PERFORMANCE EVALUATION OF COMMERCIAL BANKS IN THAILAND BY USING CAMEL MODEL

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Abstract

The objectives of this paper were 1) to analyze the financial position and performance of Commercial Banks in Thailand using CAMEL model 2) to evaluate the performance of Commercial Banks compare with industry average. The samples were 7 Commercial banks in Thailand. The research collected data from the related secondary sources and used CAMEL model as the research instruments for analysis.

The research found that top seven Commercial banks in Thailand tried to keep their financial performance and almost all firms succeed in expected target. And when comparing to industrial average standard the research results needed to be consisted with the outcome of each bank financial performance study. This study used CAMEL model financial ratio to evaluate commercial banks performance in overall picture and each bank in details, but it must use many sources of information to explain the occurrence data results.

Keywords: performance evaluation; financial ratio; CAMEL model; commercial banks

Introduction

The financial market serves as an important financial intermediary in capital funding and allocation fund resources to the various sectors of the economy. As well as providing money payment for goods and services consumption, the financial system can support effective investment that will encourage economic growth, stability and sustainability. Two functions of financial market work through money market and capital market.

In Thailand, the money market can be classified in 2 types, 1. Depository financial institutions such as Government specialized financial institutions, Commercial banks, Credit union and Money market fund. 2. Non - depository financial institutions such as Mutual fund, Insurance companies, Provident fund and Securities company. At the end of 2014, Thailand money market had total assets of approximately 36 billion baht or 2.7 times of the GDP of the country. Depository financial institutions had a market share of more than two-third of the total, most of them are Commercial banks. (Bank of Thailand, 2014)

All of financial institutions, like other companies are confronted with many risk types while operating their business. The crucial risk results to business performance is financial risk.

Financial risk includes market risk, liquidity risk, credit risk and operational risk. Market risk is risk of losses due to movement in financial market prices or volatilities. This usually includes liquidity risk which is the risk of losses due to the need to liquidity position to meet funding requirement. Credit risk is the risk of losses due to the fact that counterparties may be unwilling or unable to fulfill their contractual obligations. (Jorion, 2010) In practically, all of the risks can be measured by financial ratios analysis to identify firm's health. One of the most popularity financial tools that uses financial ratios analysis for this purpose is CAMEL.

CAMEL is basically ratio based model for evaluating the performance of Commercial banks. It is a model for ranking of Commercial banks. CAMEL is an acronym for five components of Commercial banks safety and soundness (Dang, 2011): Capital adequacy, Asset quality, Management quality, Earning ability and Liquidity.

In the present study an attempt is made to appraise the financial performance of Commercial Banks in Thailand. The study uses thirteen financial ratios of the variables relating to CAMEL framework

Research Objectives

1. To analyze the financial position and performance of Commercial Banks in Thailand using CAMEL model.

2. To evaluate the financial performance of Commercial Banks compare with industry average.

Scope of the Study

1. Information scope:

The financial ratios were calculated from the financial annual reports data of Commercial banks in Thailand. The samples consisted of 7 Commercial banks that selected from assets size (0.3 - 0.8 trillion baht).

Table 1: The Assets of 7 Commercial banks

Unit: Million Baht

Bank	**Assets**
Bangkok Bank Public Company Limited (BBL)	2,781,604
Krung ThaiI Bank Public Company Limited (KTB)	2,735,408
The Siam Commercial Bank Public Company Limited (SCB)	2,574,230
Kasikorn Public Company Limited (KBANK)	2,328,659
BANK OF AYUDHYA PUBLIC COMPANY LIMITED (BAY)	1,717,289
Thanachart Capital Public Company Limited (TCAP)	935,050
TMB Bank Public Company Limited (TMB)	831,281

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2. Time scope:

The study period are 9 years from 2006-2015 whilst Thailand economic situation stayed in a downtrend.

Literature Review

From The United States of America, Uniform Financial Institution Rating System (1997) referred to the acronym CAMEL rating: Capital adequacy, Asset quality, Management quality, Earning ability and Liquidity. Then Grier (2007) defined asset quality, management quality and earing ability in Credit Analysis of financial Institution. And Rudolf (2009) emphasized the liquidity quality in Managing Liquidity in Banks: A Top down Approach. The next study confirmed by Dang (2011) that studied in the CAMEL rating system in banking supervision: a case study of American International Assurance Vietnam (AIA). After that, research of Misra and Aspal (2013) were made to evaluate the performance and financial soundness of State Bank Group using CAMEL approach. And Altan et al. (2014) studied attempts to extensively investigate the performance and financial soundness of state - owned and private - owned banks in community of Turkish banks.

In Indian banking case study an attempt was made to evaluate the financial performance of the only scheduled Urban Co-operative Bank in Surat City namely Surat People Co-operative Banking using a CAMEL model. (Trivedi, 2014) Another case, Suba and Jogi (2015) have been made to find out the difference between the two private sector banks namely at HDFC and ICICI that evaluated by applying CAMEL analysis technique.

Research Methodology

1. Source of information

This study used secondary data drawn from the annual reports of Commercial Banks in Thailand. Sample information set consists of 7 Commercial Banks in Thailand. In this analysis, the evaluation is done by using CAMEL. For applying CAMEL model, 5 main dimensions of the performance (Capital adequacy, Asset quality, Management quality, Earnings ability and Liquidity) were used together with 13 financial ratios for analysis.

2. Data analysis

In 1979, the Uniform Financial Institutions Rating System (UFIRS) was implemented in U.S. banking institutions, and later globally, following by a recommendation of the Federal Financial Institution Examination Council. The system become internationally known with the acronym CAMEL, and

then adopted by the National Credit Union Administration in October 1987. (The United States. Uniform Financial Institution Rating System 1997, p. 1) CAMEL is an useful tool to examine the safety and soundness of banks, and help mitigate the potential risks which may lead to bank failures. (Deng, 2011)

Materials and Models

Consideration in CAMEL model by ratio groups:

Capital Adequacy

Capital adequacy is important for a bank to maintain depositor's confidence and preventing the bank from going bankrupt that reflects overall of financial condition of banks and also the ability of management to meet the need of addition capital (Suba and Jogi, 2015) and then this ratio are measuring a percentage of risks weighted credit exposures. (Altan et al., 2014) So, the capital adequacy is estimate based upon the following key financial ratios.

Table 2: Capital Adequacy Ratios

Ratios	**Formula**
Capital Adequacy Ratio	$\frac{(\text{Tier1 capital} - \text{goodwill}) + \text{Tier 2 capital}}{\text{Risk} - \text{weighted assets}}$
Debt – Equity Ratio (time)	$\frac{\text{Total Debt}}{\text{Total capital}}$

Asset Quality

The asset quality indicators highlight the use of non-performing loans ratios (NPLs) which are the proxy of asset quality, and the allowance or provision to loan losses reserve. (Frost, 2004) The maintenance of asset quality is a feature of banking. The foremost objective to measuring the asset quality is to determine the component of non- performing assets as a percentage of the total assets. (Misra and Aspal, 2013, and Altan et al., 2014) All of the important asset quality ratios were used in this research.

Table 3: Asset Quality Ratios

Asset Quality	NPLs (net) total loans	$\frac{\text{NPLs(net)}}{\text{Total loans}}$
	Allowance for loan loss ratio	$\frac{\text{Allowance for loan loss}}{\text{Total loans}}$
	Total loans and receivables to total assets ratio	$\frac{\text{Total loans and receivables}}{\text{Total assets}}$

Management Efficiency

Management Efficiency is considered to be the single most important element in the CAMEL model because it pays a substantial role in a bank's success (Grier, 2007) Management efficiency of bank includes its administrative ability to react in diverse circumstances. The term management efficiency involves the capacity of management in generating business and maximizing profits. (Trivedi, 2014) The following two ratios are calculated in the present study

Table 4: Management Efficiency Ratios

Management Efficiency	Net profit margin ratio	$\frac{\text{Net Renenue}}{\text{Revenue}}$
	Asset turnover (time) ratio	$\frac{\text{Revenue}}{\text{Total Asset}}$

Earning Ability

Earning ability reflects not only the quality and trend in earnings, but also the factors that may affect the sustainability of earning. Inadequate management may results in loan losses and in return require higher loan allowance or pose height level of market risks. (The United States. Uniform Financial Institution Rating System 1997, p. 7) This rating is also necessary for a balanced financial structure and helps provide shareholder reward. (Grier, 2007) The flowing ratios explain the quality of income generation.

Table 5: Earning Ability Ratios

Earning Ability	Return on asset (ROA)	$\frac{\text{Net interest income}}{\text{Asset growth rate}}$
	Return on equity (ROE)	$\frac{\text{Net interest income}}{\text{Shareholder's equity growth rate}}$
	Net interest income Margin (NIM)	$\frac{\text{Net interest income}}{\text{Average earning assets}}$

Liquidity Quality

The liquidity reflects the degree to which a bank is capable of fulfilling its respective obligation. Banks make money by mobilizing short - term deposit at lower interest rate, and lending or investing these funds in long - term at higher rates, so it is hazardous for banks mismatching their lending interest rate. (Rudolf, 2009)

Risk of liquidity can have an effect on the image of bank. Liquidity is a crucial aspect which expresses bank's ability to meet its financial obligations. An adequate liquidity position means a situation, where organization can obtains sufficient liquid funds, either by increasing liabilities or converting its assets quickly into cash. (Altan et al., 2014) The liquidity quality ratios are estimated.

Table 6: Liquidity Quality Ratios based upon the following key financial ratios.

Liquidity	Liquid assets to total deposits ratio	$\frac{\text{Liquid assets}}{\text{Total customer deposit}}$
	Total loan to customer deposit (LTD)	$\frac{\text{Total loans}}{\text{Total customer deposit}}$
	Liquid assets to total Assets ratio	$\frac{\text{Liquid assets}}{\text{Total assets}}$

Results and Discussion

1. To analyze the financial position and performance of Commercial Banks in Thailand using CAMEL model.

Table 7: Capital Adequacy Ratios of Banks during the Period 2006 - 2015

Bank	CAR		D/E(T)	
	Average	Rank	Average	Rank
BBL	15.80%	1	7.941	1
KTB	14.87%	5	11.19	6
SCB	15.44%	3	8.817	3
Kbank	15.29%	4	9.53	4
BAY	15.76%	2	8.497	2
TCAP	13.39%	7	10.006	5
TMB	14.60%	6	11.822	7

In above table, BBL was on the top position with highest CAR ratio of 15.80% followed by BAY (15.76%) and SCB (15.44%). TCAP scored at the bottom position. This ratio is propounded to ensure that banks can take up a reasonable level of losses arising from operational losses. A higher the CAR ratio, indicates that the bank is strong and will protect their investors. (Misra and Aspal, 2013) The banks need to maintain 8.5% CAR ratio as per latest BASEL 3 standards. (Bank of Thailand, 2014)

In terms of debt - equity ratio represent the degree of leverage of a bank. It shows how much proportion of the bank business is financed through equity and how much through debt. Higher ratio is an indicator of less protection for the depositors and creditors and vice - versa. (Misra and Aspal, 2013) This research shows that, BBL was at the top position with a least average of 7.94 followed by BAY (8.5) and SCB (8.8) while TMB scored the lowest position.

Table 8: Assets Quality Ratios of Banks during the Period 2006 - 2015

Bank	NPLn/TL		Allowance for loan loss		TL/TA	
	Average	Rank	Average	Rank	Average	Rank
BBL	1.78%	2	5.76%	6	66.18%	1
KTB	3.43%	5	3.72%	2	70.55%	4
SCB	1.82%	3	4.18%	4	72.43%	5
Kbank	1.65%	1	3.56%	1	68.32%	3
BAY	3.46%	6	4.96%	5	83.62%	7
TCAP	2.02%	4	3.78%	3	79.08%	6
TMB	5.48%	7	6.96%	7	66.84%	2

Table 8 clearly states that on non-performing loans (net) to total loans and receivable ratio, Kbank was at the top position with a least average of 1.65% followed by BBL (1.78%) and SCB (1.82%). TMB was at last position. This ratio can used to compare the quality of loan portfolios among banks. They may view lenders with high NPL ratios as engaging in high-risk lending policies, which can lead to bank failures. Economists examine NPL ratios to predict potential instability in financial markets. (Thuwanimitkun, 2015)

Kbank was at the top position with a least average allowance for loan loss ratio of 3.56% followed by KTB (3.72%) and TCAP (3.78%). Again TMB was at last position. In practice, the commercial banks always have the allowance for loan loss as the proportion of bad debts from the past that compars with total loans in a normal situation. The allowance for loan loss ratio should stay at the level of 2 - 3%. Higher ratio is an indicator that the commercial banks should be careful about the credit quality. (Thuwanimitkun, 2015)

In case of total loans and receivables to total assets ratio, BBL was at the top position with least average of 66.18%, followed by TMB (66.84%) and Kbank (68.32%). BAY was at last position. Bank loans are classified as risk assets or non - liquid assets. So that, a higher ratio impact opportunities to generate income from interest, but it impacts negatively on liquidity. The funds will be caught up in risk assets and the financial flexibility to support the withdrawal of the deposit will be less. (Thuwanimitkun, 2015)

Table 9: Management Quality Ratios of Banks during the Period 2006 - 2015

Bank	NI/TI		Asset turnover(T)	
	Average	**Rank**	**Average**	**Rank**
BBL	22.26%	3	0.06	4
KTB	17.41%	4	0.059	5
SCB	30.87%	1	0.059	5
Kbank	24.92%	2	0.067	3
BAY	10.11%	6	2.065	1
TCAP	14.60%	5	0.08	2
TMB	-4.87%	7	0.057	6

Table 9 clearly reveals that on net profit margin ratio, SCB was at the top position with an average of 30.87% followed by Kbank (24.92%) and BBL (22.26%). TMB was at the last position. This ratio is a measure of the management efficiency of the bank. Hence, the proportion of profit compared with total revenue higher that represents a powerful arm in the higher as well. (Thuwanimitkun, 2015)

In case of asset turnover ratio BAY was at top position with an average of 2.065, followed by TCAP and Kbank. TMB scored the lowest position. The Asset Turnover ratio can often be used as an indicator of the efficiency with which a company is deploying its assets in generating revenue. In general speaking, the higher ratio, the better the companies is performing, since higher ratios imply that the companies generating more revenue per dollar of assets. (Trivedi, 2014)

Table 10: Earning Quality Ratios of Banks during the Period 2006 - 2015

Bank	ROA		ROE		NIM	
	Average	**Rank**	**Average**	**Rank**	**Average**	**Rank**
BBL	1.31%	3	11.77%	**5**	2.75%	**6**
KTB	0.99%	5	13.23%	3	3.07%	4
SCB	1.81%	1	17.88%	1	3.32%	3
Kbank	1.58%	2	16.70%	2	3.61%	1
BAY	0.83%	6	7.57%	6	3.49%	2
TCAP	1.13%	4	13.05%	4	2.86%	5
TMB	-0.31%	7	-5.92%	7	2.44%	7

Table 10 indicate that the return on assets ratio, SCB rated top with an average of 1.81% followed by Kbank (1.58%) and BBL (1.31%). TMB was at the bottom most position with an average of -0.31. This ratio is a key profitability ratio which measures bank's efficiency in using its assets to generate net income (Yamin et al., 1997)

Return on equity ratio is a key profitability ratio for investors which measure the profitability of shareholders investment. (Yamin et al., 1997) Return on equity ratio showed SCB at first position with an average of 17.88, followed by Kbank and KTB. TMB was at the last place with an average of -5.92%.

The net interest income margin ratio (NIM) is the difference between the interest income and the interest expenses. It is expressed as a percentage of total assets. A higher spread indicates that better earnings are given to the total assets. (Misra and Aspal, 2013) In this study, Kbank was at the top position with an average of 3.61%, followed by BAY (3.49%) and SCB (3.32%). TMB was at the least position with an average of 2.44%.

Table 11: Liquidity Quality Ratios of Banks during the Period 2006 - 2015

Bank	LiA/TD		LTD		LiA/TA	
	Average	**Rank**	**Average**	**Rank**	**Average**	**Rank**
BBL	39.08%	2	86.99%	1	29.73%	1
KTB	31.90%	5	95.67%	4	23.99%	4
SCB	31.90%	5	98.33%	5	23.30%	6
Kbank	36.04%	3	95.09%	3	25.98%	2
BAY	29.42%	7	112.33%	6	20.26%	7
TCAP	41.38%	1	114.16%	7	25.77%	3
TMB	32.87%	4	92.20%	2	23.67%	5

Table 11 clearly reveals that on liquid assets to total deposits ratio TCAP was at the first place with highest average of 41.38%, followed by BBL (39.08%) and Kbank (36.04%). BAY was at the bottom position with an average of 29.42%. This ratio measures the liquidity available to the depositors of the bank. (Trivedi, 2014)

It was again BBL with the top position with a least average total loan to customer deposits ratio of 86.99%, followed by TMB (92.20%) and Kbank (95.09%). TCAP was at the last position with an average of 114.16%. When LTD ratio is higher or increasing it indicates that the bank's liquidity quality is reduced. A high ratio indicates that the bank loan is using funds from deposits. If the ratio is close to 1: 1 or 100% it reflects that the bank will be left with the ability to lend less. (Thuwanimitkun, 2015)

Liquid assets to total assets ratio also indicates the overall liquidity of the unit by indicating the proportion of liquid assets in total assets. (Trivedi, 2014) The highest ratio was found in BBL with the average of 29.73% followed by Kbank (25.98%) and TCAP (25.77%). BAY was at the last position with an average of 20.26%.

This Study took every financial ratio, mentioned earlier, in order to compose the ranking of the overall performance of the selected Commercial Banks in Thailand. The end result is displayed in the Table 12.

Table 12: The Group ranking of Commercial Banks in Thailand

Bank	C	A	M	E	L	Avg.	Rank
BBL	1.00	3.00	2.33	4.67	1.33	2.47	1
KTB	5.50	3.67	3.00	4.00	4.33	4.10	4
SCB	3.00	4.00	2.00	1.67	5.33	3.20	2
Kbank	4.00	1.67	1.67	1.67	2.67	2.33	3
BAY	2.00	6.00	2.33	4.67	6.67	4.33	6
TCAP	6.00	4.33	2.33	4.33	3.67	4.13	5
TMB	6.50	5.33	4.33	7.00	3.67	5.37	7

This table describes the group ranking of the Commercial bank in Thailand for the period of 2006 - 2015. It is found that under the capital adequacy ratios BBL was at the top position, while TMB got lowest rank. Next ratio, the asset quality had Kbank at the top rank while BAY held the lowest rank. Under management efficiency ratio, it is observed that top rank was taken by Kbank and lowest rank was taken by TMB. In terms of earning quality ratio the capability of SCB and Kbank got the top rank, while TMB was at the lowest position. Last ratio, Liquidity quality showed BBL on the top position and BAY on the last position.

Please note that KTB did not go along with assets size. This was because KTB is the Government bank that must take responsibility to serve public policies such as financing specialized financial institutions that limited income generating. Learning from the past performance, KTB concentrated in small business 43% compared to bank average 37%, industrial loan customers were under bank average of 35%, average receipt interest rate was 5.78% near the bank's average while big assets size banks were above. Loans rate was floated but deposit rate was fixed, and outstanding loans were long term more than 60%.

2. To evaluate the performance of Commercial Banks compare with industry average.

Table 13: The Group ranking of Commercial Bank in Thailand

Bank	C		A			M		E			L		
	CAR (%)	**D/E (T)**	**NPL/TL (%)**	**All (%)**	**TL/TA (%)**	**NI/TI (%)**	**AsTu (T)**	**ROA (%)**	**ROE (%)**	**NIM (%)**	**Lia/Td (%)**	**LTD (%)**	**Lia/Ta (%)**
BBL	15.80	7.94	1.78	5.76	88.84	22.26	0.06	1.31	11.77	2.75	39.08	86.99	29.73
KTB	14.87	11.2	3.43	3.72	92.18	17.41	0.059	0.99	13.23	3.07	31.90	95.67	23.99
SCB	15.44	8.82	1.82	4.18	95.31	30.87	0.059	1.81	17.88	3.32	31.90	98.33	23.30
Kbank	15.29	9.53	1.65	3.56	94.07	24.92	0.067	1.58	16.70	3.61	36.04	95.09	25.98
BAY	15.76	8.5	3.46	4.96	123.00	10.11	2.065	0.83	7.57	3.49	29.42	112.33	20.26
TCAP	13.39	10	2.02	3.78	108.68	14.60	0.08	1.13	13.05	2.86	41.38	114.16	25.77
TMB	14.60	11.8	5.48	6.96	92.40	-4.87	0.057	-0.3	-5.92	2.44	32.87	92.20	23.67
Industry	15.02	9.69	2.81	4.70	99.21	16.5	0.35	1.05	10.61	3.08	34.66	99.25	24.67

As shown in the figure above, Capital Adequacy Ratio group: for CAR ratio found that all of them except KTB, TCAP and TMB were over industrial average and D/E the three banks were over industrial average. That mean these three banks stay in more risky status than the others.

In Asset Quality Ratio group: for NPL/TL ratio it was found that all of them except TMB, BAY and KTB were over industrial average. The allowance for loan loss ratio had three banks that were over industrial average namely TMB, BAY and BBL. And for TL/TA ratio, TCAP and BAY were over industrial average. In this ratio group, banks with higher than industrial average show a distressed asset management.

In Management Quality Ratio group: NI/TI, banks under industrial average were TMB, BAY and TCAP. For asset turnover, only BAY was lower than the industrial average. In this ratio group, banks with under industrial average represent inefficiency management.

In Earning Quality Ratio group: ROA, all of them except TMB, BAY and KTB were over industrial average. For ROE, banks under industrial average were TMB and BAY. And for NIM, banks under industrial average were TMB, TCAP and BBL. In this ratio group, banks with an average under industrial average are affected to gain sustainable earning.

In Liquidity Quality Ratio group: Lia/TD ratio and Lia/TA ratio, all of them except KTB, SCB, BAY and TMB were over industrial average. And for LTD ratio, banks over industrial average were TCAP and BAY. In first two ratios, banks with under industrial average show risk of liquidity status but the last ratio direct to the opposite side interpretation.

Conclusion

In 2015, there were 11 banks in Commercial Banks Sector of SET and this research selected 7 of them by assets size. The Top seven banks tried to keep their financial performance and almost all firms succeeded in getting the expected target except KTB, the government bank that is doing his business operation by public policies mentioned above. Moreover, some financial ratio pointed to uncertainty ranking for TMB and BAY because of the problems of merger and acquisition issues and the changing in their shareholder's equities that influenced their performance in some year. And when comparing to

industrial average standard the research results are consistent with the outcome of each bank financial performance study before.

Recommendations

This study used CAMEL model financial ratio to evaluate commercial banks performance in the overall picture and each bank in details, but it must use many sources of information to explain the occurrence data results. However CAMEL model is the basic model using financial ratios to analyze not only the past performance but also risk position of each bank.

The next study should cover the use of the other important key related financial ratios as tools to study financial performances. In addition to this research. Furthermore, another research should concentrate on studying efficiency operations of specialized financial institutions.

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