE= No of branches

ε = error term

H_2: Branch expansion has positive significant effect on ROE

Table 4.5: Regression result of number of branches and ROE

Model	***Constant***		***t***	***Sig***
	B	***Std. Error***		
(Constant)	9.796	1.380	7.100	.000
Branches	0.061	0.020	3.079	.012

Source:Researcher's computation using SPSS

As it can be shown in the above table 4.5, financial performance of AdIB measured by ROE is affected by branch expansion significantly and positively. The positive effect implies that both number of branches and the profitability of the bank measured by ROE move with same direction significantly. If AdIB opens one more branch, its return which can be generated by its equity will increase by 6.1%. Therefore, the alternate hypothesis is accepted.

The result is in agreement with Haileyesus (2016) and Musyoka (2011). Haileyesus (2016) found that branch expansion has significant positive effect on ROE. Similarly, Musyoka (2011) found

that Bank branches have a significant and direct effect on commercial banks' financial performance in Kenya.

4.5.3 BRANCH EXPANSION AND NIM

$ROE = \beta_0 + \beta 1\ BRE + \varepsilon$

Where,

ROE = return on equity

BRE= No of branches

ε = error term

H_3: Branch expansion has positive significant effect on NIM

Table 4.6: Regression result of number of branches and NIM

Model	***Constant***		***t***	***Sig***
	B	***Std. Error***		
(Constant)	2.811	0.276	10.168	.000
Branches	0.015	0.004	3.796	.004

Source:Researcher's computation using SPSS

As it can be shown in the above table 4.6, financial performance of AdIB measured using NIM is affected by branch expansion significantly and positively. The positive effect implies that both number of branches and the profitability of the bank measured by NIM move with same direction. If AdIB opens one more branch, its return which can be generated from the difference of interest income and interest expense will increase by 1.5%. Therefore, the alternate hypothesis is accepted.

The result is in agreement with Haileyesus (2016) and Musyoka (2011). Haileyesus (2016) found that branch expansion has significant positive effect on NIM. Similarly, Musyoka (2011) found that Bank branches have a significant and direct effect on commercial banks' financial performance in Kenya.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY AND CONCLUSION

Resulting the obligation to increase their numbers of branches imposed by national bank of Ethiopia, to increase their branch by 25% annually and its distribution is 70% city branch and remaining 30% would be outline branches, commercial banks are increasing their branches dramatically from time to time. This dramatic increase of bank branches is getting the attention of academic researchers and scholars to examine branch expansion's effect on performance of Ethiopian commercial banks. Due to this, examining branch expansion's effect on AdIB's financial performance is objective of the study. For this purpose, variables that could be used to measure branch expansion and bank's financial performance were selected. The researcher has collected time series data of these variables over a period 2012-2023 and stationary of all variables is tested using Augmented Dickey-Fuller (ADF) test. Once their stationary is confirmed, linear regression for each dependent variables (ROA, ROE and NIM) with independent variable (BRN) is conducted for the observation period and the following conclusions are drowned from the result of conducted regressions:

- First, number of branch affects AdIB's net profit generated by using its asset positively. Which implies that the bank has adequate branches but it can generate more profit from its asset by opening more new branches till this effect reaches zero.
- Second, number of branches has a significant positive effect on bank's net profit generated by using its equity. Similarly, this indicates that the bank can still generate additional profit which can be generated from its equity by opening additional branches.

- At last, the profit of the bank which can be generated from the difference from interest income and interest expense is significantly and positively influenced by number of branches. This indicate that the bank can increase its NIM by opening additional new branches.

5.1 RECOMMENDATION

As the result of this study indicates, branch expansion's effect on AdIB's financial performance which is measured using ROA is positive, while it is significant positive effect on AdIB's financial performance which is measured using NIM and ROE during the period this study is conducted. Based on this result, the researcher draws the following recommendations;

- The study implies that the profit of the bank that can be generated from the difference of interest income from lending and interest expense paid for depositors is influenced by number of branches significantly and positively. Therefore, managers and stakeholders of the bank shall focus on opening more branches to increase net interest gain which can be realized as a result of increase in deposit and lending.
- As the study shows, branch expansion affected return on asset positively. As a result, managers and stakeholders of the bank shall focus on expanding branches of the bank to increase the profitability of the bank that can be generated from its asset. Since the bank asset is the structure of deposit and owners' equity, the bank can increase its deposit as discussed above and its equity by selling shares by reaching new areas. This will increase again the profit of the bank which can be generated from its asset as evidenced by the result of this research.
- This study shows branch expansion has significant positive effect on AdIB's profit generated from equity of the bank. Due to this, managements of the bank shall give their

attention on increasing number of branches specially to new areas because this will benefit the bank to increase its equity by selling more shares to potential customers the bank did not reaches before. Once the equity is increase, the bank can generate more income by expanding its branch until the positive effect becomes neutral.

- This study is focused on investigating branch expansion's effect on AdIB's financial performance for a period covers 2012- 2023. For this purpose, branch expansion is measured by number of branches and financial performance is measured by ROA, NIM and ROE. However, non-financial performance of banks shall be investigated.

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APPENDICES

APPENDIX: I – STATIONARY TEST RESULT OF EACH VARIABLES

Augmented Dickey-Fuller Unit Root Test on D(BRE,2)

Null Hypothesis: D(BRE,2) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on t-statistic, lagpval=0.1, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.750422	0.0251
Test critical values:	1% level	-4.420595	
	5% level	-3.259808	
	10% level	-2.771129	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 9

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(BRE,3)
Method: Least Squares
Date: 11/06/23 Time: 05:33
Sample (adjusted): 2015 2023
Included observations: 9 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(BRE(-1),2)	-1.335411	0.356070	-3.750422	0.0072
C	2.077307	1.678528	1.237576	0.2558

R-squared	0.667706	Mean dependent var	0.000000
Adjusted R-squared	0.620235	S.D. dependent var	7.713624
S.E. of regression	4.753526	Akaike info criterion	6.148780
Sum squared resid	158.1721	Schwarz criterion	6.192608
Log likelihood	-25.66951	Hannan-Quinn criter.	6.054200
F-statistic	14.06567	Durbin-Watson stat	1.669067
Prob(F-statistic)	0.007164		

Augmented Dickey-Fuller Unit Root Test on ROA

Null Hypothesis: ROA has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on t-statistic, lagpval=0.1, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.631302	0.0244
Test critical values:	1% level	-4.200056	
	5% level	-3.175352	
	10% level	-2.728985	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 11

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ROA)
Method: Least Squares
Date: 11/06/23 Time: 05:29
Sample (adjusted): 2013 2023
Included observations: 11 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA(-1)	-0.945451	0.260361	-3.631302	0.0055
C	2.843926	0.785365	3.621150	0.0056

R-squared	0.594345	Mean dependent var	0.048527
Adjusted R-squared	0.549273	S.D. dependent var	0.768466
S.E. of regression	0.515919	Akaike info criterion	1.677232
Sum squared resid	2.395553	Schwarz criterion	1.749577
Log likelihood	-7.224776	Hannan-Quinn criter.	1.631629
F-statistic	13.18636	Durbin-Watson stat	1.277598
Prob(F-statistic)	0.005475		

Augmented Dickey-Fuller Unit Root Test on ROE

Null Hypothesis: ROE has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on t-statistic, lagpval=0.1, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.301300	0.0086
Test critical values:	1% level	-4.200056	
	5% level	-3.175352	
	10% level	-2.728985	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 11

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ROE)
Method: Least Squares
Date: 11/06/23 Time: 05:30
Sample (adjusted): 2013 2023
Included observations: 11 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE(-1)	-0.837199	0.194639	-4.301300	0.0020
C	11.45774	2.628696	4.358715	0.0018

R-squared	0.672741	Mean dependent var	0.516956
Adjusted R-squared	0.636379	S.D. dependent var	3.648984
S.E. of regression	2.200373	Akaike info criterion	4.578097
Sum squared resid	43.57477	Schwarz criterion	4.650441
Log likelihood	-23.17953	Hannan-Quinn criter.	4.532493
F-statistic	18.50118	Durbin-Watson stat	1.249989
Prob(F-statistic)	0.001987		

Augmented Dickey-Fuller Unit Root Test on D(NIM,2)

Null Hypothesis: D(NIM,2) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on t-statistic, lagpval=0.1, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.553476	0.0331
Test critical values:	1% level	-4.420595	
	5% level	-3.259808	
	10% level	-2.771129	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 9

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(NIM,3)
Method: Least Squares
Date: 11/06/23 Time: 05:32
Sample (adjusted): 2015 2023
Included observations: 9 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(NIM(-1),2)	-1.315757	0.370273	-3.553476	0.0093
C	0.013499	0.187425	0.072023	0.9446

R-squared	0.643352	Mean dependent var	0.143195
Adjusted R-squared	0.592402	S.D. dependent var	0.863848
S.E. of regression	0.551510	Akaike info criterion	1.840816
Sum squared resid	2.129142	Schwarz criterion	1.884644
Log likelihood	-6.283672	Hannan-Quinn criter.	1.746236
F-statistic	12.62719	Durbin-Watson stat	1.886121
Prob(F-statistic)	0.009300		

APPENDIX: II– COINTEGRATION TEST RESULT OF EACH VARIABLES

Johansen Cointegration Test

Date: 11/04/23 Time: 14:03
Sample (adjusted): 2013 2023
Included observations: 11 after adjustments
Trend assumption: Linear deterministic trend
Series: BRE
Lags interval (in first differences):

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.529622	8.296414	3.841465	0.0040

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.529622	8.296414	3.841465	0.0040

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

BRE
0.030702

Unrestricted Adjustment Coefficients (alpha):

D(BRE)	3.776296

Johansen Cointegration Test

Date: 11/02/23 Time: 19:08
Sample (adjusted): 2012 2022
Included observations: 11 after adjustments
Trend assumption: Linear deterministic trend
Series: ROA
Lags interval (in first differences):

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.594345	9.924783	3.841465	0.0016

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.594345	9.924783	3.841465	0.0016

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

ROA
1.673753

Unrestricted Adjustment Coefficients (alpha):

D(ROA)	-0.564869

Johansen Cointegration Test

Date: 11/02/23 Time: 19:05
Sample (adjusted): 2013 2023
Included observations: 11 after adjustments
Trend assumption: Linear deterministic trend
Series: ROE
Lags interval (in first differences):

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.672741	12.28705	3.841465	0.0005

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.672741	12.28705	3.841465	0.0005

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

ROE
0.293379

Unrestricted Adjustment Coefficients (alpha):

D(ROE)	-2.853643

Johansen Cointegration Test

Date: 11/02/23 Time: 19:08
Sample (adjusted): 2013 2023
Included observations: 11 after adjustments
Trend assumption: Linear deterministic trend
Series: NIM
Lags interval (in first differences):

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.484767	7.294488	3.841465	0.0069

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.484767	7.294488	3.841465	0.0069

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

NIM
1.343313

Unrestricted Adjustment Coefficients (alpha):

D(NIM)	-0.297955

APPENDIX: III– FINANCIAL PERFORMANCE DATA OF ADIB

No	Period	No of Branches	ROA	ROE	NIM
1	2011/12	4	1.29	3.38	1.69
2	2012/13	11	2.97	12.09	2.77
3	2013/14	18	3.54	14.16	3.22
4	2014/15	31	3.42	13.18	3.63
5	2015/16	40	3.47	13.41	4.15
6	2016/17	52	2.70	12.18	3.80
7	2017/18	59	2.68	12.59	4.03
8	2018/19	68	2.89	14.33	4.11
9	2019/20	75	3.31	15.86	4.32
10	2020/21	91	3.06	16.72	3.89
11	2021/22	112	3.20	15.87	4.08
12	2022/23	133	3.47	17.24	4.93