ANALYZING THE FINANCIAL SOUNDNESS OF KUWAITI BANKS USING CAMELS FRAMEWORK

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ABSTRACT

Evaluating the financial performance of banks has always been in the center of attention among both academics and practitioners. In that matter, CAMELS framework has always been one of the most widely used model in evaluating the financial soundness of banks and exploring the weakness areas a bank has. The model is used to distinguish good banks from bad ones. This study aims to evaluate the financial soundness of Kuwaiti banks that are listed at Kuwait stock exchange over the period 2011-2016 using CAMELS framework. Results obtained from this study showed that Ahli united bank was the top performing bank in Kuwait during the study period despite showing weakness in terms of capital adequacy and liquidity while the worst performing bank was Kuwait finance house. Kuwait finance house showed very poor performance in capital adequacy and management efficiency. The results from this research would be useful for the Kuwaiti banks to address their weak areas and try to improve on them.

Contribution/Originality: This study is one of very few studies which have investigated the financial soundness of Kuwaiti banks using CAMELS framework. The results highlighted the weak areas in every bank listed at Kuwait stock exchange which must be addressed by the bank to improve its performance.

1. INTRODUCTION

Due to the importance of the banking sector in every economy, maintaining a healthy banking sector is vital to the prosperity of any country. While there is an extensive literature addressing banking performance evaluation CAMELS framework emerges as one of the most widely-used methodology for bank performance assessment, using particular financial ratios to reflect different aspects of a bank's performance (Sahajwala and Van den Bergh, 2000). In recent years CAMELS model was one of the most used models for the estimation of a bank performances and soundness (Baral, 2005). This model is used as a bank supervision instrument by the regulatory authorities (Gilbert *et al.*, 2000; Hays *et al.*, 2009) and also as a main model for the evaluation of the banks performances (Evans *et al.*, 2000; Derviz and Podpiera, 2008; Atikogullari, 2009; Mishra *et al.*, 2012). CAMELS model was developed in 1979 in the U.S. as a supervisory rating system which would help analyzing the overall condition of banks. The Uniform Financial Institutions Rating System (UFIRS) commonly known as CAMELS rating system was adopted by the Federal Financial Institutions Examination Council (FFIEC) on November 13, 1979. The acronym CAMEL derives from the five main segments of a bank operations: Capital adequacy, Asset quality, Management quality, Earnings ability and Liquidity. Since 1996, out of the desire to stronger focus on risk, to the five components was added the

sixth component "S", so that the CAMEL approach became the CAMELS approach, where "S" refers to the sensitivity to market risk (Babu and Kumar, 2017).

Lopez (1999) stated that bank supervisory agencies are responsible for monitoring the financial conditions of commercial banks and enforcing related legislation and regulatory policy. A key product of such an exam is a supervisory rating of the bank's overall condition, commonly referred to as a CAMELS rating. Although CAMELS rating report is important to any party that deals with the banks such as investors, depositors, creditors, and others, CAMELS report is never released by supervisory agencies, even on a lagged basis. The report is open to banks' top management to shed some information to them on their weakness areas in order to prevent the bank from future difficulties. Dincer *et al.* (2011) stated that CAMELS report can define any problems at an early stage.

Babu and Kumar (2017) used CAMELS model to compare the efficiency between public and private sector banks in India for the period 2013-2016. They found that private sector banks had a higher efficiency level than the public sector banks in terms of capital adequacy, management efficiency, earning capacity and liquidity. Jha and Hui (2012) studied the financial performance of different ownership structured commercial banks in Nepal based on their financial characteristics. Eighteen commercial banks for the period 2005 to 2010 were selected. The results showed that public sector banks were significantly less efficient than their counterparts. Furthermore, the study revealed that return on assets was significantly influenced by capital adequacy ratio, interest expenses to total loan and net interest margin, while capital adequacy ratio had considerable effect on return on equity. Mishra *et al.* (2012) analyzed the performance of 12 public and private sector banks over a period of eleven years (2000-2011). For this purpose, CAMEL approach was used and they concluded that private sector banks are at the top of the list, with their performances in terms of soundness. Christopoulos *et al.* (2011) tried to analyze whether Lehman Brothers' collapse can be anticipated by using CAMELS method. In order to achieve this objective, data for the period between 2003 and 2007 ware used. According to the results of the study, it was determined that CAMELS analysis showed a decline of Lehman Brothers. Türker Kaya (2001) analyzed Turkish banks by using CAMELS method. Data of 1997 and 2000 were used in this analysis. It was concluded that the performance of the banks in 2000 was worse than the performance in 1997. Another conclusion of this study was that when CAMELS ratings of banks increase, the probability of going bankruptcy decreases.

2. METHODOLOGY

This study is based on the use of financial ratios in evaluating the financial soundness of Kuwaiti banks. Back *et al.* (1994) showed that models built with financial ratios alone perform better than those built with common financial variables. Capital adequacy is used as an indicator to determine the bank's financial health and soundness. It provides protection for investors and enhancing the stability and efficiency of the bank. Capital adequacy is used as an indicator to determine whether the bank has sufficient resources to bear unexpected losses in the future and how leveraged is the bank. Kosmidou (2008) and Dang (2011) defined capital adequacy as the sufficiency of the amount of equity to absorb any shocks the bank might encounter and it shows the internal strength of the bank to withstand losses during crisis periods. Capital adequacy ratios are composed of four ratios as shown in Table 1. Capital to risk-weighted assets ratio is advocated to ensure that the bank can bear a reasonable amount of losses occurring during the operations and to determine the bank's loss bearing capacity. Debt-equity ratio measures the degree of leverage the bank has. Having a higher debt-equity ratio indicated the aggressiveness of the bank, which would reflect less protection for depositors and creditors and vice-versa. The equity to total assets ratio gauges the bank's total equity indicates the expansion of the bank, a higher ratio would mean that the bank is more fragile to any unexpected losses. Government securities are considers the most secured investments a bank can invest in, that is why investments in government securities to total investments ratio is important indicator for measuring the ability of the bank to absorb any unexpected downfalls since these securities are the safest and most liquid

investments a bank can hold. A higher government investments to total investments ratio would indicates a conservative investment strategy by the bank which would results in a lower risk.

Capital adequacy ratios	
Capital adequacy ratio	$\dfrac{Tier\ 1 + Tier\ 2\ Capital}{Risk\ Weighted\ Assets}$
Debt-equity ratio	$\dfrac{Total\ liabilities}{Total\ equity}$
Total equity to total assets ratio	$\dfrac{Total\ Equity}{Total\ assets}$
Government securities investments to total investments ratio	$\dfrac{Investments\ in\ governments\ securities}{Total\ investments}$

It is known that assets quality determines the financial reliability and strength of the bank. In order to determine the assets quality a number of ratios are used, these ratios are presented in in Table 2. The quality of assets possessed by bank determines its financial strength. The principal objective to evaluate the quality of assets is to determine the composition of non-performing assets (NPAs) as a percentage of the total assets. Baral (2005) suggested that credit risk in the form of NPAs is one of the crucial factors that have an impact on the financial health of a bank. The extent of the credit risk depends on the quality of assets possessed by a bank. Sangmi and Nazir (2010) stated that having a low level of non-performing assets reflects the profitability of the bank and its credit rating. The assets quality of a bank is measured by the percentage of net non-performing assets to net advances. Net NPAs are calculated by deducting net of provisions on nonperforming assets from gross NPAs. Rajender (2009) argued that the concern of growing NPAs is a challenge to banks, which will adversely affect the performance of banks. The provision for credit loss to total assets shows the size of troubled loans the bank has, having a higher ratio would not only effect the performance of the bank but also its credit rating. Provision on NPAs to NPAs shows the amount of funds the bank reserved against any NPA default. This ratio should, in its worst case scenario, be 100% meaning that the bank is expecting all NPAs to default. Having a ratio that is above 100% would indicate that the bank is expecting more NPAs to come and is building reserves for it. Taking a provision above 100% is an indication of poor assets quality. Change in NPAs indicates the way a bank deals with NPAs, having a declining changes would indicate that the bank is working in improving the quality of its assets and vice-a-versa.

Assets quality ratios	
Net NPA's to net loans and advances ratio	$\dfrac{Net\ non-performing\ assets}{Net\ loans\ and\ advances}$
Provision for credit loss to total assets	$\dfrac{Provision\ for\ Credit\ loss}{Total\ Assets}$
Provision on NPA to NPA	$\dfrac{Provision\ on\ NPA}{NPA}$
Change in NPA	$\dfrac{NPA_t - NPA_{t-1}}{NPA_{t-1}}$

Management efficiency measures the ability of the board of directors and senior management to identify, measure, monitor, and control the risks and challenges that might face the bank. They take crucial decisions in lights of the current and future market conditions in order to minimize the risk and maximize the returns for the bank. Measuring the efficiency of the bank's management is a difficult task since it is not a quantitative measure. Management efficiency is often expressed qualitatively through subjective evaluation of management discipline to standards and policies, capability to plan and be anticipatory, control systems, innovation, and quality of staff (Sangmi and Nazir, 2010). Measures that are used in measuring management quality are listed in Table 3. Keeping the expenditure down and earnings up is one of the main and most difficult tasks managers face. The aim of a bank's manager is to increase earnings and reduce expenditure and for that expenditure to total income ratio measures how successful a manager in doing so. Having a low ratio would indicate management inefficiency of the bank. Providing loans is the core business of any bank, utilizing the most of customer's deposits in providing loans is a good indicator of how efficient the bank managers are. Shollapur and Baligatti (2010) argued that the major contributor for the bank's income should be returns on loans since it is the main business of the bank. Although providing loans is essential for any bank, the bottom line for any bank is profitability. Generating the most profit from the loans a bank offers would give an indication of the bank's management efficiency. While many studies used business per employee and profit per employee as a measurement for management efficiency, this study used profit margin per employee to measure the management efficiency. The use of business per employee as a measure of management efficiency is not quite correct since having high number of business does not necessary means higher profits, and the same thing goes to profit per employee since this ratio did not take the amount of business the employee had done to generate that profit. As a result profit margin per employee would be a more appropriate measure for management efficiency. Having higher profit margin per employee is an indicator for the bank efficiency, where good bank managers would work to increase that ratio.

Table-3. Management efficiency ratios.

Management efficiency ratios	
Expenditure to income ratio	$\dfrac{Operating\ Expenditure}{Total\ Income}$
Loans and advances to total deposits	$\dfrac{Total\ loans\ and\ advances}{Total\ Deposits}$
Return on loans and advances	$\dfrac{Net\ Profit}{Total\ Loans\ and\ Advances}$
Profit margin per employee	$\dfrac{Profit\ Per\ Employee}{Business\ Per\ Employee}$

The quality of earning is an important criterion in determining the bank's ability to generate steady earnings that are ongoing into the future. Dechow and Schrand (2004) stated that earning quality should reflect the firm's current operating performance which is a good indicator of future operating performance. It is also a good indicator of the bank's profitability since it is the ultimate goal of any bank is to generate profits for its shareholders. Earning quality can be measured through a number of ratios. Table 4 presents the measuring ratios used. The interest rate margin is the difference between the interest rate the bank charges the borrowers and the interest rate they pay for the depositors, having a higher margin would mean that the bank is making more profit from loans than the bank with a lower margin. Net profit margin is another ratio that shows the quality of earnings, having a higher ratio would mean a better earning quality for the bank. Return on assets (ROA) measures the net profit of the bank as a percentage of its assets, having a higher ratio means that the bank's senior management are utilizing the assets that they have in the best possible way. Return on equity (ROE) shows the efficiency of the bank in utilizing its own

capital in an efficient manner. It is an important ratio that investor look at, this ratio measures the efficiency of the bank in getting the most for the investors on their investment in the bank's stock. Investors look for a high return on equity to enhance the value of their stocks.

Table-4. Earnings quality ratios.

Earnings quality ratios	
Interest rate margin	$Interest\ Rate\ Charged\ on\ loans - Interest\ rate\ paid\ on\ deposits$
Net profit margin	$\dfrac{Net\ Profit}{Total\ Income}$
Return on assets (ROA)	$\dfrac{Net\ Profit}{Total\ Assets}$
Return on equity (ROE)	$\dfrac{Net\ Profit}{Shareholders\ equity}$

Liquidity is an important factor in determining the financial performance of any bank. Liquidity is seen as the ability of the bank to fulfill its obligations especially customers deposits. Table 5 shows the ratios used in this category. Government securities are not only the most secured investments a bank can invest in, but they are also the most liquid investments a bank can hold. Having a higher government securities to total assets ratio would indicate a healthier liquidity position for the bank. Liquid assets are the assets that mature within one year and so is the liquid liabilities, having a higher liquid assets to liquid liability ratio would indicate a better liquidity position for the bank when it comes to sudden liquidity shortage. Banks should be aware of sudden and unexpected customer's withdrawals, as a result having a higher liquid assets to customer's deposits is very important. Among the more concentrated liquidity ratios is the 3m liquidity gap which measures the difference between the assets maturing within the next three months and the liabilities maturing within the same period to the assets maturing within the next three months. Banks make money by exploiting the yield curve, meaning that they lend for long periods and cover them with short term borrowing. Taking advantage of the upward slope yield curve would cause a liquidity risk for the bank when the bank have a high negative ratio, that is why banks try to balance their maturities to reduce that risk and that ratio for that matter.

Table-5. Liquidity ratios.

Liquidity ratios	
Government sec to total assets	$\dfrac{Government\ Securities}{Total\ Assets}$
Liquid assets to liquid liabilities	$\dfrac{Liquid\ Assets}{Liquid\ Liabilities}$
Liquid assets to total customers deposits	$\dfrac{Liquid\ Assets}{Total\ Customers\ Deposits}$
3M liquidity gap to assets maturing in 3M	$\dfrac{3M\ Assets - 3M\ Liabilities}{3M\ Assets}$

History shows that markets are unpredictable and sudden moves might have a catastrophical consequences on the banks and their profits. Table 6 shows the ratios used in assessing these market risks. Banks try to diversify their income sources and for that matter banks tend to invest in securities as an alternative source in income, having a high portion of the bank's assets invested in securities would make the bank at risk from any undesirable movements in that market. Banks tend to have high total securities to total assets ratio when the markets are doing well and vice-a-versa, but that does not mean that banks are immune from getting caught in market crashes. Banks

with higher total securities to total assets ratio means that they are faced with market volatility risk. Christopoulos *et al.* (2011) argued that a bank should have a low ratio in order for it to be safe from market risk. Another market risk a bank might face is the interest rate risk, Aspal and Dhawan (2014) used sensitivity GAP ratio to measure the interest rate risk. The Sensitivity GAP ratio is the ratio between the risk sensitive assets to the risk sensitive liabilities. In order for the bank to be immune from interest rate risk this ratio should be 1, so that the effect of interest rate movements on assets would be offset by the effect on liabilities and vice-a-versa. When a bank have a sensitivity GAP ratio that is above 1 then the bank is asset sensitive (assets reprice faster than liabilities) and if less than 1 then the bank is liability sensitive. In both cases the bank is more exposed to interest rate risk if the ratio is farther than 1 (Aspal and Dhawan, 2016). Banks activities are expanding to other countries and for that matter other currencies in order to accommodate their customers' needs, investing in international markets, and also for the bank's expansion to other countries and so on. This exposure to foreign markets carry with it the risk of exchange rate risk, for example National bank of Kuwait (NBK) bought a bank in Egypt in 2007 in order to expand their activities there. From the period from January 2011 to December 2016, the Egyptian pound went down against the U.S. dollar from 5.96 to 18.13 pounds per dollar. The same thing goes to Kuwait finance house that has a subsidiary in Turkey, for the same period the Turkish lira went down from 1.6015 to 3.5377 lira against the U.S. dollar. This weakness in the foreign currencies would have an effect on the bank's profitability, this effect is measured by the effect of exchange rates movements to net profit. While total securities to total assets gives an indication the exposure of the bank to the securities markets that includes bonds, equities and others, the effect of stock market movements only looks at the equity side of it and its effect on the bank's net profit.

Table-6. Market sensitivity ratios.

Market sensitivity ratios	
Total securities to total assets	$\dfrac{Total\ Securities}{Total\ Assets}$
Sensitivity GAP ratio	$\dfrac{Risk\ Sensitive\ Assets\ *}{Risk\ Sensitive\ Liabilities\ **}$
Effect of 5% exchange rate movement to net profit	$\dfrac{FX\ movement\ losses}{Net\ Profit}$
Effect of 5% stock market movement to net profit	$\dfrac{Stock\ Market\ movement\ Losses}{Net\ Profit}$

* Risk sensitive assets = Net loans + Net investments + Money-on-Call.
** Risk sensitive liabilities = Customer deposits + other borrowings + Due's to banks and other financial institutions.

3. DATA AND EMPIRICAL RESULTS

The results presented in this paper are based on the financial statements from nine Kuwaiti banks, Warba bank which is the tenth Kuwaiti bank was excluded from the study since it is a relatively new bank that was established in 2010 but did not start operating till 2014. The nine banks that were studied were Commercial bank of Kuwait (CBK), National bank of Kuwait (NBK), Gulf bank (GBK), AlAhli bank (ABK), Burgan bank (BBK), Kuwait Finance House (KFH), Boubyan bank (BUK), Kuwait International bank (KIB), and Ahli United bank (AUB). The results are based on the bank's annual data covering the period 2011-2016. The data for this research were obtained from the bank's annual reports and the database of the Kuwait institute of banking studies. The results shown in this research represents the average of the ratios over the study period.

With the central bank of Kuwait setting a minimum capital adequacy ratio (CAR) of 13.5%, it can be seen from Table 7 that all of the Kuwaiti banks managed to meet that ratio. With KIB having the highest CAR ratio among all banks with 23.23%. On the other hand, KFH showed the lowest CAR ratio of 15.98%. The average CAR for the nine banks under study was 18.81%. Only three banks (ABK, BUK, and KIB) had a CAR ratio that was above the

average, while all remaining banks were below average. Debt-equity ratio shows the degree of leverage of the bank, a higher ratio would indicate that the bank is aggressive and is paying more attention to the profitability side and less to the protection of the depositors and creditors and vice-versa. Taub (1975) analyzed four profitability metrics against debt-equity ratio and found a statistically positive relation between debt and profitability. Abor (2005) also found a statistically positive association between total debt and bank profitability. By looking at Table 7 it can be seen that KIB is the most conservative bank when it comes to leveraging and GBK is the most aggressive bank. The average leverage for the banks was 7.07 times, with only four banks (KIB, ABK, NBK, and CBK) being leveraged less than the average.

Equity to total assets ratio is a good indication for banks capital adequacy. Roman and Sargu (2013) argued that holding a higher ratio would indicate a better position for the bank to handle any unexpected losses in the future. In that category, it can be seen that KIB holds the highest equity to total assets ratio followed by ABK, while GBK had the lowest ratio. For the nine banks that average ratio was 12.85%, only four banks had a ratio above the average while the remaining were below it.

Table-7. Capital adequacy ratios.

Bank	CAR ratio		Debt/Equity ratio		Equity to total assets ratio		Government securities to total investments ratio		Group rank	
	%	Rank	Times	Rank	%	Rank	%	Rank	Mean	Rank
CBK	18.56	4	6.01	4	14.30	4	54.08	6	4.50	3
NBK	16.94	6	5.87	3	14.67	3	30.02	8	5	4
GBK	16.77	7	9.41	9	9.63	9	89.08	1	6.50	7
ABK	23.04	2	5.62	2	15.33	2	66.97	4	2.50	2
BBK	16.55	8	8.02	7	11.28	7	58.03	5	6.75	8
KFH	15.98	9	7.44	6	11.91	6	35.93	7	7.00	9
BUK	20.56	3	7.09	5	12.60	5	9.12	9	5.50	5
KIB	23.23	1	5.52	1	15.53	1	79.12	2	1.25	1
AUB	17.70	5	8.66	8	10.44	8	75.15	3	6	6
Mean	18.81	-	7.07	-	12.85	-	55.28	-	-	-

With government securities being the safest investment instruments a bank can invest in, the government securities to total investment ratio indicates the quantum of safe investments a bank holds. This ratio shows how risk averse the bank is, but despite government securities being almost risk-free that comes with a cost of yielding the lowest returns. Having a high ratio would indicate that the bank is conservative when it comes to investing but this would affect its profitability. In that category it can be seen that GBK is the most conservative bank in Kuwait followed by KIB with ratios of 89.08% and 79.12% respectively. On the other hand AUB had by far the lowest ratio of only 9.12% flowed by NBK with 30.02%. Taking the average score of the four capital adequacy ratios, it can be seen that KIB had the best score of 2.25 followed by ABK with 2.75. On the opposite side KFH had the worst score with 7.75 followed by BBK with a score of 7. When it comes to the overall ranking for banks in term of capital adequacy, it can be seen that KIB was the best performer in that category followed by ABK. While the worst performer was KFH followed by BBK. For the group ranking, KIB came at the top of all Kuwaiti banks followed by ABK, while KFH came at the bottom of the list.

Baral (2005) argued that credit risk in the form of non-performing assets (NPAs) is one of the most crucial factors that have an impact on the financial health of a bank. Net NPAs to net loan is used to determine the size of NPAs compared to the loans portfolio of the bank. Rajender (2009) suggests that the growth of NPAs in a bank presents a challenge for the bank since it affects the performance of the bank. Looking at Table 8 it can be seen that BUK has the lowest net NPA's to net loans ratio of 0.90%. This means that NPAs represents only 0.90% of BUK loans, while GBK on the other hand has the highest ratio of 6.58%. It can also be noted that net NPAs to net loans

and advances ratio is in a declining trend from 2011 to 2016. The reason for the downtrend is that Kuwaiti banks, as for all bank in the world, faced a growing numbers of loan defaults after the global financial crisis in 2008. Provisions held for credit losses gives an indication of the severity of NPAs, the higher the ratio means that the bank is facing problems with NPAs and is taking precautionary measures against it. Again BUK held the lowest provisions in term of total assets of 2.43% followed by KIB of 3.72%. GBK had the highest concern when it comes to NPAs with provisions reaching 6.47% followed by ABK with 6.36%.

Table-8. Assets quality ratios.

Bank	Assets quality									
	Net NPA's to net loans ratio		Provision for NPA to total assets		Provisions on NPA to NPA		Change in NPA		Group rank	
	%	Rank	%	Rank	%	Rank	%	Rank	Mean	Rank
CBK	1.01	2	5.45	6	810.81	9	-22.34	2	4.75	3
NBK	1.73	3	4.17	5	259.79	7	12.41	8	5.75	7
GBK	6.58	9	6.47	9	164.94	5	-26.35	1	6.00	8
ABK	3.22	5	6.36	8	217.95	6	1.77	5	6.00	8
BBK	5.73	8	4.03	4	85.42	1	11.46	7	5.00	5
KFH	5.40	6	5.97	7	129.14	3	-18.52	4	5.00	5
BUK	0.90	1	2.43	1	380.37	8	34.34	9	4.75	3
KIB	5.60	7	3.72	2	120.61	2	-21.94	3	3.50	1
AUB	2.72	4	3.94	3	145.65	4	7.39	6	4.25	2
Mean	3.65	-	4.73	-	257.19	-	-2.42	-	-	-

Provisions on NPAs to NPAs can give a slight idea of the banks quality of assets. While holding a high provision which is higher than 100% of the NPAs is seen as a sign against any defaults in the future, it can also be seen as a sign of the level of the assets quality the bank holds. Holding high provision can be seen as if the bank is holding bad or low quality assets and for that he is building provisions for it. For that it can be seen from Table 8 that BBK is at the top of the list with provisions of 85.42% followed be KIB. On the other hand CBK held the highest provision among the Kuwaiti banks of 810.81%. On an average the Kuwaiti banks hold provision of 257.19% against their NPAs, where six banks (GBK, ABK, BBK, KFH, KIB, and AUB) held provisions less than the average and three banks hold higher percentage. The change in NPAs is a good indicator on the quality of assets the bank holds. A decrease in NPAs would indicate that the bank is improving the quality of assets it holds. For that matter, it can be seen that GBK is the best bank in that category with an average decrease of 26.35% on their NPAs over the past six years. On the other hand, BUK was the worse with an average increase in their NPAs of 34.34%. On an average the Kuwaiti banks are improving their assets quality by decreasing their NPAs by 2.42% annually during the past six years. In that category, assets quality, it can be seen that KIB was the best performing bank in Kuwait followed by AUB. On the opposite side both GBK and ABK came tie on being the worse in the industry.

One of the key indicators of management efficiency in a bank is the expenditure to income ratio. An efficient management would work hard to reduce expenditure and increase income. Having a lower ratio would give a hint over the efficiency of the bank. From Table 9 it can be seen than CBK has the best expenditure to income ratio of 32.77%. This means that the bank would spend 327.7 fils to generate 1 KWD of income (1 KWD = 1000 fils), while KFH had the worse ratio of 61.63%. Paying more attention to the core business of the bank is a good indicator of management efficiency. With providing loans being one of the core activities of any commercial bank, a higher loans to deposit ratio is a good measure of management efficiency. As seen from Table 9 ABK has the highest average loans to deposits ratio of 88.97% for the years 2011-2016 followed by GBK with 84.28%. KFH came at the bottom of the list with only 66.60% followed by NBK with 71.75%. This indicates that KFH and NBK are using the funds from deposits in activities that are not core activity of a commercial bank. While NBK is next to the bottom when it

comes to loans to deposits ratio, the bank comes at the top of the list when it comes to return on loans. NBK produced a mean return for the years 2011-2016 of 2.55% followed by AUB and BBK both with 1.66%.

Table-9. Assets quality ratios.

Bank	Expenditure to income ratio		Loans to total deposits		Return on loans		Profit margin on business per employee		Group rank	
	%	Rank	%	Rank	%	Rank	%	Rank	Mean	Rank
CBK	32.77	1	72.40	7	1.17	8	21.42	9	6.25	8
NBK	33.98	2	71.75	8	2.55	1	48.20	1	3.00	1
GBK	39.03	5	84.28	2	0.93	9	22.07	7	5.75	6
ABK	34.62	3	88.97	1	1.44	6	31.23	4	3.50	3
BBK	44.65	6	72.86	6	1.66	2	32.40	3	4.25	4
KFH	61.63	9	66.60	9	1.61	4	21.78	8	7.50	9
BUK	55.09	8	81.51	4	1.18	7	28.84	5	6.00	7
KIB	46.22	7	81.71	3	1.39	5	27.42	6	5.25	5
AUB	37.30	4	79.92	5	1.66	2	43.03	2	3.25	2
Mean	42.81		77.78		1.51		30.71			

Business per employee (BpE) measures the volume of business (measured in 1000 KWD) an employee conduct per year. BBK came a head of all Kuwaiti banks when it comes to the amount of business an employee handles per year with an average of 306.13 KWD followed by NBK with an average of 297.70 KWD. When it comes to profit per employee (PpE), NBK came at the top with 48.20 KWD profit generated per employee followed by BBK and at the flipside BUK came at the bottom with only 23.79 KWD per employee, as seen in Table 10. Although both ratios BpE and PpE are essential in generating profit for the bank, they are not sufficient enough to determine the management efficiency. Profit margin per employee would give a better picture of management efficiency. By looking at CBK for example, it can be seen that it is ranked 5th in terms of BpE and 6th in terms PpE which can be deceiving since their management and employees are efficient enough to utilize the business they are getting efficiently like NBK for instance. CBK employee produces a profit only 214.2 KWD for every 1000 KWD of business he or she conducts, while NBK employee produces a profit of 482 KWD for every 1000 KWD of business he or she conducts. So, when it comes to profit margin on business per employee it can be seen that NBK is the most efficient bank in Kuwait in that category while CBK was the worst. As for management efficiency, NBK came at the top among the Kuwaiti banks followed by AUB and on the other hand, KFH came at the bottom followed by CBK.

Table-10. Employees performance ratios.

Bank	Business per employee (1000 KWD)	Profit per employee (1000 KWD)	Profit margin on business per employee (%)
CBK	144.87	32.42	21.42
NBK	297.70	142.63	48.20
GBK	116.69	25.54	22.07
ABK	152.18	47.51	31.23
BBK	306.13	96.79	32.40
KFH	280.88	60.61	21.78
BUK	81.85	23.79	28.84
KIB	91.28	24.61	27.42
AUB	127.73	55.09	43.03
Mean	177.70	56.55	30.71

The interest margin is basically the average interest the bank charges on loans minus the average interest the bank borrow the funds at. A higher interest margin means that the bank is generating a higher profit from the

funds he borrows. While this may be a straight forward calculation, it may also indicates that the bank is lending riskier borrows since they pay higher interest than the others due to their bad credit. By running a regression using the interest rate margin (IRM) as an independent variable and the ratio of non-performing assets to total assets (NPA) as a dependent variable, the results showed no statistically significant relation between them. A Granger causality test was also conduced and the results, as seen in Table 11 show that there is no relation between interest rate margin and the non-performing assets to total assets ratio.

Table-11. Granger causality test results (E-views).

Pairwise granger causality tests Date: 10/01/17 Time: 04:41 Sample: 154 Lags:2			
Null hypothesis	**Obs**	**F-statistic**	**Prob.**
NPA does not granger cause IRM	52	0.42537	0.6560
IRM does not granger cause NPA		0.70154	0.5009

When looking at the interest rate margin, from Table 12 it can be seen that KFH has the highest interest rate margin of 3.65% followed by NBK having 3.31% interest margin. GBK came at the bottom of the list with 2.47%. When it comes to net profit margin, it can be seen that NBK came at the top with 44.64% meaning that out of every KWD 1000 of income the bank makes a net profit of 446.4 KWD. AUB came in second place with 38.59%. On the other hand, while KFH had the highest interest margin, KFH was unable to capitalize on it and came as the worst bank by generating only 19.29% net profit from the income they make. Return on assets (ROA) is another important ratio to consider when evaluating the earning quality of any bank. Again NBK had the highest ROA ratio among the Kuwaiti banks, the bank produced a return of 1.62% followed by AUB with 1.20%. GBK showed the lowest ROA ratio of only 1.62% followed by CBK of 0.71%.

Table-12. Earning quality ratios.

Bank	Interest margin		Profit margin		Return on assets (ROA)		Return on equity (ROE)		Group rank	
	%	**Rank**	**%**	**Rank**	**%**	**Rank**	**%**	**Rank**	**Mean**	**Rank**
CBK	2.55	8	20.53	8	0.71	8	5.02	9	8.25	9
NBK	3.31	2	44.64	1	1.62	1	10.41	2	1.50	1
GBK	2.47	9	21.01	7	0.69	9	7.25	5	7.50	8
ABK	2.96	5	29.60	3	1.08	3	6.88	6	4.25	3
BBK	2.79	7	29.59	4	1.02	4	7.70	3	4.50	4
KFH	3.65	1	19.29	9	0.88	7	6.49	7	6.00	7
BUK	3.20	4	27.38	5	0.90	6	7.44	4	4.75	5
KIB	3.21	3	25.42	6	0.97	5	6.19	8	5.50	6
AUB	2.86	6	38.59	2	1.20	2	12.56	1	2.75	2
Mean	3.00	-	28.45	-	1.01	-	7.77	-	-	-

Return on equity (ROE) is a ratio that has a special interest by the shareholders. They look at it as a measure of how well their investments in the bank are doing. AUB provided the best return for his stock holders by generating a mean return over the years from 2011-2016 of 12.56% followed by NBK with 10.41%. CBK was the lowest bank in terms of ROE with only 5.02% followed by KIB with 6.19%. As a group when taking the average score for the 5 ratio's that were used in evaluating the earning quality, it can be concluded that NBK was for the period 2011-2016 the best performer in that area followed by AUB. GBK was the last in that category followed by CBK despite having the highest change in net profit.

Based on Dang (2011) stated that adequate level of liquidity is positively correlated with bank profitability. This conclusion shows the importance of maintaining a healthy liquidity in the banks. Liquidity indicates the ability of the bank to honor and fulfill its obligations, especially to their depositors. Government securities are considered to be the safest and most liquid investment a bank can hold. Having a high government securities to total assets ratio would imply that that the bank have sufficient liquid investments to cover any unexpected events. While holding a large portion of the banks' assets in government securities would ensure that the bank has an adequate level of liquidity, it would also have an effect on the bank's earnings since government securities offer the lowest return compared to other market investment instruments. In that ratio it can be seen that GBK has the highest ratio of 18.44% followed by KIB of 18.12%. On the other hand, BUK holds the lowest ratio among Kuwaiti banks of only 1.40%.

Table-13. Liquidity ratios.

Liquidity ratios									
Bank	**G-Sec to total assets**		**Liquid assets to liquid liabilities**		**Liquid assets to total customers deposits**		**3M liquidity GAP to 3M assets**		**Group rank**	
	%	**Rank**	**%**	**Rank**	**%**	**Rank**	**%**	**Rank**	**Mean**	**Rank**
CBK	10.48	5	20.82	5	34.23	5	0.43	1	4.00	3
NBK	5.59	8	17.21	8	31.55	7	-59.96	8	7.75	9
GBK	18.44	1	25.54	1	38.02	2	-67.50	9	3.25	2
ABK	15.54	3	20.16	6	32.60	6	-55.40	7	5.50	7
BBK	8.21	7	20.96	4	34.99	3	-36.49	4	4.50	4
KFH	8.27	6	22.29	3	34.43	4	-46.71	5	4.50	4
BUK	1.40	9	11.16	9	14.37	9	-18.31	3	7.50	8
KIB	18.12	2	25.19	2	41.55	1	-48.69	6	2.75	1
AUB	10.64	4	19.11	7	28.71	8	-12.49	2	5.25	6
Mean	10.74	-	20.27	-	32.27	-	-38.35	-	-	-

Many such as Demirgüç-Kunt (1989) and González-Hermosillo (1999) used liquid assets to liquid liabilities as a measure of a banks liquidity under CAMELS approach. Having a higher ratio would mean that the bank is capable of meeting any unexpected cash outflows, and for that it can be seen from Table 13 that GBK came at the top of the Kuwaiti banks with a ratio of 25.54% followed by KIB with 25.19%. BUK and NBK were the worst performers in that ratio by holding 11.16% and 17.21% respectively. While all banks compete to get more customers deposits, these deposits are also the most unsettled deposits. For that matter banks tend to be cautious when it comes to customers deposits and as a result of that should be alert for it. Having a high liquid assets to customer's deposits ratio would indicate that the bank is prepared for and sudden or unexpected demand for these customers deposits. In that ratio, it can be seen that KIB is the most prepared bank in Kuwait for that scenario by holding 41.55% of their customer's deposits in liquid assets. While on the other side, BUK was the worst bank in Kuwait by holding only 14.37%. On an average the Kuwaiti banks hold 32.27% of their customer's deposits in liquid assets and only three banks (NBK, BUK, and AUB) were below the average. The 3m liquidity GAP is basically the total assets maturing within the next 3 months minus the total liabilities maturing within the next 3 months. Having a negative GAP would mean that the bank is holding more liabilities that assets which is not a good sign. For that matter the ratio of 3M liquidity GAP to 3M assets is used to determine how much the GAP represent out of the assets. The higher that ratio means that the bank would be in a better position in terms of liquidity. From Table 13 it can be seen that CBK was the only bank in Kuwait that have more assets maturing in the next 3 months than liabilities and for that CBK was at the top of the list. While on the opposite side GBK was the worst performer by having a GAP that represents -67.50% of the assets maturing in the next 3 months. As for the liquidity ratios, KIB came as the best bank in Kuwait when it comes to liquidity and NBK came at the bottom of the list.

Market sensitivity is another set of ratios that is used in CAMELS analysis, it was added to the framework back in 1996 to measure the effect of changing market conditions on the bank's performance. Banks tend to be active in the financial markets most of the time which makes them exposed to changes in the securities markets. Such exposure would affect the profitability of the bank. One of the ratios that is used is the total securities the bank holds to the bank's total assets, the higher the ratio would indicate that the bank is active in the securities market which makes the bank more vulnerable to securities price movements. Having a low ratio would mean that the bank would be less affected by changes in the securities prices. For that matter it can be seen from Table 14 that BUK has the lowest exposure to the securities markets compared to the other Kuwaiti banks. While ABK has the highest exposure where their investments in securities amounts to 23.17% of their total assets. On an average the Kuwaiti banks hold 18.08% of their total assets in securities.

Table-14. Market sensitivity ratios.

Bank	Total securities to total assets		Sensitivity GAP		FX effect		Stock market effect		Group rank	
	%	Rank	Ratio	Rank	%	Rank	%	Rank	Mean	Rank
CBK	19.43	5	0.91	5	270.43	9	281.05	9	7.00	9
NBK	18.61	4	0.91	5	5.54	5	0.57	1	3.75	3
GBK	20.69	7	1.01	1	2.99	4	3.33	5	4.25	4
ABK	23.17	9	1.12	8	0.24	1	3.07	4	5.50	5
BBK	14.31	3	0.84	9	36.62	8	3.78	6	6.50	7
KFH	20.16	6	0.93	3	32.02	7	9.30	7	5.75	6
BUK	9.36	1	0.92	4	11.44	6	2.93	3	3.50	2
KIB	22.91	8	1.10	7	1.22	3	11.54	8	6.50	7
AUB	14.08	2	0.94	2	1.02	2	1.63	2	2.00	1
Mean	18.08	-	0.96	-	40.17	-	35.24	-	-	-

Sensitivity GAP ratio is another ratio that is used, it measures the effect of changes in interest rate on the bank, the ratio is measured as risk sensitive assets divided by the risk sensitive liabilities. In this ratio the banks should try to obtain a ratio of 1 in order to neutralize the interest rate effect. When a bank have a ratio of above 1 this would mean that the bank is more exposed to higher interest rates risk. The ranks here were assigned based on the nearest to 1. For that GBK was the closest followed by AUB, while BBK was the furthest with a ratio of 0.84 this would indicate that BBK is more vulnerable to interest rate movements. On an average, Kuwaiti banks tend to hold more interest rate sensitive liabilities than interest rate sensitive asset where the sensitive assets represents 0.96 of the sensitive liabilities.

With globalization, banks and bank's customers tends to do business in other countries and other currencies. Many banks tend to hold assets that are denominated in foreign currencies and as a result the bank is exposed to foreign exchange risk. The foreign exchange effect measures the effect of 5% change in the exchange rate of the currencies that the bank hold assets in to the net profit of the bank. CBK was the most exposed bank in Kuwait, where a 5% change in the exchange rate would result in a loss that is 270.43% of the bank's profit. This would indicate that CBK holds a huge foreign currencies denominated assets. On the other hand ABK was the least bank in Kuwait that would be effected by foreign exchange movements. By looking at the average for the Kuwaiti banks, an unfavorable 5% move in exchange rates would result in 40.17% reduction on their net profits. The market risk is basically when a bank holds listed securities in the stock market, then any move in the stock market would have an effect on the bank's profits. Measuring that effect is shown in the stock market effect ratio where it measures the effect of 5% movements in stock market on the bank's net profit. Again CBK was the most exposed bank in Kuwait when it comes to stock market risk followed by KIB. NBK is the least bank in Kuwait that would be effected by movements in the stock markets followed by AUB. For the whole of Kuwaiti banks, they would lose 35.24% of their net profit if the stock market moves 5% down. As for the aggregate score for the market sensitivity ratios, AUB

came at the top followed by BUK, while on the other side CBK was at the bottom of the list followed by both KIB and BBK.

Table-15. Aggregate score based on rank scores.

Bank	C	A	M	E	L	S	Mean	Rank
CBK	3	3	8	9	3	9	5.83	7
NBK	4	7	1	1	9	3	4.17	3
GBK	7	8	6	8	2	4	5.83	7
ABK	2	8	3	3	7	5	4.67	4
BBK	8	5	4	4	4	7	5.33	6
KFH	9	5	9	7	4	6	6.67	9
BUK	5	3	7	5	8	2	5.00	5
KIB	1	1	5	6	1	7	3.50	2
AUB	6	2	2	2	6	1	3.17	1

When looking at the overall score for the banks, two methods were used, the first method calculated the overall score based on the bank's rank in every group as seen in Table 15. In this method, AUB came as the best bank in Kuwait during the period spanning from 2011 to 2016 scoring an average of 3.17 despite coming in the top in only one category and that is market sensitivity followed by KIB while NBK came in third place. AUB scored well in all groups except for capital adequacy and liquidity while KIB, despite coming second in overall ranking, was the best performing bank in Kuwait in three categories which are capital adequacy, assets quality, and liquidity but the bank performed mediocrely in management efficiency, earnings quality and market risk sensitivity. At the bottom was KFH scoring an average of 6.67 followed by both CBK and GBK with a tie score of 5.83. KFH came in last place in terms of both capital adequacy and management efficiency. By using the mean score for every bank to evaluate then bank's performance, as seen in Table 16 the overall ranking did not change much. AUB still came as the best performer followed by KIB and then NBK. The overall ranking did not change much at the bottom also, KFH came as the worst performer followed by CBK and then GBK.

Table-16. Aggregate score based on mean scores.

Bank	C	A	M	E	L	S	Mean	Rank
CBK	4.5	4.75	6.25	8.25	4	7	5.79	8
NBK	5	5.75	3	1.5	7.75	3.75	4.46	3
GBK	6.5	6	5.75	7.5	3.25	4.25	5.54	7
ABK	2.5	6	3.5	4.25	5.5	5.5	4.54	4
BBK	6.75	5	4.25	4.5	4.5	6.5	5.25	5
KFH	7	5	7.5	6	4.5	5.75	5.96	9
BUK	5.5	4.75	6	4.75	7.5	3.5	5.33	6
KIB	1.25	3.5	5.25	5.5	2.75	6.5	4.13	2
AUB	6	4.25	3.25	2.75	5.25	2	3.92	1

4. CONCLUSION

The banking sector is the corner stone for every economy, having a healthy banking sector would yield to a stronger economy. Monitoring the banks is an essential task to diagnose any problem in its early stages and work to resolve it. The aim of this study was to shed some light on the Kuwaiti banking sector and showing the area's that needs to be addressed in each bank over the period from 2011 to 2016. Results showed that while Ahli united bank was the overall top performing bank in Kuwait the bank showed weakness in terms of capital adequacy and liquidity while the worst performing bank was Kuwait finance house showing a very poor performance in capital adequacy and management efficiency.

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