Camels Rating Model For Evaluating Financial Performance of Banking Sector: A Theoretical Perspective

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***Abstract*— The function and significance of banking sector cannot be under-estimated in the development of an economy. The strength of economy of any country basically hinges on the strength and efficiency of financial system, which, in turn, depends upon a sound banking system. Reserve Bank of India recommended two supervisory rating models named as CAMELS (Capital Adequacy, Assets Quality, Management, Earning, Liquidity, Systems and Controls) and CACS (Capital Adequacy, Assets Quality, Compliance, Systems and Controls) for rating of Indian commercial, private and foreign banks operating in India. The present study describes the various financial ratios used in the above mentioned models to measure the financial performance of banking sector. The study examined each parameter of CAMELS system by review of literature and empirical studies.**

***Index Terms:* Capital Adequacy, Assets Quality, Management, Earning Quality, Liquidity and Sensitivity etc.**

I. INTRODUCTION

Industrial development, modernization of agriculture, expansion of internal trade and foreign trade are the factors which mainly determine the economic development of an economy. A robust financial system is essential for the growth of a strong and vibrant economy. In the globalized economic scenario for economic development of an economy, the role and importance of prudent banking system cannot be underestimated. The banking sector, being a fundamental component of financial system is the backbone of the modern economic system. Banks are one of the oldest financial institutions in the financial system, which play a crucial role in the mobilization of deposits and disbursement of credit among the various sectors of the economy. A sound banking system acts as fuel injection which stimulates economic efficiency by mobilizing savings and allocating them to high return investment. Various research studies substantiates that countries with a well developed banking system grow faster in contrary to countries having weak banking system.

Research studies emphasized the function of financial sector in economic development and expressed that there is a strong correlation between economic growth and development of financial system [1]. Another study highlighted that financial sector performs as supply leading role in transferring of resources from traditional, low growth sector to high growth sector and stimulates an entrepreneurship response in the high growth sector [2]. From the above discussion it is cleared that the role of banking system is vital and crucial for the capital formation in the country and it necessitates that banks must be more closely watched for their economic efficiency and performance.

In the recent past the banking regulators and policy makers have recommended bank supervision by using CAMELS (capital adequacy, asset quality, management quality, earnings, liquidity and sensitivity) rating model to assess and examine the performance and financial soundness of the bank. CAMELS rating system as an effective internal supervisory tool for evaluating and identifying financial firms, was adopted for the first time in 1979 by the Federal Financial Institution Examination Council (USA) [3]. Regulators of the banking sector always monitors the performance of the banks to ensure efficient financial system based on CAMELS ratio.

II. REVIEW OF LITERATURE

The evaluation of financial performance of banking sector has been assessed by various researchers, academicians and policy makers in different time periods. A simplistic review of some of the important studies is presented here which fulfills the need for the present study.

Narsimham Committee set up by the Government of India had recommended various financial and banking sector reforms which laid more emphasis on improvement in performance and profitability of banks. In India Padmanabhan Working Group recommended two supervisory rating models named CAMELS (Capital Adequacy, Assets Quality, Management, Earning, Liquidity, Systems and Controls) and CACS (Capital Adequacy, Assets Quality, Compliance, Systems and Controls) for rating of Indian commercial banks and foreign banks operating in India [4]. CAMEL system is beneficial, even after controlling for a wide range of publicly available information

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about the condition and performance of banks. CAMEL system further acts as a bank's failure predicting model. The rating is designated based on both quantitative and qualitative information about the bank [5]. In a study based on CAMEL to assess the performance of all nationalized banks for the year 1998, it was found that Corporation Bank has the best rating followed by Oriental Bank of Commerce, Bank of Baroda, Dena Bank, Punjab National Bank, etc. And the worst rating was found to be of Indian Bank preceded by UCO Bank, United Bank of India, Syndicate Bank and Vijaya Bank [6]. In India a study analyzed the performance of Indian banks by adopting the CAMEL Model. The study concluded that the competition was tough and consumers benefited from better services quality, innovative products and better bargains [7].

In an analysis, it was suggested that such types of rating would help the Reserve Bank of India to identify the banks whose performance needs special supervisory attention. The main attempt of CAMEL system is to find out problems which are faced by the banks themselves and catch up the comparative analysis of the performance of various banks [8].

A framework was suggested to assess the performance of Jordanian brokerage firms by developing a CAMELS' based banking rating system. This framework would also be helpful to supervisory bodies, investors, clients, stakeholders and researchers [9]. Many banks are not aware of how to assess their ratings but there is a great need to understand, the work of the banks and what to do when something goes wrong. It is very crucial to assess the soundness of banks and financial institutions through rating system which is used by federal and state regulators, usually known as CAMELS rating system [10]. Bank's CAMEL rating is highly confidential, and only exposed to the bank's senior management for the purpose of projecting the business strategies, and to appropriate supervisory staff. CAMEL is an acronym for five components of bank safety and soundness: capital adequacy, asset quality, management quality, earning ability and liquidity [11].

The CAMELS model is very much popular among regulators due to its effectiveness. This model is highly compatible for the assessment of the performance of the bank [12]. The importance of banks is more prominent in developing countries because financial markets are usually underdeveloped, and banks are typically the only major source of finance and are act as custodian of economic savings [13]. The strength of CAMEL's factors would determine the overall strength of the bank. The quality of each component further underlines the inner strength and how far it can take care of itself against the market risks [14]. Sound financial health of a bank also provides the assurance to its stakeholders and economy as a whole.

III. RESEARCH METHODOLOGY

The nature of present study is mainly qualitative and does not make use of any statistical technique for analysis. The present study has been done mainly on the basis of literature review and secondary information available from various journals, conference proceedings and reports of professional bodies.

IV. OBJECTIVE OF THE STUDY

The prime objective of the study is to analyze and discuss the various theoretical aspects ratios used in CAMELS rating model for the assessment of financial performance of banking sector

V. DISCUSSION AND THERETICAL ANALYSIS OF VARIOUS FINANCIAL RATIOS

Since the inception of CAMELS model various researchers and policy makers have used this model in different perspectives for the assessment of performance of banking and financial sector in different time periods in different countries.

The CAMELS rating model is based on the evaluation of performance of the banks and financial institutions by scrutinizing its balance sheet, as well as, profit and loss statement on the basis of each component [15]**.** CAMEL rating is a concise and indispensable tool for researchers, policy makers and regulators. This rating ensures a bank's healthy conditions by analyzing various aspects of a bank such as financial statement, funding sources, macroeconomic data, budget and cash flow [16]. CAMELS methodology was adopted by North America Bank regulators to know the financial and managerial reliability of commercial lending institutions. To examine a bank's performance using CAMELS rating model, information is obtained from different sources like financial statements, funding sources, macroeconomic information, budget and cash flow projection, and business operations. This model assesses the overall financial position and performance of the bank [17].

The various components of the CAMELS rating model in the form of financial ratios are described as below:

1. Capital Adequacy

Capital adequacy is assumed to be a crucial reflector of the financial soundness of a bank. In order to survive, it is indispensable to protect the stakeholder confidence and preventing its bankruptcy. Capital is assumed to be a cushion that offers protection to stakeholder' and it enhances the stability and efficiency of bank. Capital adequacy represents the overall financial position of a bank. It reflects whether the bank has sufficient capital to bear unexpected losses in the future and bank leverage. The capital adequacy of a bank is assessed through following ratios:

a) Capital to Risk-weighted Assets Ratio

This ratio is advocated to ensure that banks can bear a reasonable amount of losses occurring during the operations and to ascertain bank's loss bearing capacity. Higher the ratio

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reflects that banks are stronger and the investors are more protected. In India, the banks have to maintain a CRAR of 9%. Capital to Risk-weighted Assets Ratio (CRAR) is calculated by dividing Tier-I and Tier-II capital with Risk Weighted Assets.

Tier 1 capital includes shareholders' equity; perpetual non-cumulative preference shares, disclosed reserves and innovative capital instruments. Tier 2 capitals include undisclosed reserves, revaluation reserves of fixed assets and long-term holdings of equity securities, general provisions/general loan-loss reserves; hybrid debt capital instruments and subordinated debt.

b) Debt-Equity Ratio

The debt-equity ratio reflects the degree of leverage of a bank. It expresses the proportion of debt and equity in the total fund structure of the bank. It is computed by dividing total borrowings of the bank with shareholders' net worth. Net worth encompasses equity share capital, and reserves and surpluses. Higher ratio reflects less protection for the depositors and creditors and vice-versa.

c) Government Securities to Total Investments Ratio

The risk engrossed in the investments of banks is reflected by this ratio. It is computed by dividing the investment in government securities by total investment of banks. It is assumed that Government securities are most secured and risk-free debt instruments .It means higher the investment in government securities will result in lower risk and vice versa.

2. Assets Quality

The quality of assets is significant aspect to assess the degree of financial strength of a bank. The principal purpose to measure the assets quality is to determine the composition of non-performing assets (NPAs) as a percentage of the total assets. The quality of credit portfolio expresses the profitability of banks.

The major concern of all commercial banks is to keep the amount of non-performing loans to low level. This is so because high non-performing loan affects the profitability of the bank [18]. The following ratios are required to assess assets quality:

a) Net NPAs to Net Advances

This ratio is the most standard measure to evaluate the assets quality. It is expressed as the net non-performing assets as a percentage of net advances. Net NPAs is calculated by subtracting Net of provisions on NPAs and interest in suspense account from Gross NPAs. Growing NPAs is a challenge to banks, which will adversely affect the performance of banks.

b) Secured Advances to Total Advances

As per Banking Regulation Act, 1949 an advance should be granted against the security of an asset, the market value of such security should always be equal to or greater than the amount of such advance. With a view to reduce risk, banks always sanction secured advances. The greater the security against loans lesser will be the risk and vice versa.

c) Priority Sector Advances to Total Advances

To secure better adaptation of the banking system to the needs of economic planning, priority sector lending plays more active role [19]. Issuance of advances to the priority sector is the prime objective of banks as recommended by Government of India. Such advances include agricultural loans, Small scale industry advances, micro industry advances, export credit and advances to weaker sections of the society. It is expressed as total Priority sector advances divided with total advances.

3. Management Efficiency

Management efficiency is another indispensable constituent of the CAMELS model that guarantees the growth and endurance of a bank. Management efficiency signifies adherence with prescribed norms, capability to counter to changing environment, leadership and administrative capability of the bank. The following ratios are required to assess management efficiency:

a) Total Advances to Total Deposits

This ratio expresses the efficiency of the bank's management in utilization of the deposits (including receivables) available into advances with maximum returns. Total deposits include savings deposits, demand deposits, term deposits and deposits of other banks are included in total deposits. Higher the ratio better it is and vice versa.

b) Business per Employee

Business per employee reveals the overall business contributed by each employee of a bank [20]. Business per employee highlights the productivity and efficiency of human resources of bank. It is computed by dividing the total business with total number of employees. Higher the ratio, the better it is for the bank and vice versa.

c) Return on Advances

This ratio reveals the relationship between net profit after tax (or interest income) and total advances issued by the bank. Higher return on advances results in more returns earned on advances. Higher the ratio of return on advances, higher will be the productivity and profitability of funds and vice versa.

4. Earning Quality

High earnings quality should reflect the firm's current operating performance and a good indicator of future operating performance [21]. The quality of earnings is an extremely significant parameter which expresses the quality of profitability and capability of a bank to sustain quality and

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earning consistently. It primarily reflects the profitability of bank and enlightens consistency of future earnings. The following ratios are required to assess earning quality:

a) Operating Profit to Total Assets

Operating profit ratio as the operating profit (or net operating income) of the bank divided by average total assets. It measures the ability of the management to keep revenue growth ahead of rising costs. Operating profit includes the amount earmarked for provisions and contingencies [22]. This ratio reveals how much profit a bank can earn from its operations for every rupee invested in its total asset. The optimal utilization of assets will increase the operating profit of the bank. The higher the ratio the better will be the earning of the bank.

b) Net Interest Margin to Total Assets

Net interest margin is a measure of the difference between the interest income generated by banks and the amount of interest paid out to their lenders, relative to the amount of their assets [23]. Net Interest Margin is computed as the difference between the interest earned by a bank and the interest expended by a bank. It is expressed as a percentage of total assets. Higher ratio indicates the better earnings given the total assets.

c) Interest Income to Total Income

This ratio estimates the income gained from lending operations as a percentage of the total income earned by the bank during a financial year. Interest income is consists of interest/discount on advances/bills, income on investments, interest on balances with central bank and other inter-bank funds. Total income consists of interest income and other income like commission, net profit (loss) on sale of investment, land and other assets, revaluation of investment and miscellaneous income.

5. Liquidity

The adverse effect of increased liquidity for financial Institutions stated that although more liquid assets enhances the ability to raise cash on short-notice, but also reduce management's ability to commit credibly to an investment strategy that protects investors [24]. Liquidity is another noteworthy aspect which expresses the financial performance of banks. Liquidity means the ability of the bank to honour its obligations toward depositors. Bank can preserve adequate liquidity position either by increasing current liabilities or by converting its assets in to cash quickly. It also denotes the fund available with bank to meet its credit demand and cash flow requirements. The following ratios are required to assess the liquidity:

a) Liquid Assets to Total Assets

This ratio expresses the overall liquidity position of a bank. The liquid assets include cash in hand, money at call and short notice, balance with Reserve Bank of India and balance with other financial institutions and banks. Liquidity management is one of the most imperative aspects of a bank. If available funds are not properly utilized, the bank may suffer loss because idle cash has no return.

b) Liquid Assets to Demand Deposits

Under CAMELS approach, bank liquidity is measured by liquidity ratios based on accounting data such as liquid assets to total assets or total loans to total deposits [19]. This ratio reveals the capability of bank to fulfill the demand from depositors during a particular year. In order to maintain higher liquidity for depositors, bank has to invest these funds in highly liquid form so that the needs of the depositors can be honoured in time.

c) Credit Deposit Ratio

Credit-Deposit ratio is expressed as percentage of loan issued by banks from the deposits received from customers. It reflects the capacity of banks to lend. Higher the ratio, more credit the bank generates from its deposits. Credit Deposit ratio is influenced by certain factors like credit-deposit growth, cash reserves and investments of the banks. Banks sanction credit after fulfilling the requirements of cash reserves and statutory liquidity out of its deposits. A higher ratio reveals more reliance on deposits for lending and vice-versa.

6. Sensitivity Ratios

Sensitivity is expressed as the risk which occurs due to alteration in market conditions, such changes could adversely impact earnings and/or capital. Market risk includes exposures associated with changes in interest rates, foreign exchange rates, commodity prices, equity prices, etc. While all of these items are important, the primary risk in most banks is interest rate risk [25]. The sensitivity of the market risk is assessed by banks through changes in interest rate, foreign exchange rates and equity prices. The changes in these variables effects earning ability of the bank. So, sensitivity to market risk expresses how adversely the bank is affected due to such changes. Market risk is the effect of trading activities, non-trading activities and foreign exchange operation. The following ratios are required to assess sensitivity:

a) Price Earnings Ratio

High level of price earnings ratio is a signal of overheating of stock markets. Price earnings ratio have more predictability in emerging markets and can be utilized to forecast future returns and particularly to choose the entry/exit timings and stock selections [26]. The Price Earnings ratio reflects an idea of what the market is willing to pay for the company's earnings. Higher the Price Earnings ratio more the market is eager to pay for the earnings of the company. Conversely, a

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low Price Earnings ratio may designate a "vote of no confidence" by the market. In general, a high price earnings ratio recommends that investors are expecting higher earnings growth in the future. A valuation ratio of current share price compared to its per-share earnings. Price Earnings Ratio is calculated by dividing the Market Value per Share with Earnings per Share.

b) Total Securities to Total Assets Ratio

The higher value of this ratio is more risky means the bank´s portfolio is subject to market risk. Lower the ratio is good for the bank since it expresses the appropriateness of response towards market risk [27].

This ratio reflects the risk-taking capability of a bank. It is a bank's policy to have high profits, high risk or low profits, low risk. It also suggests information about the accessible alternative investment opportunities. Keeping in view market demands the banks now a day change themselves accordingly.

This ratio reveals the correlation between banks' securities and total assets. It also provides the percentage change of its portfolio with respect to alteration in interest rates or other issues associated with the issuer of the securities. Total Securities to Total Assets is calculated by diving Total securities with Total assets.

c) GAP Analysis

GAP Analysis is a tool used to judge a bank's earnings exposure to interest rate movements is called a gap. A bank's gap over a given time period is the difference between the value of its assets that mature or reprice during that period and the value of its liabilities that mature or reprice during that period. If this difference is large (in either a positive or negative direction), then interest rate changes will have large effects on net interest income. A balanced position would result if the amount of repricing assets were exactly offset by the repricing liabilities (ratio = 1.0). Ratio less than 1.0 indicate a bank that is liability sensitive (liabilities reprice quicker than assets), while a ratio greater than 1.0 indicates that the bank's assets reprice faster than liabilities (asset sensitive).

GAP is the difference between Risk Sensitive Assets and Risk Sensitive Liabilities. Whereas, Risk Sensitive Assets are the sum of Net Advances, Net investments and Money at Call. Risk Sensitive Liabilities are the sum of Deposits and borrowings of the bank.

VI. CONCLUSION

CAMELS model is important tool to evaluate the relative financial strength of a banking system and to suggest suitable remedies to improve the deficiencies. CAMELS model is a ratio-based model to appraise the performance of banks. The above study is a humble effort to describe the various ratios which are helpful for the assessment of financial performance of banking sector. The ratios described in the present study are used by various researchers for the evaluation of banks performance in their respective studies. Under this bank is required to enhance capital adequacy, strengthen asset quality, improve management, increase earnings, maintain liquidity, and reduce sensitivity to various financial risks. From the study we observed that the CAMELS framework is not a comprehensive framework; for example, it does not take into consideration other forms of risk (such as credit risk).

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