Use of CAMEL Rating Framework: A Comparative Performance Evaluation of Selected Bangladeshi Private Commercial Banks

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Abstract

The Banking sector in Bangladesh is one of the fast growing sectors and considered as an integral part of the economy. Hence, monitoring, supervision and continuous performance evaluation of the banking sector is compulsory to ensure the financial stability of the economy since the banking sector is becoming more complex than before. The present study is an attempt to evaluate and compare the performance of the banking sector in Bangladesh. One of the most effective supervisory techniques, CAMELS rating system (basically a quantitative technique) has been used to rank the banks based on their performances. In this study, seventeen conventional private commercial banks have been chosen as samples to meet the purpose of the study. Data for analysis has been collected from the banks' annual reports for the period (2010-2016). The result from this comparative analysis shows that Eastern Bank has stood at the top position among all the selected banks based on CAMEL rating system. However, the findings from this paper will definitely help the researchers and analysts to understand financial statement analysis in a depth manner and also provide a uniform basis for identifying those institutions requiring special supervisory attention.

Keywords: capital adequacy, assets quality, management efficiency, earnings ability, liquidity management, bank's performance evaluation

1. Introduction

The economic progression is significantly dependent upon the optimum utilization of resources and most importantly operational efficiency of various sectors. The banking sector is considered as an integral part of the financial system which plays a key role in the economic development of any country through stimulating of capital formation and facilitating the monetary policy (Said & Tumin, 2011, cited in Azizi & Sarkani, 2014). A modern economy cannot be imagined without the services of a bank. Banking business has been shaped as the global business since the functions of banking business have reached beyond the border of a country. Most importantly, rest other businesses are greatly dependent upon the sound performance of banking business.

In the context of Bangladesh, the banking sector is one of the fastest growing sectors and moderately bigger than many economies of equal level of development and per capita income. At present, there are fifty-six banks operating in this small economy. Over the last thirty years, the country has achieved noticeable success regarding the access to banking services. However, modern banking is becoming more complex in nature than before since the varieties of risks are getting more complex nowadays (Sundararajan et al., 2002, cited in Dang, 2011). Evaluating the performance of banking sector has become a very challenging task and therefore, there are so many factors need to be considered while differentiating good banks from bad ones. In order to cope up with complexity and a mix of risk exposures to banking system properly, the bank regulators have introduced a number of measures over the past years to link the regulation of banks to the level of risk and financial viability. In Bangladesh, developing supervisory guidelines and rating framework for evaluating banking performance is of great importance since the banking industry has been growing rapidly. Nowadays, on-site supervisory guidelines are not enough to evaluate the performance of banks. Therefore, it becomes imperative to develop a systematic rating framework for carefully evaluating the performance of banks and help the banks for taking follow-up measures that will ensure public confidence toward banking system. Therefore, in this paper an attempt has been made to evaluate the comparative performance of the selected private commercial banks in

Bangladesh using the CAMEL Rating framework and suggest some measures on the basis of the results of this study to further improve the financial performance of the sample banks under the study.

Although, many academicians, scholars, and administrators have made several studies on the CAMEL model but in different perspectives, in different periods and in different countries. Considering the importance of performance evaluation of Bangladeshi banking system, we have attempted CAMEL rating framework in most effective way that will definitely differentiate this study form others and also make the study more sophisticated and useful.

2. Related Studies

Barker and Holdsworth (1993) found CAMEL ratings as an effective tool for predicting bank's failure and measuring the financial performance of banks. Barr, Killgo, Siems, and Zimmel (2002) observed CAMEL rating system as a precise and constitutive tool for regulators and examiners that measures bank's financial performance by analyzing a variety of bank's financial information collected from financial statements. Baral (2005) used publicly available financial data to examine the financial health of joint venture banks with the help of CAMEL framework. The study concludes that the health of joint venture banks is better than other commercial banks but not strong enough to manage the large possible shocks to their balance sheet. Kumar, Santosh, and Roopali Sharma (2014) attempted CAMEL model to analyze financial performance of the top 8 market capitalized banks. They used secondary data sources for a period of 6 years (2007-08 to 2012-13) and determined many factors by using econometric analysis. Suresh, Chithra, and M. Bardastani (2016) used CAMEL ranking approach to evaluate and compare the performance of retail conventional and islamic banks in the kingdom of Bahrain for the period 2007-14. The findings of the study shows that islamic banks are less profitable and efficient compared to retail conventional banks due to their inherent institutional factors. Echekoba, Chinedu, and Ezu (2014) determined the impact of CAMEL parameters on the profitability of Nigerian commercial banks for the period (2001-2010). They used the ordinary least square method and the statistical package. Their research found that capital adequacy, assets quality, management efficiency and earnings did not influence profitability while liquidity significantly influenced banks' profitability. Their study suggested toward the banks to maintain adequate liquidity position to build depositor's confidence and increase profitability. Venkatesh and Chithra (2014) used CAMELS model to analyze the financial efficiency of selected commercial banks in the kingdom of Bahrain which is considered as the financial hub of Middle East and plays significant role in the economic activities in the Mena Region. According to results, they conclude that National Bank of Bahrain which is the government bank in the country has attained highest efficiency compared to its peers in the market. Joshi, Amit, and Lakhvendra (2015) attempted CAMEL Model to rank 42 Indian commercial banks on the basis of their overall performance over a period of five years (2010 to 2014). They found the results based on analysis that on an average Yes Bank was at the top position followed by HDFC Bank and Indian Bank. They also found the study useful to the researchers, academicians, students and industry experts who wish to seek the best bank. Sayed, GaziaJamil, and Najmus (2013) have chosen top four private sector banks as per the ET Intelligence Group (ETIG) database for the research and their analysis shows the result that on an average Kotak Mahindra Bank stands at the top position based on CAMEL model analysis. Roman, Angela, and Alina (2013) used CAMELS framework to comparatively analyze the financial soundness of the commercial banks of Romania. The results from the study highlighted the strengths and the vulnerabilities of the analyzed banks and suggested guidelines to improve and increase their soundness. Rozzani, Nabilah, and Rashidah (2013) attempted CAMEL Model to examine the performance of both 16 Islamic banks and 19 conventional banks in Malaysia for the period (2008-2011). The result shows that the levels of performance for both conventional and Islamic banks in Malaysia are almost similar. The researchers found this study useful for stakeholders to make better investment decisions. This study also suggested both conventional and Islamic banks re-evaluate their performance based on the performance measurements used in the study. Gasbarro, Dominic, Gde, and Kenton (2002) used unique data set provided by Bank Indonesia to examine the changing financial soundness of Indonesian banks during this crisis. The empirical results show that the relationships between financial characteristics and CAMEL ratings deteriorate and only one of the traditional CAMEL components "earnings" objectively discriminates among the ratings. Bodla and Richa (2006) used CAMEL Model to evaluate the performance of SBI and ICICI for the period 2000-01 to 2004-05. They found that SBI performed better than the counterpart ICICI in terms of capital adequacy while ICICI performed better than the counterpart in terms of assets quality, earning quality and management quality. However, the liquidity position of both the banks is sound and does not differ significantly. Yuksel, Serhat, Hasan, and Umit (2015) exhibited the relationship between CAMELS ratios and credit ratings of twenty depository banks in Turkey. They used secondary data for the period (2004-2014) and analyzed 21 different ratios of CAMELS components. According to the finding of the study, three CAMEL components (Asset Quality, Management Quality, and Sensitivity to Market Risk) have effects on credit ratings

whereas the ratios related to Capital Adequacy and Earnings are not effective. Altan, Yusufazari, and Bedük (2014) investigated the financial performance of state-owned and private-owned Turkish banks for the period (2005-12). They analyzed 23 ratios with the help of CAMEL Model. Based on the overall performance, results show that Ziraat Bank had ranked top position and Tekstil Bank had the lowest rank in most positions. It is also observed from the study that there is a significant difference between the performance of state-owned and private-owned in Turkish banking system.

3. Research Methodology

CAMEL Rating System (which was first introduced in the U.S. in 1979) is an internal supervisory tool for evaluating the soundness of financial institutions on a uniform basis. It is applied to every bank and credit union in the U.S. (approximately 8,000 institutions) and is also implemented outside the U.S. by various banking supervisory regulators. Bangladesh Bank (the central bank of Bangladesh) has introduced CAMEL Rating System in 1993 for evaluating the performance of banks through ranking the banks and also for identifying those institutions requiring special supervisory attention. CAMEL model is composed of five parameters -"Capital Adequacy, Assets Quality, Management Efficiency, Earnings Ability and Liquidity Management".

The present study has been conducted to evaluate the financial performance of seventeen privately-owned commercial banks currently operating in Bangladesh. This study is predominantly based on secondary data which has been collected from the financial statements and annual reports of respective banks for the period of 2010 to 2016. The CAMEL rating framework has been used in this study to rank the selected banks based on their performances. For the purpose of this study, 24 sub-parameters under CAMEL model have been considered which are associated with different dimensions of financial performance analysis. These financial ratios are being used by the Banking Regulation and Supervision Agency for measuring various indicators of bank's financial soundness and vulnerability. The following Table 1 illustrates the various sub-parameters obtained for the purpose of assessment on the basis of CAMEL model.

Table 1. Description of the parameters and sub-parameters of CAMEL Model

CAMEL Parameters	Denotation	Sub-Parameters	Acronym
Capital Adequacy	C1	(Tire-1 Capital+ Tire-2 Capital) /Risk-weighted Assets	CAR
	C2	Total Equity /Total Assets	TE/TA
	C3	Total Debt/Total Assets	TD/TA
	C4	Govt. Securities/Total Investment	GS/TI
Asset Quality	A1	Financial Assets/Total Assets	FIN-A/TA
	A2	Total Investment/Total Assets	TI/TA
	A3	Non-performing Loans/Total Loan	NPL/TL
	A4	Fixed Assets/Total Assets	FA/TA
	A5	Loan loss provision/Total Loan	LLP/TL
	A6	Total Loan/ Total Assets	TL/TA
Management	M1	Profit Per Employee	PPE
Efficiency	M2	Business Per Employee	BPE
	M3	Funds Borrowed/Total Asset	FB/TA
	M4	Cost /Income	OI/OE
	M5	Total Loan/Total Deposit	TL/TD
Earnings Quality	E1	Net Profit(Loss)/Total Assets	ROA
	E2	Net Profit(Loss)/Total Equity	ROE
	E3	Operating Profit/Total Assets	EBIT/TA
	E4	Net Interest Income/Total Assets	NII/TA
	E5	Non Interest Income/Total Assets	NON -II/TA
Liquidity	L1	Liquid Assets/Total Assets	LA/TA
Management	L2	Liquid Assets/Short-term Liabilities	LA/SL
	L3	Liquid Assets/Total Deposit	LA/TD
	L4	Govt. Securities/Total Asset	GS/TA

4. Empirical Results and Interpretation

Basically, CAMEL model has been used with the intension of ranking the selected banks. Because, it makes analyzing the financial condition of banks much easier and sophisticated. This method has evaluated the performance of each bank relative to the performance of others. However, selected banks have been ranked based on their performances in each of the sub-parameter. Then, the ranking in the sub-parameters have been contracted

based on simple average technique to reach at the ranking in the CAMEL parameters. Again, these ranking in CAMEL parameters have been averaged to arrive at the final ranking of CAMEL model.

4.1 Capital Adequacy

Capital Adequacy is one of the eminent demonstrators that reflect the inner strength of a bank. Capital adequacy ratio (CAR) is also known as capital-to-risk weighted assets ratio (CRAR). This ratio is used to protect depositors from potential losses and promote the stability and efficiency of financial systems around the world. It measures the percentage of bank's capital to risk-weighted credit exposures. For computation of the capital adequacy ratio, capital is classified as Tier-1 and Tier-2 capitals. Tier-1 capital comprises the equity capital and free reserves, while Tier-2 capital consists of unsecured subordinated debt with an original maturity of at least five years. The higher the capital adequacy ratio, the stronger the bank although a very high CAR indicates that the bank is conservative and has not utilized the full potential of its capital. Realizing the importance of capital adequacy, Bangladesh Bank (the central bank of Bangladesh) has directed each of the banks in Bangladesh to meet the capital adequacy standard of 10% according to the norm fixed on the basis of the recommendations of Basel Committee. As a result of this direction, almost all banks in Bangladesh try to adhere to this norm thus compute the ratios of capital adequacy. A financial institution has to maintain capital in proportionate with the nature and extent of risks and the bank must have the ability to identify, measure, monitor, and control these risks. According to Fatima (2014), it is essential for a bank to conserve the stakeholders' confidence and protect the bank from being bankrupt.

Table 2. Capital adequacy ratios of sample banks

BANK'S NAME	CAR		TE/TA		TD/TA		GS/TI		GROUP	
	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK
Bank Asia	11.90	8	8.67	7.5	91.32	7	85.73	8	7.63	6
Prime Bank	12.44	3.5	9.81	4	90.19	4	92.07	4	3.88	3
Brac Bank	12.23	5	7.70	14	92.37	14	80.33	10	10.75	11
Dhaka Bank	11.29	12.5	7.76	12	92.23	13	87.53	7	11.13	12
IFIC Bank	10.27	17	6.99	15	92.99	15	76.85	14	15.25	17
Eastern Bank	12.58	2	11.79	2	88.20	2	81.02	9	3.75	2
Dutch Bangla Bank	12.44	3.5	6.80	16	93.08	16	93.08	2	9.38	8
Premier Bank	11.09	15	8.48	9	91.57	10	74.30	16	12.50	15
Pubali Bank	11.72	9	9.51	5	90.49	5	79.98	12	7.75	7
Standard Bank	11.18	14	7.71	13	91.43	9	70.10	17	13.25	16
Jamuna Bank	11.29	12.5	8.72	6	91.29	6	93.02	3	6.88	5
NCC Bank	12.06	6	10.47	3	89.48	3	93.32	1	3.25	1
AB Bank	10.86	16	8.67	7.5	91.42	8	80.13	11	10.63	10
Mercantile Bank	11.39	11	8.16	11	91.85	12	89.36	5	9.50	9
City Bank	12.90	1	12.73	1	87.90	1	78.35	13	4.00	4
One Bank	11.68	10	8.21	10	91.78	11	75.13	15	11.50	13
Trust Bank	11.98	7	6.40	17	93.60	17	88.16	6	11.75	14

Source: Authors' own calculation.

Table 2 is constructed based on the individual rankings obtained from the sub-parameters of capital adequacy which indicates the financial strength and financial stability of the banks. The average of the ranking in the individual parameters has been taken. A lower consolidated group rank indicates the better financial health. Based on the results, City Bank has stood the first position under the capital adequacy, total equity to total asset and total debt to total asset ratios. The performance of NCC Bank is the best under the govt. securities to total investment ratio. The final ranking based on all the capital adequacy sub-parameters indicates that NCC Bank has stood at the top position with group average of 3.25 and IFIC Bank has held the lowest position with group average of 15.25 due to poor performance in capital adequacy.

4.2 Asset Quality

The degree of financial strength of the commercial banks can be assessed by the quality of the assets maintained by them. The assurance of asset quality is considered as the fundamental requirement of the bank. One of the biggest risks faced by the commercial banks is the risk of loan losses that may occur due to increase in non-performing loans. Non-Performing Loans are those loans which are either in default or close to being in default. According to Bock (2012), economic activity slows down due to increase in non-performing loans or credit contracts. Asset quality greatly depends on the borrower's ability to repay the loan in due time. According to Baral (2005), the degree of credit risk depends on the asset's quality held by an individual bank.

Table 3. Asset quality ratios of sample banks

BANK'S NAME	FIN-A/TA		TI/TA		FA/TA		NPL/TL		LLP/TL		TL/TA		GROUP	
	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK
Bank Asia	92.25	13	17.33	6	2.75	14	4.37	8	1.46	4	66.44	10	9.17	10
Prime Bank	95.22	6	21.11	2	2.19	12	3.98	6	1.49	3	65.70	11	6.67	5
Brac Bank	86.90	17	11.09	16	1.43	4	5.68	15	2.24	1	65.49	13	11.00	13.5
Dhaka Bank	93.17	12	11.44	15	1.82	7	4.66	10	1.21	8	68.31	6	9.67	12
IFIC Bank	94.35	8	14.68	9	2.09	11	4.93	11	1.12	10	67.72	7	9.33	11
Eastern Bank	93.84	10	13.46	13	3.81	15	3.00	2	1.19	9	68.75	5	9.00	9
Dutch Bangla Bank	90.44	15	9.62	17	2.43	13	3.61	5	0.64	15	61.46	17	13.67	17
Premier Bank	94.04	9	17.11	7	1.56	5	5.84	16	0.46	17	65.66	12	11.00	13.5
Pubali Bank	89.81	16	16.78	8	14.32	17	4.57	9	0.93	13	63.52	15	13.00	16
Standard Bank	93.79	11	17.73	4	1.39	3	2.94	1	0.92	14	70.11	3	6.00	2
Jamuna Bank	94.98	7	24.01	1	1.88	8	5.43	14	1.26	7	61.62	16	8.83	8
NCC Bank	95.66	5	17.42	5	1.58	6	5.23	12	1.29	6	72.27	1	5.83	1
AB Bank	97.80	3	13.23	14	2.07	10	3.40	4	1.35	5	67.40	9	7.50	7
Mercantile Bank	96.61	4	19.32	3	1.93	9	4.10	7	0.97	11	69.20	4	6.33	3
City Bank	91.18	14	13.95	12	4.19	16	6.13	17	1.87	2	65.37	14	12.5	15
One Bank	98.87	2	13.99	11	1.13	2	5.28	13	0.94	12	71.61	2	7.00	6
Trust Bank	99.51	1	14.19	10	0.49	1	3.07	3	0.60	16	67.68	8	6.50	4

Source: Authors' own calculation.

Table 3 clearly shows the results of individual components of asset quality. Based on the results, Trust Bank has stood the first position under the financial asset to total asset and fixed asset to total asset ratios. The performance of Jamuna Bank is the best under the total investment to total asset ratio. Standard Bank has performed best under NPL to total loan ratio and NCC Bank has stood first position under total loan to total asset ratio. According to the group average of asset quality sub-parameters, NCC Bank has stood at the top position with group average of 5.83 followed by Standard Bank and *Mercantile Bank*. However, due to its poor performance in all sub-parameter ratios, Dutch-Bangla Bank has scored the lowest position with group average of 13.67.

4.3 Management Efficiency

It is another vital parameter of CAMEL model that ensures the survival and growth of a bank. A sound management is a key to the performance of any organization. The management efficiency plays an important role in the success of an organization. Management efficiency drives the management system respond quickly to a dynamic and changing environment.

Table 4. Management efficiency ratios of sample banks

BANK'S NAME	PPE (Million)		BPE (Million)		C/I		FB/TA		TL/TD		GROUP	
	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK
Bank Asia	3.28	4	148.48	2	42.49	5	3.87	10	84.34	10	6.20	4
Prime Bank	2.62	6	124.72	5	43.29	6	4.36	6	82.91	12	7.00	7
Brac Bank	0.56	17	36.76	17	49.57	13	3.98	9	89.75	4	12.00	13
Dhaka Bank	2.82	5	147.22	4	39.14	3	4.66	5	85.34	7	4.80	2
IFIC Bank	1.32	14	80.49	13	52.83	15	2.59	14	83.35	11	13.40	15
Eastern Bank	3.96	1	147.73	3	39.34	4	15.64	1	102.40	1	2.00	1
Dutch Bangla Bank	1.11	15	53.40	15	56.40	16	3.68	11	78.08	16	14.60	17
Premier Bank	1.49	13	109.63	8	63.81	17	3.59	13	80.92	14	13.00	14
Pubali Bank	0.98	16	46.27	16	45.10	8	1.52	16	81.61	13	13.80	16
Standard Bank	2.17	8	114.43	7	36.18	1	2.50	15	84.99	9	8.00	9
Jamuna Bank	1.59	12	81.83	12	43.98	7	4.87	4	75.70	17	10.40	10
NCC Bank	2.02	9	92.33	10	36.98	2	4.10	8	89.84	3	6.40	5.5
AB Bank	2.52	7	150.43	1	45.81	9	6.00	3	87.55	5	5.00	3
Mercantile Bank	3.91	2	120.99	6	45.88	10	3.60	12	86.37	6	7.20	8
City Bank	3.66	3	79.97	14	48.09	11	6.65	2	93.04	2	6.40	5.5
One Bank	1.93	10	97.53	9	53.13	14	1.33	17	85.06	8	11.60	12
Trust Bank	1.87	11	86.79	11	49.43	12	4.35	7	79.06	15	11.20	11

Source: Authors' own calculation.

Table 4 clearly reveals that Eastern Bank has performed outstanding and secured first position in every individual parameter except BEP and cost to income ratio. AB Bank has highest BPE and stood first among all banks. Standard Bank has maintained lowest cost to income ratio and secured the first position. However, by group average of management quality sub-parameters, Eastern Bank has secured the first position with group average of 2.00 followed by Dhaka Bank and AB Bank. Dutch-Bangla Bank has occupied the last position securing group average of 14.60.

4.4 Earnings Quality

It reflects the ability of a bank to generate and sustain profit consistently. This quality is considered as a very important criterion for evaluating the profitability and performance of a bank. It enables the bank to sustain in unwanted shocks arising from the risks that the bank may face in its operations. Good earnings help the bank in conducting present and future operations, increasing the capital base, paying dividends to the shareholders, increasing the capacity to absorb losses and also ensuring the expansion of the business.

Table 5. Earnings quality ratios of sample banks

BANK'S NAME	ROA		ROE		EBIT/TA		NI/TA		NON-II/TA		GROUP	
	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK
Bank Asia	1.14	12	13.50	11	3.22	7	2.03	11	1.80	12	10.60	12
Prime Bank	1.20	10	12.10	14	4.56	3	1.69	16	1.68	13	11.20	13
Brac Bank	1.09	13	13.89	8	2.08	16	4.12	1	2.91	7	9.00	9
Dhaka Bank	1.23	9	15.61	3	2.73	14	2.01	12	2.73	9	9.40	10
IFIC Bank	1.04	14	14.38	6	2.75	13	2.35	9	3.30	2	8.80	8
Eastern Bank	1.71	1	14.15	7	3.75	4	2.80	7	3.35	3	4.40	2
Dutch Bangla Bank	1.32	5	19.02	2	3.03	10	3.94	2	2.75	8	5.40	3
Premier Bank	0.83	16	9.37	17	1.91	17	1.96	14	3.11	6	14.00	16
Pubali Bank	1.30	7	13.11	12	3.10	9	2.99	5	1.04	17	10.00	11
Standard Bank	1.31	6	14.94	5	3.12	8	2.41	8	2.49	10	7.40	7
Jamuna Bank	1.17	11	13.57	10	2.77	12	1.62	17	1.57	14	12.80	15
NCC Bank	1.46	4	13.74	9	3.27	5	2.06	10	3.12	5	6.60	5
AB Bank	0.98	15	10.59	16	2.79	11	1.80	15	3.17	4	12.20	14
Mercantile Bank	1.26	8	15.45	4	4.83	2	2.83	6	1.99	11	6.20	4
City Bank	1.49	3	12.49	13	6.39	1	3.25	3	1.49	15	7.00	6
One Bank	1.70	2	20.66	1	3.25	6	3.02	4	3.75	1	2.80	1
Trust Bank	0.73	17	11.65	15	2.15	15	2.00	13	1.20	16	15.20	17

Source: Authors' own calculation.

From Table 5 it can be observed that One Bank has held the first position with group average of 2.80. Eastern Bank and Dutch-Bangla Bank have secured second and third position with group average of 4.40 and 5.50 respectively. Due to overall poor performance, Trust Bank has scored lowest and stood last position. However, EBL has performed best under ROA ratio and stood first. On the other hand, One Bank has attained first position under ROE and non-interest income to total asset ratio. City Bank has performed best under earnings before interest and tax to total asset ratio. Brac bank has performed outstanding under net income after tax to total asset ratio.

4.5 Liquidity Management

Liquidity is a crucial aspect which reflects bank's ability to meet its financial obligations. An adequate liquidity means sufficient liquid funds maintained by the bank to cover short-term liabilities. Banks can meet their financial obligations either by mobilizing short-term deposits from customers or by quickly converting their assets into cash. Dang (2001) observed that adequate level of liquidity is synchronous with profitability. The bank's inability to meet its short-term liquidity requirements can cause a serious impact on bank's profitability and overall performance. A high liquidity ratio indicates that the bank is more affluent to hedge against liquidity risk under all rational conditions.

Table 6. Liquidity management ratios of sample banks

BANK'S NAME	LA/TA		LA/SL		LA/TD		GS/TA		GROUP	
	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK	AVG	RANK
Bank Asia	26.28	8	1.08	9	33.41	8	15.00	5	7.50	6
Prime Bank	26.18	9	1.10	7	32.88	9	19.80	2	6.75	4
Brac Bank	23.36	17	1.05	12	31.58	12	8.99	16	14.25	17
Dhaka Bank	28.58	4	0.55	17	36.08	4	10.04	15	10.00	12.5
IFIC Bank	24.55	14	1.03	13	30.25	15	11.26	10	12.75	16
Eastern Bank	25.17	10.5	1.18	6	36.44	3	10.92	11	7.63	7.5
Dutch Bangla Bank	28.77	3	1.02	14	36.73	2	8.96	17	9.00	9
Premier Bank	30.77	1	0.95	15	37.57	1	12.72	7	6.00	2
Pubali Bank	27.96	5	1.07	10.5	35.64	5	13.45	6	6.63	3
Standard Bank	24.37	15	1.09	8	29.73	17	12.29	9	12.25	15
Jamuna Bank	26.33	7	1.34	5	31.98	10	21.77	1	5.75	1
NCC Bank	24.61	13	1.07	10.5	31.27	13	16.31	4	10.13	11
AB Bank	27.02	6	0.91	16	35.07	6	10.68	13	10.25	14
Mercantile Bank	25.17	10.5	1.42	3	30.32	14	17.47	3	7.63	7.5
City Bank	23.77	16	1.43	2	33.80	7	10.90	12	9.25	10
One Bank	29.44	2	1.53	1	31.90	11	10.55	14	7.00	5
Trust Bank	24.88	12	1.38	4	30.21	16	12.52	8	10.00	12.5

Source: Authors' own calculation.

The Table 6 reveals that Jamuna Bank has obtained the most comfortable liquidity position with an average group ranking of 5.75, followed by Premier Bank and Pubali Bank. Results show that Brac Bank has maintained least liquidity and scored last position with group average of 14.25. However, Premier Bank has performed outstanding under liquid asset to total asset ratio and liquid asset to total deposit ratio. But in terms of liquid asset to short-term liability ratio, One Bank has attained the first position. However, Jamuna Bank has performed best under government securities to total asset ratio.

Table 7. Overall performance of sample banks during the period (2010-2016)

BANK'S NAME	C	A	M	E	L	AVG	Composite CAMEL Rating
Bank Asia	6	10	4	12	6	7.60	6
Prime Bank	3	5	7	13	4	6.40	4
Brac Bank	11	13.5	13	9	17	12.70	16
Dhaka Bank	12	12	2	10	12.5	9.70	10
IFIC Bank	17	11	15	8	16	13.40	17
Eastern Bank	2	9	1	2	7.5	4.30	1
Dutch Bangla Bank	8	17	17	3	9	10.80	13
Premier Bank	15	13.5	14	16	2	12.01	15
Pubali Bank	7	16	16	11	3	10.60	12
Standard Bank	16	2	9	7	15	9.80	11
Jamuna Bank	5	8	10	15	1	7.80	7
NCC Bank	1	1	5.5	5	11	4.70	2
AB Bank	10	7	3	14	14	9.60	9
Mercantile Bank	9	3	8	4	7.5	6.30	3
City Bank	4	15	5.5	6	10	8.10	8
One Bank	13	6	12	1	5	7.40	5
Trust Bank	14	4	11	17	12.5	11.70	14

The Table 7 depicts the overall performance under CAMEL rating analysis of the seventeen chosen banks. In order to assess the overall performance of the selected commercial banks, we have calculated the composite ranking and results have been conferred in Table 7. Taking consolidated results, it can be observed from the table that Eastern Bank has performed best among all banks and ranked at the top position with composite average of 4.30 followed by NCC Bank and Mercantile Bank. However, IFIC Bank has occupied the last position among all the selected banks with composite average of 13.40.

5. Conclusion

CAMEL rating approach is considered as an important tool for identifying the financial strengths and weaknesses of a bank. This analysis helps to point out possible weaknesses and suggest necessary corrective measures to overcome weaknesses and thus improve the overall performance of a bank. This study has been conducted to examine the performance of 17 selected private commercial banks in Bangladesh during the period (2010-16) with respect to CAMEL ratios. It is found that on an average the Capital Adequacy ratio of all banks is much higher than the benchmark of 10% as mandated by Bangladesh Bank. The average CAR of City Bank is the highest (12.90%) among all the banks. As the NPLs of City Bank (6.94%) is much higher than other banks, Bangladesh Bank should look after the bank and suggest corrective measures to overcome potential losses due to increase in NPLs. The profit per employee (PPE) of Eastern Bank is the highest and it can be inferred that the efficiency of EBL is much higher as compared to other banks. Estimating the profitability ratios it can be observed that for long-term period, One Bank's profitability is outstanding on an average as compared to other banks. Jamuna Bank has maintained comfortable liquidity position although excessive liquidity may affect profitability. However, the findings from the study can be helpful for the management of these selected banks to improve their financial performance and formulate policies that will improve their overall performance. Although, the scope of this study is limited to seventeen selected banks only but this study is equally beneficial to all the banks in Bangladesh since it has identified some specific areas for banks to work on.

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