CHAPTER-2

REVIEW OF LITERATURE

2.1 Literature Review on CAMEL Ratings: - A number of studies have been conducted in India and abroad to study the various aspects of performance measurement in the banking sector. These studies have been reviewed critically with a view to understand the objectives of these studies, research methodology, research findings, etc. and to identify the gap that exists in the literature in this area. The analysis of banking performance has received a great deal of attention in the banking literature. The five CAMEL factors are Capital adequacy, Asset quality, Management Ability, Earnings capacity, and Liquidity management; indicate the increased probability of bank’s failure when any of these five factors of CAMEL framework proves to be insufficient. The selection of the five CAMEL factors is depending on the idea that each component represents a major element of financial statement of a bank. Several studies are made are as follows:

2.2 Review of Journals, Articles and Papers

1. Barr et al. (2002), in the research the author concluded from his findings that CAMEL rating criteria has become a easy, short and essential tool for supervisors and regulators. The rating confirms a bank’s financial conditions and soundness through the availability of information sources such as financial statement, cash flow statement, sources of funds, and budget analysis.

2. Chowdhury (2002) in this research, the author revealed that the banking industries of Bangladesh comprise public, private and foreign banks. Several efforts were made by the author to study the performance of the selected banks. And to understand the performance the performance of the bank needed skills about the profitability and earnings and to establish relationship between the variables like size of market, analysis bank risk and size of bank market and the profitability.

3. Godlewski (2003) in this research, the author tested the validity of the CAMEL rating model for banks bankruptcy reforms in the growing markets. He focused clearly on using a rational model applies on the list of defaulted banks in the growing markets.

4. Said and Saucier (2003) In this research the author studied the liquidity position, smoothness, solvency and productivity of the Japanese Banks by using CAMEL rating
model, for a selected Japanese banks for the period of 1993-1999, and the researcher also evaluated the capital adequacy, assets quality and management capacity, earnings ability and liquidity position of the sampled banks.

5. **Qamar (2003)** in this research, the author evaluate the differences of endowment factor, risk factor, sales diversification, profitability, and efficiency which may have existed among the 100 scheduled commercial banks, divided into three groups for the year from 2000 to 2001. His study concluded that the public sector banks were better performer in terms of their assets quality, share capital and shareholders fund than other banks, on the other hand foreign banks and old private sector banks were operated at a high capitalization ratio.

6. **Elizabeth and Elliot (2004)** this study revealed that all financial performance of the banks which are measured by Net Interest Margin, Return on Equity, Return on Assets, and capital adequacy are found to be positively correlated with customer service.

7. **Prasuna (2004)** in this research the author analyzed the performance of Indian banks through CAMEL Model. He studied the performance of 65 banks for the year 2003-04. The researcher found that the competition was very due to better quality of the services, innovative facilities provided to the customers increases the tough competition among the banks and this benefit to the customers and he concludes that the upcoming financial year will prove to be a changing phase of Indian banks, therefore the banks have to support their planned focus for increasing the interest rate etc.

8. **Veni (2004)** in this research the author analyses the capital adequacy requirement of the banks and the methods adopted by the banks to strengthen their capital adequacy ratios. The author also states that the rating agencies give much importance to Capital Adequacy Ratios of banks though rating the bank’s term deposits, fixed deposits and bonds. And they adopt CAMEL rating model for rating these banks. Thus, Capital Adequate ratio is considered to be the most important element of rating a bank.

9. **Satish et al. (2005)** in this research the author adopted CAMEL model to analyses the financial performance of the banks in India. The researcher evaluated the performance of 55 banks for the year 2004-05, by using CAMEL Rating Model and the study concluded that the Indian banking system is much sound and Information Technology will help the banking system to grow as well as to strengthen their future stability.
10. **Mous (2005)** In this research, the author analysis the bankruptcy prediction models of banks which are using the profitability, operating, financial ratios, liquidity, leverage, and total assets ratios in decision tree models and multiple discriminate models, and also found that the decision tree approach is good indicator.

11. **Sarker (2005)** in this research, the author examined the CAMEL model for regulation and supervision of Islamic banks by the central bank in Bangladesh. The study supported and supervisors to get a Sharia benchmark to monitor the Islamic banks and other financial institutions.

12. **Bodla & Verma (2006)** in this research, the author tried to evaluate the financial soundness of SBI and ICICI through CAMEL model. Data has been collected for the year from 2000-01 to 2004-05. For the purpose of study. According to the Capital Adequacy ratios, it concluded that ICICI has an advantage over SBI in terms of its assets quality, earning ability and management capacity, Therefore it can be seen that ICICI has shown superiority on SBI. So the liquidity position of both the banks was found to be sound and not much differs.

13. **Arora and Kaur (2008)** in this research the author made an attempt to analyses the performance of Indian banking sector during the post-reforms period. They have made a comparative study of the Indian banks on the basis of seven key performance indicators, which are returns on assets (ROA), Total capital to risk weighted Assets ratio, NPA to Net Advances, Business per employee, Net Profit Margin Ratio, Net NPA’S and off balance sheet analysis of commercial banks for a period of 9 years from 1996-2005. The analysis reveals that there is remarkable development has been seen in the banking sector particularly in the public sector banks.

14. **Wirnkar and Tanko (2008)** in this research the author analysis the significance of the CAMEL model while evaluating the financial soundness of the banks. This experimental research was conducted to find out the effectiveness of CAMEL model in inspecting the financial performance of the bank, and also to evaluate the relevance of different components of CAMEL model and its important ratios that bank regulators use in assessing the soundness of banks. The analysis has been done on a sample of eleven operated commercial banks of Nigeria. The study collects the data from the annual reports of nine years from 1997-2005. The study concluded that the inability of each component of CAMEL to reflect the whole performance of a bank.
15. **Cinko & Avci (2008)** in this research, the author observed that all the banking regulatory authorities are using CAMEL ratings on global level since many years. In this study, some financial ratios are applied to compute the CAMEL ratings for the period of 15 years from 1996 to 2000 and these ratios were used to expect the position of commercial banks to the SDIF in 2001. Therefore the author has confirmed that it is quite difficult to estimate the passing of a bank to SDIF through CAMEL ratios.

16. **Gupta and Kaur (2008)** In this research, the author conducted a study with a view to evaluate the financial performance of the private Sector banks in India by using CAMEL model and also tried to assign the rating to the five top and bottom banks. The researcher studied the 20 old and 10 new private sector banks through CAMEL rating system. The study included the data for the period of 5 years.

17. **Dash and Das (2010)** in this research the author analyzed the Indian banking sector by using CAMEL model. The study was performed on a sample of fifty-eight operating banks of India out of which twenty-nine were public sector banks, and twenty-nine were private sector/foreign banks. The study was based on secondary data for the period of 2003-04 to 2007-08. The data for the study consisted of financial variables and financial ratios based on the CAMELS framework. The results revealed that private banks/foreign banks are better performer than the public sector, These two factors in order is to improve the performance of private banks/foreign-run and accurate and profitability. The results of the research states that public sector banks have to adapt changes efficiently according to changing market conditions, with a view to compete with private and foreign banks.

18. **Agarwal & Sinha (2010)** in this research the author have assessed the financial performance of the banks and it has been found that there will be sustainability of micro finances institutions (MFIs) in India by using the CAMEL model.

19. **Kaur (2010)** in this research an author has made an evaluation of operating commercial of India by using CAMEL model. In this study the researcher has categorized the selected banks into Public, Private and Foreign Banks. CAMEL rating technique was used to provide the ratings to the banks. Each parameter of CAMEL was analyzed by using ratios and a final composite rank has been formed. The study concluded that Andhra Bank and State Bank of Patiala were rated on the top most position and in the case of private sector banks, Jammu and Kashmir Bank were at the first rank followed by HDFC Bank, whereas among the foreign sector banks, Antwerp
was at the first rank followed by JP Morgan Chase Bank.

20. **Sangmi & Nazir (2010)**, In this research the author has examined the financial performance of two major private sector banks in the northern India are Punjab national and Jammu and Kashmir Bank, JKB. These 2 banks were selected with a view to know their role in the growth of the economic conditions of the northern part of India, especially on the basis of advances, deposits, management, branch expansion etc. The study concluded that the position of the respective banks is found to be sound and satisfactory as far as their capital adequacy, asset & management quality, earnings and liquidity is concerned. (RK models).

21. **Siva and Natarajan (2011)** in this research, the author examined the relevance of CAMEL framework and its significant impact on the performance of SBI groups. The study revealed that annual CAMEL ratings by the internal management help the commercial bank to identify the financial health of the banks and also aware the bank to take necessary preventive measures for its sustainability.

22. **Laghari, Jalbani and Rani (2011)** in this research, the author stated a study of CAMEL analysis of National Banks of Pakistan (NBP) and Muslim Commerce Bank (MCB). The data are collected from the annual reports of NBP and MCB and were analyzed on the basis of a number of measures. The study concluded that in case of liquidity position, these selected banks suffer from a low asset ratio and problem of higher debts.

23. **Khan A. A. (2011)** in this research the author examined the several different aspects of banking industry such as mergers and acquisition in India post liberalization period. The financial performance of the banks were compared before and after mergers on the basis of parameter of CAMEL by calculating various accounting and financial ratios like Net profit margin, return on equity, return on capital employed, operating profit margin etc. on the data of three years. After analysis the mean value and the standard deviation of values of the pre-merger and post-merger ratios of merged banks and acquiring bank was compared. This study also examines the effects of mergers and acquisitions on acquiring banks and the results concluded that mergers and acquisitions are useful for growth and expansion of banks.

24. **Sinha P. & Gupta S. (2011)** in this Research, the author studied eighty cases of mergers and acquisitions in the financial sector of India by using ten financial parameters. They have used three models. The first model is a simple average of
parameters of pre and post-merger period performance is taken. The second model is estimated return on net worth before and after merger. The third model is to measure the change in risk. The study revealed that Profitability of the institution is affected by the merger but the liquidity weakened by a decrease in current ratio.

25. **K.V.N. Prasad and Dr. A.A. Chari (2011)** In this study, the author conducted a study to evaluate and compare the financial performance of top four public and private sector banks in India. In this study they compared the financial performance of PNB, ICICI, HDFC and SBI bank and it has been found from the overall that HDFC bank is rated at top most position.

26. **Jha and Sarangi (2011)** In this research, the author analyzed the performance of seven public sector and private sector banks for the period of one year from 2009 to 10. Basically three sets of ratios were used operating performance ratios, financial ratios, and efficiency ratios. They found that Axis Bank was at the top most position, closely followed by ICICI bank, BOI, PNB, SBI, IDBI, and HDFC bank.

27. **K.V.N. Prasad & G. Ravinder, 2011** “In this study, the author examined the performance of twenty nationalized banks on the CAMEL model to measure the performance of these banks from each of the component of CAMEL like Capital Adequacy, Asset Quality, Management efficiency, earnings ability and Liquidity. According to the scope of the study each component of CAMEL was given the equal weights. The study concluded the results that on an average Andhra Bank was found to be at the top most position which is followed by Bank of Baroda and Punjab & Sindh Bank.

28. **Siraj and Pillai (2012)** In this research the author tried to analysis the performance of Islamic and Conventional banks for the period of 5 years from 2005 to 2010 and basically the study is done on some performance indicators like ROA, ROE, Net profit ratio, Operating Profit Ratio. The study is carried on performance indicators such as OPR, NPR, ROE, and ROA and the conclusion revealed that Islamic banks shows positive results during the period of study.

29. **Jha and Hui (2012)** In this research the author tied to find the factors which affecting the performance of Nepalese Commercial banks by using CAMEL framework ratios like capital CAR (Capital Adequacy Ratio), ROA (Return on Assets), ROE (Return on Equity) NPA (Non-Performing Assets Ratio) etc. and the study concluded that public sector banks have higher total assets value as compared to domestic private and joint
venture banks. But overall it has found that the overall performance of domestic private and joint venture banks is superior over the public sector due to its poor management, heavy expense, and asset quality.

30. Nilesh J. Lakhtaria 2013 In the above study, the researcher evaluate the performance of three largest public sector banks namely, Bank of Baroda (BOB), State Bank of India(SBI) and Punjab National Bank(PNB) for the period of three years from 2010 to 2012. Basically an attempt was made to assign the ranks to the selected banks by using CAMEL Model and using the various ratios. And rank the banks as per their performance.

31. R.K. Srinivas and L. Saroja (2013) in this research, an author had conducted a comparative study to compare the financial performance of the ICICI and HDFC bank, The study concluded that there is no significant difference between the performance of these banks but it may note that HDFC bank performance is slightly better compared with ICICI.

32. Nabilah Rozzani and Rashidah Abdul Rahman 2013 In this research, the author evaluated the performance of 19 Islamic and 16 Conventional banks in Malaysia by using CAMEL Model “the period of the study was 3 years from 2008 to 2011 and data was collected from the annual reports by the author From the analysis, it has been conclude that the performance of both the conventional and Islamic banks were quite similar, by showing the potential interaction between the banks.

33. Mishra and Aspal (2013) In the study, the author examine the performance of SBI group by using CAMEL rating model and applied the statistical tests like ANOVA, Kolmogorov- Smirov and Shapirowilk and after the analysis, It has been concluded by the author that though SBI is much bigger than its associates bank had get least position rank due to its bad performance in debt- equity ratio, advances to assets ratio etc. whereas State of Bikaner and Jaipur, State Bank of Patiala were at the top most position because of its better performance in asset quality and liquidity management.

34. Aspal and Malhotra (2013) In this study the author attempts to measure the financial performance of Indian public sector banks by using CAMEL model or applying various statistical tools to test the data collected for the period from 2007 to 2011 and the research concluded that the banks Bank of Baroda and Andhra Bank were at the top ranks due to their better capital adequacy and better asset quality whereas united bank of India, UCO, Bank of Maharashtra and central bank of India were at the
bottom most position because of poor assets quality, low capital adequacy and earnings managements.

35. **CA. Ruchi Gupta 2014** “In this study, the author made an attempt examine the performance of Indian Public sector banks by using CAMEL Rating for the period of five years from 2009 to 2013 for determining the significant difference between the means of CAMEL ratios of the banks, and to test the hypothesis One way ANOVA was applied and the results of the ANOVA revealed the significant difference between the mean values of the banks as per CAMEL ratings at 5% level of significance and the hypothesis was rejected due to the drastic changes in the banking sector of India.

36. **Chowdhary (2014)** in this research, the author was conducted a study to evaluate the performance of public and private sector banks by using CAMEL approach. The study was based on secondary data for the period of 2 years from 2009 to 2011 and the analysis concluded that the performance of private sector banks were better than the public sector banks because the development of private sector banks was growing at a very fast speed.

### 2.3 REVIEW OF NOTEWORTHY CONTRIBUTION

1) **Uyen Dang 2011, Arcada University of Applied Sciences**, in this thesis, the author attempts to conduct a case of American International Insurance Vietnam (AIA) with a view to determine the relevance of CAMEL in public monitoring and banks supervision. And also identify the advantages and disadvantages of CAMEL rating system that brings to AIA. The research problem was discovered with a view to analyzing a bank’s overall quantitative performance. The study collected the theory relevant to the experiential research, and then finds conclusions from the findings by connecting them back to the literature reviewed. The researcher concluded that CAMEL Rating system is found to be useful supervisory tool in the U.S. CAMEL Model proved to be relevant as it is an internationally standardized rating and provides elasticity between on-site and off-site examination; hence, it’s found to be significant model in assessing the banks’ performance of AIA.

2) **Haseeb Zaman Babar GulZeb, Addis Ababa University 2011 in the study CAMELS Rating System for Banking Industry in Pakistan’ Does CAMELS system provide similar rating as PACRA system in assessing the performance of banks in Pakistan?”** In the above thesis, the author has done a study with a view to find out the
similarity in the ranks assigned by PACRA and CAMEL. The above study has concluded that PACRA rating agency is a dominant credit rating agency of Pakistan that performs ratings for most banks and financial institutions of the country and also the author examined the homogeneity in the ratings provided by CAMELS rating system and PACRA rating agency on the sample of seventeen commercial banks of Pakistan. And the research confirms that ratings assigned by both CAMEL as well as PACRA did not find any similarity between them. This might be a sign of the bank’s failure in past three to four years or a future risk to a financial sector of Pakistan.

3) **Saumya Lohia, Claremont McKenna College, 2011** in this thesis, the author analyzes the performance of Indian banks for the period of the last ten years by using the CAMEL Framework for evaluating the performance of public and private banks in India. The study also conducts an experiential analysis to compare the share price performance of Indian banks with the share price performance of banks in Hong Kong, Europe and the US etc. and after the analysis the study concluded that private banks are the better performer than public banks on the basis of CAMEL Framework. And the study also found that the share price performance of the Indian banks are dependent on the share price performance of the Hong Kong, US and European banks and it has a relevant positive relationship with the overall Hong Kong stock market, and this relationship reinforces after 2007.

4) **Gulgz Oztorul, Middle East Technical University, 2011** “Performance Evaluation of Banking Groups: Turkey Case” The basic aim of this research to measure performance standards of the banks in Turkey and to find the factors affecting those standards for the period from 2006 to 2010. However the measures which evaluating banks performance are sufficient in nature. Basically with different approaches, Data Envelopment Analysis (DEA) which measuring banks efficiency and the other is CAMELS analysis. DEA is supported out at various levels: firstly for top 14 banks of the country then separated the banks according to the state banks, the domestic private banks and the foreign private banks. The bank performance measures obtained from DEA and CAMELS analysis are compared and the factors affecting the performances of the Turkish banks are analyzed. The author revealed the results that high efficiency levels of the state banks was decreasing excluding public assets and liabilities. The State Banks and Domestic Private Bank have high CAMELS’ ratios, on the other hand the foreign banks had low.
5) Kairaria 2014 “Effects of camel variables on bank efficiency: a panel analysis of Kenyan Commercial Banks” In this research the author wants was to establish the effects of CAMEL variables on the banks performance of Kenyan Commercial banks as measured by efficiency ratios. For the purpose of research the annual financial statements of 37 Kenyan commercial banks from 2007 to 2011 were analyzed and a sample of 185 study units was analyzed by using multiple linear regression method. The findings of the research concluded that Capital Adequacy, Earnings and Liquidity ratio have a negative relationship with the efficiency ratio however Management quality and Asset quality ratios have a positive relationship.

2.4 GAP Analysis
Several studies have been done on the performance analysis of the banks through CAMEL rating model during the different time period in the form of journals, article, research papers and dissertations in India or outside India. With the help of review of literature we may come to know that maximum research work on CAMEL analysis has been done in Islamic countries and in Bangladesh with different concepts.
In India, we have review several studies on CAMEL analysis. But most of the work is done in the form of research paper only, the work has been done for the previous years also, and some have different criteria for the selection of the banks, while some have included only public sector banks in their studies.
While keeping in mind the review of literature on CAMEL, We may find that CAMEL is very significant model to provide the rating to the banks according to their performance which will significantly help to the investor, creditors, shareholders and customers of the bank.
In our study, we have included comparative study of the selected public and private sector banks, through CAMEL rating for the year of five years from 2011 to 2015. We expect that our study will contribute a lot to solve the problem of the society, management and creditors. The CAMEL approach has been sanctioned and acknowledged as the most influential internal supervisory implement employed extensively for rating the sensitivity of the financial institutions.