Bank-Specific and Macroeconomic Determinants of Capital Adequacy Ratio: Evidence from Kuwaiti Banks

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**Abstract**

Practical experience and existing literature indicates that banks held capital higher than the requirement of legal authorities. This suggests that there are some factors other than legal capital requirements determine banks’ capital structures. This study investigates the impact of bank-specific and macroeconomic factors on bank’s Capital Adequacy Ratio (CAR). Size, profitability (ROA & ROE), Asset Quality (AQ), Management Quality (MQ), Liquidity (LIQ), Net Interest Margin (NIM), and bank type are used as bank-specific factors. Gross domestic product (GDP) and inflation are used as macroeconomic factors. Annual data for all Kuwaiti listed banks is used for the period from 2009 to 2016. The findings indicate that in terms of bank characteristics, only bank size, AQ, MQ and bank LIQ have significant impact on CAR. The findings suggest that CAR tends to be more affected by how efficient bank resources are utilized than by any other bank characteristic or macroeconomic variable.

**Keywords:** Capital Adequacy Ratio (CAR); Conventional and Islamic Banks, determinations of CAR; Kuwait Banking System.

1. **Introduction**

Banks are corporate entities that operate in a highly uncertain environment, and hence, their capital plays an important role in maintaining safety and solidarity of banks. Adequacy of banks’ capital is one of the most important topics for regulatory authorities and banks’ managements, as it represents a safety value for banks’ clients and shareholders to reduce risk exposure. Moreover, Capital adequacy performs many functions in the banking system. It determines and affects the level of bank’s performance. Furthermore, capital serves as a cushion for operational loss absorption and creates shareholders’ confidence in the bank. Additionally, it represents the bank’s ability to finance its long-term projects and capital expenditures (Olarawaju and Akanda, 2016).

For this purpose, regulatory authorities have worked to introduce a minimum ratio for banks’ capital levels. The most prominent of which is the Basel Committee. The Basel capital requirement regulations provide a ground for strong capital structure in order to minimize default risks of banks. The Basel Committee on Banking Supervision (BCBS) has the authority to strengthen regulation and improve the quality of banking supervision worldwide. Minimum CAR has been recommended by Basel to ensure banks can absorb a reasonable level of losses before becoming insolvent, which will
protect depositors and promote the stability and efficiency of the financial system (Alajmi and Alqasem, 2015). The minimum capital standards made by Basel Committee were designed to increase the safety and soundness in international banking systems and to set a level playing field for banking regulation (Mekonnen, 2015).

Although, regulation of capital adequacy is of great importance, the existing literature indicates that factors other than regulation are also of excessive significance in explaining and determining banks’ CAR. Many researches have been conducted in both developed and developing countries on CAR determinates (e.g., Aktas, et al., 2015; Alajmi, and Alqasem, 2015; Al-Tamimi and Obeidat, 2013; El-Ansary and Hafez, 2015; Mekonnen, 2015; Olareqaju and Akanda, 2016; Shingjiergji and Hyseni, 2015). No research in Kuwait, with the exception of Alajmi and Alqasem (2015), studied major determinates of Capital adequacy ratio. Alajmi and Alqasem (2015), focused only on conventional banks and investigated the impact of seven bank specific factors on the CAR using data covering the period from 2005 to 2013. The present study extends Alajami and Alqasem study by investigating the CAR determinants not only for conventional banks but also for Islamic banks. Moreover, the present study investigates additional bank specific factors as well as macroeconomic factors that might help in explaining banks managements’ strategies toward CAR for 8-year period covering the years from 2009 to 2016.

The study has six sections. The first introduces the topic. The second section reviews the relevant literature and previous studies. Research objective, questions and hypothesis are explained in section three. The fourth section presents data collection and methodology. The fifth section analyzes and discusses research results and findings. The last section provides summary and concluding remarks of the study.

2. Literature Review and Previous Studies
Capital structure refers to the mixture of debt and equity financing of total assets. This topic drew the attention of both theoretical and applied researchers. The fundamental concept of capital structure was first introduced by Modigliani-Miller (M&M) in 1958. Since M&M published their study, there have been various studies on the topic of optimal capital structure. These studies are mainly focused on the non-financing sector; with limited studies conducted on capital structure of banking sector, especially in developing countries (Bokhari & Ali, 2009). Literature on bank’s capital structure identifies three issues through which capital adequacy ratio and its determinants are discussed: first, the need for capital adequacy regulation; second, bank specific (internal) factors affecting CAR; and finally, the impact of macroeconomic (external) factors on bank’s CAR.

Regulation of bank’s capital adequacy has grown in recent years. As direct controls have fallen into disfavor, bank regulators were forced to rely increasingly on capital adequacy rules to resolve these problems as stated by Dowd (2015). In favor of capital adequacy regulation, Dowd reported three reasons given by three scholars. The first reason put forward by David Miles (1995); who argues that capital adequacy regulation is needed to counter market frailer. The second reason given by Benston and Kaufman (1996) who argue that capital adequacy regulation is needed to counter the moral hazard effect of government deposit insurance. That is, if bank manager knows that depositors will run if the bank becomes week, he will have a strong incentive to nurture its financial health to maintain depositors’ confidence. Finally, Tirole (1994) and Dewatripont & Tirole (1995) argue that capital adequacy regulation (and other forms of state intervention, such as deposit insurance) is justified primarily by the desire to protect uniformed, incompetent and free-riding depositors. Capital adequacy regulation is therefore justified by the need to make banks stronger to protect the small, usually ill-informed depositors. These arguments have been supported by empirical research results. Joosen (2002) examines the impact of applying Basel (II) rules on Netherland and European banks, and found that applying Basel rules helps in protecting depositors and avoiding bank’s solvency risk. Similar
results reported by Girardone et al (2007) and Sarma & Nikaido (2007) who examined the situation in Italian banks and Indian banks respectively.

The idea of determining bank’s capital structure mainly by regulation has been accepted for a long period. The acceptance of this idea may lead to believe that there is no reason to study factors that might have an impact on bank’s CAR. However, results revealed by empirical studies from both developed and developing countries show that banks maintain capital levels above legal requirements. Juca et al (2012) found that the largest twenty banks in Brazil hold about 18% minimum level of capital; similarly, the largest twenty world banks hold 14% minimum level of capital even though Basel requirement is only 8% at the time of conducting the study. Sarma and Nikaido (2007) reported similar results for Indian banks. The results indicated that Indian banks maintain CAR above both international and Indian Federal Reserve Banks’ Capital Adequacy Ratios. In Spain, Barrios and Balanco (2004) investigated the following question: “is bank’s capital adequacy affected by market conditions or by capital adequacy regulatory agencies?” The main contribution was that capital adequacy is better influenced by market condition factors rather than by capital adequacy rules imposed by regulatory agencies. In Kuwait, Aljoman Center (2015) reports that all Kuwaiti banks maintain CAR higher than what is required by the Basel standard, and by the central bank of Kuwait (CBK).

These results suggested that there must be factors other than the legal capital requirements determining bank’s CAR. There have been several studies in the area of the possible determinants of bank’s CAR. The majority of these studies concentrated on determinants related to bank-specific factors such as size, risk, profitability, asset quality, management quality, liquidity, etc.

In Kuwait, Alajmi and Alqasem (2015), found that bank size and return on assets (ROA) have significant negative relationships with CAR. However, loan to deposit ratio showed a significant positive relationship with CAR. On the other hand, dividend payout, loans to assets, non-performing loans to total loans, and return on equity (ROE) do not have significant effect on CAR. In Saudi Arabia, another important county in the Gulf Cooperation Council (GCC), Polat and Al-khalaf (2014) examined the impact of some bank internal factors on the CAR of listed banks in the Saudi Stock Exchange. The results varied depending on the statistical model used. Fixed effect, robust estimation, and least squared dummy regression results show that loans to assets ratio has negative significant relationship in determining CAR while leverage and size have positive significant relationship. In GLS estimation, the results indicated that in addition to earlier model results, loan to deposit ratio has negative significant relationship and return on assets (ROA) has positive significant impact on CAR. AL-Mutairi and Naser (2015) attempted to identify determinants of capital structure in a sample of 47 commercial banks listed on the Gulf Cooperation Council (GCC) stock markets. To achieve this objective, data was collected for the period between 2001 and 2010. The results indicated that profitability and liquidity affect bank’s capital structure decision.

Apart from the studies conducted in the Gulf area, there have been several studies conducted in other areas. Masood and Ansari (2016) examined the impact of bank specific factors on the determination of CAR of Pakistani Commercial Banks. The results revealed that loans to assets ratio and ownership concentration of more 50% had significant but negative impact on the CAR. The equity assets ratio, deposit assets ratio, and loan loss reserve had significant and positive impact on the determination of CAR, whereas size, profitability, and nonperforming loans had no impact on CAR. In another emerging market, El-Ansary and Hafez (2015), examined explanatory factors that influence capital adequacy ratio (CAR) in the Egyptian commercial banks. The study investigates determinants of CAR before and after global financial crises. Results vary according to the period understudy. For the whole period, results show that liquidity, size, and management quality are the most significant variables. Before the financial crises, results show that asset quality, size, and profitability are the most significant variables. After the financial crises, results show that asset quality, size, liquidity, management quality, and credit risk are the most significant variables that explain the variance of Egyptian banks' CAR. Romdhane et al., (2012) analyzed determinants of CAR in Tunisia, and found that the net interest margin and risk strongly affect the capital ratio. In Jordan, Al-Tamimi and Obeidat
(2013) examined the issue and found a significant positive correlation between CAR, liquidity risk and ROA, as opposed to negative, but insignificant, relationship with capital risk, credit risk, and the rate of force-revenue.

Apart from Arab countries, Olarewaju & Akande (2016) examined the determinants of capital adequacy in Nigerian banks. The study found a direct and positive relationship between ROA, size, and CAR, while they found inverse linear relationships among ROA, credit risk, deposit structure, and liquidity that are statistically significant in determining CAR. The study recommends the need for all these affected banks to gear up and invest more on the significant factors that can lead to improvements in their capital adequacy in order to achieve viability, sustainability and stability in the long-run. Bateni et al., (2014) examined the relationship between seven financial factors and CAR in Iranian private banks. The study showed a negative relationship between size and CAR, while positive relationships with loans asset ratio, ROE, ROA, and CAR. Deposits asset ratio and risk asset ratio were not having impact on CAR. Shingjergji and Hyseni (2015) analyzed the main banking determinants of the capital adequacy ratio in the Albanian banking system. The results indicated that profitability do not have any influence on CAR, while non-performing loans, loan to deposit ratio, and equity multiplier have negative and significant impact on CAR. Bank size has a positive impact on CAR. In Indonesia, Nuviyanti and Anggono (2014), examined determinants of CAR. The research found that operating expense to operating income ratio, loan to deposit ratio, and ROE have negative significant effect towards CAR; on the other hand, non-performing loans and ROA have positive influence on capital adequacy ratio. In the same country, Raharjo et. al; (2014) found that Indonesian state-owned banks’ CARs are affected by total assets growth, equity to total assets ratio, non-performing loans, interest rate risk, operational cost and revenue ratios.

In Turkey, Asarkaya and Ozcan (2007) analyzed determinants of CAR in Turkish banks. Findings pointed out that lagged capital, portfolio risk, economic growth, ROE, and average capital level were positively correlated with CAR. On the other hand, deposits to assets ratio was negatively correlated with CAR. Five years after Asarkaya and Ozcan’s study, Büyükşalvarcı and Abdioğlu (2011) studied Turkish banks, and found that loans, ROE, and leverage have negative significant effect towards CAR, while loan loss reserve and ROA have positive significant effect towards CAR. Mekonnen (2015) found that ROA, deposit, and size have positive effect on capital adequacy while ROE and net interest margin have negative effect on capital adequacy. Liquidity, loan to total asset, and leverage have no significant effect on capital adequacy of Ethiopian banks.

A few number of studies were directed toward studying determinants of CAR in Islamic banks. Abusharba, et al., (2013) analyzed the determinants of the CAR in the Indonesian Islamic banks. The study found that profitability and liquidity are positively related to CAR. Non-performing financing is significant but negatively related to the capital adequacy ratio. On the other hand, depositors’ funds and operational efficiency have no significant effect on capital adequacy of Indonesian Islamic banks. Moreover, it was found that Indonesian Islamic banks have excessive funds to meet their obligations and protect the owners of capital. Abdul Karim et al., (2013) conducted a research to examine capital adequacy, lending, and deposit behavior of conventional and Islamic banks. The study findings reported that there are positive relationships between CAR and deposits and loans growth in both Islamic and conventional banks.

The preceding studies focused on bank specific determinants; little number of studies considered market and macroeconomic factors such as GDP growth rate, inflation rate, stock market index, real interest rate, and etc. in their analysis. Recently, Ben Moussa (2018), studied a sample of 18 banks in Tunisia, and found that ROA, net interest margin, liquidity, inflation rate, foreign ownership, and private ownership affect significantly bank capital. Badalashvili (2016) analyzed the determinants of capital adequacy ratio in the banking sector of Greece. The findings indicated that ROA, net interest margin, and inflation do not have an influence on how the capital adequacy ratio is determined. Non-performing loans, asset structure, and unemployment seems to have strong impact on capital adequacy ratio of Greek banks. Aktas et al. (2015), evaluate the impact of bank-dimensional and environmental
factors on bank’s capital adequacy ratio in South Eastern European region. The results show that among the bank dimensional factors, size, ROA, leverage, liquidity, net interest margin, and risk have statistically significant effects in determining CAR. Among the environmental factors, economic growth rate, market index, deposit insurance coverage, and governance have statistically significant effects in determining CAR for the banks investigated. Mili et al. (2014) examined the impact of factors such as economic growth and real interest rate on CAR, and found that economic growth has a positive and significant impact on capital ratio, while real interest rate shows significantly negative. Additionally, Ogere et al. (2013) and Williams (2011) investigate the relationship between inflation and capital adequacy in Nigeria, and concluded that inflation has negative relationship with bank capital base.


The above studies have not reached the same findings and conclusions. They provided different and contrary results in terms of the set of factors having an impact on CAR. Moreover, some factors were found having positive impact in some studies, and the same factors were found either having negative impact or do not having any impact at all. This is may be due to the fact that these studies are conducted in different countries with different cultures, and using different methods and different periods.

To the knowledge of the authors, with the exception of Alajmi and Alqasem study (2015), no similar research has been conducted in Kuwait. Moreover, Alajmi and Alqasem study considered only the conventional banks and investigated the impact of bank specific factors on the CAR using data covering the period from 2005 to 2013. The present study extends Alajami and Alqasem study by investigating the CAR determinants not only for conventional banks but also for Islamic banks. Moreover, the present study investigates additional bank specific factors as well as two macroeconomic factors that might help in explaining banks managements’ strategies toward CAR for 8-year period covering the years from 2009 to 2016.

3. Research Objective, Questions, and Hypothesis

3.1. Research Objectives

As mentioned, there are legal requirements on banks’ capital structure formulating the minimum capital level. Practical experience as well as the results revealed by related studies indicated that banks maintain capital level greater than the legal requirement. This is also the situation in Kuwait. Algoman Center (2015), reported that the Kuwaiti banks maintain CAR higher than what is required either by the Basel standard (Basel III), or by the central bank of Kuwait (CBK). This was the case for both conventional and Islamic banks, and for each bank individually or on an average.

This fact suggests that there must be factors other than the legal capital requirements determining the bank’s capital structure. The main objective of this study is to investigate the relationship between two groups of factors and the Kuwaiti banks’ capital adequacy ratio. The first group consists of eight factors related to bank specific characteristics including: bank size, bank profitability (measured as ROA & ROE), asset quality (AQ), management quality (MQ), liquidity (LIQ), net interest margin (NIM), and type of bank (Islamic and Conventional). The second group consists of two factors related the macroeconomic conditions: gross domestic product (GDP) and consumer price index (CPI) as proxy for inflation.
3.2 Research Questions

Based on the research objective, this study intends to answer the following questions:

1. Is there a relationship between each of the bank-specific factors and capital adequacy ratio of Kuwaiti banks?
2. Is there a relationship between each of the macroeconomic factors and capital adequacy ratio of Kuwaiti banks?
3. Do macroeconomic factors add additional explanation for the factors affecting Kuwaiti banks’ CARs when added to the banks’ specific factors?

In order to achieve the research objective and to answer these three questions data from the annual reports of all Kuwaiti banks (5 conventional banks and 5 Islamic banks) were collected covering 8-year period from 2009 to 2016.

3.3 Variable Definition and Research Hypothesis

The main objective of this study is to investigate the relationship between two groups of independent variables and the Kuwaiti banks’ CARs as the dependent variable. As mentioned above, the first group consists of eight variables related to bank specific characteristics, and the second group includes two variable related the macroeconomic conditions.

Capital Adequacy Ratio (CAR)

Capital adequacy ratio is a measure of the amount of bank’s capital expressed as a percentage of bank’s total assets adjusted by loan loss provision and risk-free assets. A minimum CAR have been required by Basel Committee. Applying minimum CAR made by Basel Committee was designed to protect depositors and promote the stability and efficiency of the financial system (Mekonnen, 2015). The Central Bank in Kuwait adopts the Basel standard and requires that each bank should increase its capital adequacy ratio by 0.5% annually.

Independent Variables and Hypothesis

Bank Size (SIZE)

Bank size is one of the most common determinants of CAR in the existing literature. In some studies, impact of size on bank’s CAR is found to be positive; (e.g., Mekonnen (2015); El-Ansary and Hafez (2015); and Polat1 and Al-khalaf (2014) however, some other studies found this impact to be negative (e.g., Alajmi and Alqasem (2015); and Bateni et al., (2014). For the purpose of this study, the natural logarithm of total assets is used as a proxy of bank’s size, and tested the following hypothesis:

H1: There is significant association between bank size and banks’ CARs.

Type of Bank (TYPE)

Like their conventional counterparts, Islamic banks are required to operate according to the same rules that are applied to the conventional banking system. In Kuwait, both conventional and Islamic banks are required to hold paid-up capital of KD 75m ($258.4m) for local institutions and KD 15m ($51.7m) for branches of foreign banks. However, Islamic banks are allowed to adjust internal management and organizational practices to suit the requirements of sharia-compliant banking (Kuwait Finance services Analysis). None of the previous studies examines the possible relationship between type of bank and the level of its capital adequacy. The present study examines this relationship by testing the following hypothesis:

H2: There is significant association between type of bank (Conventional vs. Islamic) and banks’ CARs.

Profitability (ROA and ROE)

Profitability is used by all the previous research as a bank specific determinant of CAR. ROA and ROE are the two common indicators for measuring profitability. Masood and Ansari (2016) and Shingjergji
and Hyseni (2015) found that neither ROA nor ROE has an impact on bank’s CAR. Other studies revealed a positive impact for the ROA (e.g., Mekonnen, 2015); and Polat and Al-khalaf, 2014; Al-Tamimi and Obeidat, 2013), and a negative impact for the ROE (e.g., Mekonnen, 2015; Nuviyanti and Anggono, 2014). This study tends to examine the relationship between the two profitability measures and CAR.

**H3:** There is significant association between profitability (ROA & ROE) and banks’ CARs.

**Liquidity (LIQ)**
Liquidity refers to the ability of a bank to respond to short-term obligations. Therefore, a high liquidity ratio reduces liquidity risk and increases capital of a bank (Abusharba, et al., 2013). The results of empirical research support this concept and indicate a positive relationship between bank liquidity and CAR (e.g., Bateni et al., 2014 and Abusharba, et al., 2013). This study expects a positive relationship between liquidity and CAR, and tests this relationship using the following hypothesis:

**H4:** There is significant association between liquidity and banks’ CARs.

**Net Interest Margin (NIM)**
Net interest margin is taken as a ratio of net interest income (interest revenue – interest expense) to average total assets. This equation is used for conventional banks. For banks adopting Islamic Sharia law, we used the finance income & finance expense reported in the income statement, instead of interest income and interest expense. The impact of NIM on CAR can be detected as either positive or negative. In some studies, impact of NIM on bank’s CAR is found as having a positive impact (e.g., Aktas et al, 2015). Other studies found this impact as negative (e.g., Mekonnen, 2015). In Tunisia, Romdhane et al., (2012) and Ben Moussa (2018) found a positive impact of NIM on bank’s CAR. Whereas, Badalashvili (2016), found that NIM does not have an influence on how the CAR is determined in the banking sector in Greece. The following hypotheses is tested:

**H5:** There is significant association between NIM and banks’ CARs.

**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 numbers of their assets are at financial risk and how much allowance for potential losses they must have to make. One of the most common indicators of asset quality is the loans loss reserve to total assets ratio. This ratio has been found by El-Ansary and Hafez (2015) as one of the most significant variables expanding the variance of the Egyptian banks’ CARs. In Turkish banks, loans loss reserve has been found as having a positive impact on bank’s CAR. For the purpose of this study, loans loss reserve is used to test the relationship between asset quality and CAR in Kuwaiti banks.

**H6:** There is significant association between Asset quality and banks’ CARs.

**Management Quality (MQ)**
Management quality is an important factor behind the performance of all banks. It measures the ability of management to generate business and maintain profit. Several ratios are used to measure bank’s management quality. For the purpose of this study, loans to deposit ratio is used. A high level of loans to deposit means a higher liquidity risk that should be compensated by a higher level of capital. At the same time, a high level of loans to deposits means higher profits which consequently adds to retained earnings increasing capital and thus results in higher CAR (Shingjergji and Hyseni, 2015). Abusharba, et al., (2013) found a positive and significant relationship between loans to deposits ratio and CAR in the Indonesian banks. Similar results have been revealed by Alajmi and Alqasem (2015) in Kuwait; and Bateni et al., (2014) in Iranian banks. Using the loans to deposits ratio, the following hypothesis is tested:

**H7:** There is significant association between management quality and Kuwaiti banks’ CARs.
Macroeconomic Variables
The second group of independent variables consists of two factors related the macroeconomic conditions: gross domestic product (GDP) and consumer price index (CPI) as proxy for inflation. In Nigerian banks, Williams (2011) examined the impact of macroeconomic variables on capital base and found a negative relationship between inflation rate and bank capital. Ben Moussa (2018) concluded that inflation rate affects significantly Tunisia banks’ capital. Aktas, et Al., (2015) reported similar result for South Eastern European banks. This study test the relationship between GDP growth rate and Inflation rate on the Kuwaiti banks’ CARs.

Ho8: There is significant association between macroeconomic determinants (GDP and CPI) and banks’ CARs.

4. Data Collection and Methodology
Data used for this study covers eight years, 2009-2016. Data for each bank obtained from the annual reports provided by the bank’s website and Bayanati Database (IBS-Kuwait, 2017)\(^1\). A sample of 77 bank-year observations was obtained. Information on macroeconomic factors (GDP and CPI) was retrieved from the International Monetary Fund (IMF) website. Our sample contains in total 40 conventional bank-year observations and 33 Islamic bank-year observations as summarized in table (1).

Table 1: Data Distribution by Year and Bank Type

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank Type</td>
<td>Conventional</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Islamic</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>77</td>
</tr>
</tbody>
</table>

To test Hypotheses one through eight we constructed the following regression model:

\[
\text{CAR} = \alpha + b_1 \text{Size} + b_2 \text{Type} + b_3 \text{Profitability} + b_4 \text{LIQ} + b_5 \text{NIM} + b_6 \text{AQ} + b_7 \text{MQ} + b_8 \text{CPI} + b_9 \text{GDP} + \epsilon \tag{1}
\]

Where:

\text{CAR}: Capital adequacy ratio is a measure of the amount of bank’s capital measured as bank’s capital expressed as a percentage of bank’s total assets adjusted by loan loss provision and risk-free assets (The dependent variable)

\text{Size}: measured as natural logarithm of total assets, to test H1.

\text{Type}: categorical variable takes the value of 1 if the bank conduct its business in accordance with Islamic sharia law. Otherwise, 0 is the value given for conventional banks. This variable constructed to test H2.

\text{Profitability}: we used two variables as proxy for profitability. First, ROA which is measured as (net profit/avg. total asset) and ROE which is measured as (net profit/ avg. total equity); both variables constructed to test H3.

\text{LIQ}: Liquidity refers to the ability of a bank to respond to short-term obligations, measured as net loans/total assets. This variable constructed to test H4.

\text{NIM}: Net Interest Margin: measured as the difference between interest income and interest expense scaled by avg. total assets for conventional banks. For Islamic Sharia law banks, we used the difference between finance income and finance expense scaled by avg. total assets. This variable is constructed to test H5.

\text{AQ}: Asset Quality refers to an evaluation of the credit risk associated with any particular asset, measured as loans loss reserve scaled by total assets, and used to test H6.

\text{MQ}: Management Quality is a proxy for management ability to generate business and maintain profit, measured as Loans/Deposits, and used to test H7.

\(^1\) Database provides financial information about companies, operated by Institute of Banking Studies in Kuwait.
CPI: Consumer Price Index, is a proxy for inflation which represents the macroeconomic conditions, this variable obtained from the IMF website and used to test H8

GDP: Gross Domestic Product, another macroeconomic conditions variable. Also obtained from the IMF website and used also to test H8.

Hypotheses 1 through seven (H1, H2, H3, H4, H5, H6 & H7) depict the determinants of CAR based on bank specific characteristics. These hypotheses examine the relationship between CAR and seven bank characteristics: bank size, bank type, bank profitability, bank liquidity, bank net interest margin, bank assets quality and bank management quality. Two proxies are used to measure bank profitability: ROA and ROE. Due to multicollinearity problem occurring between the two profitability measures (i.e. ROA & ROE), equation one is constructed once to include the ROA and one more time to include the ROE as proxy for profitability. Equation 1.a and 1.b depicted below:

\[
\begin{align*}
CAR = a + b_1 \text{Size} + b_2 \text{Type} + b_3 \text{ROA} + b_4 \text{LIQ} + b_5 \text{NIM} + b_6 \text{AQ} + b_7 \text{MQ} + b_8 \text{CPI} + b_9 \text{GDP} + e \\
\text{(1.a)} \\
CAR = a + b_1 \text{Size} + b_2 \text{Type} + b_3 \text{ROE} + b_4 \text{LIQ} + b_5 \text{NIM} + b_6 \text{AQ} + b_7 \text{MQ} + b_8 \text{CPI} + b_9 \text{GDP} + e \\
\text{(1.b)}
\end{align*}
\]

As for Hypothesis 8 (H8) macroeconomic conditions impact on CAR investigated, two proxies are used CPI and GDP.

5. Research Results & Analysis

5.1. Descriptive Statistics

Table (2) provides descriptive statistics for both conventional and Islamic banks samples, as well as for the total. The table shows descriptive statistics for the study variables (the dependent variable, and the eight independent variables). The observed descriptive statistics consists of mean, median, minimum, maximum and standard deviation. For the total sample, the dependent variable (CAR), show a mean (average) of 12.8% and median of 12.1%, which is above the capital level required by both Basel requirement and the Central Bank of Kuwait. The minimum and the maximum value of CAR stood at 6.6% and 42.8% respectively. The 6.6% represents one of the 77 bank-year observations during year 2009 following the 2008’s financial crises.

Moreover, the descriptive statistics indicate that there are slight differences between the “Size” means and medians for both subsamples and the differences diminish when compared to the total sample. For example, the mean (median) for the size in the total sample is 6035.125 (3904.303), while the mean (median) for conventional banks and Islamic banks sub samples are 7257.536 (4671.844) and 4713.599 (2260.533), respectively. This difference in the size should not be of a concern as the use of natural logarithm of total assets in the regression equation would eliminate this problem when conducting our hypotheses testing. As for the rest of the variables, the means and medians are approximately equal in the 8 years for the entire sample and also for each subsample. The main conclusion from this table is that variables are not skewed based on the differences between the medians and the means for each variable.

5.2. Empirical Results

Table (3) shows the results of Pearson correlation two-tail test. These results indicate that size of the bank and AQ are significantly negatively correlated with CAR (p-values 0.00 and 0.02, respectively) providing preliminary support for rejecting both H1 and H6. Slightly less significance positive (negative) correlation observed for both GDP and LIQ, that is H8 and H4 (p-value <0.08). No similar significant relationship is observed for CAR and the other variables. However, a significant relationship is observed among the independent variables, which may indicate a multicollinearity problem. A VIF test for multicollinearity reveals that all values are below 10, which rules out any multicollinearity problem. The only exception is the correlation between ROA and ROE. To overcome this problem, we will run two separate regression models as explained at the end of the previous section, Data and Methodology.
Table (4) reports the results for regression models (1.a) and (1.b) in panels A and B, respectively. The results across both panels are consistent and there are no differences; therefore, the results interpretation covers the findings in both panels. The results reveal that there is a negative significant relationship between size of the bank and CAR. The size variable exhibits significant results at p-value less than 0.00, hence confirming our prediction (H1). This finding indicates that as bank size increases the CAR decreases. Given the coefficient of size from table (4), a one unit increase in bank size decreases bank’s CAR by 0.30 units. This finding can be explained based on the trade-off theory that as company’s size increases, it would be easier to access capital markets with lower transaction costs (Aktas et al., 2015). The result of the present research is in line with the results of Alajmi and Alqasem (2015); Juca et al., (2012a), Romdhane (2012), and Bateni et al., (2014), that is, large banks have lower CAR than small size banks.

As for H2, bank type, and as per the results reported in table 4 in both panels A and B, we find no evidence to support the hypothesis. In other words, there is no relationship between bank type (i.e. bank adopting sharia law vs. conventional banks) and CAR. Regarding bank profitability, measured by ROA and ROE, and reported separately in panels A and B respectively, the results indicate that there is a positive but insignificant relationship between profitability and CAR. Hence, we cannot confirm H3. These results are in line with results revealed by Masood and Ansari (2016), and Shingjergji and Hyseni (2015) who found that neither ROA nor ROE has an impact on bank’s CAR.

Liquidity (H4) is found to have significant negative correlation with CAR with p-value less than 0.00 on both panels. That is, as bank’s LIQ increases, its CAR decreases. The coefficient of liquidity is (-0.20) on both panels, which means a one unit increase in bank’s liquidity, the bank’s CAR decreases by 0.20 units. However, this finding is not in line with previous literature, where the relationship is always positive. One can conclude that such contradiction with previous research might be explained by dividends policy adopted by the bank.

The results for (H5) net interest margin measured by the variable NIM is reported in table 4. Both panels provide no evidence for H5. The findings complements those of Badalashvili (2016), who found that NIM does not have an influence on how the CAR is determined in the banking sector in Greece. In some other studies, impact of NIM on bank’s CAR is found as having a positive impact (Aktas et al., 2015), or having a negative impact (Mekonnen, 2015). In Tunisia, Romdhane et al., (2012) and Ben Moussa (2018) found a strong positive impact of NIM on bank’s CAR.

In contrary with previous studies, AQ (H6) is found to have significant negative relationship with CAR at p-value less than 0.00. In other words, as the quality of the asset increases, the capital adequacy decreases. This result might be explained by the skewness in the size of the banks reported in the descriptive statistics. According to Olweny and Shipho’s (2011) study of Kenyan banks, large banks have higher asset quality than smaller banks. Moreover, Al-Ansary and Hafez (2015) study of Egyptian banks reported asset quality as the most significant variable expanding the variance of the Egyptian banks’ CARs.

The results on management quality measured by the variable MQ (H7) provide strong evidence on the impact of MQ on CAR. The results are significantly positive with p-value less than 0.00. The findings indicate that higher management quality of banks will result in better and more stable banks as reflected by CAR. These findings are no different than the findings of Abusharba et al., (2013), Alajmi and Alqasem (2015) and Bateni et al., (2014). Therefore, confirming our prediction in (H7).

As for macroeconomic variables, we found a partial support for (H8). There is a negative significant relationship with the variable CPI (at p-value 0.09), which indicates that as inflation rate increases in a country the CAR decreases. These findings are in line with the findings of previous research (e.g. Williams, 2011). Such results are not observed for the variable GDP, thus providing

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2 Two regression models utilized to overcome the multicollinearity problem among the two profitability variables ROA and ROE.

3 Dividend policy is highly influenced by family ownership, an issue that has been discussed in detail by Almutairi and Alyousef (2015)
partial support for (H8). A possible explanation for such results is that bank specific variables are more important in affecting the CAR than the macroeconomic variables. Therefore, we have decided to run an ad-hoc analysis and eliminate the macroeconomic variables from the two regression equations since macroeconomic variables are not strong contributors to CAR. The new regression models for the ad-hoc analysis are:

$$\text{CAR} = \alpha + \beta_1 \text{Size} + \beta_2 \text{Type} + \beta_3 \text{ROA} + \beta_4 \text{LIQ} + \beta_5 \text{NIM} + \beta_6 \text{AQ} + \beta_7 \text{MQ} + \epsilon \quad (2.a)$$

$$\text{CAR} = \alpha + \beta_1 \text{Size} + \beta_2 \text{Type} + \beta_3 \text{ROE} + \beta_4 \text{LIQ} + \beta_5 \text{NIM} + \beta_6 \text{AQ} + \beta_7 \text{MQ} + \epsilon \quad (2.b)$$

The results tabulated in table (5) show no difference than those reported by table (4). Thus, we conclude that, in the Kuwaiti banking sector, macroeconomic variables are not of a stronger impact than bank specific variables.

Table 2: Descriptive Statistics

<table>
<thead>
<tr>
<th>Bank Type</th>
<th>CAR</th>
<th>Size</th>
<th>ROA</th>
<th>ROE</th>
<th>LIQ</th>
<th>NIM</th>
<th>AQ</th>
<th>MQ</th>
<th>GDP</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional</td>
<td>N</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>0.124</td>
<td>0.009</td>
<td>0.073</td>
<td>0.555</td>
<td>0.024</td>
<td>0.066</td>
<td>0.074</td>
<td>138.961</td>
<td>109.324</td>
</tr>
<tr>
<td>Median</td>
<td></td>
<td>0.127</td>
<td>0.01</td>
<td>0.076</td>
<td>0.586</td>
<td>0.024</td>
<td>0.063</td>
<td>0.068</td>
<td>134.725</td>
<td>109.725</td>
</tr>
<tr>
<td>Min.</td>
<td></td>
<td>0.066</td>
<td>-0.006</td>
<td>-0.069</td>
<td>0.236</td>
<td>0.019</td>
<td>0.036</td>
<td>0.04</td>
<td>105.9</td>
<td>95.7</td>
</tr>
<tr>
<td>Max.</td>
<td></td>
<td>0.174</td>
<td>0.23</td>
<td>0.145</td>
<td>0.656</td>
<td>0.03</td>
<td>0.159</td>
<td>0.151</td>
<td>174.16</td>
<td>121.945</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td></td>
<td>0.029</td>
<td>0.006</td>
<td>0.043</td>
<td>0.095</td>
<td>0.003</td>
<td>0.024</td>
<td>0.026</td>
<td>28.616</td>
<td>8.474</td>
</tr>
<tr>
<td>Islamic</td>
<td>N</td>
<td>37</td>
<td>37</td>
<td>37</td>
<td>37</td>
<td>37</td>
<td>37</td>
<td>37</td>
<td>37</td>
<td>37</td>
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<tr>
<td>Mean</td>
<td></td>
<td>0.132</td>
<td>0.006</td>
<td>0.048</td>
<td>0.574</td>
<td>0.024</td>
<td>0.045</td>
<td>0.043</td>
<td>140.083</td>
<td>110.063</td>
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<tr>
<td>Median</td>
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<td>0.067</td>
<td>0.612</td>
<td>0.025</td>
<td>0.043</td>
<td>0.044</td>
<td>154.03</td>
<td>111.19</td>
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<tr>
<td>Min.</td>
<td></td>
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<td>-0.054</td>
<td>-0.593</td>
<td>0.367</td>
<td>0.012</td>
<td>0.011</td>
<td>0.012</td>
<td>105.9</td>
<td>95.7</td>
</tr>
<tr>
<td>Max.</td>
<td></td>
<td>0.428</td>
<td>0.12</td>
<td>0.144</td>
<td>0.82</td>
<td>0.03</td>
<td>0.086</td>
<td>0.079</td>
<td>174.16</td>
<td>121.945</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td></td>
<td>0.063</td>
<td>0.014</td>
<td>0.118</td>
<td>0.117</td>
<td>0.014</td>
<td>0.021</td>
<td>0.02</td>
<td>28.874</td>
<td>8.313</td>
</tr>
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<td>Total</td>
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<td>77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>0.128</td>
<td>0.008</td>
<td>0.061</td>
<td>0.564</td>
<td>0.024</td>
<td>0.056</td>
<td>0.059</td>
<td>139.5</td>
<td>109.679</td>
</tr>
<tr>
<td>Median</td>
<td></td>
<td>0.121</td>
<td>0.009</td>
<td>0.071</td>
<td>0.588</td>
<td>0.024</td>
<td>0.058</td>
<td>0.058</td>
<td>154.03</td>
<td>111.19</td>
</tr>
<tr>
<td>Min.</td>
<td></td>
<td>0.066</td>
<td>-0.054</td>
<td>-0.593</td>
<td>0.236</td>
<td>0.012</td>
<td>0.011</td>
<td>0.012</td>
<td>105.9</td>
<td>95.7</td>
</tr>
<tr>
<td>Max.</td>
<td></td>
<td>0.428</td>
<td>0.12</td>
<td>0.145</td>
<td>0.82</td>
<td>0.03</td>
<td>0.159</td>
<td>0.151</td>
<td>174.16</td>
<td>121.945</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td></td>
<td>0.064</td>
<td>0.009</td>
<td>0.088</td>
<td>0.106</td>
<td>0.004</td>
<td>0.025</td>
<td>0.028</td>
<td>28.556</td>
<td>8.35</td>
</tr>
</tbody>
</table>

Capital Adequacy (CAR): Measured percentage of bank’s total assets adjusted by loan loss provision and risk-free assets.
Size: Measured as total assets.
ROA: (Net profit/Total Assets).
ROE: (Net profit/Total Equity).
Liquidity (LIQ): Measured as Net Loans/Assets.
Net interest Margin (NIM): Measured as the difference between interest income and interest expense.
Asset Quality (AQ): Measured as Loans Loss Reserves/Total Loans.
Management Quality (MQ): Measured as Loans/Deposits
GDP: Gross Domestic Product.
CPI: Consumer Price Index as proxy for inflation.

Table 3: Pearson Correlation

<table>
<thead>
<tr>
<th>Size</th>
<th>ROA</th>
<th>ROE</th>
<th>CAR</th>
<th>AQ</th>
<th>MQ</th>
<th>Liquidity</th>
<th>NIM</th>
<th>Type</th>
<th>Log GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>0.43*</td>
<td>0.39**</td>
<td>-0.47**</td>
<td>0.24**</td>
<td>0.37**</td>
<td>-0.17</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>0.39**</td>
<td>0.957**</td>
<td>-0.03</td>
<td>-0.19**</td>
<td>0.24**</td>
<td>-0.01</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAR</td>
<td>-0.06</td>
<td>0.61</td>
<td></td>
<td>-0.23**</td>
<td>-0.09</td>
<td>0.04</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AQ</td>
<td>-0.26</td>
<td>0.02</td>
<td></td>
<td></td>
<td>0.71***</td>
<td>0.08</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQ</td>
<td>0.02</td>
<td>0.61</td>
<td></td>
<td></td>
<td></td>
<td>0.09</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquidity</td>
<td>-0.19</td>
<td>-0.20</td>
<td>-0.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table 4: Regression Results</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Panel (A)**
\[
\text{Capital Adequacy} = \alpha + b_1 \text{Size} + b_2 \text{Type} + b_3 \text{AQ} + b_4 \text{MQ} + b_5 \text{Liquidity} + b_6 \text{NIM} + b_7 \text{GDP} + b_8 \text{CPI} + b_9 \text{ROA} + \epsilon
\]

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>t-Value</th>
<th>p-Value</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.14***</td>
<td>3.38</td>
<td>0.00</td>
<td>1.63</td>
</tr>
<tr>
<td>-0.30***</td>
<td>-5.69</td>
<td>0.00</td>
<td>1.67</td>
</tr>
<tr>
<td>-0.01</td>
<td>-0.89</td>
<td>0.00</td>
<td>3.36</td>
</tr>
<tr>
<td>-1.22***</td>
<td>-4.08</td>
<td>0.00</td>
<td>2.97</td>
</tr>
<tr>
<td>0.86***</td>
<td>3.46</td>
<td>0.00</td>
<td>1.66</td>
</tr>
<tr>
<td>-0.20***</td>
<td>-4.11</td>
<td>0.00</td>
<td>1.35</td>
</tr>
<tr>
<td>-1.28</td>
<td>-0.98</td>
<td>0.00</td>
<td>1.65</td>
</tr>
<tr>
<td>-0.04</td>
<td>-1.57</td>
<td>0.00</td>
<td>1.39</td>
</tr>
<tr>
<td>-0.09</td>
<td>-0.14</td>
<td>0.00</td>
<td>1.53</td>
</tr>
<tr>
<td>0.45</td>
<td>0.83</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

**Panel (B)**
\[
\text{Capital Adequacy} = \alpha + b_1 \text{Size} + b_2 \text{Type} + b_3 \text{AQ} + b_4 \text{MQ} + b_5 \text{Liquidity} + b_6 \text{NIM} + b_7 \text{GDP} + b_8 \text{CPI} + b_9 \text{ROA} + \epsilon
\]

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>t-Value</th>
<th>p-Value</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.23***</td>
<td>3.32</td>
<td>0.00</td>
<td>1.65</td>
</tr>
<tr>
<td>-0.03***</td>
<td>0.00</td>
<td>0.00</td>
<td>1.64</td>
</tr>
<tr>
<td>-0.01</td>
<td>0.33</td>
<td>0.00</td>
<td>3.17</td>
</tr>
<tr>
<td>-1.27***</td>
<td>0.00</td>
<td>0.00</td>
<td>2.93</td>
</tr>
<tr>
<td>0.89***</td>
<td>0.00</td>
<td>0.00</td>
<td>1.66</td>
</tr>
<tr>
<td>-0.20***</td>
<td>0.00</td>
<td>0.00</td>
<td>1.39</td>
</tr>
<tr>
<td>-1.07</td>
<td>0.41</td>
<td>0.00</td>
<td>1.39</td>
</tr>
<tr>
<td>-0.40</td>
<td>0.11</td>
<td>0.00</td>
<td>1.38</td>
</tr>
<tr>
<td>-0.08</td>
<td>0.19</td>
<td>0.00</td>
<td>1.40</td>
</tr>
<tr>
<td>0.02</td>
<td>0.66</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at the (0.01) level, ** Significant at the (0.05) level, *** Significant at the (0.01) level.

Capital Adequacy (CAR): Measured percentage of bank’s total assets adjusted by loan loss provision and risk-free assets.
Size: Measured as natural logarithm of total assets.
Type: Categorical variable takes the value of 1 if the bank conduct its business in accordance with Islamic sharia law, 0 otherwise.
Asset Quality (AQ): Measured as Loans Loss Reserves/Total Loans.
Management Quality (MQ): Measured as Loans/Deposits
Liquidity: Measured as Net Loans/Assets.
Net interest Margin (NIM): Measured as the difference between interest income and interest expense.
GDP: Natural logarithm of Gross Domestic Product.
CPI: Natural logarithm Consumer Price Index as proxy for inflation.
ROA: (Net profit/Total Assets).
ROE: (Net profit/Total Equity).
Table 5: Regression Results

| Panel (A) |  |  |  |  |  |  |  |  |  |
|-----------|---|---|---|---|---|---|---|---|
| Capital Adequacy = $a + b_1$Size + $b_2$Type + $b_3$AQ + $b_4$MQ + $b_5$Liquidity + $b_6$NIM + $b_7$ROA + $e$ | (Constant) | $b_1$Size | $b_2$Type | $b_3$AQ | $b_4$MQ | $b_5$Liquidity | $b_6$NIM | $b_7$ROA |
| Coefficient | 0.49*** | -0.30*** | -0.01 | -0.93 | 0.69*** | -0.16 | -0.62 | 0.39 |
| t-Value | 8.95 | -5.71 | -0.95 | -3.47 | 2.93 | -3.83 | -0.50 | 0.72 |
| p-Value | 0.00 | 0.00 | 0.35 | 0.00 | 0.00 | 0.00 | 0.62 | 0.47 |
| VIF | 1.54 | 1.66 | 2.60 | 2.57 | 1.10 | 1.16 | 1.16 | 1.51 |

| Panel (B) |  |  |  |  |  |  |  |  |  |
|-----------|---|---|---|---|---|---|---|---|
| Capital Adequacy = $a + b_1$Size + $b_2$Type + $b_3$AQ + $b_4$MQ + $b_5$Liquidity + $b_6$NIM + $b_7$ROA + $e$ | (Constant) | $b_1$Size | $b_2$Type | $b_3$AQ | $b_4$MQ | $b_5$Liquidity | $b_6$NIM | $b_7$ROA |
| Coefficient | 0.49*** | -0.03*** | -0.01 | -0.99*** | 0.71*** | -0.16*** | -0.45 | 0.01 |
| t-Value | 8.92 | -5.50 | -1.04 | -3.79 | 3.02 | -3.85 | -0.37 | 0.24 |
| p-Value | 0.00 | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | 0.71 | 0.81 |
| VIF | 1.55 | 1.64 | 2.44 | 2.54 | 1.11 | 1.21 | 1.21 | 1.39 |

* Significant at the (0.01) level, ** Significant at the (0.05) level, *** Significant at the (0.01) level.

Capital Adequacy (CAR): Measured percentage of bank’s total assets adjusted by loan loss provision and risk-free assets.
Size: Measured as natural logarithm of total assets.
Type: Categorical variable takes the value of 1 if the bank conduct its business in accordance with Islamic sharia law, 0 otherwise.
Asset Quality (AQ): Measured as Loans Loss Reserves/Total Loans.
Management Quality (MQ): Measured as Loans/Deposits
Liquidity: Measured as Net Loans/Assets.
Net interest Margin (NIM): Measured as Loans/Deposits
ROA: (Net profit/Total Assets).
ROE: (Net profit/Total Equity).

6. Summary, Limitation and Future Research
The findings of existing literature indicated that banks maintain CARs higher than the standard required either by the international or national regulatory bodies. This fact suggests that there are some factors other than the legal capital requirements that help in determining and understanding banks’ capital structure. The objective of this study is to investigate the impact of seven bank-specific factors and two macroeconomic factors on banks’ CARs in Kuwait. Annual data from all Kuwaiti listed banks is used for the period of eight years from 2009 to 2016.

A precursor to conducting the cross-sectional analysis is determining that a significant relationship existed between bank-specific factors and Kuwaiti banks’ CARs. The results indicate a significant negative relationship between CAR and bank size, assets quality, and bank liquidity. On the other hand, the results revealed that, management quality is positively associated with CAR. Type of bank have no significant relationship with CAR. An interesting finding in this study, contrary to previous literature, is that we found that liquidity is negatively associated with CAR; banks with high liquidity experience a lower CAR than banks with low liquidity. In addition, another interesting finding is the absence of the role of profitability, measured by ROA and ROE, in determining Kuwaiti banks’ CARs.

As for macroeconomic factors, we found partial support for our hypotheses; only inflation rate is negatively associated with CAR. Based on the findings on microeconomics variables, an ad-hoc analysis is carried on by eliminating both GDP and CPI variables. The cross-sectional analysis is conducted to explore whether macroeconomic factors add additional explanation for the factors affecting Kuwaiti banks’ CARs when added to the bank’s specific factors. The results, as reported using only bank-specific factors, show no difference than those reported when both bank-specific factors and macroeconomic factors are included together in the analysis.

This result suggested that, in the Kuwaiti banking sector, macroeconomic variables are not of a stronger impact on bank’s CAR than bank specifics. Specifically, Bank Size, Assets Quality,
Management Quality, and Liquidity are strong determinants of Kuwaiti banks’ CARs. The results are important for regulators, practitioners and academia. The results are also important for professionals (i.e. regulators, shareholders, and monitoring bodies), since they provide clear evidence that imposed minimum capital ratio by either international or national authorities, is for the benefit of shareholders. This is obvious by the conclusions of our results about the internal factors impact on CAR. Thus requiring more transparency of the bank’s management about the factors that affect CAR. The main contribution in our opinion of this study is that it will provide in depth seen for researchers and regulators, especially after knowing that macrocosmic variables are not significant in Kuwait as other countries.

A few limitations should be noted. Despite our efforts to answer the research questions raised earlier in sub-section 3.2, one cannot limit the variables that affect CAR to those we have included in our study. Therefore, we only can draw inferences about the relationships that existed between CAR and the variables included in our study, since there might be other variables affecting CAR that we can get our hand on but were not mentioned by the early research. Such limitation are observed in all studies and not limited to this study and are accepted by the research community. Future research might consider this limitation and avoid it in the future.

Moreover, the small sample of our study is considered as another limitation since it is limited to the Kuwaiti market. As researchers, our interest is to answer this question for the Kuwaiti market, especially after the recent upgrade for the Kuwait Stock Exchange (KSE) from a frontier market to a secondary emerging market by FTSE effective on September 2018. This upgrade increases our curiosity as researchers to examine our hypotheses in this market. Future research might consider including a sample from the other GCC countries. We believe this paper should be looked at as building blocks for studies to come to compare KSE before and after the FTSE upgrade.

References


