# Performance Evaluation of Banks in Ethiopia: a Case of Four Selected Commercial Banks

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## Abstract

*Evaluation of banks performance is very important to ensure sound and stable financial system in the economy, and then to increase the contribution of the banking industry towards the growth and development of the economy. Thus, this study was conducted bearing this purpose aimed at evaluating the performance of four Ethiopian private commercial banks namely, Dashen Bank, Nib International Bank, Wegagen Bank, and Zemen Bank, they maintained over the past five years, 2010 through 2014. The study employed CAMELS model i.e. evaluating the performance of those banks based on six parameters such as Capital adequacy, Asset quality, Management efficiency, Earnings ability, Liquidity and Sensitivity to market risk, and followed descriptive method of data analysis. The data were collected from secondary sources, such as, from 2010 to 2014 annual reports of each bank. The researcher then analyzed the five year financial statements of those banks, using respective performance indicator ratios per each CAMELS component and the researcher compared the banks each other and assessed their trend throughout the five year periods. The study found out that, there was inconsistency in the performance of those banks over the five years and among themselves. The researcher forwarded recommendations for those banks to design appropriate credit policy; to maintain good quality of their asset; to use their maximum effort to increase their capital; to build appropriate mix of assets and liabilities; and to design appropriate policy for composition of liquid and illiquid assets for maintaining good liquidity position. In addition, the researcher recommended the regulatory bodies such as National Bank of Ethiopia should set standardized bank performance indicator ratios along with their benchmarks to facilitate the evaluation of banks performance.*

**Keywords:** Exact competitive performance, financial statement analysis, CAMELS system, ratio analysis, trend analysis, and comparative analysis

## 1. Introduction

### 1.1 Background of the Study

In the early and mid2000s, the commercial banking industry experienced a period of recording profits. During periods of falling profits and even during periods of record profits, many banks have weak and inefficient areas that need to be addressed. One way to identify weaknesses and problem areas is by analyzing financial statements (Hurdigins, 2008). Banking system plays a very important role in the economic life of a nation. The health of the economy is closely related to the soundness of its banking system. Beyond the intermediation function, the financial performance of banks has critical implications for economic growth of countries (International Journal of Economics and Financial Issues, nd). As the banking sector is considered a vital segment of a modern economy, its efficiency is of vital importance. In order to ensure a healthy financial system and an efficient economy, banks must be carefully evaluated and analyzed (Rengasamy, 2012).

The term performance as defined by Rengasamy (2012) refers to "carrying in to execution or achievement: or accomplishment of specific activities or the performance of an undertaking of a duty". Rengasamy, (2012), also defines the term bank performance as "the adoption of a set of indicators which are indicative of the bank's current status and the extent of its ability to achieve the desired objectives". Banks today are under great pressure to perform-to meet the objectives of their stock-holders, employees, depositors, and borrowing customers, while somehow keeping government regulators satisfied that the bank's policies, loans, and investments are sound(Rose, 1999). According to Rose (1999), many of banking failures has been associated with the managerial mistakes, the quality of the assets the bank holds, outright fraud, and a more volatile and uncertain economy that demands new standards for bank management.

Assessing the health of an economy can be accomplished by studying the financial performance of its banks. Then banking and financial industry has become a reality in today's economy, as it is witnessing a growing both in terms of the number of such institutions, or in terms of

the amount of money managed by or diversity activities. In spite of this progress and successes achieved by the banking and financial institutions, it still have challenges which will require further intensive efforts on the part of these institutions (European Journal of Accounting Auditing and Finance Research, 2014). Thus as studies shows that many organizations including banks are failing to achieve their objectives due to misunderstanding or not bearing their competitive performance among their market area/industry, as evidence (Webb & Robert, 2004). The biggest problem in banking is measuring performance (European Journal of Accounting Auditing and Finance Research, 2014). So banks should give a great deal of evaluating their performance. Especially, in a developing country like Ethiopia which has under developed banking industry and its financial exchange/market are dependent on banks, timely measuring and evaluating performance of banks is of highly crucial. Because, even though banking in Ethiopia is not developed amongst the world, it is the dominant business in Ethiopia, and the failure of banks will result in financial distortion and economic discrepancies in the country (Zerayehu, Kagnew, & Teshome, 2013).

In this very competitive era, it is also very important for banks to evaluate how they are performing; they need to evaluate their performance through trend analysis and comparing themselves with the industry. In addition to maintain the bank's profitability, the efficient working of banking industry will boost the economic growth of the country up. Therefore measuring the performance of commercial banks in Ethiopia, should not be the task of the banks themselves, rather the government and any interested entity should engage in such like studies. DB, NIB, WB and ZB are the commercial banks under study which are rendering financial services in the country and are contributing more to the development of the country's economy, which needs such timely supervision, analysis and evaluation.

## 1.2. Statement of the Problem

"Due to the nature of banking and the important role of banks in the economy in capital formation, banks should be more watched than any other type of economic unit in the economy"(Reddy, 2012). Therefore, the overall economic system to be healthy, banks need to be healthy

and have good performance. To understand the financial healthiness of banks, it is essential to evaluate their past performance. In addition, planning is the key to the success of any business. Any good plan as to Yaregal (2007) should be related to the firms existing strengths and weaknesses. As per Yaregal, (2007) strengths must be understood if they are to be used to proper advantage and weaknesses must be recognized if corrective action is to be taken. Identifying strengths and weaknesses requires evaluating past performance. While banks help business organizations by rendering a wide range of products and service, the products and services are more or less identical from one bank to another, and there is little scope for differentiating between them. Therefore, it is necessary to measure the banks individual performance to determine their contribution to the business development (Rengasamy, 2012).

The mere financial statement produced by each bank may be misleading in understanding their exact competitive performance, for they only show the absolute figures of their financial result. To know the banks exact competitive performance, these financial statements should be analyzed and interpreted well and this can be done through ratio analysis i.e. CAMELS rating system. According to Yeregal, (2007) an accounting figure conveys valid and useful meaning when it is related to some other relevant information. Beside, ratio analysis allows the bank manager to evaluate the bank's current performance, the change in its performance overtime (time series analysis of ratios over a period of time), and its performance relative to that of competitor banks (cross-sectional analysis of ratios across a group of firms (Ongore, 2013).

Therefore, if banks exact competitive performance is not evaluated overtime and comparing with their competitors with in their industry however, banks will not be able to identify their strength and weaknesses and problem areas, understand their exact competing capacity, plan their future with certainty, know what changes they brought over the past years, and as a result will not be able to achieve growth and development and thereby they will fail. On the consequence, if banks fail, the overall economic system in the country will be deteriorated, since banks are backbones of the economy. In

addition, poor bank performance can lead to banking failure and crisis which in turn have a negative repercussion on the economic growth of the country (Ongore, 2013). Therefore, evaluating the performance of banks is a serious matter that should not be set for tomorrow concerns not only banks themselves, but also government, academicians, and any interested body.

But with this severity, as the knowledge of the researcher, still little research has been done about evaluation of bank's performance in Ethiopia. Among the researches that have been conducted, Tesfaye, (2012), finds out that high performance is related to the ability of banks to control their overhead risk, diversify their income sources by incorporating non-traditional banking services and control their overhead expenses. And also, on the other research it has been concluded that diversification, operational efficiency, market penetration, capital adequacy, bank size, loan intensity, and asset quality are the significant key factors that influence bank's profitability in Ethiopia (Determinants of Ethiopian Commercial Banks, nd).

In addition to filling this research gap, a timely evaluation of bank's performance is of highly important for banks under the study, for such like studies are time sensitive to be outdated and be conducted to know the performance of banks for specified period of time. Therefore, previous studies have no role in understanding current status of banks other than may be used as guidance for evaluation purpose, and hence, up-to-date study is very necessary to understand current status of banks.

Minding this, the researcher undertook this study to examine the exact competitive performance of four selected Ethiopian commercial banks such as, DB, NIB, WB, and ZB, they maintain over five year periods(2010 through 2014) through trend /time series analysis, comparing with each other, through horizontal/cross-sectional analysis, by using CAMELS rating system through ratios.
In general, throughout this study the researcher will try to answer the following basic research questions:
- How the selected banks are performing well in relation to capital adequacy over the five years?
- How the qualities of the assets of the selected banks are over the five years?

- How is the management of the selected banks efficient over the five years?
- How the earnings of the selected banks remain over the five years?
- Are the selected banks remaining liquid over the five years?
- How much the selected banks are sensitive to market risk over the five years?

### 1.3 Objectives of the Study

The study has been conducted to achieve the following pre-established research objectives.

### 1.3.1 General Objective

- To evaluate the performance of selected banks, such as, DB, NIB, WB, and ZB, they have maintained over the five year periods (2013-2014) through trend/vertical analysis and horizontal analysis (comparing each other) using CAMELS rating system.

### 1.3.2. Specific Objectives

- To appraise the capital adequacy of the selected banks over five year periods,
- To assess the asset quality of the selected banks over five year periods,
- To examine the management efficiency of the selected banks over five year periods,
- To weigh up the earnings quality of the selected banks over five year periods,
- To evaluate the liquidity of the selected banks over the five periods, and
- To assess sensitivity to market risk of the selected banks over five year periods.

### 2. Research Methodology

### 2.1. Research Design and Approach

This study is designed to be comparative and trend analysis i.e. to examine the exact performance of each selected banks, by comparing their current performance with their previous performance and with each other over the five years. Since, as it is obvious that, using banks financial statements as performance indicator will not lead to better

understanding of its exact competitive performance. Rather, the bank's financial position should be evaluated over time through trend/time series analysis and comparing with its competitors within the industry through comparative/cross sectional analysis.

The comparative and trend analysis has been conducted quantitatively and applied descriptive method of analysis by using ratios, percentages, graphs, and bar charts. Because, the data that have been collected are all quantitative and can't be expressed in quality, the analysis followed quantitative approach. The major data for analysis purpose was collected from secondary sources such as, different publications and directive manuals of National Bank of Ethiopia and the five year (2010-2014) annual reports of each selected banks.

The study applied CAMELS rating system that is to evaluate the financial performance of each selected bank's based on bank's specific/internal determinants of its performance, which are the components of CAMELS system; to evaluate each bank's capital adequacy, asset quality, management efficiency, earnings ability/profitability, liquidity, and sensitivity to market risk over the five years and compare each other. These components of CAMELS have been measured using the respective performance indicator ratios for each component. According to Buerger (2011), CAMELS rating system is the best method to evaluate bank's performance based on bank's specific determinants of bank's performance.

## 2.2. Source of Data and Methods of Data Collection

Secondary source of data has been used to collect the appropriate data for the comparative and trend analysis of the performance of each selected banks. The data were collected from different publications and directive manuals of National Bank of Ethiopia and the five year annual reports (2010_2014) of each bank, especially balance sheet and income statements are essential to evaluate each banks performance. In addition, the researcher has collected the data from online posts of NBE such as, performance evaluating ratios and their respective standards/ bench mark for commercial banks, and any requirements and directives set by NBE for performance evaluation of commercial banks in Ethiopia. All the required data has been collected using internet sources.

## 2.3. Population of the Study

Since, the study is proposed to evaluate the five year performance of selected Ethiopian commercial banks; the targeted population of this study will be the purposively selected banks. The researcher selected four banks, which constitute only private owned banks, whose performance to be evaluated by this study purposively; by looking their data availability from internet source, or even by contacting their branch office of those banks in Woldia town for those which have branch in the town. These are DB, NIB, WB and ZB.

## 2.4. Methods of Data Presentation and Analysis

After the required data have been collected from the available stated sources, the relevant data for analysis was identified and then arranged in to a tabular form to make it convenient for computation of ratios. Then the researcher has gone for selection of CAMELS ratios, such as, performance indicator ratios for capital adequacy, asset quality, management efficiency, earnings ability, liquidity, and sensitivity to market risk and compute mathematically. Further, after compute the ratios mathematically, the researcher has represented them graphically and through bar charts. Finally, the researcher analyzed the trends and comparatively among each selected banks performance by comparing selected banks each other.

## 2.5 The CAMELS Rating Methods

The CAMELS rating system was originally developed in the US to classify banks overall condition in 1979. The rating system is commonly referred to as the CAMELS rating system because it assesses six components of a bank's performance: Capital adequacy, Asset quality, Management efficiency, Earnings ability, Liquidity, and Sensitivity to market risk. The ratings are assigned based on a ratio analysis of the financial statements, combined with onsite examination made by a designated supervisory regulator (CAMELS rating system, nd).CAMELS is a rating system generally used by the government policy cycle, regulating commercial banks, that is, central banks and non-governmental research centers for the purpose of assessing the soundness of a saving institution or a bank (Kabir, 2012). For this

research the following CAMELS parameters with their corresponding performance indicator ratios has been used.

### 2.5.1 CAMELS: Capital Adequacy Component

In the standard CAMELS framework, capital adequacy focuses on the total risk weighted capital intended to protect the depositors from the potential shocks of losses that a bank might incur (anonymous).Capital adequacy is a measure of the financial strength of a bank, usually express as a ratio of its shareholders' fund to total assets. Capital adequacy of a commercial bank can be measured by calculating a number of ratios, such as, capital adequacy ratio, leverage ratio, capital to loans ratio, capital to deposit ratio etc (Ongore, 2013).

### 1. Capital adequacy Ratio (CAR)
This ratio reflects the ability of a bank to withstand the unanticipated losses and the ability of management to address emerging needs for additional capital. This ratio has a positive relationship with the financial soundness of the bank (Kabir, 2012). The higher the ratio, the better would be the performance of banks.
*Formula; CAR= Total Capital /total Asset= TC/TA*

### 2. Leverage (debt to equity) Ratio (LR)
This ratio indicates the degree of leverage of a bank. It indicates how much of the bank business is financed through debt and how much through equity. It is a measure of the amount of assets being provided by creditors for each dollar of assets being provided by the shareholders. Higher ratio indicates less protection for the creditors and depositors in the banking system (Ginevicius, 2011).
*Formula: LR= Total liability/Total Capital=TL/TC*

### 3. Capital to Loans ratio (CLR)

This ratio assesses the nature, trend and volume of problem assets, and the adequacy of allowances for loan and lease losses and other valuation reserves. It reflects the degree of equity coverage to outstanding loans. The higher the ratio, the better would be the banks performance (Kabir, 2012).
*Formula= Total Capital/Total loans and advances= TC/TL*

## 2.5.2 CAMELS: Asset Quality Component

Asset quality evaluates the risks associated with the bank's asset portfolio i.e. the quality of loans issued by the bank. Asset quality is strongly hinged with credit risk management of banks. Asset quality of a banking company is primarily assessed on the basis of its ability to recover the outstanding loans and advances made in due time (Kabir, 2012). The asset quality rating reflects the quantity of existing and potential credit risk associated with the loan and investment portfolios, other real estate owned, and other assets (Pajutagana, 1999).Several ratios can be used for measuring credit quality however, not all information on the loans is always available. Non-performing loans is not available for all banks therefore this paper use the ratios such as earning assets to total assets, provisions to loans and total loans and advances to assets.

### 1. Earning assets to Total Assets Ratio

This ratio measures the extent of deployment of assets in earning assets. The higher the ratio, the better the assets are deployed to earning assets and the better would be the performance of banks (Pajutagana, 1999).

*Formula=Net loans and advances+ Net investment+ Money at call/Total assets*

*Where:*
Net loans and advances= gross or total loan- Provision for
loan loss Money at call = national bank treasury bills+
government treasury bills

### 2. Provisions to Loans Ratio

The ratio measures the adequacy bank's total loan portfolio that is provisioned for bad or doubtful loans and advances. The ratio indicates the riskiness of portfolio assets. The higher the ratio, the lower the quality of the portfolio and the higher the riskiness of the asset, the lower would be the performance of banks (Shaik, 2014).
*Formula= total provision for loans and advances/gross loans and advances*

### 3. Total loans and Advances to Total Assets Ratio (LAR)

This ratio measures the proportion of gross loans and advances to assets in the composition of assets of the bank, which indicates the vulnerability of assets to credit risk. A higher proportion of loans and advances indicate vulnerability of assets to credit risk and lower performance of banks (Kabir, 2012).

*Formula= Total loans and advances/Total assets= TL/TA*

### 2.5.3 CAMELS: Management Efficiency Component

Management Efficiency is one of the key internal factors that determine the bank profitability but appears to be one of the complexes subject to capture with financial ratios (Ongore, 2013). Sound management is a key pre-requisite for the strength, profitability and growth of any financial institution. The performance of Management capacity is usually qualitative and can be understood through the subjective evaluation of Management systems, organization culture, control mechanisms, and so on. However, the capacity of the management of a bank can also be gauged with the help of certain ratios of off-site evaluation of a bank. The capabilities of the management to deploy its resources, aggressively to maximize the income, utilize the facilities in the bank productively and reduce costs etc (Sangamy, 2010). The efficiency and capabilities of the management of commercial banks can be measured using ratios such as asset utilization ratio, cost to income ratio and loan and advance to asset ratios.

### 1. Asset Utilization Ratio (AUR)

This ratio determines that how efficiently the bank is utilizing its assets in generating revenues. Higher value of it reveals that bank is efficient in utilizing its resources (Shaik, 2014).

*Formula=Total income (revenue)/Total asset= TI/TA*

### 2. Cost to Income Ratio (CIR)

Cost to Income Ratio (C/I) measures how the management of the bank is efficient in generating the maximum income per a unit of cost. That is how expensive it is for the bank to produce a unit of output. The lower the C/I ratio, the better would be the performance of the bank (Webb & Robert, 2010).

*Formula = total cost /total income= TC/TI*

### 3. Total Loans and advances to Total Deposits Ratio (LDR)

The ratio measures the efficiency of management in converting the deposits available with the bank (excluding other funds like equity capital, etc.) into high earning advances. Total deposits include demand deposits, savings deposits, term deposits and deposits of other banks. Total advances also include the receivables (Performance Measurement System in Indian Banking Sector in CAMEL Framework, nd).

*Formula= Total loans and advances /deposits= TL/TD*

### 2.5.4 CAMELS: Earnings Ability/Profitability Component

The earnings/Profit is a Conventional Parameter of measuring financial performance. Higher income generally reflects a lack of financial difficulties and so would be expected to reduce the likelihood of failure of a bank (Sangamy, 2010). Earning quality reflects quality of a bank's profitability and its ability to earn consistently. Earnings determine the ability of a bank to increase capital (through retained earnings), absorb loan losses, support the future growth of assets, and provide a return to investors (Credit & Finance Risk Analysis, nd). The quality of earning is a very important criterion that determines the ability of a bank to earn consistently, going into the future. It basically determines the profitability of the bank. It also explains the sustainability and growth in earnings in the future. The profitability of commercial banks can be measured through ratios such as return on asset, return on equity, and net interest margin (Webb & Robert, 2010).

### 1. Return on asset (ROA) Ratio

This ratio shows the ability of management to acquire deposits at a reasonable cost and invest them in profitable investments. The ratio indicates how much net income is generated per birr of assets. It indicates the return earned on the resources invested by both the stockholders and the creditors. The higher the ROA, the more the profitable the bank, the better would be the performance of the bank (Webb & Robert, 2010).

*Formula =Net income after tax/ total asset= NI/TA*

## 2. Return on equity (ROE) Ratio

ROE is the most important indicator of a bank's profitability and growth potential. This ratio indicates the return earned in the resources contributed by the stockholders (Webb & Robert, 2010). The higher the ratio, the profitable the bank is, the higher would be the performance of the bank.

*Formula =Net income after tax /total equity= NI/TE*

## 3. Net interest margin (NIM) Ratio

Net interest margin measures the residue from intermediating business. Net interest margin measures the gap between the interest income the bank receives on loans and securities and interest cost of its borrowed funds. It reflects the cost of bank intermediation services and the efficiency of the bank. The higher the net interest margin, the higher the bank's profit and the more stable the bank is. However, a higher net interest margin could reflect riskier lending practices associated with substantial loan loss provisions (Ongore, 2013). If it becomes negative, this is indicative of poor pricing and/or poor credit quality. The higher the positive ratio indicates the good pricing and/good pricing quality, and the profitability of the bank to be good (Pajutagana, 1999).
Formula= [Interest income-(interest expense+ provisions for loan loss)]/Total assets= NII/TA

## 2.5.5 CAMELS: Liquidity Component

Liquidity indicates the ability of the bank to meet its financial obligations in a timely and effective manner (Webb & Robert, 2010). Liquidity is very important for any organization dealing with money. For a bank, liquidity is a crucial aspect which represents its ability to meet its financial obligations. It is of utmost importance for a bank to maintain correct level of liquidity, which will otherwise lead to declined earnings. Banks have to take proper care in hedging liquidity risk, while at the same time ensuring that a good percentage of funds are invested in higher return generating investments, so that banks can generate profit while at the same time provide liquidity to the

depositors. Among a bank's assets, cash investments are the most liquid (Performance Measurement System in Indian Banking Sector in CAMEL Framework, nd). The liquidity position of commercial banks can be measured using the ratios such as loan to deposit ratio, liquid asset to total asset ratio, and liquid asset to deposit ratio.

## 1. Liquid Assets to Total Deposits Ratio (LATD)

This ratio measures the liquidity available to the depositors of a bank. Liquid assets include cash in hand, balance with the national bank, balance with other banks (both in domestic and abroad), and money at call and short notice. Total deposits include demand deposits, savings deposits, term deposits and deposits of other financial institutions. The ratio indicates the percentage of short term obligations that could be met with the bank's liquid assets in the case of sudden withdrawals (Webb & Robert, 2010).

*Formula= (Cash+ cash reserved in the national bank + cash in other banks+ cash in foreign banks+ money at call and short notice)/Total deposits*

## 2. Net Loans to Total Asset Ratio (NLTA)

NLTA measures the percentage of assets that is tied up in loans. The higher the ratio, the less liquid the bank is. The higher the ratio, the more risky a bank may be to higher defaults.
*Formula= Net loans/total assets*

## 3. Net Loans/Total Deposits

This ratio indicates the percentage of the total deposits locked into non-liquid assets. A high figure denotes lower liquidity (Webb & Robert, 2010).
*Formula= Net loans/ Total deposit*

## 2.5.6 CAMELS: Sensitivity to Market Risk

Sensitivity to market risk reflects the degree to which changes in interest rates, foreign exchange rates, commodity prices, or equity prices can adversely affect a financial institution's earnings or economic capital (Ginevicius, 2011). The sensitivity of commercial banks to market risk is analyzed using ratio such as, Gap analysis which focuses on rate sensitive assets and liabilities (Pajutagana, 1999). Rate-sensitive

assets and liabilities refer to those assets and liabilities which react to changes in market conditions (such as changes in interest rate, foreign exchange rate and equity prices) that may lead to increase/decrease in value/earnings on the asset or costs/expenses on the liability (Pajutagana, 1999). But for this research, since the data needed for the computation of ratios was not available in all selected banks, only the Gap analysis has been used.

**Gap Analysis**

Gap analysis helps identify maturity and repricing mismatches between assets, liabilities, and off-balance sheet instruments. Gap schedules segregate rate-sensitive assets (RSA), rate-sensitive liabilities (RSL), and off-balance sheet instruments according to their repricing characteristics. Then, the analysis summarizes the repricing mismatches for defined time horizons. Additional calculations can then estimate the effect the repricing mismatches may have on net interest income (Federal Depoit Insurance Corporation of USA, nd).

A basic gap ratio is calculated as:

RSA *minus* RSL [(Net loans and advance+ net investment+ money at call) – (Deposits + Borrowings)]

Earning Asset   Investment securities+ net loans and advances+ money at call

A bank has a positive gap if the amount of RSAs repricing in a given period exceeds the amount of RSLs repricing during the same period. When a bank has a positive gap, it is said to be asset sensitive. Should market interest rates decrease, a positive gap indicates that net interest income would likely also decrease. If rates increase, a positive gap indicates that net interest income may also increase.

Conversely, a bank has a negative gap when the amount of RSLs exceeds the amount of RSAs repricing during the same period. When a bank has a negative gap, it is said to be liability sensitive, and a decrease in market rates would likely cause an increase in net interest income. Should interest rates increase, a negative gap indicates net interest income may decrease (Federal Depoit Insurance Corporation of USA, nd).

**2.6. Model of the Analysis Process**

In general, the overall process of the study from data collection up to the end result and conclusion and recommendation is described below diagrammatically.

**Figure 1: Model description of the overall research process**

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┌────────────────────────┐                    ┌──────────────────────────────┐
│ Collection of data from│                    │ capital adequacy indicator   │
│ stated sources         │                    │ ratios                       │
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            │                                                 │
            ▼                                                 ▼
┌────────────────────────┐                    ┌──────────────────────────────┐
│ Identification of      │                    │ Asset quality indicator ratios│
│ relevant data          │                    └──────────────────────────────┘
└────────────────────────┘                                   │
            │                                                 ▼
            ▼                                    ┌──────────────────────────────┐
┌────────────────────────┐                      │ Management    efficiency      │
│ Arrange in tabular form│                       │ indicator ratios             │
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            │                                                 │
            ▼                                                 ▼
┌────────────────────────────┐                 ┌──────────────────────────────┐  Earnings
│ Selection of performance    │                │ ability indicator ratios     │
│ indicator ratios for        │                └──────────────────────────────┘
│ components of CAMELS        │                                 │
└────────────────────────────┘                                 ▼
                                                 ┌──────────────────────────────┐
                                                 │ Liquidity indicator ratios   │
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                                                 │ Sensitivity to market risk   │
                                                 │ indicator ratios             │
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            ▼
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│ Mathematical calculation│
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│ Graphical representation│
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            │
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┌────────────────────────┐
│ Analysis and           │
│ interpretation         │
└────────────────────────┘
        │                       │
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┌──────────────────┐     ┌──────────────────────────┐
│ Trend/time series│ ◄─► │ Comparative/cross sectional│
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        │                       │
        ▼                       ▼
┌──────────────────────────────┐   ┌──────────────────────────────┐
│ Identification of strengths   │ ◄─►│ Ranking banks based on the    │
│ and weaknesses                │   │ finding                       │
└──────────────────────────────┘   └──────────────────────────────┘
                    │
                    ▼
        ┌────────────────────────────┐
        │ Conclusion and recommendation│
        └────────────────────────────┘
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## 3. Data analysis, Result Presentation and Discussion

### 3.1 CAMELS: Capital Adequacy Component

Capital adequacy of a commercial bank can be measured by calculating a number of ratios, such as, capital adequacy ratio, leverage ratio, capital to loans ratio, capital to deposit ratio etc.

### 3.1.1 Capital Adequacy Ratio (CAR)

The higher the ratio, the better would be the performance of banks.
*Formula; CAR= Total Capital /total Asset= TC/TA*

**Table 1: Capital Adequacy Ratio of each Bank**

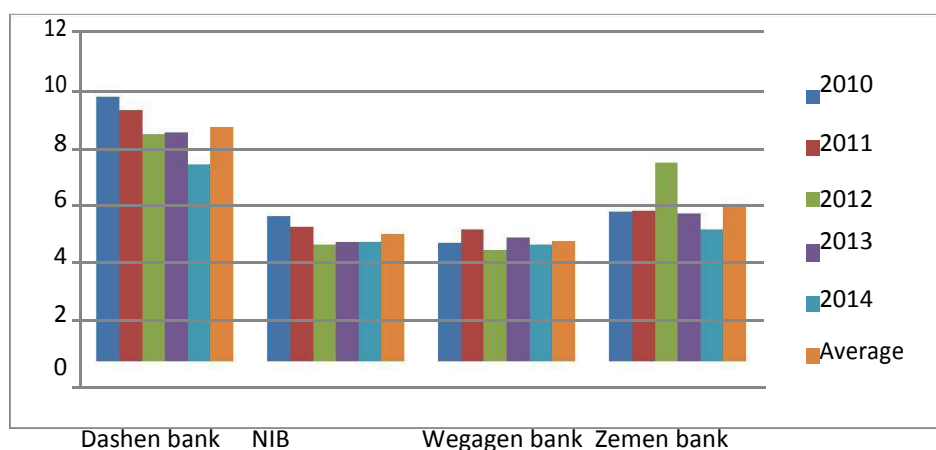| Banks | CAR of banks | | | | | |
|---|---|---|---|---|---|---|
| | **2010** | **2011** | **2012** | **2013** | **2014** | **Average** |
| DB | 0.1 | 0.1 | 0.104 | 0.103 | 0.12 | 0.1054 |
| NIB | 0.15 | 0.16 | 0.185 | 0.18 | 0.18 | 0.17 |
| WB | 0.18 | 0.166 | 0.19 | 0.176 | 0.186 | 0.18 |
| ZB | 0.15 | 0.15 | 0.12 | 0.15 | 0.167 | 0.15 |

Source: the five year (2010- 2014) annual reports of each bank

As we can see in the table above, the capital adequacy ratio of Dashen bank is relatively small than the other banks, and there is no significant change over the five years. In 2012, the CAR ratio of Zemen bank has shown a slight change that it decreases to 0.12 but it rises since the next year. In general, there was no significant performance change and difference among banks over the five year, as measured by their capital adequacy. The following graph also shows the trends and changes in the capital adequacy of the banks over the five year periods. By taking the average of their five year CAR, WB and NIB has shown better performance as their higher CAR (0.18 and 0.17 respectively) than other banks, whereas, DB has the least capital adequacy performance.

**Figure 2: The trend in capital adequacy of banks**
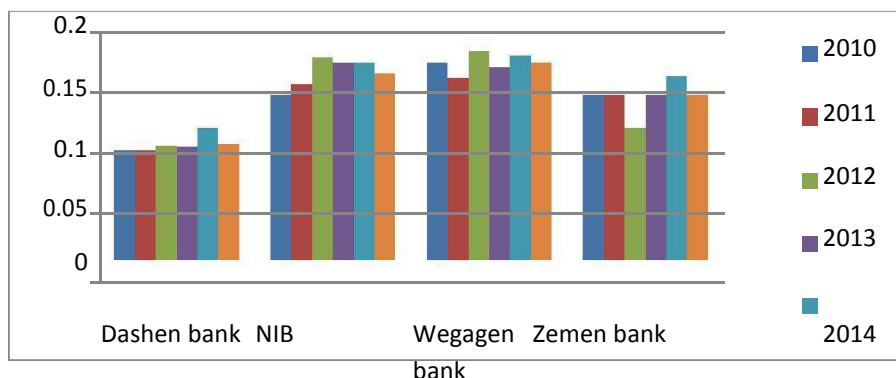


Source: the five year (2010- 2014) annual reports of each bank

## 3.1.2 Leverage (Debt to Equity) Ratio (LR)

Higher ratio indicates less protection for the creditors and depositors in the banking system.

*Formula; LR= Total liability/Total Capital=TL/TC*

**Table 2: Leverage (debt to equity) Ratio**

| Banks | LR of banks | | | | | |
|-------|------|------|------|------|------|---------|
| | **2010** | **2011** | **2012** | **2013** | **2014** | **Average** |
| DB | 10 | 9.5 | 8.6 | 8.65 | 7.45 | 8.84 |
| NIB | 5.5 | 5.1 | 4.42 | 4.5 | 4.5 | 4.82 |
| WB | 4.46 | 5 | 4.2 | 4.68 | 4.4 | 4.55 |
| ZB | 5.66 | 5.7 | 7.5 | 5.6 | 4.97 | 5.9 |

Source: the five year (2010- 2014) annual reports of each bank

As shown in the table above, debt to equity ratio of Dashen bank is relatively higher than other banks and the ratio slightly decreases for the consequent years. This indicates that Dashen bank has more debt proportional to its capital than other banks, and the creditors and depositors has less protection for their loan and deposit, i.e. there will be default risk for the creditors and depositors. In addition, by the year

of 2012, as it is also shown in the graph below, DER of Zemen bank was higher than other years and other banks except Dashen bank's. This higher ratio bears that low performance.

In line with the above table the following graph vividly exhibits the trends in the debt to equity ratio of the banks over the five years. As shown in the table above and in the graph below, the banks, such as, NIB, WB and ZB, does not show a significant change in their performance in terms of DER and there was no material difference among them, except Zemen bank show higher ratio by the year of 2012. On average, DB has the lowest performance than other banks as its highest LR (8.84) implies in the above table and in the figure that follows.

**Figure 3: Trends in Leverage Ratio (DER) of Banks over the Five Years**



Source: the five year (2010- 2014) annual reports of each bank

### 3.1.3Capital to Loans Ratio (CLR)

It reflects the degree of equity coverage to outstanding loans. The higher the ratio, the better would be the banks performance (Kabir, 2012).

*Formula= Total Capital/Net loans and advances= TC/TL*

**Table 3: Capital to Loans Ratio of Banks over the Five Years**

| Banks | CLR of banks | | | | | |
|-------|------|------|------|------|------|---------|
|       | **2010** | **2011** | **2012** | **2013** | **2014** | **Average** |
| DB    | 0.23 | 0.23 | 0.23 | 0.236 | 0.275 | |
| NIB   | 0.37 | 0.44 | 0.4  | 0.38  | 0.36  | |
| WB    | 0.44 | 0.48 | 0.46 | 0.4   | 0.47  | |
| ZB    | 0.42 | 0.4  | 0.28 | 0.4   | 0.5   | |

Source: the five year (2010- 2014) annual reports of each bank

As we can see from the table above and in the figure below, the CLR of Dashen bank is lower than other banks, which indicates dashen bank has lower performance than the rest banks, and its performance is slightly the same for the four years, and increases in the year of 2014. In addition, Zemen bank has shown lower ratios in 2012 (0.28) and higher ratio in 2014 (0.4). However, banks such as, NIB, WB and ZB has nearly similar performance as evidently demonstrated in table 4.3 and in figure 4.3, except ZB"s CLR was lower in 2012 and higher in 2014. On average WB has the best performance than other banks, on the other hand DB has the lowest performance.

**Figure 4: Trend of the Capital to Loans ratio of Banks over the Five Years**
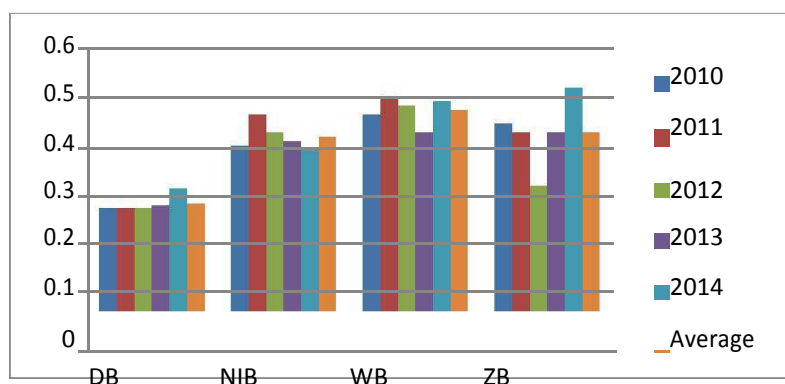


Source: the five year (2010- 2014) annual reports of each bank

## 3.2 CAMELS: Asset Quality Component

Several ratios can be used for measuring credit quality however, not all information on the loans is always available. Non-performing loans is not available for all banks therefore this paper use the ratios such as earning assets to total assets, provisions to loans and total loans and advances to assets.

### 3.2.1 Earning Assets to Total Assets Ratio (EAAR)

The higher the ratio, the better the assets are deployed to earning assets and the better would be the performance of banks (Pajutagana, 1999).

*Formula=Earning assets /Total assets= EA/TA*

*Where:*

*Earning assets=Total loans and advances+ Investment+ Money at call*

Money at call = national bank treasury bills+ government treasury bills

**Table 4: Earning Assets to Total Assets Ratio**

| Banks | EATAR of banks | | | | | |
|---|---|---|---|---|---|---|
| | 2010 | 2011 | 2012 | 2013 | 2014 | Average |
| DB | 0.52 | 0.53 | 0.62 | 0.63 | 0.62 | |
| NIB | 0.5 | 0.48 | 0.62 | 0.72 | 0.76 | |
| WB | 0.45 | 0.46 | 0.63 | 0.72 | 0.66 | |
| ZB | 0.42 | 0.53 | 0.61 | 0.72 | 0.57 | |

Source: the five year (2010- 2014) annual reports of each bank

As indicated in the table 4 above almost all the banks have been showing an increasing trend in their earning assets to total assets ratio over the five years from 2010 through 2014. That is they had lower ratios in the earlier years and higher ratios in the later years. This increasing trend demonstrates that the banks have been deploying their assets to earning assets that would increase their profitability. The trend is also shown in figure 4.4 below. In addition, the banks didn't show a fundamental difference in their EAAR over the five year periods as it is evidently demonstrated in the table 4.4 above and the figure 4.4 below.

**Figure 5: Trend in EAAR of Banks over Five Years**
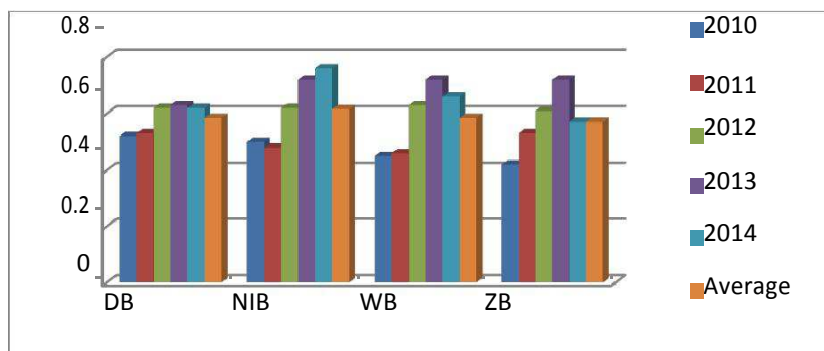


Source: the five year (2010- 2014) annual reports of each bank

### 3.2.2 Provisions to Loans Ratio (PLR)

The higher the ratio, the lower the quality of the portfolio and the higher the riskiness of the asset, the lower would be the performance of banks (Shaik, 2014).

*Formula= total provision for loans and advances/gross loans and advances= TP/GL*

**Table 5: Provisions to Total Loans Ratio**

| Banks | PLR of banks | | | | | |
|-------|--------|--------|--------|--------|--------|---------|
|       | **2010** | **2011** | **2012** | **2013** | **2014** | **Average** |
| DB | 0.0021 | 0.02 | 0.021 | 0.021 | 0.017 | |
| NIB | 0.039 | 0.041 | 0.027 | 0.025 | 0.021 | |
| WB | 0.07 | 0.045 | 0.024 | 0.022 | 0.017 | |
| ZB | 0.016 | 0.018 | 0.018 | 0.085 | 0.088 | |

Source: the five year (2010- 2014) annual reports of each bank

As we can observe in the above table and in the figure 4.5 below, Dashen bank has shown lower PLR other than other banks in 2010, which indicates its better performance, for it had less risky assets in that year. If the bank has lower PLR, it would indicate that the bank has less risky assets i.e. there will not be default risk that results to provision lower for the loans or advances provided by the bank. By the years

from 2011-2014, Dashen bank however showed relatively similar trends which is higher than its 2010 PLR. NIB and WB had shown similar trend in their PLR for the two years (2010-2012) and in the next consecutive years (2012-2014) they shown similar trends which was higher than their trend in the previous two years. ZB had also shown relatively lower PLR than NIB and WB but higher PLR than DB (in 2010) in the years 2010 through 2012. However, by the years 2013 and 2014 ZB has shown significantly higher provisions to loans ratio, which indicates that it, has higher risk assets which may have higher default risks than the other banks. On average DB has the best asset quality performance than other banks have as its lowest PLR (0.01622) reveals, while ZB has the lowest asset quality performance as its highest PLR (0.045) reflects.

**Figure 6: Trends in Provisions to Total Loans and Advances**
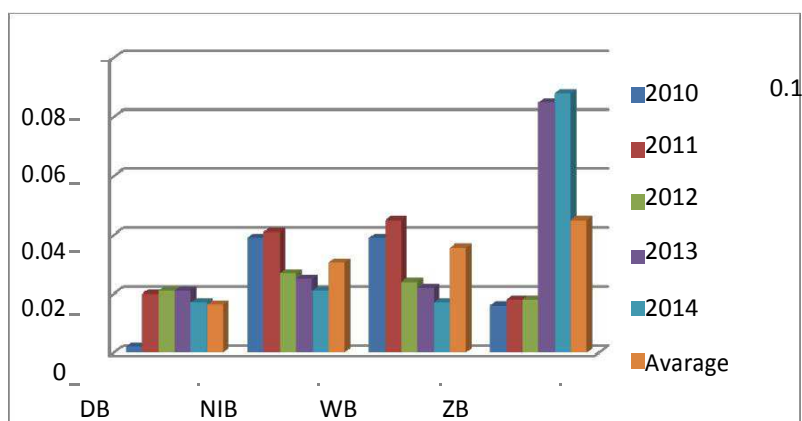


Source: the five year (2010- 2014) annual reports of each bank

### 3.2.3. Total Loans and Advances to Total Assets Ratio (LAR)

This ratio measures the proportion of gross loans and advances to assets in the composition of assets of the bank, which indicates the vulnerability of assets to credit risk. A higher proportion of loans and advances indicate vulnerability of assets to credit risk and lower performance of banks (Kabir, 2012).

*Formula= Total (gross) loans and advances/Total assets= TL/TA*

**Table 6: Total Loans and Advances to Total Assets Ratio**

| Banks | LAR of banks | | | | | |
|-------|------|------|------|------|------|---------|
|       | **2010** | **2011** | **2012** | **2013** | **2014** | **Average** |
| DB    | 0.41 | 0.43 | 0.46 | 0.45 | 0.44 | 0.438 |
| NIB   | 0.43 | 0.39 | 0.45 | 0.5 | 0.51 | 0.456 |
| WB    | 0.43 | 0.36 | 0.43 | 0.45 | 0.4 | 0.414 |
| ZB    | 0.364 | 0.4 | 0.423 | 0.42 | 0.364 | 0.3942 |

Source: the five year (2010- 2014) annual reports of each bank

As portrayed in the table.6 above and in the figure 6 as well below, the banks had shown almost similar trend in their total loans and advances to total assets ratio as compared each other over the five years (2010-2014).

**Figure 6: Trend in Total Loans and Advances to Total Assets Ratio of Banks**
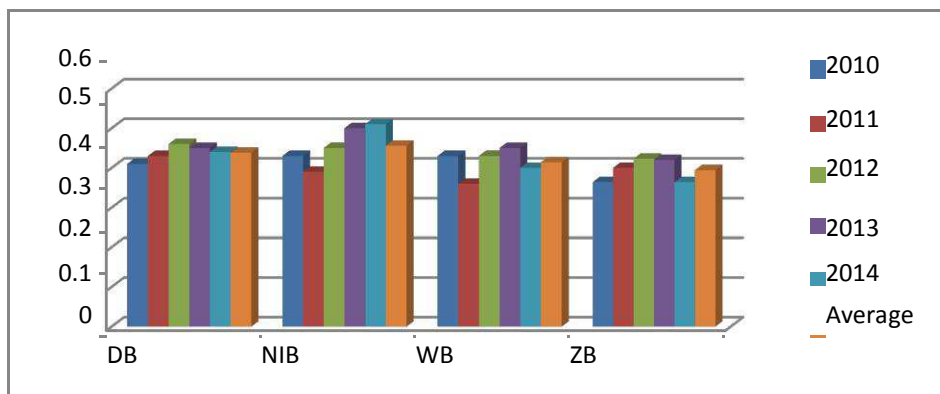


Source: the five year (2010- 2014) annual reports of each bank

### 3.3 CAMELS: Management Efficiency Component

Management Efficiency is one of the key internal factors that determine the bank profitability but appears to be one of the complexes subject to capture with financial ratios (Ongore, 2013). Sound management is a key pre-requisite for the strength, profitability and growth of any financial institution. The performance of Management capacity is usually qualitative and can be understood through the subjective evaluation of Management systems, organization culture, control mechanisms, and so on. However, the capacity of the management of a

bank can also be gauged with the help of certain ratios of off-site evaluation of a bank. The capabilities of the management to deploy its resources, aggressively to maximize the income, utilize the facilities in the bank productively and reduce costs etc (Sangamy, 2010). The efficiency and capabilities of the management of commercial banks can be measured using ratios such as asset utilization ratio, cost to income ratio and loan and advance to asset ratios.

### 3.3.1. Asset Utilization Ratio (AUR)
This ratio determines that how efficiently the bank is utilizing its assets in generating revenues. Higher value of it reveals that bank is efficient in utilizing its resources (Shaik, 2014).
*Formula=Net income before tax and dividend/ Total asset= NI/TA*

**Table 7: Asset Utilization Ratio of Banks**

| Banks | AUR of banks | | | | | |
|-------|-------|-------|-------|-------|-------|---------|
|       | 2010  | 2011  | 2012  | 2013  | 2014  | Average |
| DB    | 0.037 | 0.043 | 0.051 | 0.041 | 0.044 | 0.0432  |
| NIB   | 0.048 | 0.048 | 0.047 | 0.041 | 0.039 | 0.0446  |
| WB    | 0.055 | 0.057 | 0.055 | 0.043 | 0.036 | 0.0492  |
| ZB    | 0.065 | 0.075 | 0.052 | 0.038 | 0.042 | 0.0544  |

Source: The five year (2010- 2014) annual reports of each bank

The higher asset utilization ratio of banks indicates that better the banks are utilizing their assets in generating income for the year and vice versa. As indicated in the table 7 above and clearly portrayed in the figure 7 below, DB has shown relatively lower asset utilization ratio (0.037) in 2010 than other banks and its AUR ratios in the next four years though not significant. WB has also shown lower AUR (0.36) in 2014. Even though, most of the banks has shown a decreasing AUR trend, ZB has relatively higher ratios in 2010 (0.065) and in 2011 (0.075) than other banks which indicates that ZB has been better utilizing its assets in these years than other banks and other years to generate revenue. In general, most of these banks such as NIB though not significant, WB and ZB has shown lower AUR in later years (2013 and 2014) than earlier years, which implied that these banks were better

exploiting their assets in revenue generation process. By taking the average of their five year performance, ZB has the best management efficiency performance since its average AUR (0.0544) is the highest ratio than other banks though there is no significant difference amongst banks.

**Figure 7: Trends in Asset Utilization Ratio of Banks**
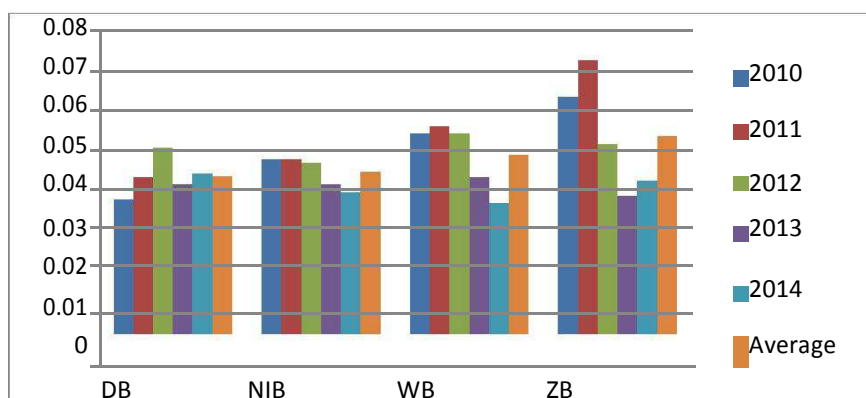


Source: the five year (2010- 2014) annual reports of each bank

### 3.3.2 Cost to income Ratio (CIR)

Cost to Income Ratio (C/I) measures how the management of the bank is efficient in generating the maximum income per a unit of cost. That is how expensive it is for the bank to produce a unit of output. The lower the C/I ratio, the better would be the performance of the bank (Webb & Robert, 2010).

*Formula = total cost /total income= TC/TI*

**Table 8: Cost to Income Ratio of Banks**

| Banks | CIR of banks | | | | | |
|-------|------|------|------|------|------|---------|
|       | 2010 | 2011 | 2012 | 2013 | 2014 | Average |
| DB    | 0.52 | 0.51 | 0.48 | 0.45 | 0.55 | 0.502 |
| NIB   | 0.49 | 0.48 | 0.49 | 0.56 | 0.6  | 0.524 |
| WB    | 0.44 | 0.44 | 0.43 | 0.54 | 0.6  | 0.49 |
| ZB    | 0.48 | 0.44 | 0.54 | 0.7  | 0.64 | 0.56 |

Source: The five year (2010- 2014) annual reports of each bank

Since CIR measures the efficiency of the management of banks in

generating maximum revenue in given cost, or its ability to generate higher income without incurring higher cost and expenses. The lower CIR indicates that the better the managements efficiency in generating higher revenue per a unit of cost or in minimizing the cost in line with generating optimum revenue. As we can see in the table 4.8 above and in the figure 4.8 below, there are variations and fluctuations in the CIR of the banks over the five years (2010-2014) that in 2010 WB has shown the lower CIR (0.44) and DB has shown higher CIR (0.52) than the other banks for the same year. In the year of 2011, WB and ZB have shown lower CIR (0.44), while the other banks DB and NIB have shown relatively higher CIR (0.51 and 0.48 respectively). In 2012, WB showed the lowest CIR (0.43) and ZB showed highest CIR (0.54) than other banks. But in the years 2013 and 2014 DB has shown the lowest CIR (0.45 and 0.55 respectively) and ZB has shown highest CIR (0.7 and 0.64) than the other banks.

**Figure 8: Trends in cost to income ratio of banks**
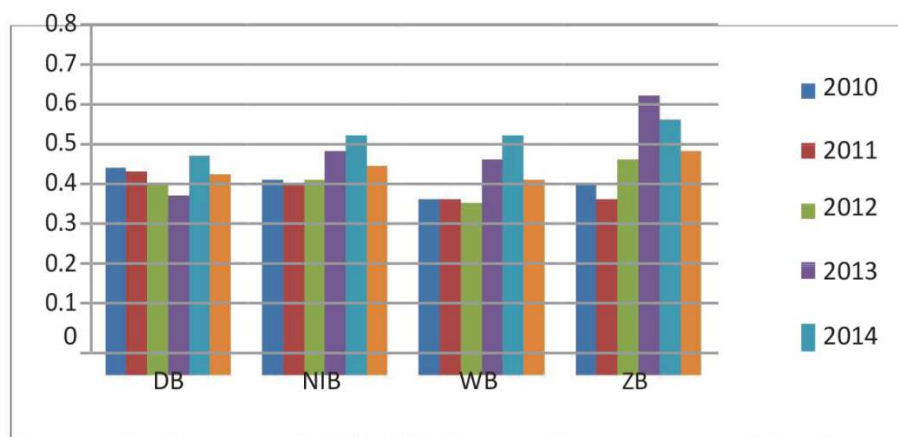


Source: the five year (2010- 2014) annual reports of each bank

### 3.3.3. Total Loans and Advances to Total Deposits Ratio (LDR)

The ratio measures the efficiency of management in converting the deposits available with the bank (excluding other funds like equity capital, etc.) into high earning advances. Total deposits include demand deposits, savings deposits, term deposits and deposits of other banks. Total advances also include the receivables (Performance Measurement System in Indian Banking Sector in CAMEL Framework, nd).

*Formula= Total (Gross) loans and advances /deposits= TL/TD*

**Table 9: Total Loans and Advances to Total Deposits Ratio**

| Banks | LDR of banks | | | | | |
|-------|------|------|------|------|------|---------|
|       | 2010 | 2011 | 2012 | 2013 | 2014 | Average |
| DB    | 0.5  | 0.53 | 0.58 | 0.56 | 0.54 | 0.542 |
| NIB   | 0.62 | 0.54 | 0.64 | 0.68 | 0.69 | 0.634 |
| WB    | 0.62 | 0.51 | 0.66 | 0.66 | 0.57 | 0.604 |
| ZB    | 0.56 | 0.555 | 0.57 | 0.55 | 0.47 | 0.541 |

Source: The five year (2010- 2014) annual reports of each bank

Since the banks most function is channeling funds from savers to investors, banks should be efficient in converting and channeling deposits by customers in to higher earning loans and advances at higher rate to generate the optimum profit. As it is evidently revealed in the table 4.9 above and figure 4.9 as well below the banks didn't show a fundamental difference in their LDR trend over the five years that that ranges from 0.47 LDR of ZB in 2014 to 0.69 LDR of NIB in the same year. Comparatively NIB has shown higher LDR in the years 2010 (0.62), 2012 (0.64), 2013 (0.69) and likewise WB has also shown higher ratios in the years of 2010 (0.62), 2012 and 2013 (0.66) which indicates the better managements efficiency of these banks in converting deposits in to high earning loans than other banks and other years of their own. On average NIB and WB have better management efficiency performance than the rest two banks, for their higher LDR (0.634 and 0.604) reflects.

**Figure 9: Trend in Gross Loan and Advance to Deposit Ratio of Banks**
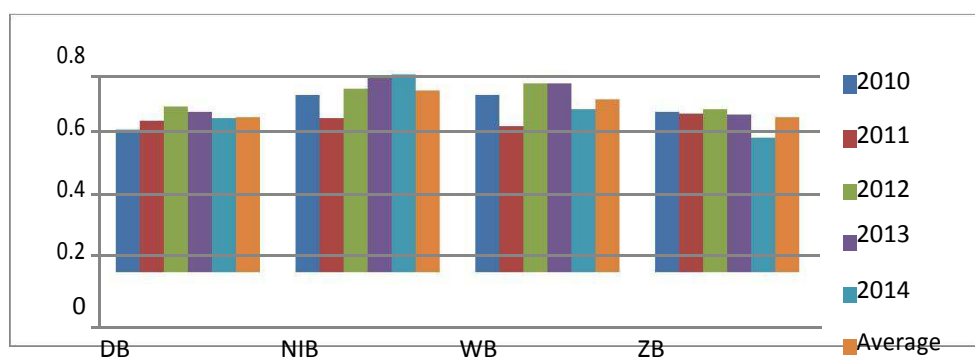


Source: the five year (2010- 2014) annual reports of each bank

## 3.4 CAMELS: Earnings Ability/Profitability Component

The Earnings/Profit is a Conventional Parameter of measuring financial performance. Higher income generally reflects a lack of financial difficulties and so would be expected to reduce the likelihood of failure of a bank (Sangamy, 2010). Earning quality reflects quality of a bank's profitability and its ability to earn consistently. Earnings determine the ability of a bank to increase capital (through retained earnings), absorb loan losses, support the future growth of assets, and provide a return to investors (Credit & Finance Risk Analysis, nd). The quality of earning is a very important criterion that determines the ability of a bank to earn consistently, going into the future. It basically determines the profitability of the bank. It also explains the sustainability and growth in earnings in the future. The profitability of commercial banks can be measured through ratios such as return on asset, return on equity, and net interest margin (Webb & Robert, 2010).

### 3.4.1 Return on asset (ROA) Ratio

This ratio shows the ability of management to acquire deposits at a reasonable cost and invest them in profitable investments. The ratio indicates how much net income is generated per birr of assets. It indicates the return earned on the resources invested by both the stockholders and the creditors. The higher the ROA, the more the profitable the bank, the better would be the performance of the bank (Webb & Robert, 2010).

*Formula =Net income after tax/ total asset= NI/TA*

Table 10: Return on Asset Ratio of Banks

| Banks | ROA of banks (%) | | | | | |
|-------|------|-------|------|------|------|---------|
|       | 2010 | 2011  | 2012 | 2013 | 2014 | Average |
| DB    | 2.6  | 3.08  | 3.7  | 3.07 | 3.24 | 3.14    |
| NIB   | 3.4  | 3.465 | 3.46 | 3.13 | 2.92 | 3.3     |
| WB    | 3.9  | 4     | 4    | 3.23 | 2.8  | 3.6     |
| ZB    | 4    | 5     | 3.6  | 3    | 3.3  | 3.8     |

Source: The five year (2010- 2014) annual reports of each bank
The ROA measures the return banks earned per their assets. The higher

ROA ratio indicates the better profitability of the banks that they produce by both equity capital and debt funds. On the contrary, lower ROA ratios implies that the less profitability of banks that they didn't utilize their assets efficiently as required in the revenue generation process. As we can see in the table 4.10 above and in the figure 4.10 below, most of the banks showed variations in the ROA trend that ranges from DB's 2.6% in 2010 to ZB's 5% in 2011. DB showed relatively better ROA (3.7%) in 2013 than other years of its own. NIB has shown better ROA in three earlier years about 3.4% but lesser ROA in the latter two years 2013 and 2014, (3.1% and 2.9% respectively). Similarly, WB showed better ROA in the earlier three years about 4% but lower ROA in the latter two years 2013 and 2014, (3.3% and 2.8% respectively). ZB has shown the best ROA in 2011 than other banks and other years of its own. On average ZB has the highest ROA (3.8%) followed by WB with ROA of 3.6%. whereas, the rest of the two banks, NIB and DB has relatively lower ROA ratio.

**Figure 10. Trend in return on asset of banks**
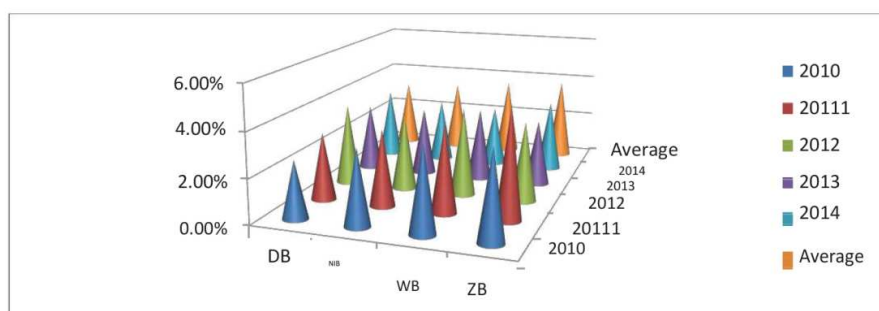


Source: the five year (2010- 2014) annual reports of each bank

### 3.4.2 Return on equity (ROE) Ratio

ROE is the most important indicator of a bank's profitability and growth potential. This ratio indicates the return earned in the resources contributed by the stockholders (Webb & Robert, 2010). The higher the ratio, the profitable the bank is, the higher would be the performance of the bank.

*Formula =Net income after tax /total equity= NI/TE*

**Table 11: Return on Equity Ratio of Banks**

| Banks | ROE of banks (%) | | | | | |
|-------|------|------|------|------|------|---------|
|       | 2010 | 2011 | 2012 | 2013 | 2014 | Average |
| DB    | 29   | 32.3 | 35.7 | 30   | 27   | 30.8    |
| NIB   | 22   | 21   | 18.7 | 17.2 | 16   | 19      |
| WB    | 21   | 24   | 21   | 18.6 | 15   | 20      |
| ZB    | 26.4 | 35.2 | 31   | 19.1 | 19.5 | 26      |

Source: The five year (2010- 2014) annual reports of each bank

ROE measures the return that shareholders of the banks earned for their investment (equity capital). The higher ROE ratio entails that the good performance of banks in generating higher revenue in proportion of their equity capital, while the lower ROE ratio indicates that the lower performance of banks in producing higher return for their stockholders. As we can refer in the table 4.11 above and figure 4.11 as well below, comparatively NIB and WB has shown lower ROE in the five years except ZB has lower ROE in the later years 2013 and

2014. DB and ZB have shown best performance as measured by their ROE especially in the years of 2010 (29% and 26.4% respectively), 2011 (32.3% and 35.2% respectively) and as well in 2012 (35.7% and 31% respectively) than other banks and other years of their own. Furthermore, DB has also shown better performance in ROE by the years of 2013 (30%) and 2014 (27%) than other banks in these years. WB has shown the lowest ROE (155%) in 2014 than other banks and other years of its own. On average, DB has the best profitability performance as measured by its ROE which amounts 30.8% followed by ZB with ROE of 26%, while the other banks, NIB and WB has relatively lower ROE.

Figure 11: Trend in the return on equity of banks
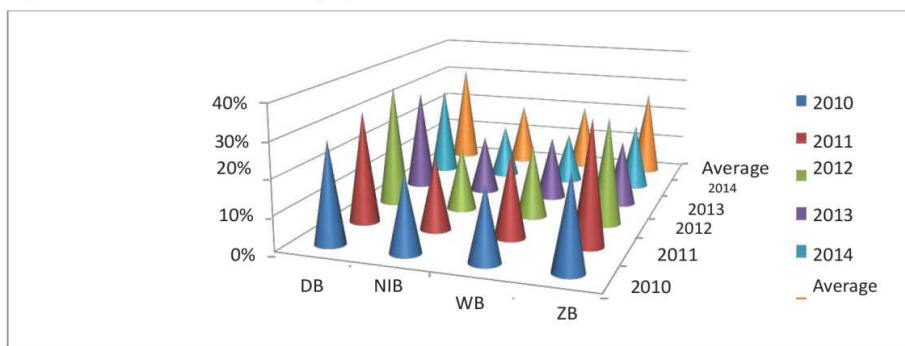


Source: the five year (2010- 2014) annual reports of each bank

### 3.4.3 Net interest margin (NIM) Ratio

NIM measures the residue from intermediating business. Net interest margin measures the gap between the interest income the bank receives on loans and securities and interest cost of its borrowed funds. It reflects the cost of bank intermediation services and the efficiency of the bank. The higher the net interest margin, the higher the bank's profit and the more stable the bank is. However, a higher net interest margin could reflect riskier lending practices associated with substantial loan loss provisions (Ongore, 2013). If it becomes negative, this is indicative of poor pricing and/or poor credit quality. The higher the positive ratio indicates the good pricing and/good pricing quality, and the profitability of the bank to be good (Pajutagana, 1999).

Formula= [Interest income-(interest expense+ provisions for loan loss)]/Total assets= NII/TA

**Table 12: Net interest margin Ratio of Banks**

| Banks | NIM of banks (%) | | | | | |
|-------|------|------|------|------|------|---------|
|       | 2010 | 2011 | 2012 | 2013 | 2014 | Average |
| DB    | 2    | 2    | 2.7  | 2.6  | 2.6  | 2.4     |
| NIB   | 2.4  | 2.8  | 3.4  | 4    | 4.2  | 3.46    |
| WB    | 3    | 2.2  | 3    | 4    | 3.7  | 3.2     |
| ZB    | 0.42 | 0.9  | 1.3  | 1.5  | 2.3  | 1.3     |

Source: The five year (2010- 2014) annual reports of each bank

Banks generate more of their income through intermediating activities that is by accepting deposits from savers (parties with surplus of money) at lower rates and providing these deposits to the investors (parties who are in need of money) at higher ratios. The higher NIM ratio indicates banks are efficient in their intermediating activity and maintain good profitability and performance. As markedly depicted in table 4.12 above and as well in the figure 4.12 below, banks shown variable performance in their NIM over the five years. DB showed relatively smooth trend in the NIM over the five years and medium performance relative to other banks. NIB bank has shown an increasing NIM trend over the five years i.e. 2.4%, 2.8%, 3.4%, 4% and 4.2% throughout the respective years of 2010-2014. WB has shown lower NIM 2.2% in 2011 and relatively better performance in NIM (4% & 3.7%) in 2013 and 2014 respectively than other years of its own. ZB has also though relatively lower than other banks, shown an increasing trend in its NIM performance i.e. 0.42%, 0.9%, 1.3%, 1.5%, & 2.3% throughout the years 2010-2014 respectively. On average NIB has the best NIM 3.46% followed by WB with NIM of 3.2%, where as ZB has the least NIM (1.3%) than other banks.

**Figure 12. Trend in the net interest margin ratio of banks**
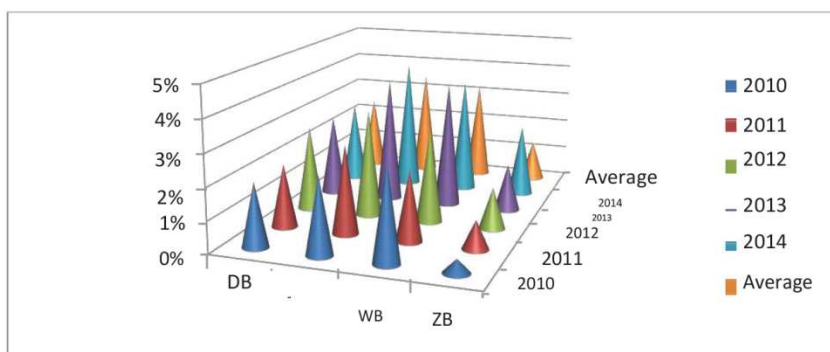


Source: the five year (2010- 2014) annual reports of each bank

### 3.5 CAMELS: Liquidity Component

Liquidity means cash, or how quickly a bank can convert its assets into cash at face value to meet the cash demand of the depositors and borrowers. Liquidity is the life for a commercial bank (Yesuf, 2010). As a depository institution commercial bank must meet its depositor claims on demand. Failing to meet this demand, commercial banks are

exposed to liquidity risk. So, commercial banks must hold sufficient liquidity. It is of utmost importance for a bank to maintain correct level of liquidity, which will otherwise lead to declined earnings. Banks have to take proper care in hedging liquidity risk, while at the same time ensuring that a good percentage of funds are invested in higher return generating investments, so that banks can generate profit while at the same time provide liquidity to the depositors. The liquidity position of commercial banks can be measured using the ratios such as loan to deposit ratio, liquid asset to total asset ratio, and liquid asset to deposit ratio (Ginevicius, 2011).

### 3.5.1 Liquid Assets to Total Deposits Ratio (LATD)

This ratio measures the liquidity available to the depositors of a bank. Liquid assets include cash in hand, balance with the national bank, balance with other banks (both in domestic and abroad), and money at call and short notice. Total deposits include demand deposits, savings deposits, term deposits and deposits of other financial institutions. The ratio indicates the percentage of short term obligations that could be met with the bank's liquid assets in the case of sudden withdrawals (Webb & Robert, 2010). The higher the LATD, the more liquid is a commercial bank and less vulnerable it is to run the bank.
*Formula= Liquid Assets/Total deposits=LA/TD*

*Where, Liquid assets=(Cash+ cash reserved in the national bank + cash in other banks+ cash in foreign banks+ money at call and short notice+ items in course of collection from other banks)*

**Table 13: Liquid Asset to Deposits Ratio of Banks**

| Banks | LATD of banks | | | | | |
|-------|------|------|------|------|------|---------|
|       | 2010 | 2011 | 2012 | 2013 | 2014 | Average |
| DB    | 0.69 | 0.59 | 0.47 | 0.44 | 0.44 | 0.526   |
| NIB   | 0.74 | 0.7  | 0.51 | 0.34 | 0.34 | 0.512   |
| WB    | 0.77 | 0.7  | 0.48 | 0.32 | 0.32 | 0.52    |
| ZB    | 0.9  | 0.61 | 0.46 | 0.32 | 0.32 | 0.52    |

Source: The five year (2010- 2014) annual reports of each bank

Banks as a depository institution should satisfy the money needs of depositors from their deposits. They can pay/service sudden withdrawals by depositors if they have sufficient liquid assets. The higher LATD ratio indicates that the best liquidity performance of banks and vice versa. As we can refer in table 4.13 above and also in the figure 4.13 below, the banks maintained good liquidity position in earlier years than the latter years. DB has shown a decreasing LATD i.e. 0.69, 0.59, 0.47, 0.44, and 0.38 throughout the five years 2010 - 2014 respectively. Similarly, NIB also shown a decreasing LATD ratio except the trend shows high decreasing rate than DB's that is 0.74, 0.7 0.51, 034, and 0.24 throughout 2010 to 2014 respectively. WB also showed a decreasing LATD ratio except it showed an increased LATD in 2014. ZB has shown the highest LATD ratio (0.9) in 2010 than other banks and others years of its own. It has also shown the lowest LATD ratio in 2013 than other years of its own. On average the four banks maintain almost similar liquidity performance that ranges from 0.512 to 0.526 as measured by their LATD ratio.

**Figure 13. Trend in liquid asset to deposits ratio of banks**
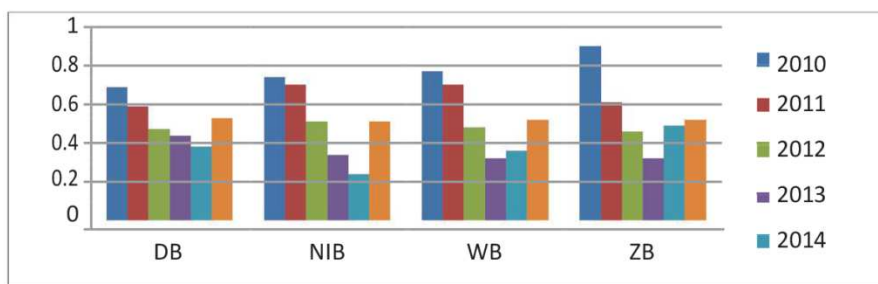


### 3.5.2. Net Loans to Total Asset Ratio (NLTA)

NLTA measures the percentage of assets that is tied up in loans. The higher this ratio indicates a bank is loaned up and its liquidity is low. The higher the ratio, the more risky a bank may be to higher defaults (Yesuf, 2010).

*Formula= Net loans/total assets= NL/TA*

**Table 14: Net Loans to Total Asset Ratio**

| Banks | NLTA of banks | | | | | |
|-------|------|------|------|------|------|---------|
|       | 2010 | 2011 | 2012 | 2013 | 2014 | Average |
| DB    | 0.4  | 0.42 | 0.45 | 0.44 | 0.43 | 0.43    |
| NIB   | 0.41 | 0.37 | 0.44 | 0.48 | 0.5  | 0.44    |
| WB    | 0.41 | 0.35 | 0.42 | 0.44 | 0.39 | 0.4     |
| ZB    | 0.36 | 0.39 | 0.42 | 0.39 | 0.33 | 0.38    |

Source: The five year (2010- 2014) annual reports of each bank

Banks generate most of their income through advancing loans to customers. If the loan granted to the customers is so high proportional to total assets, the bank becomes loaned up and less liquid, that it will not be able to satisfy demand or sudden withdrawals. The higher the loan and advance to total asset ration implies that the loan is loaned up and is less liquid tough it will generate higher profit in the short run. But in the long run it negatively affects the profit of the banks. As it is evidently demonstrated in the table 4.14 above and in the figure 4.14 as well below, the banks didn't show fundamental variation in their NLTA ratio over the five years and among each other. The banks showed almost similar trend that ranges from the smallest NLTA ratio (0.35) of WB in 2011 to the highest NLTA ratio (0.5) of NIB in 2014.

**Figure 14. Trend in NLTA ratio of banks over the five years**
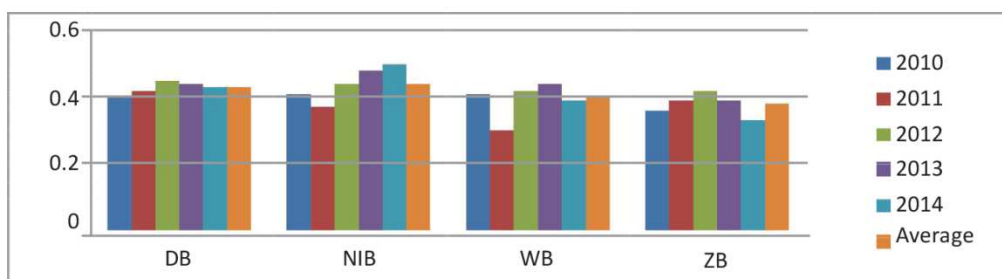


Source: the five year (2010- 2014) annual reports of each bank

### 3.5.3 Net Loans/Total Deposits (NLTD)

This ratio indicates the percentage of the total deposits locked into non-liquid assets. A high figure denotes lower liquidity (Webb & Robert, 2010). The higher the ratio, the more the bank is relying on borrowed

funds, which are generally more costly than most types of deposits. Bank with low NLTD ratio is considered to have excessive liquidity, potentially lower profits, and hence less risk as compared to the bank with high NLDR. The higher the NLTD, the higher is the liquidity risk (Yesuf, 2010).

*Formula= Net loans and advances/ Total deposit=NL/TD*
*Where, Net loans and advances = gross loans and advances- provisions to loan losses*

**Table 15: Net Loans and Advances to Total Deposits Ratios for Banks**

| Banks | NLTD of banks | | | | | |
|-------|------|------|------|------|------|---------|
|       | 2010 | 2011 | 2012 | 2013 | 2014 | Average |
| DB    | 0.49 | 0.51 | 0.57 | 0.55 | 0.53 | 0.53    |
| NIB   | 0.6  | 0.51 | 0.62 | 0.67 | 0.68 | 0.616   |
| WB    | 0.62 | 0.48 | 0.64 | 0.64 | 0.56 | 0.59    |
| ZB    | 0.55 | 0.55 | 0.56 | 0.5  | 0.43 | 0.52    |

Source: The five year (2010- 2014) annual reports of each bank

Intermediating through accepting deposits/funds from parties with surplus of funds thereby granting to the investors who are in need of funds is the very significant function of banks and it is the very operation of banks as well that they can generate the largest portion of their profit. Thus, banks will be sensitive in granting higher loans to generate higher income, but this reduces their liquidity. The higher NLTD implies that to generate maximum profit the bank is highly relied up on deposits and the bank is illiquid. As we can refer in table 4.15 above and as well in the figure 4.15 below, ZB has shown best liquidity performance with the lowest NLTD ratio (0.43) in 2014 than other banks and other years of its own. NIB has shown the lowest liquidity performance as its highest NLTD ratios 0.67 and 0.68 asserts in the years of 2013 and 2014 respectively than other banks and other years of its own. 0n average NIB has the highest NLTD (0.616) than the other banks.

**Figure 15. Trend in net loans and advances to total deposit ratio of banks**
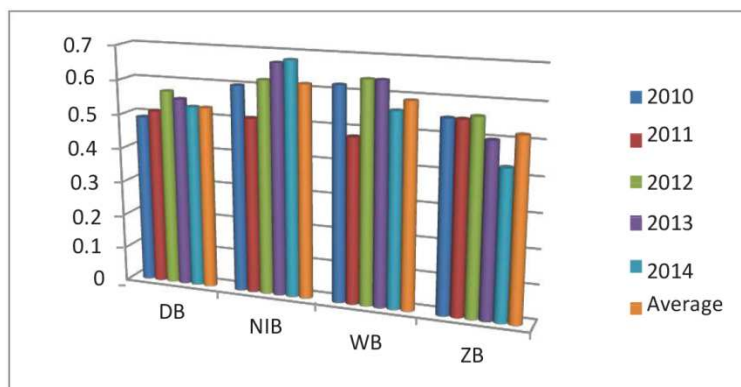


Source: the five year (2010- 2014) annual reports of each bank

### 3.6 Sensitivity to Market Risk

Sensitivity to market risk is a newly added component that reflects the degree to which changes in interest rates, foreign exchange rates, commodity prices, or equity prices can adversely affect a financial institution's earnings or economic capital (Ginevicius, 2011). The sensitivity of commercial banks to market risk is analyzed using ratios such as, Gap analysis, rate-sensitive assets to rate-sensitive liabilities, rate-sensitive assets to total assets, and rate-sensitive liabilities to total assets (Pajutagana, 1999). Rate-sensitive assets and liabilities refer to those assets and liabilities which react to changes in market conditions (such as changes in interest rate, foreign exchange rate and equity prices) that may lead to increase/decrease in value/earnings on the asset or costs/expenses on the liability (Pajutagana, 1999).

### 3.6.1. Gap Analysis

Gap analysis helps identify maturity and repricing mismatches between assets, liabilities, and off-balance sheet instruments. Gap schedules segregate rate-sensitive assets (RSA), rate-sensitive liabilities (RSL), and off-balance sheet instruments according to their repricing characteristics. Then, the analysis summarizes the repricing mismatches for defined time horizons. Additional calculations can then estimate the effect the repricing mismatches may have on net interest income (Federal Deposit Insurance Corporation of USA, nd). A bank has a positive gap if the amount of RSAs repricing in a given period exceeds the amount of RSLs repricing during the same period. When a bank has

a positive gap, it is said to be asset sensitive. Should market interest rates decrease, a positive gap indicates that net interest income would likely also decrease. If rates increase, a positive gap indicates that net interest income may also increase. Conversely, a bank has a negative gap when the amount of RSLs exceeds the amount of RSAs repricing during the same period. When a bank has a negative gap, it is said to be liability sensitive, and a decrease in market rates would likely cause an increase in net interest income. Should interest rates increase, a negative gap indicates net interest income may decrease (Federal Deposit Insurance Corporation of USA).

*A basic gap ratio is calculated as:*

*RSA minus RSL* = *[(Net loans and advance+ net investment+ money at call) – (Deposits + Borrowings)]*

Earning Asset (EA)

**Table 16: Gap ratio of   banks**

| Banks | 2010 | 2011 | 2012 | 2013 | 2014 | Average |
|---|---|---|---|---|---|---|
| DB | -0.59 | -0.48 | -0.3 | -0.276 | -0.3 | -0.39 |
| NIB | -0.4 | -0.51 | -0.14 | -0.02 | 0.03 | -0.21 |
| WB | -0.52 | -0.62 | -0.09 | -0.005 | -0.1 | -0.267 |
| ZB | -0.82 | -0.37 | -0.23 | -0.08 | -0.34 | -0.37 |

Source: The five year (2010- 2014) annual reports of each bank

As it be seen in the table above and in the figure below as well, only NIB a positive GAP ratio in 2014. ZB showed the highest negative GAP ratio in 2010 the other banks. On average DB and ZB have shown higher GAP ratio than the other banks with respective ratios of -0.39 and -0.37.

**Figure 16. Trend in gap ratio of banks over the five years**
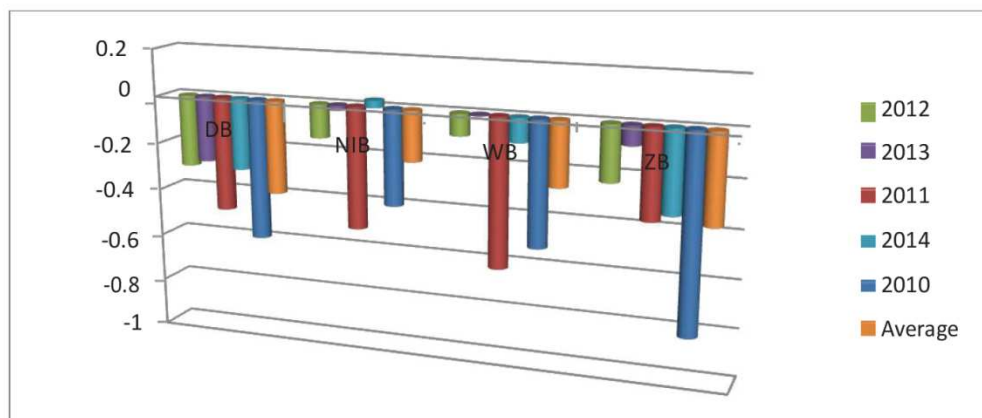


Source: the five year (2010- 2014) annual reports of each bank

## 4. Conclusion

This study aims to evaluate the financial performance of four selected Ethiopian private commercial banks such as Dashen Bank, Nib International Bank, Wegagen Bank and Zemen Bank they maintained over the five years 2010 through 2014. The performance evaluation was made by using the bank's internal determinants of its performance using the CAMELS model. Each internal determinants of bank's performance are the components of the CAMELS system; it comprises the capital adequacy, asset quality, management efficiency, earnings ability, liquidity, and sensitivity to market risk. The performance of the banks is evaluated based on these six components, using the respective performance indicator ratios per each component.

As discussed in the previous chapter, the capital adequacy performance of the banks was evaluated using three performance indicator ratios such as, capital adequacy ratio, leverage ratio, and capital to loans ratio. The capital adequacy of DB didn't show a fundamental variation over the five years, as measured by the capital adequacy ratio and capital to loans ratio, but it showed somewhat a decreasing rate as measured by its leverage ratio and it is exhibited in table 4.1, 4.2 and 4.3. Similarly, the other banks such as NIB, WB and ZB also didn't show material difference in their capital adequacy performance as measured by these ratios throughout the five years 2010 to 2014. In general, the capital adequacy of NIB and WB is found to be better as measured by capital adequacy ratio over, leverage ratio and capital to loans ratio the five years than other banks.

The asset quality performance of the banks is also evaluated using three performance indicator ratios such as, earning assets to total assets, provisions to loans, and total loans to total assets ratios. The results then revealed that the banks has shown an increasing trend over the five years as measured by earning assets to total assets ratio. But as measured by the provisions to loans, banks didn't show the same result. For instance, DB has shown the lowest PLR that indicates its best asset quality performance in 2010 and ZB has shown the lower PLR ratios in earlier three years since 2010, but highest PLR in the later years. NIB and WB have also shown higher PLRs which demonstrates their lower asset quality performance in the earlier two years 2010 and 2011, and lower PLR in the latter three years which indicates better asset quality performance, as it is displayed in figure 5 in the previous chapter. As measured by the total loans to total assets, the banks didn't show a material difference and variation in the asset quality performance of banks among themselves among each other over the five years as exhibited in the table 6.

The management efficiency of the banks is measured by using three performance indicator ratios such as asset utilization ratio, cost to income ratio and loan and advance to asset ratios. The results showed that banks such as DB, NIB and WB didn't show fundamental variation in their management efficiency performance over the five year performance as measured by asset utilization ratio as it is depicted in figure 7 in the previous chapter. But, ZB has experienced variation in its AUR that we can refer in the figure 7 in the previous chapter that it has best performance as its higher AUR implies in 2010 and 2011, but lower AURs in the later three consecutive years which were in decreasing with time and little increase in the last year. The second bank management's efficiency performance indicator ratio CIR's revealed that the same result as the AUR that we can refer in figure 8 from the previous chapter. As measured by loans and advances to total assets ratio, the banks such as DB and ZB showed almost similar management efficiency trend over the five years and there was no fundamental difference among themselves as it is evidently demonstrated in figure 9 in the previous chapter. NIB showed better performance in all years since 2010 except it has lower LTAR in 2011, and WB as well has shown better management efficiency performance

in 2010, 2012, 2013, 2014 and a relatively lower LTAR in 2011 as it is indicated in figure 9. Another very important component of CAMELS and the very crucial determinant of the bank's performance, profitability or earning's ability of the banks is measured using the very common bank's profitability performance indicator ratios such as ROA, ROE and

NIM. These profitability performance indicator ratios disclosed different results. The ROA reveals that ZB showed the best profitability performance in 2011 than other banks and other years of its own. But, as measured by ROE, DB showed the best profitability performance in 2012 and ZB as well in 2011 while it is evidently disclosed in figure 4.11. While measured by NIM, NIB showed the best profitability performance in 2014 than other banks and other years of its own. ZB showed the lowest performance in 2010 as measured by NIM than other banks and other years of its own. On average ZB has the highest ROA (3.8%) followed by WB with ROA of 3.6%. whereas, the rest of the two banks, NIB and DB has relatively lower ROA ratio.

The liquidity performance of the banks, which is considered as the blood of commercial banks is evaluated using three performance indicator ratios such as, liquid asset to deposit ratio, net loans to total asset and net loans to total deposit ratio. They however showed different results. The LATD reveals that ZB achieved the best liquidity performance in 2010 where as NIB has achieved the lowest liquidity performance in 2014 than other banks and other years of their own. Whereas, when measured by NLTA and NLTD ratios, though WB showed the lowest performance in 2011, the banks didn't show fundamental difference and variation in their liquidity performance over the five year and among themselves.

The last component of CAMELS, sensitivity to market risk was evaluated using one performance indicator ratio that is Gap ratio. Even though due to the difficulty in acquiring data about interest rate, the result reveals that no consistency in the trend and among themselves of banks sensitivity to market risk, that only NIB has shown a positive gap in 2014 and ZB has shown the largest negative gap in 2011, as it is plainly demonstrated in figure 4.16 in the previous chapter. This negative trend in GAP ratio indicates that the banks are liability sensitive.

## 5. Recommendations

This study attempted to evaluate the financial performance of four Ethiopian commercial banks such as, DB, NIB, WB and ZB by using CAMELS model. On the basis of the findings and conclusions reached, the following recommendations are forwarded by the researcher in order to improve the performance of these banks. In addition, the recommendations are forwarded to maintain good performance in the overall banking system in Ethiopia. These recommendations are forwarded for these banks themselves, for the banking regulators like national bank of Ethiopia and for further research conductor.

- It is better that the banks, particularly, DB should use its maximum effort to maintain adequate capital to build confidence on depositors that they are protected from the potential losses that a bank might incur.

- These banks, especially the Zemen bank should have well designed credit policy and procedure to maintain quality assets. To reduce the provision for loan losses, the borrower's performance should be scrutinized whether they have capability to repay the loan. For this an appropriate credit policy should be designed. In addition, as much as possible, these banks should use their effort to deploy their assets to earning assets to strengthen their earnings ability.

- The NIM of Zemen bank has shown the least performance; therefore the researcher recommends that the Zemen bank should adjust the interest rate when granting loans and accepting deposits i.e. the lending rate should be substantially higher than the rate of borrowing that bank should pay for depositors, but should be within the scope that the national bank has set.

- Liquidity in a bank is highly sensitive and most crucial issue than other enterprises. Therefore, those banks should be in a position to meet its liability holders as when demand arises. Thus the appropriate mixture of liquid and non-liquid asset should be maintained. For this an appropriate strategy of liability and assets management should be designed by the management of these banks.

- The GAP ratio of these banks indicates that they are liability sensitive. Especially, Dashen Bank and Zemen Bank has higher GAP ratio, which implies they are highly liability sensitive that their income

will decrease in case of rising market rates because the rise in interest rate causes the interest expense to increase. Therefore, the researcher recommended that these banks should maintain proportionate assets and liabilities and the optimum asset and liability mix should be maintained.

- The regulatory bodies of financial institutions such as the National bank of Ethiopia should build bank performance measures standards i.e. bank performance indicator ratios along with the accompanying standards or benchmarks to measure the performance of banks which are operated and being run in Ethiopia.

### 5.1. Direction for Further Researches

- Further researches which focus not only on internal factors of banks performance, but also on external factors should be conducted periodically i.e. at least annually. Because such like studies are so time sensitive that once they have been applied they will not be used to know the next year's performance of banks, and that the performance of banks in the economy can also be affected by the external factors such as the overall condition of the economy and will be different from year to year.

- In addition, it is better that the researches entail qualitative and primary data.

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