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Ranking and Rating Lebanese Commercial Banks: A CAMELS Framework

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Abstract

The CAMELS model, by incorporating more than one ratio, is one of the most widely used framework for measuring bank performance. Thus, this paper will measure the efficiency of Lebanese banks, rank and rate them using CAMELS framework. Only the largest ten Lebanese banks are included covering the period from 2008 to 2012. The study finds that the CIFS rating used in Lebanon is not in conformance with the CAMELS rating, indicating the need to develop a more accurate model to rate the Lebanese banks. Second, bank ranking is not stable throughout the years. Third, none of the Lebanese banks received a rating of 5, indicating that their efficiency should be improved. Fourth, none of the banks had a positive score in all CAMELS aspects. The study highlighted the main strengths and weaknesses of each bank, suggesting areas to be enhanced should the bank improve its rating and ranking.

Keywords: Banks' Ranking, Rating, CAMELS, Score, Lebanon

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1. Introduction

Banking is the key sector of any country's economy, contributing directly to the national income, to the economy's growth (Dash & Das, 2013), and to the improvement in the society's living standards by providing various services to the rest of the economy (Bollard, 2011). Banks provide an intermediation service that brings savers and investors together by helping private citizens save money, providing guard against uncertainty, and building credit, while enabling businesses to start up, expand, increase efficiency, and compete in local and international markets (Armenta, 2007). As the banking sector has this major impact on the economy, bank performance is one of the vital issues for the healthy functioning of the economy. In order to ensure a healthy and solid banking sector, banks' evaluation has gained great importance in recent years following the global financial crises. Banks need to be not only profitable, but also efficient; therefore, it is important to conduct a study that rates and ranks banks. Ranking commercial banks can show how well these financial institutions are doing in providing their services. However, it is often very difficult to rank banks, especially that these entities are generally characterized by many indicators (Bikker, 2010).

Through Lebanese banks were not affected by the financial crises, evaluating bank performance has become important in this dynamic environment. In Lebanon, the banking sector is the backbone of the Lebanese economy, where the total assets of Lebanese commercial banks account for 364% of GDP in 2015 (Lebanon This Week, 2017). Despite several periods of political instability, Lebanon's banking sector has proven its ability to advance by adapting to national, regional and international trends and requirements. Moreover, commercial banks are the major lender of the government, thus, their efficiency, ratings, and rankings are crucial issues. Thus, this study will use the CAMELS parameters to construct a score for the Lebanese commercial banks in order to rate and rank them. This study will capture the strengths and weaknesses of Lebanese banks and will find ways to improve them. Furthermore, the obtained ranking will be compared to that based on Capital Intelligence Financial Strength (CIFS). The comparison provides a more realistic picture for a better comprehensive evaluation of banks' efficiency.

The study will proceed as follows. Literature review is presented in Section 2, followed by data and methodology in Section 3. Section 4 presents and discusses the findings, while Section 5 concludes.

2. Literature Review

2.1. CAMELS Framework

In recent years, one of the most applied models for estimating bank performance and soundness is represented by the CAMELS framework (Roman & Sargu, 2013). In fact, the Uniform Financial Institutions Rating System (UFIRS) proposed the CAMELS rating, a rating system used by regulators for assessing financial institutions on a constant basis in order to identify the institutions that require a special supervisory attention. CAMELS supervisory rating system was built and introduced first in USA for onside monitoring, before being used for both on-site and off-site monitoring purposes (Kaya, 2001). Originally, CAMEL rating can trace its root to 1979 and had at the time five components, which are Capital Adequacy (C), Asset Quality (A), Management Soundness (M), Earnings and Profitability (E), and Liquidity (L) (Cole & Gunther, 1998). A sixth component was introduced in 1996, which is S or Sensitivity to market risk (Barr, Killgo, Siems, & Zimmel, 2002). The obtained rating from the CAMELS framework ranges from 1 to 5 with 1 being the best rating and 5 being the worst one. The first two Ratings (1 and 2) designate a sound bank, whereas Ratings of 3 and 4 designate a bank with severe

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problems. A rating of 5 is assigned to banks that have a high probability of failing within the next 12 months (Collier, Forbush, Nuxoll, & O'Keefe, 2003). The CAMELS rating is a guiding rating system that was developed in the U.S to classify the general condition of a bank.

On the other hand, CAEL model was developed to monitor bank performance, which is based on nineteen financial ratios falling into four categories, capital, asset, earning, and liquidity (Sahajwala & Van der Bergh, 2000). ORAP model has been established by the French supervisory authorities, which is based on fourteen parameters related to prudential ratios, on and off-balance sheet activities, market risk, earnings, and qualitative criteria. PATROL system was introduced by the Bank of Italy, which is based on five parameters, capital adequacy, profitability, credit quality, organization, and liquidity (Sahajwala & Van der Bergh, 2000).

2.2. Empirical Evidence addressing banking performance evaluation using CAMELS

CAMELS framework is a widely used methodology to evaluate banks. In fact, the use of financial ratios for bankruptcy prediction and for measuring financial performance for banks had started with Beaver (1966), followed by Altman (1968).

The CAMELS rating has been used by many studies, which will be briefly presented in chronological order. Barker, Holdsworth, and Federal Reserve Bank of New Yorl (1993) found evidence that CAMEL ratings are useful in predicting banks' failure. Similarly, Cole and Gunther (1998) found that CAMEL ratings contain useful information. Kaya (2001) analyzed the relationship between CAMELS rating and the possibility of failure of a bank based on 1997 to 2000 data of Turkish commercial banks. The result was that only 17% of the banks that were pointed out as successful by CAMELS system have failed (Kaya, 2001). Barr et al (2002) found that CAMELS ratings were consistent with the efficiency scores obtained through Data Envelopment Analysis (DEA). "CAMEL rating has become a concise and indispensable tool for examiners and regulators" (Barr et al., 2002, p.19).

Said and Saucier (2003) used CAMEL rating methodology to evaluate Japanese Banks. Dzeawuni and Tanko (2008) conducted a study on eleven commercial banks in Nigeria over a period of nine years (from 1997 to 2005) to find the adequacy of CAMEL in capturing the overall performance of a bank and to show the relative weights of importance of all factors. They concluded that no factor in CAMEL is sufficient to depict the overall performance of a bank. They recommended the usage of the best identified ratios in CAMEL when evaluating banks' performance. Furthermore, Hays, Stephen, and Arthur (2009) analyzed the efficiency of banks in the United States using data from year-end 2006-2008 employing the CAMELS framework in order to differentiate between low efficiency and high efficiency banks. Sangmi and Nazir (2010) conducted a study to evaluate the financial performance of the two major banks operating in Northern India by using CAMEL parameters. They found that the position of the banks under study is sound and satisfactory in terms of capital adequacy, asset quality, management capability and liquidity. Dincer, Gencer, Orhan, and Sahinbas (2011) evaluated the Turkish banking sector after the Global crisis via CAMELS ratios. The CAMELS method was also used by Öztorul (2011) to compare the financial performance of the Turkish banking sector for the period 2004 to 2011 based on capital ownership and scale. The study concluded that the aggregated CAMELS components of groups obtained from grouping of banks in terms of capital ownership show significant difference only in terms of A, M, E, and S. In terms of scale, it was obtained a significant separation between small banks and medium banks for asset quality and liquidity, a significant separation between small banks and large banks in

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terms of management, and a significant separation among all scales in terms of profitability and sensitivity to market risk.

Dash and Das (2013) used CAMELS framework to compare the performance of public sector with private or foreign banks. They found that private/foreign banks are better than public banks on most of CAMELS framework, and the most important factors contribution to the better performance were management (M) and earnings (E).

Similalry, Altan, Yusufazari and Beduk (2014) conducted a study using the CAMEL approach to investigate the performance and financial soundness of state-owned and private-owned banks in Turkish banks for the period 2005 to 2012. They observed that there is a significant difference in the performance between state-owned and private-owned in the Turkish banking system.

Ferrouhi (2014) analyzed the performance of major Moroccan financial institutions for the period 2001-2011 using CAMEL approach. He aimed to evaluate their capital adequacy, asset quality, management, earnings and liquidity in order to determine a proper ranking for these banks. The result was a ranking that ranges from 2.2 for the worst bank to 4.4 for the best bank using the CAMEL approach.

Some studies had combined the use of factor analysis with CAMEL financial ratios to develop rating models for life insurance companies. Hsiao (2006) developed CAMEL-S model based on fourteen variables, and results obtained were consistent with DEA efficiency scores. Similarly, Yakob, Yusop, Radam, and Ismail (2012) developed CAMEL model based on a set of twenty three financial ratios to rate insurance service providers. Klomp and de Haan (2011) developed CAMELS framework using a set of twenty-five financial variables to measure bank risk. Popovska (2014) integrated the factor analysis to the CAMELS dimensions to develop a model to measure bank stability.

In summary, many studies have used CAMELS model to develop measures of bank performance and risk. CAMELS model has been found to be very suitable and accurate model to evaluate banking performance and to predict failure rate.

3. Data and Methodology

The objective of the study is to construct a single index using traditional CAMELS framework to measure the performance and efficiencies of Lebanese commercial banks, and to rank them. This approach provides a more realistic picture for a better comprehensive evaluation of banks' efficiency.

3.1. The Sample

The study will focus on the top ten largest Lebanese banks in terms of total assets, regardless of whether they are listed. Secondary yearly data are retrieved from Bankscope. Because of some missing information, the bank ranked in the tenth place is dropped and replaced by the bank ranked in the eleventh place. Therefore, the banks that will be investigated are: (1) Bank Audi, (2) BLOM Bank, (3) Byblos Bank, (4) Fransabank, (5) Bankmed, (6) Société Générale de Banque au Liban, (7) Bank of Beirut, (8) Banque Libano-Francaise, (9) Crédit Libanais, and (10) BBAC.

Data for the study cover the period from 2008 to 2012 resulting in 50 observations.

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3.2. Variables

A score will be calculated as a function of ten financial ratios that are inspired from the **CAMELS** rating. These variables will be grouped into 6 categories: **C**apital adequacy (C), **Asset** quality (A), **M**anagement (M), **E**arnings (E), **L**iquidity (L), and **S**ensitivity to market risk (S).

Capital Adequacy: Capital adequacy shows the ability of the bank's capital to cover its risks. Total Capital Ratio (TCR), defined as Tier 1 and Tier 2 capital divided by Risk-weighted Exposures is used, in according with Basel requirements. It measures the power of the capital to cover different types of risks namely credit, market, and operational risks.

Asset Quality: Asset quality shows the bank's ability to manage its assets and to minimize problem, overdue, or rescheduled loans. Two variables will be used to assess the asset quality of banks, namely, asset quality index, and loan loss reserves ratio.

- Asset Quality Index (AQI): it is defined as the ratio of non-current assets other than plant, property and equipment to total assets, versus prior year (Warshavsky, 2012):

  $$AQI = \frac{1 - (\text{Current assets}_{t} + PP\&E)/\text{Total assets}_{t}}{1 - (\text{Current assets}_{t-1} + PP\&Et\text{-}1)/\text{Total assets}_{t-1}}$$

  Where: t = current year and t – 1 = prior year; PP&E = property, plant & equipment.
  This ratio measures the proportion of total assets for which future returns are less certain, so the lower the ratio, the better it is.
- Loan Loss Reserve Ratio (LLR), defined as loan loss reserves divided by the average gross loans. More provisions for loan losses are put when the bank has made loans to lower-rated, doubtful companies, thus, this ratio gives an indication of the management's expectation of future loan losses. As mentioned by Walter (1991), provision for loan losses has been found to be one of the most important factors affecting bank profitability

Management: Management refers to the analysis of the ability of management to understand and generate business, to maximize profits, and to respond to the risks. Management will be measured by two ratios, namely, the cost to income ratio and the growth in assets.

- Cost to Income Ratio (C/I): It measures management's ability in keeping costs as low as possible and in getting higher profit.
- Growth in Assets (GA): This ratio measures the percentage change in total assets in a given year, reflecting the bank's management ability in expanding its operations.

Earnings: Earnings measure the sufficiency of earning to cover potential losses and to please shareholders. In this concept, Return on Equity (ROE) and Return on Assets (ROA) are used in this study.

- Return on equity (ROE): It is defined as the net profit divided by the total equity and it measures the amount of profit per one unit of money invested in a bank by shareholders.
- Return on Assets (ROA): It is defined as the net profit divided by the total assets and it measures the efficiency of bank in using its assets to generate profit (Petersen & Schoeman, 2008).

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The more the bank's efficiency is, the higher its score would be. Therefore we expect a positive relationship between the ROE and ROA and the bank's score.

Liquidity: Liquidity is simply the bank's ability to generate cash or turn quickly its short term assets into cash. In this context, net loans total asset ratio (NTTA) and liquid assets over total assets (LATA) will be used to capture banks' liquidity.

- Net Loans to total asset ratio (NLTA): It measures the percentage of assets tied up in loans and is defined as the total loans over the total assets. The higher the ratio, the higher the liquidity risk is.

- Liquid Assets over Total Assets (LATA): It is defined as liquid assets over total assets. Liquid Assets include cash, money market securities, and any other assets can be converted into cash easily (Olagunju, David, & Samuel, 2011).

Sensitivity to Market Risk: The sensitivity to market risk refers to the fluctuation in market interest rate, foreign exchange rates, commodity prices, and share prices (Trautmann, 2006). Although sensitivity to market risk is typically measured by rate sensitive assets divided by rate sensitive liabilities or by beta, it will be proxied by the risk weighted assets over total assets (RWTA) due to data unavailability. The risk weighting varies according to each asset's inherent potential for default and what the likely losses would be in case of default (Jackson & Kronman, 1979).

3.3. Methodology

The procedure used to calculate the CAMELS ratio or score of a bank is derived from Kaya (2001). An index for each of the 6 criteria (capital adequacy, asset quality, management, earnings, liquidity, and sensitivity to market risk) that define the CAMELS will be calculated. Then, a single score for each bank i for a certain year t will be computed as the average of the six indices calculated earlier.

$Score_{i,t}$ = (Capital Adequacy $index_{i,t}$ + Asset Quality $index_{i,t}$ + Management $index_{i,t}$ + Earning $index_{i,t}$ + Liquidity $index_{i,t}$ + Sensitivity $index_{i,t}$)/6

To find the index for each independent variable or criterion, the following steps are used:

Step 1: Calculate the ten ratios described earlier, which are related to Capital Adequacy, Asset Quality, Management, Earning, Liquidity, and Sensitivity to Market Risk.

Step 2: Find a reference value of each ratio, which is simply the average value of each ratio in a certain year. For example, the reference value of ROE in a given year t is equal to the sum of ROE of all banks in a given year t divided by the number of banks, which is ten in our case.

$$\text{Reference value of ROE} = \sum_{i=1}^{10} \frac{(ROE\ bank\ i)}{10}$$

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Step 3: Find an intermediate value of each ratio of each bank i by dividing the value of this variable for bank i by the reference value computed in Step 2. For example, the intermediate ROE of bank i is equal to:

$$\text{Intermediate value of bank i} = \frac{\text{ROE of Bank i}}{\text{Reference value of ROE}} x\ 100$$

Step 4: Determine the sign of a relationship between the ratio and the performance indicator. For example, net loans to total asset ratio and liquidity have negative relationship because as the level of net loans to total assets increases, the liquidity decreases. On the other hand, liquid assets to total assets and liquidity have a positive relationship.

Step 5: Find the index for bank i for each performance indicator as follows:

- If the variable is positively related to the performance indicator, the index is equal to Intermediate index – 100
- If the variable is negatively related to the performance indicator, the index is equal to 100 - intermediate index.

Then, the performance value for each of the performance indicator (CAMELS criterion) is calculated by using the average index of each of the variables defining the criterion. For example, the index for the Earning criterion is calculated as follows:
Earning index bank i = (ROE index bank i + ROA index bank i)/2

Step 6: Calculate the consolidated CAMELS value for each bank and year as the average of each of the performance value.

Table 1 summarizes the ratios used in the CAMELS analysis, with the expected signs between them and the performance indicator.

Table 1: Description of the Ratios used in CAMELS

PERFORMANCE INDICATOR		Ratio	Sign with performance Indicator
C	Capital Adequacy	**Total Capital Ratio TCR**	+
A	Asset Quality	**Asset Quality Index AQI**	-
		Loan Loss Reserve Ratio LLR	-
M	Management	**Cost to Income Ratio (C/I)**	-
		Growth in Assets	+
E	Earnings	**Return on Equity ROE**	+
		Return on Assets ROA	+
L	Liquidity	**Net Loans to total asset ratio (NLTA)**	-
		Liquid Assets over Total Assets (LATA)	+

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S	Sensitivity to Market Risk	**Risk Weighted Assets over Total Assets (RWTA)**	-

4. Findings

4.1. Descriptive statistics and Correlation Analysis

The reference value of each ratio for a given year is calculated by taking the average of this variable for the given year and the results are presented in Table 2. The average capital adequacy ratio was well above the Basel II required level of 9%. The low standard deviation suggests the adherence of the Lebanese banks to the regulations imposed through the central bank of Lebanon.

There was a marked improvement in the asset quality along the years, with a lower asset quality index and a lower loan loss reserve ratio. Although management skills are evaluated by two ratios, there was a general improvement only in one aspect, mainly in cost to income ratio. Assets growth was so high in 2009 before falling tremendously in year 2012.

Earning performance was relatively stable, especially return on asset at around 1%. As for liquidity, there was no clear trend. While net loans to total asset had increased between 2008 and 2012, suggesting a decrease in liquidity, the liquid assets to total assets had slightly increase, suggesting a slight increase in liquidity. However, the result is more a decrease in liquidity over the years. Finally, sensitivity to market risk, after increasing to a maximum of 62.85% in year 2011, had decreased in 2012, but still above the level of 2008, suggesting an overall increase in the sensitivity to market risk.

In general, results show that growth in assets, risk weighted assets over total assets, and asset quality index exhibit larger standard deviation, revealing that the growth and the composition of assets are different between one bank and another and from year to year.

Table 3 verifies the existence or non-existence of linear correlation between these variables. The low correlation among most of the variables suggests that a good performance in one aspect of the CAMELS variables does not necessarily mean a good performance in other aspects.

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Table 2: Reference Value for all Years

Performance Indicator	Ratio	**%**	**All years**	**2012**	**2011**	**2010**	**2009**	**2008**
Capital Adequacy	**Total Capital Ratio TCR**	Reference	13.94	12.93	11.27	13.07	14.09	18.34
		Std. Dev	4.12	1.93	2.47	1.94	4.25	5.40
Asset Quality	**Asset quality index AQI (%)**	Reference	102.25	95.31	99.77	105.98	100.21	109.98
		Std. Dev	10.46	6.62	5.32	8.49	3.73	17.05
	Loan Loss Reserve Ratio LLR	Reference	5.71	4.76	4.44	5.70	6.30	7.37
		Std. Dev	5.07	3.43	3.34	5.62	5.57	6.94
Management	**Cost to Income Ratio (C/I)**	Reference	50.21	49.41	51.00	48.25	50.48	51.92
		Std. Dev	6.10	7.39	6.89	4.86	4.93	6.60
	Growth in Assets	Reference	14.97	8.77	19.62	11.49	22.24	12.73
		Std. Dev	15.21	4.82	31.05	4.29	8.90	5.41
Earnings	**Return on equity ROE**	Reference	13.36	12.81	12.39	14.02	13.66	13.93
		Std. Dev	2.87	2.87	2.56	3.18	3.25	2.63
	ROA	Reference	1.15	1.07	1.06	1.26	1.19	1.16
		Std. Dev	0.23	0.19	0.23	0.24	0.26	0.23
Liquidity	**Net Loans to total asset ratio (NLTA)**	Reference	26.91	28.71	28.88	27.09	24.63	25.27
		Std. Dev	4.47	4.07	3.91	3.91	4.33	5.11
	Liquid Assets over Total Assets (LATA)	Reference	25.96	27.71	24.22	23.22	27.24	27.42
		Std. Dev	6.07	6.51	6.83	5.33	6.07	5.16
Sensitivity to Market Risk	**Risk Weighted Assets over Total Assets (RWTA)**	Reference	56.57	58.56	62.85	60.07	56.82	44.55

Table 3: Correlation between CAMELS Variables

Variable	TCR	AQI	LLR	C/I	GA	ROE	ROA	NLTA	LATA	RWTA
TCR	1.00	0.28	-0.01	-0.07	-0.22	-0.02	-0.02	-0.42	0.03	-0.78
AQI	0.28	1.00	-0.12	-0.07	0.03	-0.01	-0.03	-0.32	-0.24	-0.26
LLR	-0.01	-0.12	1.00	0.17	0.28	0.49	0.26	-0.13	-0.33	-0.23
C/I	-0.07	-0.07	0.17	1.00	0.20	-0.44	-0.58	0.38	-0.33	-0.19
GA	-0.22	0.03	0.28	0.20	1.00	0.05	-0.02	-0.04	-0.19	0.01
ROE	-0.02	-0.01	0.49	-0.44	0.05	1.00	0.78	-0.31	-0.03	-0.09
ROA	-0.02	-0.03	0.26	-0.58	-0.02	0.78	1.00	-0.20	0.07	0.21
NLTA	-0.42	-0.32	-0.13	0.38	-0.04	-0.31	-0.20	1.00	0.08	0.34
LATA	0.03	-0.24	-0.33	-0.33	-0.19	-0.03	0.07	0.08	1.00	0.13
RWTA	-0.78	-0.26	-0.23	-0.19	0.01	-0.09	0.21	0.34	0.13	1.00

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4.2. CAMELS Scores and Ranking

Table 4 and 5 show the overall CAMELS score (the average of all performance values) and the classification of each bank from the year 2008 till the year 2012. Decomposition of the CAMELS score is show in Appendix A.

Table 4: CAMELS banks scores from year 2008 till year 2012

Bank/Year	2008	2009	2010	2011	2012
Bank Audi	-2.84	9.84	-0.46	-2.22	5.59
BLOM Bank	-2.48	10.32	10.84	10.59	12.46
Byblos Bank	14.18	1.86	3.15	0.64	-10.78
Fransabank	**16.33**	-3.77	1.13	-6.24	-3.40
Bankmed	-12.55	-12.11	-14.11	-10.23	-4.20
Bank of Beirut	13.36	4.08	10.58	**11.88**	**19.44**
SGBL	**-13.70**	**-14.52**	**-25.31**	9.01	**-16.59**
Banque Libano Francaise	-6.10	-7.40	1.92	-4.56	-5.01
Credit Libanais	-7.72	-2.56	**16.50**	4.75	2.16
BBAC	1.52	**14.25**	-4.24	**-13.62**	0.33

Table 5: CAMELS banks ranking from year 2008 till year 2012

Bank/Year	2008	2009	2010	2011	2012
Bank Audi	6	3	7	6	3
BLOM Bank	5	2	2	2	2
Byblos Bank	2	5	4	5	9
Fransabank	**1**	7	6	8	6
Bankmed	9	9	9	9	7
Bank of Beirut	3	4	3	**1**	**1**
SGBL	**10**	**10**	**10**	3	**10**
Banque Libano Francaise	7	8	5	7	8
Credit Libanais	8	6	**1**	4	4
BBAC	4	**1**	8	**10**	5

As we can see in the table above, Bank Audi was ranked number 6 in 2008; jumping during 2009 to be ranked number 3, due to a better Earning, liquidity, and Sensitivity . In 2010 the bank did not maintain its good performance, declining to a rank of 7, mainly due to a decline in its management efficiency and liquidity. In 2012, it improved all aspects except liquidity, to be ranked number 3. The main weakness of this bank lies in its Capital adequacy ratio, being negative in all years.

As for BLOM Bank, it had a more stable ranking moving from number 5 in 2008 (having weaknesses in capital, management, and sensitivity) to number 2 in the following years. It maintained its second rank from 2009 to 2012. Despite being ranked as number 2, BLOM suffers in all years from problems in management efficiency and in sensitivity to market risk.

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Byblos Bank was among the most effective banks based on the CAMELS in 2008, being ranked 2, with a slight problem in its earning. Its performance dropped in 2009, due to a significant drop in its management, its earning and an increase in its sensitivity, but it was stable until 2011. More specifically, between 2009 and 2011, it maintained almost the same position varying between number 4 and 5. However, in 2012, its performance dropped significantly to the top bottom, reaching number 9. Byblos main weaknesses are in its earnings and sensitivity, and its main strength is in its capital adequacy ratio.

Although Fransabank was ranked 1 in 2008, it did not retain its good position and moved down to be ranked between the 6^{th} and the 8^{th} position in the remaining years. Looking throughout the years, Fransabank was able to improve one parameter at the expense of another parameter. For example in 2012, it improved its asset quality and its management, but at the expense of lower earning.

Bankmed was among the least performed banks over all the years being number 9 from 2008 till 2011 and number 7 in 2012. Its main strength is in its asset quality, being positive in all years.

As for Bank of Beirut, it retained its position in the top four ranks. Its rank was between 3 and 4 between 2008 and 2010. In 2011, its performance increased significantly to reach number 1, a rank that was maintained by the bank in 2012. Bank of Beirut worked heavily on improving its management efficiency, while maintaining a good asset quality and safe capital ratio in all years.

As it is shown in the table above, SGBL has the lowest performance and was ranked number 10 in all the years except in 2011 where it made an exceptional move and was ranked number 3. The low score is attributed to the bad asset quality in all years.

Bank Libano Francaise maintained almost the same position moving between number 5 and number 8. In 2009, BLF has a problem in all CAMELS aspects, which were slightly improved in 2010.

Credit Libanais had a lot of fluctuations. It was ranked number 8 in 2008, moving forward to number 6 in 2009. It made a big jump in 2011 to be ranked number 1. However it did not maintain its good performance and moved downward to number 4 in the years 2011 and 2012. Liquidity remains a weakness in all years.

Finally, BBAC was ranked number 4 based on the CAMELS criteria in 2008. It enhanced its performance compared to the remaining banks and was ranked number 1 in 2009. However its good performance did not last long and the bank made a big drop as compared to the remaining banks to be ranked number 8 in 2010 then number 10 in 2011. In 2012, it made an enhancement and it was ranked number 5 to be on the average among the banks. Earnings remain its main weakness throughout all years, in addition to problems in its management and asset quality.

4.3. CAMELS Rating

CAMELS rating was assigned according to the range they are in. The ranges used are $-\infty/-30$, $-30/-10$, $-10/+10$, $+10/+30$ and $+30/+\infty$. A rating of 5 was assigned to the highest range, while a rating of 1 was assigned to the lowest range.

Table 6 reports the CAMELS ratings of the banks in our sample for the years between 2008 and 2012. None of the banks were rated 5. As shown below, BLOM bank and Bank of Beirut are the most successful banks on average. Fransabank and Credit Libanais are the second best performers, with a rating of 3 of all years except one year. The third performers include Audi, Byblos, Bank Libano Francaise, and BBAC. While Bank Audi and Banque Libano Francaise maintained the same rating of 3

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in all years, Byblos and BBAC have a volatile rating. Finally, Bankmed and SGBL are the worst performers, with a rating of 2 for all years, except one year.

Table 6: CAMELS banks rating from year 2008 till year 2012

Bank/Year	2008	2009	2010	2011	2012	Average
Bank Audi	3	3	3	3	3	3
BLOM Bank	3	4	4	4	4	3.8
Byblos Bank	4	3	3	3	2	3
Fransabank	4	3	3	3	3	3.2
Bankmed	2	2	2	2	3	2.2
Bank of Beirut	4	3	4	4	4	3.8
SGBL	2	2	2	3	2	2.2
Banque Libano Francaise	3	3	3	3	3	3
Credit Libanais	3	3	4	3	3	3.2
BBAC	3	4	3	2	3	3

In Lebanon, Capital Intelligence Financial Strength (CIFS) ratings, an international rating system that rates banks according to specific standards, is available, which ranges from AAA (extremely strong condition) to D (extremely weak financial condition and may be in an untenable position). Furthermore, Capital Intelligence appends "+" and "-" signs to their financial strength ratings in the categories from "AA" to "C" to indicate that the strength of a particular institution is, respectively, slightly greater (+) or lower (-) than that of similarly rated peers (Capital Intelligence, n.d). In Lebanon, banks' rating according to CIFS is not changing from year to year, in contrast to CAMELS rating.

Table 7 compares the CIFS ratings for the ten banks in this study from the year 2008 till the year 2012 as obtained from BANKSCOPE to the CAMELS ratings. These two ratings do not conform with each other. First, while Bank of Beirut has the highest rating based on CAMELS, it has the lowest rating based on CIFS. Second, while Bank Audi, Byblos, and BLOM have the same rating based on CIFS, BLOM bank is much better than Byblos and Audi. Furthermore, the third top performers according to CAMELS rating have a volatile CIFS rating ranging from BBB- to B.

Table 7: CIFS Rating versus CAMELS Rating

		CIFS	CAMELS
	Bank/Year	**2008-2012**	**2008-2012**
First	**BLOM Bank**	BBB-	3.8
	Bank of Beirut	B	3.8
Second	**Fransabank**	BB+	3.2
	Credit Libanais	BB+	3.2
Third	**Bank Audi**	BBB-	3
	Byblos Bank	BBB-	3
	BBAC	BB+	3
	Banque Libano Francaise	B	3

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Fourth	**Bankmed**	B	2.2
	SGBL	B	2.2

Source: Bankscope

It is extremely important to choose a rating system that differentiates the ratings among banks on a yearly basis as well as the rating of the same bank from year to year. Thus, the CAMELS ranking that designates a score for each bank enabling us to rank banks' performance from the best to the worst one could be a solution.

5. Conclusion

This study examined and evaluated the performance and financial soundness of Lebanese commercial banks for the years 2008 and 2012 using CAMELS rating model. The study was limited to the top ten largest Lebanese banks. An overall CAMELS score, rating, and ranking were obtained based on the performance in six areas: Capital adequacy (C) measured by total capital ratio; asset quality (A) measured by asset quality index and loan loss reserve ratio; management efficiency (M) measured by cost to income ratio and Growth in assets; earning quality (E) measured by ROE and ROA; liquidity (L) measured by net loans to total assets and by liquid assets to total assets; and sensitivity to market risk measured by risk weighted assets to total assets. Results show that first, bank scores and ratings are not stable or constant over the years. Second, Lebanese banks are not highly efficient as the CAMELS scores for some banks was negative. Third, despite that the sample includes the top Lebanese banks, none of the banks achieved a rating of 5, indicating that Lebanese banks should try to improve their performance. Fourth, results show that banks' rating based on capital intelligence financial strength rating which is an international rating system used by the Bankscope is not appropriate to rank Lebanese commercial banks since it does not differentiate the ratings among banks on a yearly basis and does not differentiate the rating of the same bank from year to year. The developed approach captures the strengths and weaknesses of banks and can help in finding ways to improve them. A deep analysis for the score reveals that each bank has its own strengths and weaknesses. Improving their weaknesses is needed should they want to have a higher score and rating. Capital parameter should be improved by Audi, Fransabank, SGBL, and BBAC. Asset quality should be enhanced for Byblos Bank, SGBL, and BBAC. Management efficiency should be boosted for Byblos Bank, BankMed, SGBL, and BLF. Earning should be higher for Byblos, Fransabank, BankMed, BLF, Credit libanais, and BBAC. Liquidity should be increased for Audi, Byblos, Fransabank, bankMed and Credit Libanais. Finally, BLOM, Byblos, Fransabank, BankMed, and Bank of Beirut should reduce their exposure to market risk. Another important finding is that there is no one bank that has a positive score in all CAMELS parameters, suggesting that none of the top Lebanese banks are highly efficient. For example, in 2012, the number 1 bank has a positive score in all CAMELS aspect except sensitivity. Similarly in 2011, number 1 bank has a negative score in both earning and sensitivity.

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Appendix A

CAMELS Score Decomposition in 2008							
Bank/Parameter	**C**	**A**	**M**	**E**	**L**	**S**	**Score**
Bank Audi	**-29.99**	34.77	17.14	**-0.59**	1.32	**-39.71**	**-2.84**
BLOM Bank	**-30.64**	15.86	**-8.22**	26.15	25.82	**-43.86**	**-2.48**
Byblos Bank	31.41	23.42	18.26	**-2.08**	2.12	11.97	14.18
Fransabank	35.28	**-6.24**	13.79	**-1.78**	13.32	43.62	16.33
Bankmed	**-19.30**	27.59	**-42.71**	**-33.07**	**-20.26**	12.47	**-12.55**
Bank of Beirut	31.95	33.85	**-10.64**	3.86	1.36	19.80	13.36
SGBL	0.00	**-108.75**	17.07	26.56	**-17.10**	0.00	**-13.70**
Banque Libano Francaise	**-23.61**	6.02	**-19.12**	2.68	**-2.57**	0.00	**-6.10**
Credit Libanais	**-27.37**	11.05	19.21	2.79	**-5.90**	**-46.11**	**-7.72**
BBAC	32.28	**-37.56**	**-4.78**	**-24.52**	1.88	41.82	1.52

CAMELS Score Decomposition in 2009							
Bank/Parameter	**C**	**A**	**M**	**E**	**L**	**S**	**Score**
Bank Audi	**-15.32**	34.71	18.80	2.69	16.23	1.94	**9.84**
BLOM Bank	**-0.92**	17.11	**-5.07**	31.57	23.28	**-4.03**	10.32
Byblos Bank	8.67	20.48	1.12	**-5.68**	4.95	**-18.39**	1.86
Fransabank	**-15.89**	**-2.10**	6.85	**-12.81**	5.15	**-3.83**	**-3.77**
Bankmed	**-15.96**	21.32	**-32.20**	**-26.48**	**-6.49**	**-12.82**	**-12.11**
Bank of Beirut	11.43	35.85	**-1.52**	**-8.55**	**-4.46**	**-8.29**	4.08
SGBL	**-33.14**	**-114.97**	44.46	47.28	**-26.70**	**-4.02**	**-14.52**
Banque Libano Francaise	**-7.94**	**-1.41**	**-16.04**	**-13.41**	**-4.80**	**-0.77**	**-7.40**
Credit Libanais	**-8.44**	15.90	**-0.78**	**-8.38**	**-8.32**	**-5.36**	**-2.56**
BBAC	77.51	**-26.88**	**-15.62**	**-6.24**	1.17	55.56	14.25

CAMELS Score Decomposition in 2010							
Bank/Parameter	**C**	**A**	**M**	**E**	**L**	**S**	**Score**
Bank Audi	**-12.63**	23.47	**-12.97**	5.17	**-8.02**	2.24	**-0.46**
BLOM Bank	5.65	16.38	**-5.26**	26.51	23.75	**-2.01**	10.84
Byblos Bank	12.46	12.32	7.71	**-7.79**	**-1.31**	**-4.47**	3.15
Fransabank	**-8.19**	13.15	6.75	**-5.79**	5.89	**-5.02**	1.13
Bankmed	**-15.39**	12.41	**-35.35**	**-27.95**	**-11.45**	**-6.95**	**-14.11**
Bank of Beirut	10.17	45.19	16.21	**-3.96**	7.37	**-11.51**	10.58
SGBL	**-14.85**	**-129.74**	**-18.75**	33.41	**-13.41**	**-8.49**	**-25.31**
Banque Libano Francaise	3.66	9.55	15.39	**-19.09**	3.63	**-1.64**	1.92

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Credit Libanais	29.68	15.83	32.51	14.08	**-14.95**	21.84	16.50
BBAC	**-10.57**	**-18.55**	**-6.24**	**-14.59**	8.50	16.00	**-4.24**

CAMELS Score Decomposition in 2011

Bank/Parameter	C	A	M	E	L	S	Score
Bank Audi	**-5.13**	17.86	**-44.33**	21.83	**-3.21**	**-0.35**	**-2.22**
BLOM Bank	14.57	18.12	**-27.88**	37.96	26.26	**-5.51**	10.59
Byblos Bank	20.78	1.11	**-20.64**	**-2.48**	7.78	**-2.71**	0.64
Fransabank	**-11.16**	**-5.22**	**-3.23**	3.56	**-17.63**	**-3.75**	**-6.24**
Bankmed	**-11.25**	14.62	**-41.81**	**-6.37**	**-7.47**	**-9.10**	**-10.23**
Bank of Beirut	21.41	43.54	6.47	**-2.08**	9.72	**-7.80**	11.88
SGBL	**-47.20**	**-98.67**	212.96	**-6.22**	**-13.31**	6.47	9.01
Banque Libano Francaise	0.46	4.47	**-8.15**	**-37.53**	14.05	**-0.63**	**-4.56**
Credit Libanais	25.58	27.73	**-32.80**	**-1.46**	**-10.80**	20.28	4.75
BBAC	**-8.06**	-23.55	**-40.58**	**-7.21**	**-5.39**	3.08	**-13.62**

CAMELS Score Decomposition in 2012

Bank/Parameter	C	A	M	E	L	S	Score
Bank Audi	**-4.39**	18.58	4.71	19.56	**-16.06**	11.12	5.59
BLOM Bank	11.39	7.55	10.10	28.34	20.65	**-3.29**	12.46
Byblos Bank	16.26	**-14.99**	**-32.69**	**-13.68**	**-6.31**	**-13.27**	**-10.78**
Fransabank	**-3.77**	6.65	0.74	**-5.19**	**-13.07**	**-5.72**	**-3.40**
Bankmed	3.81	13.77	**-26.64**	**-7.61**	**-2.32**	**-6.18**	**-4.20**
Bank of Beirut	9.92	38.73	59.30	1.48	9.88	**-2.64**	19.44
SGBL	**-36.96**	**-92.07**	**-9.37**	22.71	14.43	1.74	**-16.59**
Banque Libano Francaise	4.27	6.10	**-29.66**	**-21.87**	5.53	5.54	**-5.01**
Credit Libanais	6.20	28.07	**-0.10**	**-15.70**	**-14.97**	9.43	2.16
BBAC	**-6.71**	**-12.38**	23.61	**-8.04**	2.24	3.27	0.33

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