Bank Performance and the Association Between Accounting Income and the CAMEL Framework: Evidence from Kuwait

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The study examines the overall performance of Kuwaiti banks using the CAMEL framework; shows if accounting income is associated with the CAMEL framework; and compares the performance of commercial banks and Islamic banks. The results of the study indicate that Kuwaiti banks in general have high ratios of capital adequacy, earnings quality, asset quality, and management quality; conventional banks are generally performing better than Islamic banks; and accounting income is highly associated with the CAMEL framework. The later finding implies that accounting income can be used as a proxy to measure banks performance and supports the claims by accounting standards setters that accounting income number has value relevance to users of financial statements. The findings are expected to be useful to regulators and other stakeholders to make better and informed decisions.

INTRODUCTION

Banking industry constitutes a major financial service affecting economic development worldwide. The stability and growth of any economy depend to a great extent on the stability of its banking sector. It operates as intermediary linking surplus and deficit units; facilitates funds for productive purpose and thereby contributes significantly to economic development (Siraj and Pillai, 2012). In addition to simply being involved in the financial intermediation activities, banks are operating in a rapidly innovating industry that urges them to create more specialized financial services to better satisfy the changing needs of their customers (Dang, 2011).

In order to ensure a healthy, solid and stable banking sector, banks must be continuously evaluated in a way that allow the smooth correction and removal of any potential problem. The evaluation of bank performance is important for several parties including depositors, investors, bank managers, and regulators. In a competitive financial market, bank performance provides a signal to depositors and investors whether to invest or withdraw funds from the bank (Moin, 2008, cited in Muhmad and Hashim,

2015). Similarly, it gives direction to bank managers to focus on improving productivity, profitability, and management efficiency (Muhmad and Hashim, 2015).

Starting from the appreciation of evaluating bank performance, the national and international regulatory and supervision authorities as well as the academic researchers have deepened their interest on the evaluation and analysis of the soundness and performances of the financial system in general and implicitly of the banking sector (Roman and Sargu, 2013)

A common financial indicator used by supervision authorities and past researchers to measure bank performance is the CAMEL framework. According to Susmitha and Mouneswari (2017), Majumder and Rahman (2016), and several other researchers, CAMEL is originally developed by US Federal regulators in the 1970s to evaluate American Banks' overall position and afterward its use has been extended as a useful tool to assess the soundness of financial institutions by regulators and other supervision authorities worldwide.

The acronym CAMEL derives from the five main segments of a bank operations: Capital adequacy, Asset quality, Management quality, Earnings ability and Liquidity. Out of the desire to focus on risk, a sixth component was added in 1997 and the acronym was changed to CAMELS, where "S" refers to the sensitivity to market risk. Since then, the use of CAMEL or CAMELS parameters in evaluating a bank's financial performance and soundness has become widespread among Bank's supervision agencies in several countries, including those in Kuwait.

Due to the unavailability of data to measure sensitivity to market risk component "S" for the Kuwaiti banks, the present study is an attempt to evaluate the relative performance of Kuwaiti banks using the CAMEL model. In addition, it investigates the association between the five CAMEL parameters and the Kuwaiti banks' performance measured in terms of the commonly accounting income measures: Return on assets (ROA), and return on equity (ROE), and whether the accounting income as a single indicator for financial performance can be used as a proxy by bank regulators and others to measure banks performance. The study examines further if the association will differ between commercial and Islamic banks.

The findings of this study are expected to provide useful information for stakeholders to make better and rational decisions, and to help both conventional and Islamic banks to mark and re-valuate their performance. In addition, the outcome of this study is important to policymakers in assessing the bank performance that could determine the future direction of the banking system in Kuwait.

The study is related indirectly to the literature that examines the usefulness of accounting numbers and its findings are expected to support the claims by accounting standards setters and the finding of previous studies that documented the usefulness of accounting income numbers as a measure of financial performance of business entities.

The remainder of the study is organized as follows: section two reviews the relevant literature, section three presents the research design and data collection, section four contains the empirical results and discuss the study's findings, and section five provides summary and concluding remarks of the study.

LITERATURE REVIEW

The evaluation of the financial performance of banks using the CAMEL framework has received a great deal of attention by the existing literature on economics, finance and accounting. A brief review of related studies is carried out in this section to highlight the need for the present study. Related literature can be divided into three major streams. The first stream of research examined the ability of the CAMEL framework to predict banks failure. Barker and Holdsworth (1993) found evidence that CAMEL ratings are useful in predicting bank failure. Godlewski (2003) tested the validity of the CAMEL rating typology for banks' default modulizations in emerging markets. The study focused explicitly on using a logit model applied to a database of defaulted banks in emerging markets. The finding revealed that the proxy variables for bank solvability, asset quality and liquidity, management quality, profitability, and intermediation rate have a negative impact on a bank's success in market economies. Nurazi and Evans (2005) investigated whether CAMEL(S) ratios could be used to predict bank failure in Indonesia. They

used multivariate logistic regression and multiple discriminant analysis. Employing 13 independent variables (representing the CAMEL variables, a sensitivity to market risk measure, and a bank size measure) they documented that the adequacy ratio, asset quality, management, earnings, liquidity and bank size are statistically significant in explaining bank failure. Moreover, Olweny and Shipo (2011) analyzed the determinants of bank failure in Kenya and found that asset quality and liquidity were the determinants of Kenyan bank failures.

The second stream of studies used the CAMEL framework to examine and compare the overall performance of banks. Most of these studies applied the model as a case study using a single bank, two or several banks. Dang (2011) conducted a case study using The American International Assurance Vietnam (AIA) to determine whether the CAMEL framework plays a crucial role in banking supervision. He found that the CAMEL rating system is a useful supervisory tool for examining the safety and soundness of banks.

In Iran, a similar study undertaken by Rostami (2016) examined the financial performance of an Iranian bank using the CAMELS indicators. All indicators were calculated and compared with averages of the banking industry. The results indicated that the CAMEL model can help managers control and analyze financial data, as well as assess their organizational position in the banking industry.

Tripath et al. (2014) used the CAMEL model to analyze the financial position and performance of two leading private sector banks in India – Axis and Kotak Mahindra – over a period of ten years (2004-2013). The results of applying the CAMEL analysis and t-test indicated that there was no significance difference between the two banks' financial performance even though, Kotak Mahindra's performance was slightly lower when compared with Axis. Using the same approach, Mohiuddin (2014) evaluated the financial performance of two major banks in Bangladesh, and found that their position was sound and satisfactory as far as their capital adequacy, asset quality, management capability and liquidity were concerned.

Gupta (2008) analyzed the performance of 30 Indian private banks using the CAMEL model for the period of 2003-2007 and rated the top five and bottom five banks. Later in 2014, the same author conducted another study on the Indian public sector banks and found that the overall performance of the public sector was different and recommended that the banks with the lowest ranking improve their performance to come up to the desired standards.

In Iran, Zagherd and Barghi (2017), performed an empirical study on the performance evaluation of Iranian banking industry using the CAMEL framework. Data for the study was annually collected, extracted and investigated from a sample of 17 banks over a period of nine years (2007-2015). The results indicated that with the exception of earning quality, all CAMELS indicators significantly correlated with the ROA of banks in the Iranian banking industry.

In Bangladesh, Majumder and Rahman (2016) examined the performance of 15 banks. Composite ranking, averages and ANOVA-test were applied to reach conclusion through the comparative and significance analysis of the different CAMEL parameters. The ANOVA-test demonstrated a significant difference in the performance of the selected banks, concluding that policy makers of the lowest ranking banks should take necessary steps to improve their weaknesses.

In Malaysia, Muhmad and Hashim (2015) used the CAMEL framework to assess bank performance. The results of the regression analysis showed that capital adequacy, asset quality, earning quality and liquidity have a significant impact on the performance of Malaysian banks.

Similar studies were also undertaken in other countries. In Romania, Roman and Sargu (2013) analyzed the financial soundness of the Romanian commercial banks; El Mahdi Ferrouhi (2014), conducted a study to evaluate the Moroccan financial institutions using the CAMEL model for the purpose of generating a rank list of Morocco's banks. In Nigeria, Egbunike et al. (2014), examined the impact of CAMEL on the profitability of Nigerian banks, and found that liquidity had a significant impact on bank profitability, while capital adequacy, asset quality, management efficiency, and earning did not. Desta (2016) applied the CAMEL framework to analyze the financial performance of the seven best African banks. The study spanned a period of three years (2012-2014) and concluded that the banks that were rated as strong and satisfactory had higher capital adequacy and earnings ability. Conversely, those

who were rated as less satisfactory were either deficient or critically deficient when in terms of asset quality, management quality and liquidity.

The CAMEL framework was also used to evaluate Islamic Banks' performance. Ahsan (2016), analyzed the financial performance of three Islamic banks in Bangladesh over a period of eight years (2007-2014). He found that they were all in a strong position based on the composite rating system. They were sound in respect to their capital adequacy, asset quality, management quality, earning capacity and liquidity. Using the same approach, Mousa (2016) applied the CAMEL model to evaluate the performance of 3 national Islamic banks in Jordan from 2010 to 2015. The results showed that all 3 banks were performing strongly. Sarker (2005) examined the applicability of the CAMEL model for the regulation and supervision of Islamic banks by the central banking of Bangladesh. The study documented that applying CAMEL model by Islamic banks enabled the regulators and supervisors to get a Shariah benchmark to supervise and inspect Islamic banks and financial institutions from an Islamic perspective.

The third stream used the CAMEL framework to examine and compare the overall performance among a group of different types of banks (e.g. public, private, conventional, and Islamic banks). Jaffar and Manarvi (2011) measured and compared the performance of both Islamic and conventional banks in Malaysia. A sample of 5 conventional banks and 5 Islamic banks were selected, and data was collected for a period of 5 years (2005-2009). The study found that Islamic banks performed better in possessing both adequate capital and liquidity, while conventional banks excelled in management quality and earning ability. Asset quality for both types of banks was almost the same; conventional banks recorded slightly smaller loan loss ratios while demonstrating an improved loan recovery policy. In Malaysia also, a similar but larger study was conducted by Rozzani and Rahman (2013) looking at 19 conventional banks and 16 Islamic banks over a period of 4 years. The analysis results indicated that the levels of performance for both conventional and Islamic banks in Malaysia were very similar. Munir and Bustaman (2017) conducted a cross-country study to evaluate and compare the performances of conventional and Islamic banks in both Malaysia and Indonesia. A sample of 10 banks in Malaysia and 9 banks in Indonesia were selected, and data was collected for a period of 6 years (2010-2015). The study indicated that the CAMEL analysis accurately assesses the performance of banking profitability.

Although similar in nature, the above studies have not reached the same findings and conclusions. This is due to the fact that, these studies are conducted in different countries with different cultures, using different analytical methods and covering different periods. Moreover, there is little research concerning the application of CAMEL to assess and compare the performance of both Conventional and Islamic banks. The present study examines the validity of the CAMEL model in evaluating the performance of conventional and Islamic banks operating in Kuwait. It further investigates whether the accounting income numbers measured under International Financial Reporting Standards (IFRS) as a single indicator of financial performance is associated with the CAMEL framework.

The findings of the present study are expected to provide useful information for stakeholders to make better and more rational decisions, and to help both conventional and Islamic banks mark and re-valuate their performance. In addition, the outcome of this study will help shape policymakers' assessment of the banking performance and could determine the future direction of banking in Kuwait. Moreover, the findings of the present study are expected to support the claims by accounting standard setters and the finding of previous studies of the validity of accounting income numbers as a measure of financial performance of business corporations. To the knowledge of the authors, no similar research has been conducted in the GCC countries generally, and in Kuwait specifically. This study will allow us to help fill this void and determine if similar or new correlations can be made.

RESEARCH DESIGN AND DATA COLLECTION

Sample Selection

The Kuwaiti banking sector is one of the most important and developed economic sector in Kuwait. Based on the value of traded shares, banking sector accounted for 34% of the total shares value traded in the Kuwait Stock Exchange (KSE) during 2016, and raised to more than 52% during 2018 (KSE, the

economic sectors report, 2018). In addition, six banks are among the top ten profitable companies listed in the KSE (AL Joman Center, Kuwait, 2018).

According to the economic report issued by the Central Bank of Kuwait (CBK), bank sector consists of 23 banks: five conventional banks, five Islamic banks, one specialized bank, and twelve branches of foreign banks (CBK, the 46th economic reports, 2017). The last two types are excluded from this study because they are either specialized in nature, or they have a foreign ownership. Accordingly, only the ten conventional and Islamic banks are included in the initial sample. Table 1 presents some statistical data about these banks as of December 31, 2017.

Data for Warba Bank was not available for the total period of the study and was excluded. The final sample used for this study covers nine banks (five commercial banks and four Islamic banks) over eight years (2010-2017). Data has been collected from the annual report provided by the bank's website and Bayanati Database prepared and provided by the Institute of Banking Studies in Kuwait (IBS-Kuwait, 2017). A sample of 72 bank-year observations was obtained. The sample contains in total 40 conventional bank-year observations, and 32 Islamic bank-year observations.

TABLE 1
INITIAL SAMPLE OF KUWAITI BANKS

Bank	Total Assets (KD' 000,000)	Ranking (Based on TA)
Conventional banks		
National Bank of Kuwait (NBK)	26,035	1
Gulf Bank (GBK)	5,683	4
Commercial Bank of Kuwait (CBK)	4,395	5
Al-Ahli Bank of Kuwait (ABK)	4,362	6
Burgan Bank (BURG)	7,415	3
Islamic Banks		
Ahli United Bank (ALMUTAHED)	3,666	8
Kuwait International Bank (KIB)	1,916	9
Kuwait Finance House (KFIN)	17,358	2
Boubyan Bank (BOUBYAN)	3,970	7
Warba Bank (WARBA)	1,773	10

Research Objectives and Questions
Research Objectives

The present study aims at examining the overall performance of conventional and Islamic banks operating in Kuwait using the CAMEL model. It further investigates whether the accounting income numbers measured under International Financial Reporting Standards (IFRS) as a single indicator of financial performance is associated with the CAMEL framework and can be used as a good proxy for the CAMEL model in evaluating the performance of conventional and Islamic banks.

Research Questions

Based on the research objective, this study intends to answer the following questions:
1. Is there a significant difference between conventional and Islamic bank's performance?
2. Is there a relationship between each of the five CAMEL parameters and banks' performance as measured by the ROA and ROE?
3. Is the accounting income measured under the IFRS associated with the CAMEL model?
4. Do the ROA and/or ROE - as a single indicator to measure Bank's performance – can be used as a proxy for the CAMEL Framework?
5. Is the association between the CAMEL parameters and Kuwaiti banks' performance as measured by the ROA and ROE will differ between Conventional and Islamic banks?

In order to achieve the research objective and to answer these questions, data for the Kuwaiti listed banks (5 conventional banks and 4 Islamic banks) were collected covering 8-year period (2010-2017).

Definition of Variables

The dependent variable used for the present study is a measure of accounting income. Two common measures are used, the rate of return on assets (ROA), and the rate of return on equity (ROE). The independent variables are the acronym CAMEL derives from the five main measures of a bank performance: Capital adequacy, Asset quality, Management quality, Earnings quality, and Liquidity.

Capital Adequacy (CA)

Capital adequacy indicates whether a bank has enough capital to maintain depositors' confidence, to absorb unexpected losses, and thus preventing the bank from going bankrupt (Majunber and Rahman, 2016). It is a measurement of bank's financial strength (Muhmad and Hashim, 2015). Therefore, capital adequacy represents one of the five components of the CAMEL as a model to measure bank performance.

For the purpose of our study, capital adequacy is measured using the following two ratios:
1. Total Capital Adequacy Ratio: Total regulatory capital/ Risk weighted assets
2. Equity capital to total assets ratio: Equity capital/total assets.

where,

total regulatory capital is measured by the total of Tier 1 and Tier 2 capital and Tier-1 capital refers to the strictest definition of capital as defined by Basel III capital standard. It includes Common equity plus certain allowable forms of non-common stock issued, and

Risk weighted assets measure by the assets and exposures of the bank as defined by the Central Bank of Kuwait, as part of the implementation of Basel capital standard weight by risk.

Asset Quality (AQ)

In a banking sector, asset quality refers to an evaluation of the credit risk associated with any particular asset. This term is used by banks to decide what types of their assets are at financial risk and how much allowance for potential losses they must have. The weakening value of assets has a spillover effect, as losses are eventually written-off against capital, which eventually expose the earning capacity of the institution (Susmitha and Mouneswari, 2017). Therefore, the quality of assets plays important role in influencing bank performance. To evaluate the impact of bank's asset quality on bank performance, the following two ratios are used: (notes that the term loans is used for conventional banks, while receivables is used for Islamic banks.
1. Non-performing Loans (Receivables) / Gross Loans (Receivables)
2. Provisions for Loan (Receivable) Losses /Gross Loans (Receivables)

Management Quality (MQ)

Management quality is an important factor behind the performance of all banks. Good management practice should display a high standard of integrity, professional competence, and quality of service (Muhamad and Hashim, 2015). This in turn will result in enhancing bank performance. Several ratios are used to measure bank's management quality. For the purpose of this study, the following two ratios are used:
1. Total income per employee (Net Income/number of employees)
2. Operating profit per employee (Operating Income/number of employees)

Earning Quality (EQ)

The quality of earnings is a very important criterion that determines the ability of a bank to earn consistently (Ymeen and Ali, 2016). The rise of earnings performance should inspire confidence among depositors, investors, creditors and public (Muhmad and Hashim, 2015). Thus, earning quality is a vital

factor in evaluating bank performance. Several ratios are used to measure the quality of a bank's earnings. For the purpose of this study, the following two ratios are used:

1. Net interest margin (NIM): Net interest income / Average Interest Earning Assets
2. Cost to Income: Noninterest expense (Operating Expenses / (Net interest Income + Noninterest income)

For Islamic banks, we used the finance income & finance expense, instead of interest income and interest expense, and the ratios are:

1. Net financing margin (NFM): Net finance income / Average finance income earning assets
2. Cost to income: (Nonfinance expense (operating expenses) / (Net finance income + nonfinance income)

Liquidity (LIQ)

Liquidity refers to the ability of a bank to respond to short-term obligations as well as loans commitments. Failure of a bank to manage its liquidity commitments, it might be desperate to borrow short term and emergency loan at an excessive interest rate, doing so lead to reduction in earnings (Muhmad and Hashim, 2015). The bank's capability to proper managing liquidity, will enhance the bank performance. To evaluate the impact of liquidity on bank performance, the following two measures are employed:

1. Highly Liquid assets to total Assets Ratio
2. Highly liquid assets to customer deposits Ratio

where, highly liquid assets: refers to cash and short-term funds plus balances with the Central bank of Kuwait, holdings of Central bank of Kuwait bonds, and holdings of Kuwait treasury bonds.

The Regression Model

To examine the association between accounting income and the CAMEL framework, we use the following models:

Model 1: $\text{ROA}_{it} = \beta_0 + \beta_1 \text{CA}_{1it} + \beta_2 \text{CA}_{2it} + \beta_3 \text{AQ}_{1it} + \beta_4 \text{AQ}_{2it} + \beta_5 \text{MC}_{1it} + \beta_6 \text{MC}_{2it} + \beta_7 \text{EQ}_{1it} + \beta_8 \text{EQ}_{2it} + \beta_9 \text{LIQ}_{1it} + \beta_{10} \text{LIQ}_{2it} + \varepsilon_{it}$ (1)

Model 2: $\text{ROE}_{it} = \beta_0 + \beta_1 \text{CA}_{1it} + \beta_2 \text{CA}_{2it} + \beta_3 \text{AQ}_{1it} + \beta_4 \text{AQ}_{2it} + \beta_5 \text{MC}_{1it} + \beta_6 \text{MC}_{2it} + \beta_7 \text{EQ}_{1it} + \beta_8 \text{EQ}_{2it} + \beta_9 \text{LIQ}_{1it} + \beta_{10} \text{LIQ}_{2it} + \varepsilon_{it}$ (2)

where
ROA = Net income / Average total assets
ROE = Net income / Average total equity
CA_1 = Total regulatory Capital risky weighted assets
CA_2 = Equity capital / Total asset
AQ_1 = Non-performing loans (receivables) / Gross loans (receivables)
AQ_2 = Provisions for loan (receivable) losses /Gross loans (receivables)
MQ_1 = Total income per employee
MQ_2 = Operating income per employee
EQ_1 = Net interest (financing) margin
EQ_2 = The ratio of cost to income
LIQ_1 = Highly liquid assets / Total assets
LIQ_2 = Highly liquid assets / Customer deposits

The Coefficient of determination (Adjusted R^2) is used as a metric measure of the association between accounting income measures and the CAMEL model.

To examine if the association is affected by the type of banks, the total sample is decomposed into two subsamples, the first includes observations related to commercial banks (40 observations) and the

second includes observations related to Islamic banks (32 observations), the Adjusted R^2 acquired from equations 1 and 2 using the two subsamples are compared to see if there is any effect of the type of banks on the association between accounting income and the CAMEL model.

To utilize the benefit of having cross sectional and longitudinal data, panel data regression is used to estimate equations 1 and 2 and to answer the research questions. The Wu-Haussman test is used to test whether the unique errors (ε) are correlated with the regressor and to determine whether the fixed effect model or the random effect model is appropriate for the data. The test results dictate the use of the fixed effect model.

THE EMPIRICAL RESULTS

Descriptive Statistics and Kuwaiti Bank Performance

Table 2 presents the descriptive statistics of all the dependent and independent variables. It is worthwhile to notice the big differences between the mean and the standard deviation for the two measures of dependent variables as well as for each of the couple measures of the five independent variables. For all variables, the values of standard deviation are less than the mean values, and thus, the coefficient of variation is less than 1. This means that the values of all observations are not dispersed around the mean, and thus the estimations are precise.

TABLE 2
DESCRIPTIVE STATISTICS FOR THE TOTAL SAMPLE

Variable	N	Min.	Max.	Mean	Std. Deviation
ROA	72	.023	2.348	1.03582	.433364
ROE	72	.159	14.828	7.91293	3.103373
CA_1	69	13.501	27.652	18.65507	3.529119
CA_2	72	8.663	18.565	12.99183	2.470568
AQ_1	72	2.304	4.317	3.02485	.434554
AQ_2	72	1.986	9.522	4.79610	1.553369
MQ_1	72	64.112	366.121	177.89624	87.358634
MQ_2	72	.887	164.223	57.65733	40.996273
EQ_1	72	.000	18.685	3.91240	3.886500
EQ_2	72	15.017	75.356	43.78139	12.428047
LIQ_1	72	3.089	30.247	20.00060	5.657750
LIQ_2	72	4.321	47.344	32.08922	9.655210

The results in Table 2 indicate that capital adequacy ratios CA_1 and CA_2 are 12.99% and 18.655 respectively. These amounts are higher than what is required by the Central Bank of Kuwait (CBK, Basel-3). The strong capital adequacy reveals a high degree of financial flexibility for Kuwaiti banks. It indicates a strong sign of banks survival in tough economic times as well as their ability to take advantage of unexpected investment opportunity.

The results also indicate a positive sign for Kuwaiti banks in terms of their earning quality. The mean value of the net interest margin (EQ_1) is 43.8. On average, Banks are successful in managing their investment as compared to their debt situations. A positive value of EQ_1 means that investment strategy pays more interest than the costs (Mohamad and Hashim). The second measure of earning quality, cost to income (EQ_2), shows that operating expenses on average represent only 43% of a bank's net income, reveals that Kuwaiti banks are successful in managing their operating activities.

In the same direction, asset quality measures indicate a positive performance. Non-performing loans are only 3.9% of total loans as indicated by AQ_1 and is covered by 4.7% provisions for Loan as indicated

by AQ_2. Moreover, the management quality measures (MQ_1 & MQ_2), show a high rate of net income and operating income per employee of KD 178,000 and 58,000 respectively.

Moreover, the two measures of liquidity indicate that on average no possible problem for Kuwaiti banks to meet their liability obligations. The highly liquid assets represent 20% of total assets (LIQ_1) and 32% of total customer deposits (LIQ_2). The minimum values of the two measures of liquidity indicate that some banks suffer unbalanced mixture of liquid and non-liquid assets.

To identify whether there is a difference between the conventional and Islamic bank's performance, the total sample is decomposed into two subsamples, the first includes observations related to conventional banks (40 observations) and the second includes observations related to Islamic banks (32 observations).

Table 3 presents a comparison between the two types of banks for all the dependent and independent variables. It reveals that there is a significant difference between the two banks as for asset quality (AQ_2), Management quality (MQ_1 and MQ_2), and earning quality (EQ_1 and EQ_2). Based on the mean values, conventional banks performed better in all of these five performance measures, except for EQ_1 and EQ_2, where Islamic banks performed better than conventional banks.

The two measures of accounting income (ROA, and ROE), capital adequacy measures (CA_1 and CA_2), and asset quality (AQ_1) for both type of banks are almost the same.

TABLE 3
COMPARISON OF THE MEAN AND VARIANCES FOR ALL VARIABLES
BETWEEN CONVENTIONAL AND ISLAMIC BANKS

Variable	Conventional		Islamic		T Statistics	Levene's Test
	Mean	Standard Deviation	Mean	Standard Deviation		
ROA	1.05153	.517496	1.01619	.304146	0.361	6.023**
ROE	7.65363	3.129020	8.23706	3.089546	0.791	1.314
CA_1	18.20344	3.412953	19.24220	3.648279	1.216	0.684
CA_2	13.09353	2.506065	12.86472	2.459335	0.388	0.104
AQ_1	3.87193	4.005810	3.96300	3.795095	0.089	0.009
AQ_2	5.37135	1.380586	4.07703	1.472353	3.838**	0.020
MQ_1	204.40875	84.602402	144.75559	80.207675	3.042**	1.284
MQ_2	70.47995	47.799948	41.62906	22.305057	3.148**	21.838**
EQ_1	2.83020	.348334	3.26816	.412131	4.886**	1.406
EQ_2	37.81225	9.762143	51.24281	11.420082	5.378**	2.218
LIQ_1	21.07358	3.375208	18.65938	7.459168	1.829	46.32
LIQ_2	34.70930	4.491024	28.81413	12.969448	2.685	63.026

** significant at 0.01.

On the other hand, conventional banks recorded higher liquidity ratios (LIQ1, and LIQ2), showing better loans recovery strategies and policies. The difference in liquidity could be explained in terms of the nature of the operating activities of the two types of banks.

The overall results indicate that conventional banks are generally performing better than Islamic banks. This could be largely due to the fact that Islamic banks established their business in Kuwait recently, comparing to conventional banks that have a longer history, vast experience of learning from the financial markets, and larger share in Kuwaiti financial sector.

The Association Between Accounting Income and the CAMEL Model for the Total Sample

Tables 4 present the results of the regression of models 1 and 2 using data for the total sample. It reveals that both the rate of return on assets and the rate of return on equity are positively and significantly associated with the measure of the CAMEL framework. The coefficients of variation (overall adjusted R^2) for the two models are 0.83 and 0.795 respectively. These results reveal that the accounting measure of income as a single performance measure can be used as a proxy for the CAMEL model.

The Association Between Accounting Income and the CAMEL Model for Commercial and Islamic Banks

Tables 5 and 6 present the results of the regression of models 1 and 2 using data for the subsamples of commercial and Islamic banks respectively.

The results show that the relationship between the two measures of income and the CAMEL framework is positively and statistically significant at 0.001 for the two subsamples. The coefficient of variations for the two models for the commercial bank (Islamic banks) are 89.4% and 89.3% (78.2% and 88.4%) respectively. Moreover, the results reveal that association using the commercial banks subsample is higher than the association using the Islamic banks subsamples.

TABLE 4
THE ASSOCIATION BETWEEN RETURN ON INVESTMENT (ROA), RETURN ON EQUITY (ROE) AND THE CAMEL MODEL FOR THE TOTAL SAMPLE

Variable	ROA			ROE		
	Coefficients	Z	Significant level	Coefficients	Z	Significant level
Constant	0.148	0.560	0.574	11.506	5.52	0.001
CA_1	-0.012	0.060	0.288	-0.566	6.65	0.001
CA_2	0.001	0.17	0.869	-0.039	0.98	0.325
AQ_1	0.003	0.38	0.703	-0.017	0.32	0.751
AQ_2	0.032	1.72	0.086	0.383	2.55	0.011
MQ_1	0.015	13.72	0.001	0.115	12.65	0.001
MQ_2	-0.005	10.31	0.001	-0.043	10.90	0.001
EQ_1	0.002	0.71	0.480	0.022	1.19	0.235
EQ_2	0.243	3.56	0.001	1.225	2.26	0.024
LIQ_1	-0.001	00.03	0.978	0.042	0.32	0.745
LIQ_2	0.002	0.24	0.808	-0.53	0.70	0.481
N = 72	Adjusted R^2 Within = 0.774 Between = 0.943 Overall = 0.830 Wald Chi 2 = 302.82 (0.001)			Adjusted R^2 Within = 0.769 Between = 0.842 Overall = 0.795 Wald Chi 2 = 236.08 (0.001)		

TABLE 5
THE ASSOCIATION BETWEEN RETURN ON INVESTMENT (ROA), RETURN ON EQUITY (ROE) AND THE CAMEL MODEL FOR COMMERCIAL BANKS

Variable	ROA			ROE		
	Coefficients	Z	Significant level	Coefficients	Z	Significant level
Constant	0.344	0.46	0.648	13.814	3.01	0.003
CA_1	0.008	0.39	0.70	-0.256	2.01	0.045
CA_2	0.019	2.14	0.32	0.094	1.72	0.085
AQ_1	-0.003	0.28	0.783	-0.024	0.40	0.687
AQ_2	0.001	0.01	0.989	0.163	0.79	0.427
MQ_1	0.017	11.44	0.001	0.121	13.66	0.001
MQ_2	-0.005	6.44	0.001	-0.040	8.03	0.001
EQ_1	0.003	0.79	0.429	0.369	1.63	0.102
EQ_2	-0.009	0.05	0.957	-1.802	1.75	0.081
LIQ_1	0.006	0.24	0.808	0.079	0.53	0.596
LIQ_2	-0.001	0.0	0.931	-0.104	1.26	0.207
N = 40	Adjusted R^2 Within = 0.824 Between = 0.984 Overall = 0.894 Wald Chi 2 = 244.84 (0.001)			Adjusted R^2 Within = 0.859 Between = 0.992 Overall = 0.893 Wald Chi 2 = 242.35 (0.001)		

TABLE 6
THE ASSOCIATION BETWEEN RETURN ON INVESTMENT (ROA), RETURN ON EQUITY (ROE) AND THE CAMEL MODEL FOR ISLAMIC BANKS

Variable	ROA			ROE		
	Coefficients	Z	Significant level	Coefficients	Z	Significant level
Constant	0.861	2.10	0.035	18.230	6.01	0.001
CA_1	-0.024	-1.26	0.209	-0.850	5.91	0.001
CA_2	-0.004	-0.44	0.657	0.011	0.15	0.877
AQ_1	0.017	0.77	0.442	0.098	0.60	0.551
AQ_2	-0.018	-0.29	0.775	0.753	1.61	0.106
MQ_1	0.015	5.05	0.001	0.111	5.01	0.001
MQ_2	-0.004	-3.57	0.001	-0.043	5.26	0.001
EQ_1	-0.001	-0.09	0.928	-0.009	0.25	0.799
EQ_2	0.152	1.18	0.237	0.083	0.09	0.930
LIQ_1	-0.023	-0.68	0.495	-0.060	0.25	0.806
LIQ_2	0.015	0.79	0.427	0.009	0.06	0.951
N = 32	Adjusted R^2 Within = 0.720 Between = 0.995 Overall = 0.782 Wald Chi 2 = 75.42 (0.001)			Adjusted R^2 Within = 0.757 Between = 0.999 Overall = 0.884 Wald Chi 2 = 160.32 (0.001)		

SUMMARY AND CONCLUDING REMARKS

The CAMEL framework, which derives from the five main segments of a bank operations: Capital adequacy, asset quality, management quality, earnings ability and liquidity, is a common financial indicator that has been used by supervision authorities and academic researchers as a useful tool to evaluate banks' overall performance.

The present study examines the performance of Kuwaiti banks, compares the performance of conventional banks and Islamic banks, and examines further if accounting income numbers measured under International Financial Reporting Standards (IFRS), as a single indicator of financial performance is associated with the CAMEL framework.

Using available data for conventional and Islamic banks listed in KSE during the period from 2010 to 2017, the study indicates that Kuwaiti banks in general have high ratios of capital adequacy, earnings quality, asset quality, and management quality. The overall results also indicate that conventional banks are generally performing better than Islamic banks.

The study documents two other major findings: Accounting income (as measured by return on assets and return on equity) is highly associated with the CAMEL framework for all Kuwaiti banks during the study period, and the association is higher for the commercial banks than that of Islamic banks.

The findings of the study reveals that accounting income number as a single indicator for financial performance can be used as a proxy by bank regulators and others to measure banks performance and support the claims by accounting standards setters and the finding of previous studies that documented the usefulness of accounting income numbers as a measure of financial performance to users of financial statements.

Moreover, the findings of this study are expected to provide useful information for stakeholders to make better and rational decisions, and to help both conventional and Islamic banks to mark and re-valuate their performance. In addition, the outcome of this study is important to policymakers in assessing the bank performance that could determine the future direction of the banking system in Kuwait.

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