

# Impact Of Camel Model In Determining The Health Status Of Indian Banking Industry

Kankipati Ajay Kumar, A.V.N.Murty



Abstract: The banking industry is the one which can contribute more to the development of the nation's GDP. The monitoring of the banks and supervising their performance has become very crucial due to the material changes happens in the nonperforming assets of the banks in the recent past. In order to ensure the financial stability of the nation, we need to follow a systematic approach to evaluate the performance of the banks. the present paper made an attempt to find the financial performance of the banks by using the CAMELS Ranking Model. With this research paper we can provide a solution to rank the banks financial status as well as by using this method or approach we came to how efficient our indian banks based on their performance. This research paper evaluates the bank's performance by using the CAMELS model.

Key Words: CAMELS, financial stability, banks, Ranking Methodology, ANOVA.

#### I. INTRODUCTION

The banking industry is the backbone for all the countries in the entire world. In order to improve employability in our country MSME units should increase, entrepreneurship also taken care by the government with the help of banking sector [1] The total financial structure of the economy depends on the performance of the banking industry. Because of the fastest growth [2] and development of the economy getting a lot of pressure on the total banking industry. Indian banking industry focused on lot of new methods of financing[3] after the introduction of the GST we can observe a lot of changes happens in the digital payments it increased the burden for the banks to develop a very secured environment for digital payments[4][5] As far as the banking industry is concerned many nonperforming assets coming into the picture in very recent days, these NPAs became a stumbling block for the banking industry to face all these challenges right now. So that there is a need to develop a structural evaluation system to monitor all these financial institutions performance in order to improve the returns of the banks as well as to reduce the risk of the financial institution. Various studies have been conducted in the world. CAMELS is a very interactive tool which is very efficient and perfectly accurate as a performance checker [6]. CAMELS ratios are used to

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calculate capital adequacy, asset quality, management efficiency, earnings capacity, liquidity and sensitivity of the banks [7]. These all are together given output of the total performance of the bank. In this study, the total descriptive data were analysed in a systematic manner so as to use for the researchers and to the management of the banks. We can also notice volatility in returns of the banks in the recent past and a lot of changes in banking share indexes [8]. In India particularly we can observe a great turnaround shift has been taken place in the recent past, as well as RBI also bringing a lot of changes for the development and safety of the financial system in the Indian banking industry. Banks have mediation between the administration and financial policies in the country.So, it is very crucial to assess the impact of camel model in identifying and determining the health status of indian banking induistry in india. For that Canara, Central, syndicate, Union, Andhra Banks were considerd for this research.

#### II. REVIEW OF LITERATURE

Geeta Sharma and Amandeep Arora (2016) [7] examined the performance of selected public and private banks by using capital adequacy along with assets and management quality and finally earnings ability and liquidity position of banks by applying camel rating methodology for the period of one the year 2014-2015. He identified a total of 8 public sector banks and 7 private sector banks to conduct research secondary data has been collected from the different websites and web sources. He calculated the rank individually and finally, he comes up with a composite rating for overall banks. He analysed the study and concluded as private sector banks are a far better than public sector banks, IDBI banks and Central bank took the least rank. Dr Sneha and Shukla (2015) [9] assessed the performance of selected public and private banks by using capital adequacy along with assets and management quality and finally earnings ability and liquidity position of banks by applying camel rating methodology for the period of three years (2010-13) He identified total 3 public sector banks and 3 private sector banks to conduct research secondary data has been collected from the different websites and web sources. He calculated the rank individually and finally, he comes up with a composite rating for overall banks. The oral performance of this research shows that HDFC ranked first followed by ICICI bank and bank of Baroda. Imran Syed (2012) [10] analysed the performance of scheduled urban co-operative banks in Surat city and he made an attempt to evaluate the performance of these banks with 10 years of past data find out capital adequacy and asset quality, management efficiency and earning quality, liquidity position.

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This study is based on secondary data collected from annual reports of cooperative banks and he took a sample of one bank that is surat people co-operative bank. He used a CAMEL rating model to find out the performance of that bank. This study limited to only one bank i.e scheduled urban co-operative bank and he not spoken why the bank is not performing well and he not given the reasons for why that bank was not maintaining optimum ratios. Analysed the performance of scheduled urban co-operative banks in Surat city and he made an attempt to evaluate the performance of these banks with 10 years of past data find out capital adequacy and asset quality, management efficiency and earning quality, liquidity position.

Parvesh Kumar aspal and Naresh Malhotra (2013) [11] investigated the performance of selected public and private banks by using capital adequacy along with assets and management quality and finally earnings ability and liquidity position of banks by applying camel rating methodology for the period of four years (2007-11) He identified total 19 public sector banks to conduct research secondary data has been collected from the different websites and web sources. He calculated the rank individually and finally; he comes up with a composite rating for overall banks. it is found that during 2007-2011 the top two performing banks are bank of Baroda and Andhra bank because of high capital adequacy and asset quality.

Rostami (2016) [12] assessed the performance of selected public and private banks by using capital adequacy along with assets and management quality and finally earnings ability and liquidity position of banks by applying camel rating methodology for the period of ten years (2005-14) He identified total of 10 public sector banks to conduct research secondary data has been collected from the different websites and web sources. He calculated the rank individually and finally, he comes up with a composite rating for overall banks. the composite ranking that has been calculating from the group ranking of the public sector banks in India for the period of (2004-14) and results show that bank of Baroda is at the top position followed by the PNB, Indian Bank, IDBI Bank, Canara Bank. The central bank of India secured the least position.

#### III. OBJECTIVES

To examine the performance of 5 nationalised banks in India and ranking them by using the CAMELS Rating Model

# IV. RESEARCH METHODOLOGY

For this current study is descriptive in nature. The data has been collected for this study is from secondary data sources. The study considered 5 nationalised banks for the financial year 2017-18. There is random sampling technique in tota of 19 nationalised banks in india. The data collected for this research collected from the website of RBI, prowess database, Individual bank websites, annual financial reports of the banks. This CAMEL model used to assess the financial performance of the bank. Group average of all banks assessed based on their multiple parameters were so considered after the calculation of composite rankings done.

#### A. Hypothesis

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H0 = There is no significant difference in the performance of the 5 selected nationalised Banks in

India by using CAMEL model

H1 = There is a significant difference in the performance of the 5 selected nationalised Banks in India by using CAMEL model

#### B. Sampling

Total 5 major nationalised Banks in India selected on basis of random sampling out of total 19 natioanlised banks the purpose of the study.

#### C. Data Collection

The data collected for this research collected from the website of RBI, journals, IBA bulletin, prowess database, Individual bank websites, annual financial reports of the banks

# D. Data analysis techniques - Statistical tools

- 1. The Shapiro-Wilk Test to verify the normality in distribution
- 2. Both arithmetic mean and the Standard Deviation to evaluate
- 3. One-way ANOVA tool

# V. ANALYSIS OF ELEMENTS IN CAMEL MODEL FRAMEWORK

CAMELS model is a supervisory rating model helps the management to know the bank's overall condition and financial soundness of a bank. It can be applied to every bank. Based on the CAMELS model we will allocate rankings to each every bank based on their performance.

#### A. CAPITAL ADEQUACY

It is said that capital sufficiency is one of the significant reflectors of a bank's money related wellbeing. Ensuring partner certainty and averting liquidation are extremely fundamental for a bank to endure. Capital is thought to be a pad, which secures the premiums of the invested individuals and expands the dependability and proficiency of the bank. Capital sufficiency shows the general monetary position of a bank [2]. Shows whether the bank has adequate funding to withstand sudden misfortunes later on and bank influence. The capital ampleness of a bank is estimated by the accompanying proportions: Capital proportion to chance weighted resources (CRAR): this relationship is proposed to guarantee that banks can receive a sensible degree of misfortunes got from activities and to decide the bank's misfortune bolster limit. Higher proportion implies that banks are more grounded and financial specialists are increasingly ensured. The most recent RBI order for banks in India is to keep up a CRAR of 9%. Capital proportion to chance weighted resources (CRAR) = (Level I + Level II)/Risk-weighted resources. Level 1 capital incorporates the investors' value; Perpetual non-aggregate favored stocks, unveiled stores and inventive capital instruments. Level 2 capital incorporates undisclosed stores, revaluation stores of fixed resources and long haul capital property. Exchange and Management protections, general arrangements/general stores of credit misfortunes; Hybrid obligation of value instruments and subjected obligation[8]. Obligation/value proportion: The level of influence of a bank is reflected in the obligation value proportion. Demonstrates the extent of obligation and capital in the complete financing of the bank.





It is determined by partitioning the all out credits by investors' value. Total assets incorporates social capital and holds and surpluses. A higher proportion shows less assurance for contributors and banks and the other way around. Extent of advances to resources: it is a connection between complete advances and all out resources. It is determined by partitioning complete advances by absolute resources. This relationship shows the forcefulness of a bank in credits, which at last prompts better benefit. The estimation of complete resources does exclude the revaluation all things considered. Records receivable are likewise incorporated into all out advances. A higher proportion contrasted with a lower one is liked.

**Table I: Capital Adequacy ranking** 

					Adv to	Assets				
	CR	AR	Debt-Equ	ity Ratio	Ra	tio	Govt sec to	Invst Ratio	Group	Rank
BANKS	Average	Ranks	Average	Ranks	Average	Ranks	Average	Ranks	Average	Ranks
Andhra Bank	14.61	4	1.16	4	64.36	4	92.35	1	3.25	4
Canara Bank	15.29	1	0.91	3	63.96	2	83.92	4	2.5	1
Central Bank	14.92	2	0.78	2	61.24	5	87.97	2	2.75	2
Syndicate Bank	14.47	3	0.22	1	61.72	3	80.94	5	3	3
Union Bank	14.3	5	1.18	5	62.74	1	84.83	3	3.5	5

#### **B. ASSET QUALITY**

The nature of advantages additionally assumes a urgent job in deciding the budgetary quality of a bank. The primary target of surveying the nature of benefits is to decide the

Table II: Asset Quality

DANIZO	Net NPA to Net Adv		Net NPA to Total Assets		Total Invest to	Total Assets	Group Rank		
BANKS	Average	Ranks	Average	Ranks	Average	Ranks	Average	Ranks	
Andhra Bank	0.93	2	0.659	2	22.02	2	2.00	2	
Canara Bank	0.67	1	0.463	1	20.26	1	1.00	1	
Central Bank	1.82	5	1.183	5	26.25	4	4.67	4	
Syndicate Bank	0.99	3	0.689	3	26.33	5	3.67	3.5	
Union Bank	1.19	4	0.703	4	25.20	3	3.67	3.5	

organization of unfruitful Assets (NAP) as a level of all out resources. The accompanying proportions are required to assess the nature of the benefits: Extent of Net Advances to Net Advances: The most standard measure for evaluating the nature of benefits is to gauge unbeneficial net resources as a level of net advances[2]. Net NPAs are determined by deducting the net of arrangements on ineffective resources and enthusiasm for tension record of the gross NPA.

Rundown of net advantages for absolute resources; This relationship shows the proficiency of the bank to decide the hazard emerging from the credit and recoup the obligations. Under this relationship, net NAPs are communicated as a level of all out resources. The lower the proportion, the better the nature of the advances and the other way around. Connection between absolute ventures and all out resources: the aggregate of interests in all out resources mirrors the extent of the sending of benefits of a bank in interests before the advances. This proportion estimates the extent[4]. Trade and Management of the complete resources secured up speculations. It is controlled by separating all out speculations by complete resources. A higher file speaks to that the bank has kept up an abnormal state of ventures as a protect against NPAs by embracing a moderate arrangement

#### C. MANAGEMENT EFFICIENCY

The proficiency of the executives is one of the significant segments of the CAMEL model that ensures the survival and development of a bank. The productivity of the administration implies the follow-up of the characterized standards, the ability to plan and react to the dynamic condition and the regulatory limit of the bank. Powerful administration is one of the essential factors behind the presentation of any establishment. Business by worker: business by representative uncovers the profitability and effectiveness of the bank's HR. It is determined by separating the all out business with the absolute number of workers. The higher the extent, the better it will be for the bank and the other way around[2]. Advantage per worker: As the name suggests, this relationship uncovers the advantage per representative. It is determined by separating the benefit after charges gotten by the manage an account with the absolute number of workers. The more noteworthy the relationship, the more prominent the effectiveness of the administration and the other way around.

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# An Analytical Study Of Understanding The Financial Health Of Indian Banking Industry Using Camel Model

Credit store proportion: this proportion assesses the effectiveness of the bank's organization by applying the stores (counting debt claims) accessible, barring different finances, for example, social capital, and so forth., in advances with significant returns. Investment funds stores, request stores, time stores and stores from different banks are incorporated into complete stores[8].

Table III - Management Efficiency ranking

BANKS	Busine empl	_	Profit per	employee	Credit dep	osits ratio	Return on	net worth	Group	Rank
	Average	Ranks	Average	Ranks	Average	Ranks	Average	Ranks	Average	Ranks
Andhra Bank	12.91	2	8.89	3	75.54	2	17.77	2	2.25	4
Canara Bank	13.67	1	10.52	1	74.36	3	16.88	3	2	5
Central Bank	12.62	3	8.56	5	72.56	5	15.62	4.5	4.38	1
Syndicate Bank	10.56	5	9.25	2	73.44	4	15.62	4.5	3.88	2
Union Bank	10.67	4	8.67	4	77.55	1	18.26	1	2.5	3

Profit for value: it is a proportion of the gainfulness of a bank. In computing this relationship, the after-tax reduction is communicated as a level of the investors' speculation.

The nature of the profit is a significant foundation that speaks

#### D. EARNINGS QUALITY

#### **Table -IV Earning Quality ranking**

bank's all out resources. The higher the extent, the more

BANKS	ANKS Return on Assets		NIM to Total Assets		Operating profit to total assets		Intrest income to total income		Group Rank	
	Average	Ranks	Average	Ranks	Average	Ranks	Average	Ranks	Average	Ranks
Andhra Bank	1.315	3	2.892	3	2.16	3	89.12	1	2.50	1.5
Canara Bank	1.265	4	2.451	4	1.95	4	88.93	5	4.25	0.5
Central Bank	1.211	5	2.205	5	1.82	5	88.48	2	4.25	0.5
Syndicate Bank	1.541	1	3.343	1	2.58	1	88.18	3	1.50	3.0
Union Bank	1.383	2	3.181	2	2.47	2	87.38	4	2.50	1.5

to the nature of the salary regarding the pay created by the primary movement: the pay from the advance tasks. This model is significant in light of the contention that the majority of the bank's benefits originate from non-center exercises, for example, treasury activities, speculations, corporate Ajay Kumar Kankipati 1992. Profit for resources: this proportion mirrors the level of the benefit of the advantages of a bank in the age of pay. The best utilization of the advantages will prompt a more prominent operational Net intrigue edge (NIM) to add up to advantage[2]. resources: NIM is the distinction between intrigue pay and

intrigue cost. It is communicated as a level of absolute resources. A higher edge shows the best increases given absolute resources. Working benefit to add up to resources: this proportion mirrors the exhibition of the advantages utilized. It is determined by separating net benefits with the

noteworthy the benefit potential and the other way around. Premium pay to add up to pay: this proportion computes the pay from advance activities as a level of the absolute salary acquired by the bank during a year[13].

Premium incorporates pay premium/limits advances/solicitations, speculation salary, enthusiasm on offsets with RBI and other interbank assets and others. Absolute salary incorporates premium pay and other pay, for example, commission, net increase (deficit) on the closeout of ventures, land and different resources, revaluation of speculations and incidental pay.

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### E. LIQUIDITY

Liquidity is an essential angle that mirrors the bank's capacity to meet its monetary commitments and to keep up a sufficient degree of fluid resources, which will generally prompt an abatement in benefits[2]. You can acquire a satisfactory liquidity position by expanding liabilities or changing over your advantages rapidly into money. The

Table -V Liquidity ranking

	-	sets to Total sets	1 - 1 -		-	Liquid assets to Demand deposits		Group Rank		
BANKS	Average	Ranks	Average		Average	Ranks	Average	Ranks	Average	Ranks
Andhra Bank	6.86	3	20.77	3	8.18	2	120.28	4	3	3
Canara Bank	12.74	1	16.59	5	14.99	1	208.33	1	2	4.5
Central Bank	6.89	2	22.31	1	7.99	3	148.5	2	2	4.5
Syndicate Bank	5.79	5	20.72	4	6.82	5	122.31	3	4.25	1
Union Bank	5.91	4	20.94	2	7.26	4	95.41	5	3.75	2

Table -VI Overall composite camel rankings

of the five open division banks of India chose for the period

BANKS	Capital Adequacy	Asset Quality	Management	Earnings	Liquidity	Mean	Rank			
			Efficiency	Capacity						
Andhra	3.250	2.000	2.250	2.500	3.00	2.600	2			
Bank										
Canara	2.500	1.000	2.000	4.250	2.000	2.350	1			
Bank										
Central	2.750	4.670	4.380	4.250	2.000	3.610	5			
Bank										
Syndicate	3.000	3.670	3.880	1.500	4.250	3.260	4			
Bank										
Union Bank	3.500	3.670	2.500	2.500	3.750	3.180	3			
	Overall Grand Mean X									
	Standard Deviation									

Bank must take the proper measures to cover the liquidity chance. Fluid resources for complete resources: this proportion estimates the general liquidity position of a bank. Fluid resources incorporate money close by, cash accessible at short notice, offset with the Reserve Bank of India and offset with other monetary foundations/banks (India and abroad). The all out resources incorporate the revaluation of the considerable number of benefits. Government protections to add up to resources: this proportion is determined by separating the aggregate sum put resources into affirmed esteems with complete resources. The affirmed qualities include speculations made in state/related organizations, for example, Electricity Corporations, Housing Development Corporations, Regional Rural Banks and corporate securities.

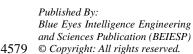
# F. OVERALL COMPOSITE RATING

To survey the general execution of Public Sector Banks in India, the composite rating was determined from the gathering order of open division banks in India for the period 2009-2013 and the outcomes are exhibited in the table beneath. Table 6 demonstrates the gathering characterization

2009-2013. It was discovered that Bank of Baroda was in the main position with a general normal of 2.35, because of its prevalent exhibition in the zone of quality of benefits and capital sufficiency. While Andhra Bank was in the second position with a general normal made out of 2.60, because of its consistent presentation in every aspect of the CAMEL parameters.

Table- VII: Classification of nationalised banks based on camel parameters

RANK	CAMEL BASE	MEAN =	BANKS
	CRITERIA	3.000	
		SD=0.460	





W<sub>tab</sub>

0.67

Excellency	Upto (Mean = $0.670$	Upto 2.69	Canara
	SD)		Bank,
			Andhra
			Bank
Good	From (Mean = $0.67$	2.69 to 3.00	NIL
	SD) upto Mean		
	value		
Fair	Above the mean and	From 3.00 to	Union
enough	upto (Mean + 0.67	3.31	Bank,
	SD)		Syndicate
			bank
Poor	Above (Mean + 0.67	More than	Central
	SD)	3.31	Bank

#### **G.Tests of Normality**

To test the data normality, the hypothesis proposed is that population distribution is absolutely normal. So therefore the shaprio – wilk test has been applied to the total data and the results obtained are shown in the table.

Bank	X <sub>I</sub>	Orde	$s^2$	$\mathbf{b}^2$	W	Alpha	Ī
		red x <sub>i</sub>			$=\mathbf{b}^2$	level	
		$\mathbf{y_i}$			$/S^2$		
Andhra	2.59	2.34	1.0	0.6	0.6	0.01	Ī
Bank			53	34	01		
			9	9			
Canara	2.34	2.59					
Bank							
Central	3.59	3.17					
Bank							
Syndicat	3.25	3.25					
e Bank							
Union	3.17	3.59					
Bank							
Grand	3.00	3.00					
Mean							

The outcomes feature that the determined W value is less than the table value of W at 0.01 degree of significance. This is the proof of normality in the distribution. Henceforth Ho will be accepted which means that the total data was normally distributed as well.

# H. EXPERIMENTED RESULTS ONE WAY ANOVA

To calculate that there is any notable difference in between the means of the factors of CAMEL Model Value ratios, one way anova has been implemented on the total sample data. The outcomes are tabulated as follows:

Variation	Sum of	Df	Mean	F	Table
	squares		square		value of
					F @ 0.05

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Between	0.00	4	00.00	0.00	2.86
the Groups					
Within the	23.79	20	0.83		
Groups					
Total value	23.79	24			
•	23.79	24			

The outcome of the ANOVA assessment shows that the calculated F test vlaue outcome is less than that tableoutcome value at 0.05 degree of Significance. It implies that the null hypothesis H0 is accepted and hence There is no significant difference in the performance of the 5 selected nationalised Banks in India using CAMEL Model.

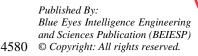
#### VI. CONCLUSION

In the above research we gone thorugh several statistical tools and concluding that there is no significant difference in the performance of nationalised banks using CAMEL model. Because of the numerous adjustments in the financial part that have been seen lately, for example, improving the nature of administration, supervision and learning of the requirement for banking, all around acknowledged assessment procedures have been completed. The CAMEL alongside other existing methodologies. the strategies to dissect execution occasionally. A few examinations have been led in India on the presentation of various classes of banks in different parameters. The various banks are ordered by the evaluations got in the five most fundamental parameters of CAMEL. The consequences of the present examination unmistakably show that there are no measurably huge contrasts in the presentation of the exhibition of the Public Sector Banks chose during the investigation time frame. It can likewise be reasoned that manages an account with low positioning. They have to improve their exhibition to accomplish the ideal norms. That the regulatory body RBI has to frame few more regulations in the mechanism of sanctioning the loans because NPA is a major problem in INDIA.

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Kankipati Ajay Kumar, PhD Research scholar KLU Business School, Koneru Lakshmaiah Education Foundation, Greenfields, Vaddeswaram, Guntur Dist., Andhra Pradesh, 522502, India. He has proficient knowledge in internal quality assurance of colleges and universities. Such NAAC, UGC, AICTE Works along with good teaching skills. Nowadays accreditation became mandatory for all the colleges and universities to make their institutions more innovative and

quality-oriented. So that delivering that services is the on the job. Earlier delivered services as entrepreneurship coordinator in the university. Being a research scholar, trying to explore more knowledge in the area of research as well as contributions that knowledge to society.



Dr.A.V.N.MURTY, Professor KLU Business School Lakshmaiah Education Foundation, Greenfields, Vaddeswaram, Guntur Dist., Andhra Pradesh, 522502, India. He has sound knowledge in the field of research, he guided more than 20 research scholars under his guidance, being a professor he published more number of journal research papers and

contributed more to innovative teaching methodologies as well. Being professor he has published few books for the society to explore into new competitive world and under his guidance now more than ten research scholars are doing their Ph.D. along with that he has delivered number of guest lectures in reputated universities and in international conferences.

