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CAMELS' ANALYSIS IN BANKING INDUSTRY

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ABSTRACT

"CAMELS" model as a tool is very effective, efficient and accurate to be used as a performance evaluator in banking industries and to anticipate the future and relative risk. "CAMELS" ratios are calculated in order to focus on financial performance. The CAMELS stands for **C**apital adequacy, **A**sset quality, **M**anagement, **E**arning and **L**iquidity and **S**ensitivity.

In this study some important ratios are chosen and calculated to evaluate bank's performance. Data which is used in this study is gathered from annual financial reports of an Iranian bank**.** Then data is compared with other bank's ratios and reports. Certainly, the trends of calculations and relevant figures show important points for managers and also, CAMELS rating can be an efficient tool to manage and control and decide in management accounting view.

INTRODUCTION

Bank is very old institution that is contributing toward the development of any economy and it's treated as an important service industry in modern world. Nowadays the function of bank is not limited to within the same geographical limit of any country. It is an important source of financing for most businesses (Nimalathasan, 2008). Also, bank is a financial institution that require fund to carry out business. Fund may come from deposit and non deposit such as capital (Al Mamun, 2013). Bank need to find best way to manage resources and assess its activities and decisions of consumption of resources. Simply stated much of the current bank performance literature describes the objective of financial organizations as that of earning acceptable returns and minimizing the risks taken to earn this return (Hempel et al., 1996).

Generally financial performance of banks and other financial institution measured by using combination of financial ratio analysis., benchmarking, measuring performance against budget or mix of these methodologies (Avkiran, 1995). In simple accounting terms, performance to banks refers to the capacity in generating sustainable profitability (Rozanni & A. Rahman, 2013). Banks need a way to evaluate performance and consider some important financial ratios and find the strengths and weaknesses.

Traditional method of applying financial ratios to evaluate bank's state of performance has been long practiced, with practitioners using CAMELS rating to measure their banks' performance. CAMELS bank rating is used by bank's management to evaluate financial health and performance (Rozanni & A. Rahman, 2013).

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Supervisory regulations enhance transparency and accountability in the operations of the banks thereby compelling them to pay greater attention to the quality of lending. In addition, these regulations conform to the international accounting standards. Hence, adherence to these guidelines would enhance the sustainability of banks and make them competitive (Soni, 2012). In order to be comparative and try a good model for benchmarking, choosing a suitable system to calculate some ratios and analysis for supervisory and auditor unit can be useful and effective. The comparative financial performance of banking sector conducted by using CAMELS rating system (Nimalathasan, 2008)

The Uniform Financial Institutions Rating System (UFIRS) was created in 1979 by the bank regulatory agencies (Datta, 2012). In 1988, the Basel Committee on Banking Supervision of the Bank of International Settlements (BIS) proposed the CAMELS framework for assessing financial institutions (Dash & Das, 2009). CAMELS rating system is an international bank-rating system where bank supervisory authorities rate institutions according to six factors (Datta, 2012) for financial institution's operations: **C**apital adequacy, **A**sset quality, **M**anagement soundness, **E**arnings and profitability, and **L**iquidity and **S**ensitivity. In 1997, it included the sixth component, Sensitivity to market risk, to form the CAMELS framework (Dash & Das, 2009, Gunsel, 2005)

Actually CAMELS rating is a common phenomenon for all banking system all over the world. It is used in all over the country in the world. It is mainly used to measure a ranking position of a bank on the basis of few criteria (Datta, 2012). Bank's performance or rather solvency or insolvency has been given much attention both at the local and international level. Financial ratios are often used to measure the overall financial soundness of a bank and the quality of its management (Wirnkar & Tanko, 2008)

By concentrating on the top line and bottom line, banks across the board have improved their profit while reducing their operational costs and more number of banks has improved their financial performance by using the concept of mergers and acquisitions. CAMEL rating is used by most banks across the world as a performance evaluation technique (Raiyani, 2010). In order to evaluate banks' overall financial condition, CAMELS supervisory rating system is built and introduced first in USA for onside monitoring. Now, it is used both on-site and off-site monitoring purposes (Kaya, 2001). Generally, the financial performance of banks and other financial institutions has been measured using a combination of financial ratios analysis, benchmarking, measuring performance against budget or a mix of these methodologies (Avkiran, 1995).

In this study, six categories of ratios according to CAMELS system are applied and are summarized in relative model of that category to define CAMELS system in any group of ratios. Those categories as Gunsel, N., (2005) & Nimalathasan, B., (2008) & Peterson, (2006) and Sarker (2005) pointed, are:
Capital (C) The first variable group is the indicators of capital and relevant indicators those present capital, the ratio of capital to assets and show organization strengths.

Asset Quality (A) Asset quality ratios are one of the main risks that banks face. As loans have the highest default risk, an increasing number of non-performing loans shows a deterioration of asset quality.

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Management Quality (M) As management is a qualitative issue, such as the ability for risk taking, it is usually difficult to measure the quality of management. The management quality of a bank can be measured by some important ratios those are used in CAMELS model.

Earning Ability (E) Earning is the most important performance measurement of banks. The ratios of earning and relative financial ratios are calculated in this study.

Liquidity (L) Liquidity risk measures an institution's ability to meet unanticipated funds that are claimed by depositors. Liquidity ratios are expected to be both positively and negatively related to the likelihood of failure those are set in model.

Sensitivity (S) Sensitivity ratios those are related to risk and covering power of organization are defined and calculated to finalize bank's performance model because risk indicators is very important and highlighted in CAMELS model.

CAMELS MODEL INDICATORS
In table 1, some important indicators those are employed in CAMELS model studies are shown. As study literature, there are 6 categories in this model that in each category some practical and relevant elements are used.

Table 1, some important indicators in prior studies

Year	Title of study	Author	Capital	Asset quality	Management quality	Earnings	Liquidity	Risk
2011	A Performance Evaluation of the Turkish Banking Sector after the Global Crisis via CAMELS Ratios	Dincer, H., Gencer, G., Orhan, N., & Sahinbas, K.	Equity to (Loan + Market + Principle Amount Subject to Operational Risk) / Equity to Total Assets/ Equity to (Deposit + Non-deposit Sources)	Financial Assets to Assets/ Loans and Receivables to Assets /Permanent Assets to Assets	Interest expenses to total expenses/interest incomes to total incomes/total incomes to total expenses	Net Profit to Total Assets /Net Profit to Equity	liquid assets to Assets/liquid assets to short term liabilities/liquid assets to deposit and non-deposit sources	Total Assets to Sector Assets/ (Loans and Receivables) to (Sector Loans and Receivables)/ Deposits to Sector Deposits
2012	Applicability of CAMELS Rating for Supervisory Regulation of the Indian Banking	Soni, R.	CAR/ Debt to capital/ Debt to assets/ Investment securities to assets	Non-current receivables to total receivables/Noncurrent debt to assets/Investments to assets/percent changes in non-current receivables	Total debt to total deposits/Per capita profit per employee/ROE/ Earnings per employee	Operating profit to average working capital/ margin to total assets/Net profit to assets/Interest income to total income/Non-interest income to total income	Liquid assets to total deposits/Securities to assets	-

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2013	Analysing the Financial Soundness of the Commercial Banks in Romania: An Approach Based on the Camels Framework	Roman, A., & Şargu, A. C.	CAR/equity to total asset	Impaired loans to gross loans /loan loss provision to net interest revenue/total loans to asset	Operating expenses to asset/interest expenses to Deposits	ROA/ROE/cost to income ratio	liquid assets to (deposit and short term funding)/Net loans to (deposit and short term funding)	The ratio of its assets to the assets
2013	Camels and performance evaluation of banks in Malaysia: conventional versus Islamic	Rozzani, N., & Rahman, R. A.	Earning to assets	NPL	Staff costs to assets	ROA/ROE	Net loans to (deposits and short-term financing)/Short-term liquid assets to deposits and financing	Risk sharia
2014	A Working Paper on the Impact of Gender of Leader on the Financial Performance of the Bank: A Case of ICICI Bank (india)	Chandani, A., Mehta, M., & Chandrasekaran, K. B.	CAR/ proportion of debt to capital/Debt to assets/bond investments to assets	Noncurrent receivables gross to debt/ Noncurrent debt to debt/Loans to assets/Noncurrent net debt to loans	Debt to deposits/ Returns per employee	Operating profit to average capital turnover rate/ margin or net profit to assets/ interest income to income	Securities to assets/Assets to deposits	-
2014	The evolution of Romania's financial and banking system	Rodica-Oana, I.	Solvability ratio/ Equity ratio	Risk ratio/Interbank loans and investments to assets/Loans to Assets/Net overdue and doubtful loans to Loans/Net overdue and doubtful claims to Assets/Net overdue and doubtful claims to Attracted and borrowed funds/ NPL/Total amounts due and overdue/Debtors and overdue debtors number/ Number of loans	State banks and with state major ownership / Private banks and with private ownership/Banks legal persons/Branches of foreign banks	Total provision Loss category	Effective liquidity to Required liquidity	Loans granted and commitments assumed by bank in some currency

| 2014 | Comparative Performance Evaluation of Selected Commercial Banks in Kingdom of Bahrain Using CAMELS Method.Chithra | Venkatesh, D., & Suresh, C. | CAR/Equity to assets/ Net capital to facilities/Capital to short-term funding/ Capital to debt | Loan loss reserve to gross loans/ Loan loss provisions to net interest revenue/ loan loss reserve to impaired loans /Net charge offs to average gross loans/ impaired loans to equity | Noncurrent loans to equity/Non operational items to net income/Equity to asset/Operating profit to total risk weighted asset | Rate margin/ cost of assets minus interest income divided by average assets/ other operating income to assets/ ROA/Equity ratio of operating expenses to operating income/ Noninterest expenses to assets | Receivables from other banks divided by debt to other banks/ Assets to loans/ Net loans to short-term deposits/ Net loans to total deposits/ Cash to short-term deposits/ Cash to deposits | The risk of interest rate/ exchange rate risk/ risk stocks |
| 2015 | Bank Performance with CAMELS Ratios towards earnings management practices In State Banks and Private Banks | Salhuteru, F., & Wattimena, F. | CAR/ Profit before tax to assets/ ROA/ Net profit margin/ Loan to Deposit | | | | | |

METHODOLOGY
In this study, 5 indicators are chosen in each of CAMELS category and all indicators are calculated for an Iranian bank (Sample) and then the results are compared with average of industry (Total). Total amounts in this study are the average of 16 Iranian banks (Noavaran Amin, 2015) that those are used for comparing with Sample bank (an Iranian bank). The trends of figures show the changes of each indicator.

RESEARCH MODEL
In table 2, the model of CAMELS in this study is shown.

Table 2, CAMELS model

| CAMELS | Capital (C) | Total shareholders 'equity/Total risk-weighted assets | Total complementary capital/Total risk-weighted assets | Total capital base/ Total complementary capital | Liabilities/ Equity | Deposits/ Equity |
| | Asset Quality (A) | Rate base assets /Total assets | Bank shares of income/ Total assets | Deposits/ Total assets | Fix assets/ Equity | Fix assets/ Total assets |

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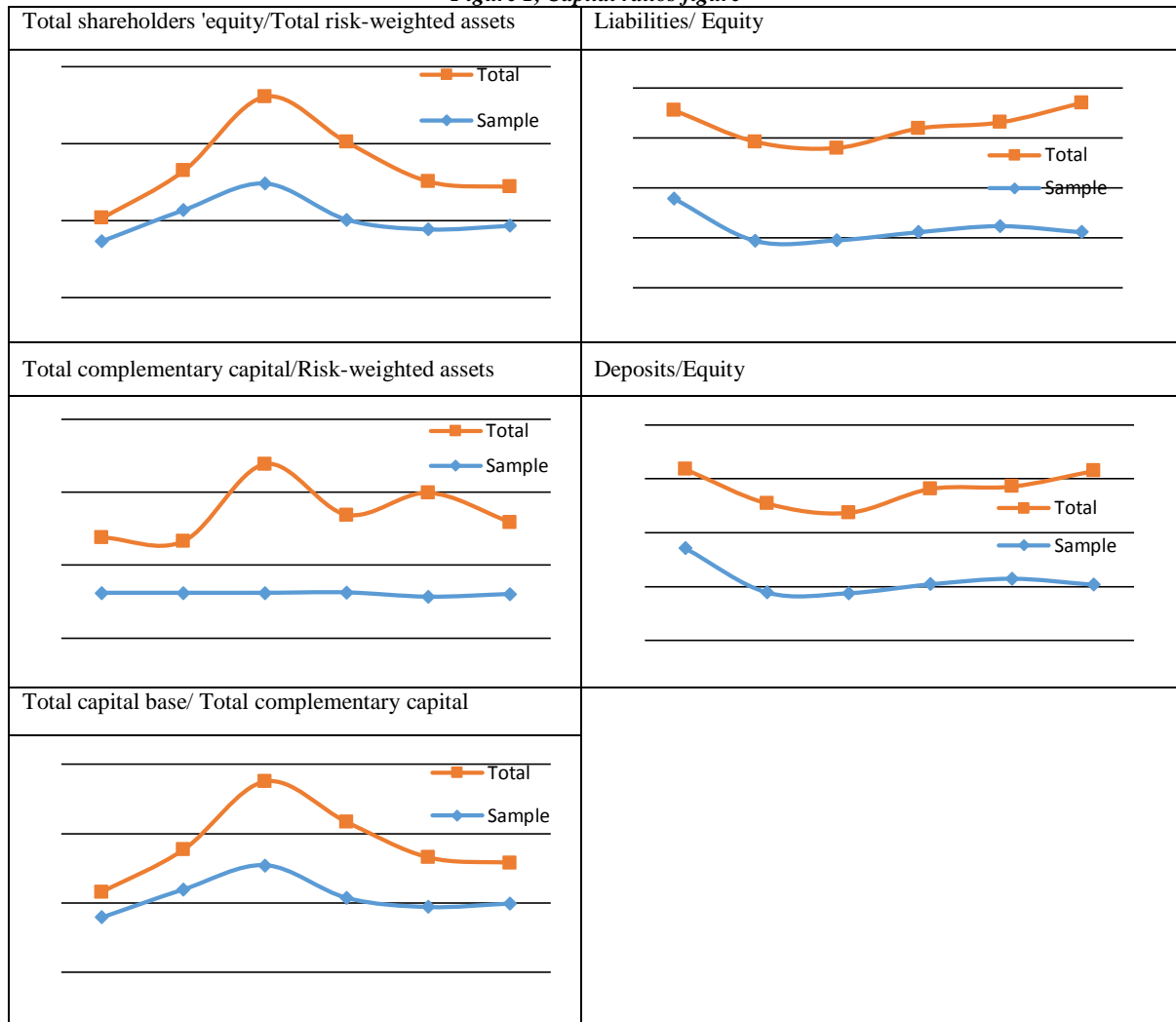|					
Management Quality (M)	Net profit/ Number of branches	Total assets/ Number of branches	Total liabilities/ Number of branches	Total deposits/ Number of branches	Total loans/ Number of branches
Earning Ability (E)	Fees and commissions/ Total Income	Loan income/ Loans	Deposit cost/ Deposit	Loan income/ Deposit cost	Cost/ Income
Liquidity (L)	(Investment/ Total assets)	Current liquidity/ Deposits	Security/ Total assets	Current liquidity/ (Demand deposits)	Liquidity/ Assets
Sensitivity (S)	Doubtful debts/Loans	Provisions of loan/Loans	(Bad debts + Overdue)/ Loans	Long term deposits/ Deposits	Demand deposits/ Deposit

RESULTS AND DISCUSSION
Capital ratios
In table 2 and figure 1, the 5 indicators in capital category are calculated and compared.
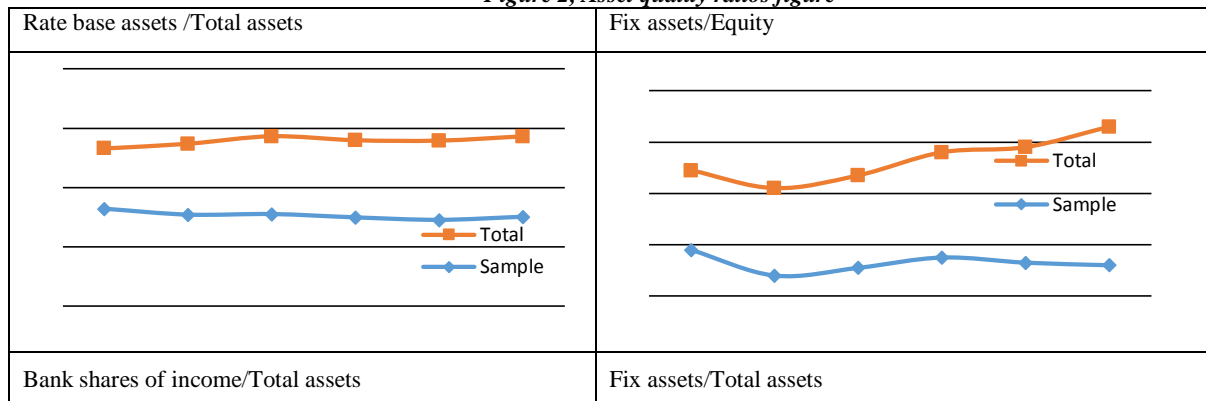
Table 2, Capital ratios table

Capital	Total shareholders 'equity/Total risk-weighted assets		Total complementary capital/Total risk-weighted assets		Total capital base/ Total complementary capital		Liabilities/ Equity		Deposits/Equity	
	Sample	Total	Sample	Total	Sample	Total	Sample	Total	Sample	Total
2009	14.65	6.01	1.24	1.52	15.9	7.27	8.92	8.85	8.54	7.33
2010	22.7	10.24	1.24	1.42	23.92	11.49	4.71	9.89	4.44	8.25
2011	29.59	22.58	1.24	3.53	30.84	24.24	4.77	9.21	4.38	7.44
2012	20.21	20.15	1.25	2.13	21.46	21.87	5.58	10.35	5.21	8.84
2013	17.7	12.49	1.14	2.84	18.85	14.28	6.18	10.36	5.73	8.54
2014	18.62	10.14	1.21	1.97	19.84	11.72	5.57	12.93	5.17	10.55

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Figure 1, Capital ratios figure

Assets quality ratios
In table 3 and figure 2, the 5 indicators in asset quality category are calculated and compared.

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Table 3, Asset quality ratios table

Assets quality	Rate base assets /Total assets		Bank shares of income/Total assets		Deposits/Total assets		Fix assets/Equity		Fix assets/Total assets	
	Sample	Total	Sample	Total	Sample	Total	Sample	Total	Sample	Total
2009	82.11	50.93	4.48	2.91	86.09	52.75	0.18	0.31	1.89	2.61
2010	77.07	59.84	4.6	3.44	77.87	59.93	0.08	0.34	1.42	3.96
2011	77.56	65.49	5.06	4.22	75.91	61.96	0.11	0.36	1.91	5.54
2012	74.72	65.05	5.45	4.61	79.17	71.43	0.15	0.41	2.28	5.52
2013	72.61	66.87	4.51	3.52	79.83	74.71	0.13	0.45	1.86	4.98
2014	75.25	67.72	3.78	2.64	78.69	76	0.12	0.54	1.86	4.23

Figure 2, Asset quality ratios figure

Rate base assets /Total assets

Fix assets/Equity

Bank shares of income/Total assets

Fix assets/Total assets

Deposits/Total assets
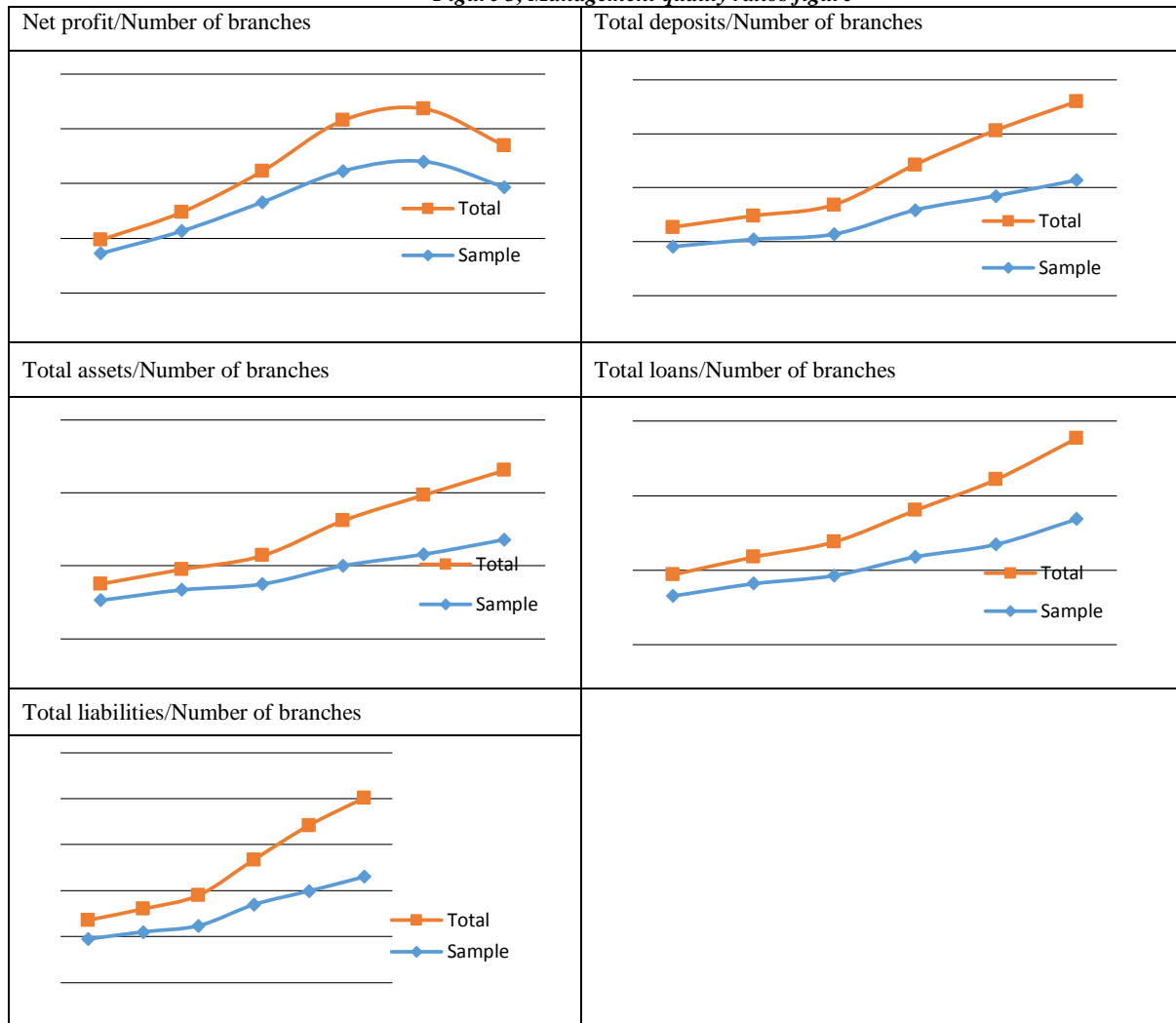
Management quality ratios

In table 4 and figure 3, the 5 indicators in management quality category are calculated and compared.

Table 4, Management quality ratios table

Management quality	Net profit/Number of branches		Total assets/Number of branches		Total liabilities/Number of branches		Total deposits/Number of branches		Total loans/Number of branches	
	Sample	Total	Sample	Total	Sample	Total	Sample	Total	Sample	Total
2009	14,473	4,949	526,322	225,019	473,301	206,258	453,154	180,983	326,389	142,174
2010	22,629	6,888	668,761	280,488	551,644	249,959	520,806	218,591	408,932	179,224
2011	33,230	11,335	749,353	388,830	619,567	332,008	568,888	273,053	463,942	225,668
2012	44,601	18,501	1,000,275	617,738	848,435	489,703	791,918	420,808	588,516	312,039

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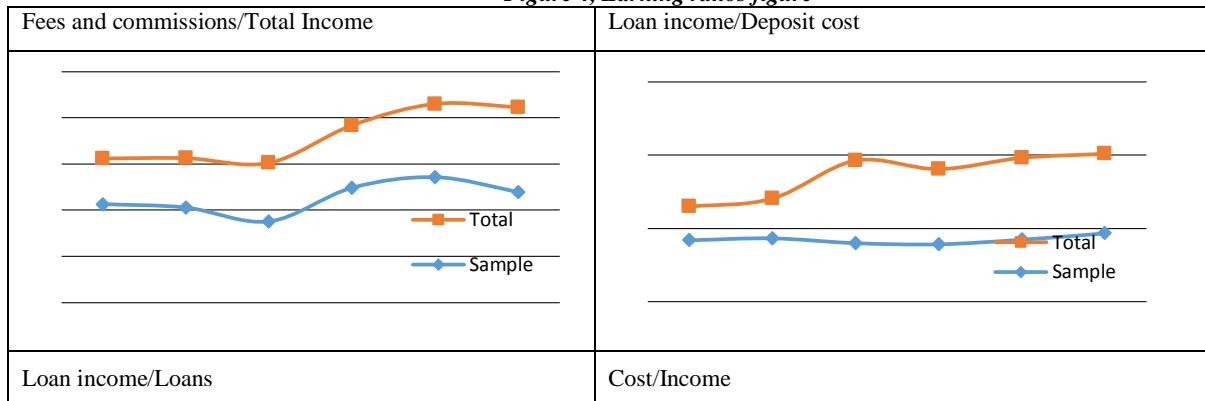| 2013 | | 48,064 | 19,282 | 1,157,271 | 811,760 | 996,273 | 715,497 | 923,890 | 607,708 | 672,366 | 434,807 |
| 2014 | | 38,663 | 15,166 | 1,358,544 | 948,677 | 1,152,036 | 858,613 | 1,069,137 | 728,988 | 841,344 | 542,807 |

Figure 3, Management quality ratios figure

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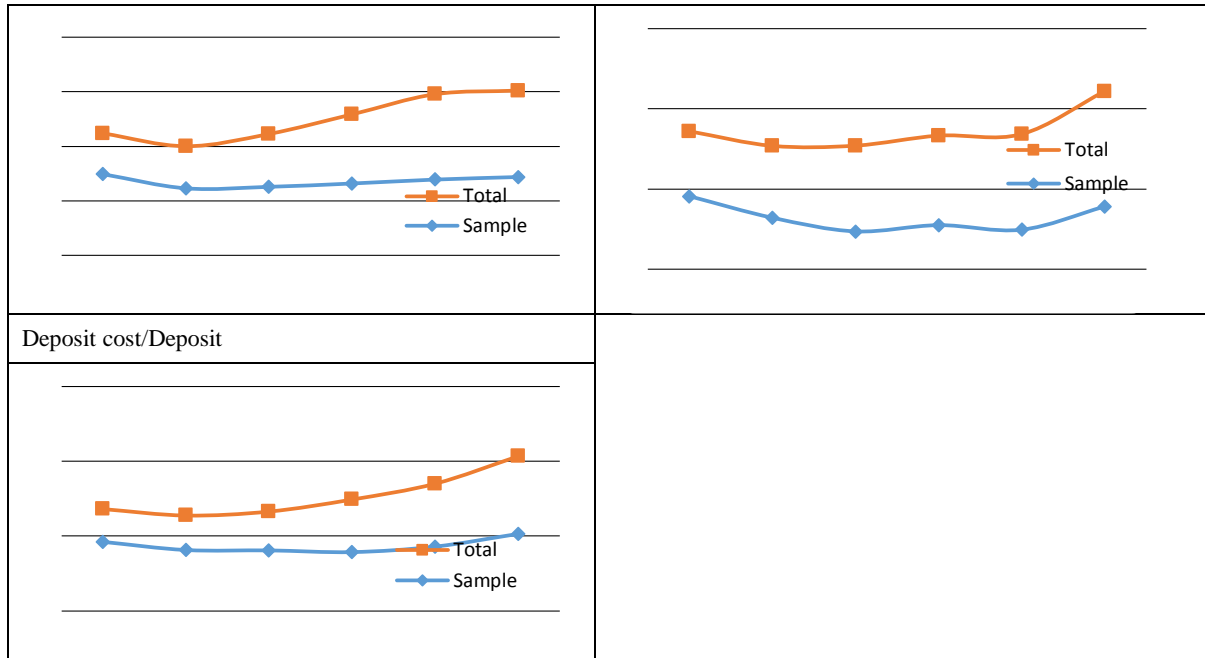
Earnings ratios

In table 5 and figure 4, the 5 indicators in earning category are calculated and compared.

Table 5, Earning ratios table

Earnings	Fees and commissions/Total Income		Loan income/Loans		Deposit cost/Deposit		Loan income/Deposit cost		Cost/Income	
	Sample	Total	Sample	Total	Sample	Total	Sample	Total	Sample	Total
2009	21.32	9.88	14.88	7.49	9.22	4.38	83.68	45.99	45.52	40.49
2010	20.56	10.70	12.28	7.73	8.13	4.61	86.33	54.34	32.07	44.85
2011	17.57	12.67	12.56	9.70	8.08	5.19	79.73	112.82	23.56	53.49
2012	24.86	13.53	13.17	12.69	7.85	7.03	78.20	102.72	27.46	55.84
2013	27.14	15.88	13.89	15.67	8.59	8.41	84.45	111.87	24.61	59.62
2014	23.95	18.36	14.36	15.86	10.29	10.38	93.14	108.66	39.09	71.95

Figure 4, Earning ratios figure

Deposit cost/Deposit

Liquidity ratios
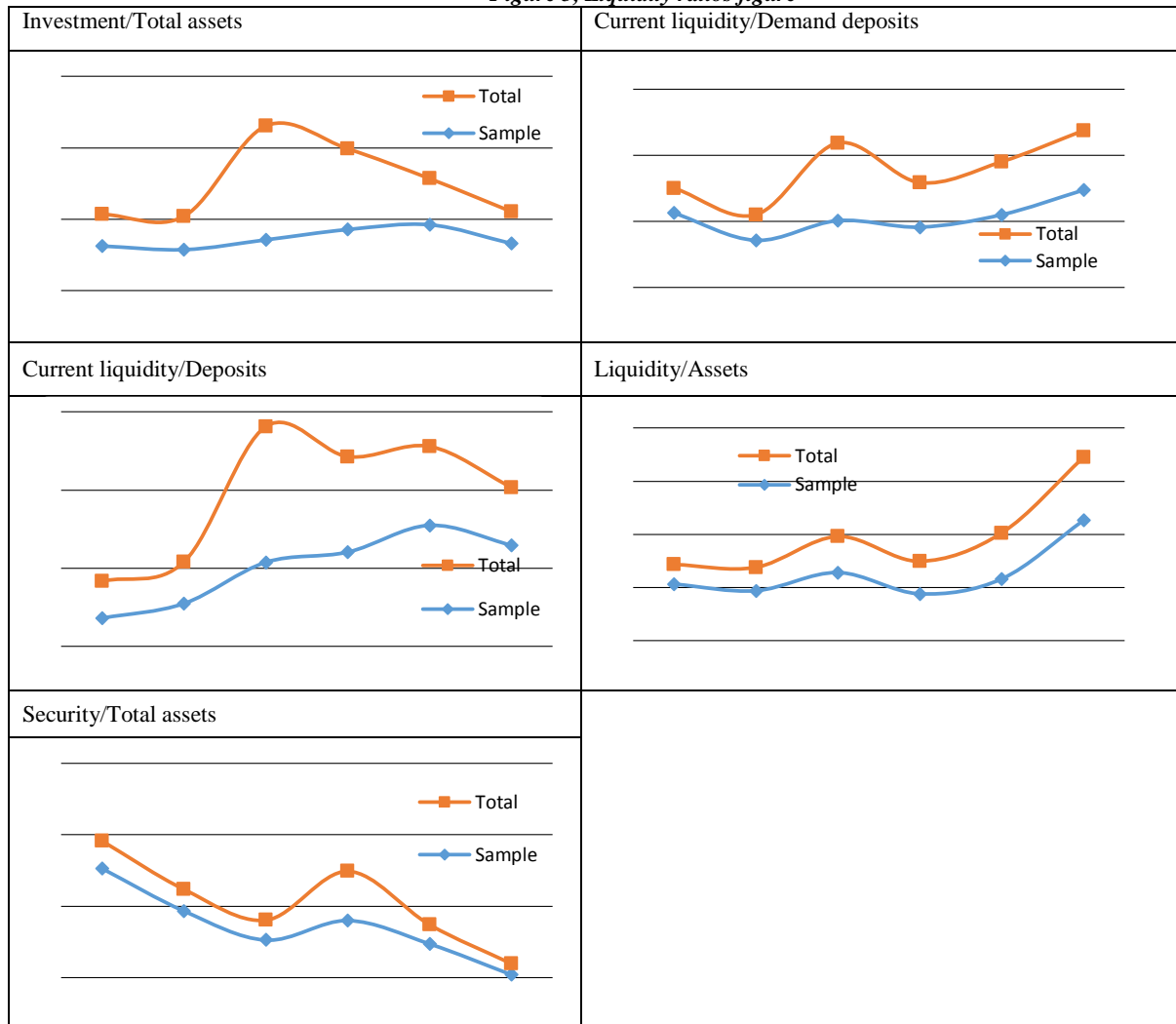In table 6 and figure 5, the 5 indicators in liquidity category are calculated and compared.

Table 6, Liquidity ratios table

Liquidity	Investment/Total assets		Current liquidity/Deposits		Security/Total assets		Current liquidity/Demand deposits		Liquidity/Assets	
	Sample	Total	Sample	Total	Sample	Total	Sample	Total	Sample	Total
2009	12.49	8.89	3.62	4.71	7.63	1.93	225.43	75.29	5.32	1.85
2010	11.47	9.37	5.49	5.34	4.65	1.52	142.97	77.48	4.70	2.20
2011	14.23	31.94	10.77	17.38	2.62	1.40	202.51	234.55	6.41	3.39
2012	17.11	22.59	12.07	12.21	3.99	3.45	182.83	134.59	4.41	3.06
2013	18.44	12.91	15.49	10.09	2.35	1.34	220.23	160.15	5.81	4.32

| 2014 | 13.17 | 8.92 | 12.93 | 7.39 | 0.19 | 0.77 | 294.79 | 180.07 | 11.32 | 5.93 |

Figure 5, Liquidity ratios figure

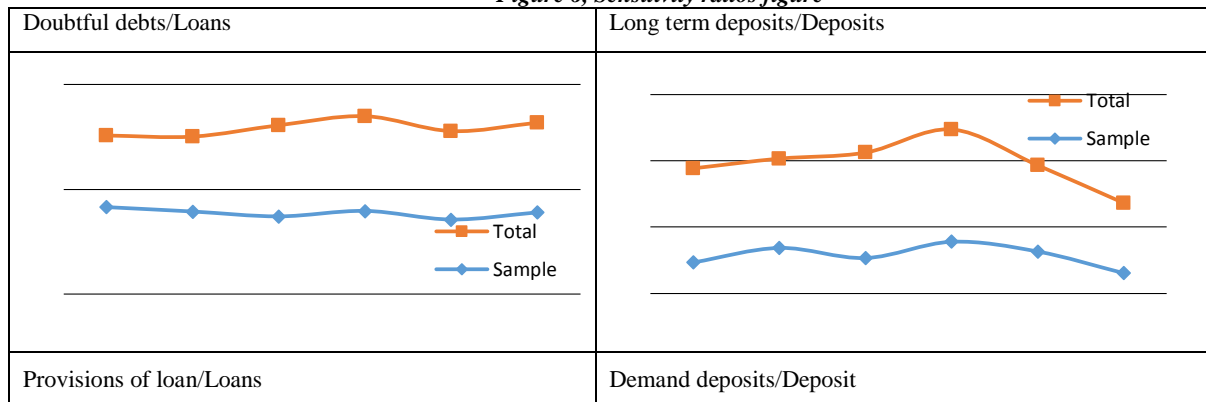Global Journal of Engineering Science and Research Management
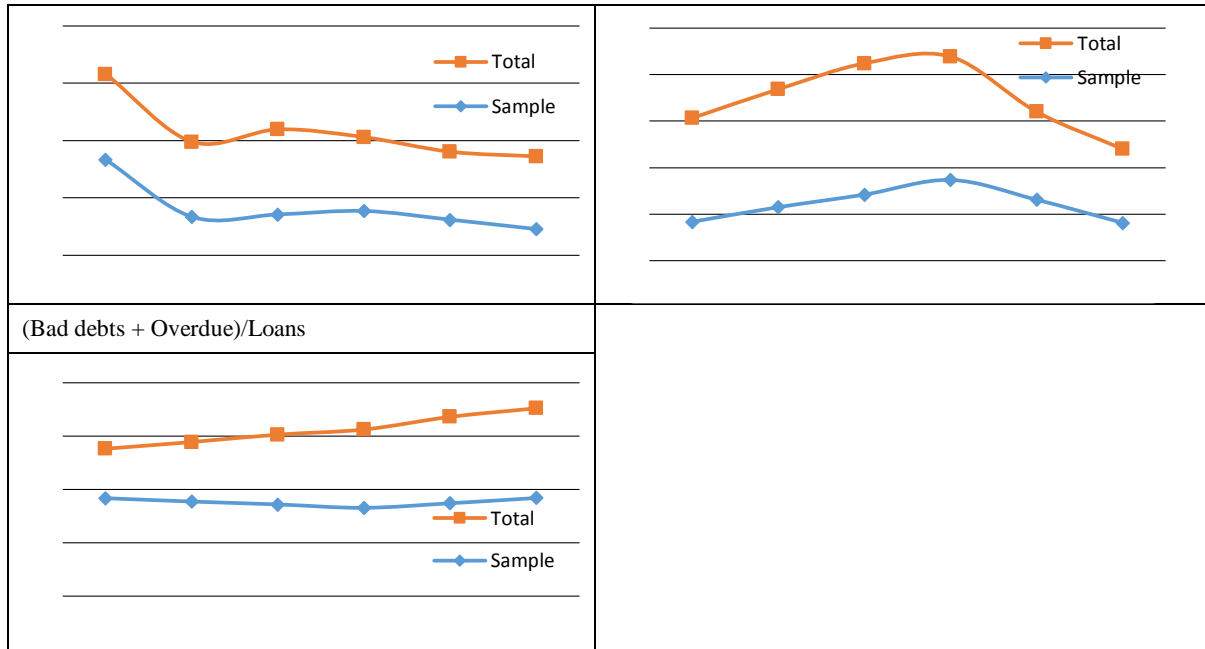
Sensitivity and risk ratios
In table 7 and figure 6, the 5 indicators in Sensitivity category are calculated and compared.

Table 7, Sensitivity ratios table

Sensitivity and risk	Doubtful debts/Loans		Provisions of loan/Loans		(Bad debts + Overdue)/Loans		Long term deposits/Deposits		Demand deposits/Deposit	
	Sample	Total	Sample	Total	Sample	Total	Sample	Total	Sample	Total
2009	4.15	3.41	8.33	7.48	91.63	46.43	8.36	22.32	4.66	14.20
2010	3.94	3.57	3.35	6.55	88.49	55.87	11.50	25.37	6.85	13.48
2011	3.71	4.34	3.56	7.42	85.78	65.52	14.21	28.22	5.33	15.91
2012	3.97	4.51	3.86	6.44	82.64	73.46	17.35	26.53	7.78	16.95
2013	3.56	4.21	3.10	5.93	86.90	81.07	13.09	18.92	6.31	13.01
2014	3.90	4.27	2.28	6.34	91.86	84.13	8.13	15.86	3.04	10.58

Figure 6, Sensitivity ratios figure

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(Bad debts + Overdue)/Loans

CONCLUSION

To assess the performance of the bank is necessary to prepare the financial reports usually consists of a balance sheet, income statement, cash flow statement, statement of changes in equity and notes to the financial statement (Salhuteru & Wattimena, 2015). Some ratios can show organization situation in society and industry. There are some rating system to demonstrate position and some special point to managers and all stakeholders. CAMELS rating model is a model to confess that an organization where can be successful and where has weaknesses.

In this study CAMELS rating method is used to choose important and effective indicators in each category and then calculated ratios are compared with average of banking industry. "CAMELS" model can help managers to control and analyze financial data and organizational position in an industry.

Banks can use this method to calculate and discuss ratios and focus on some crisis and find best solution when there is competitive problem and try to challenge and get a new and better position between the others. In fact, the important aspect of CAMELS is to compare an organization with the others in internal and external industry.

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