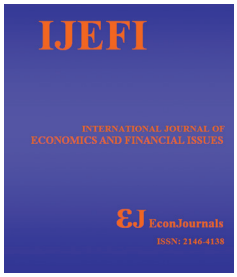

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# Shareholders' Value of Saudi Commercial Banks: A Comparative Evaluation between Islamic and Conventional Banks using CAMEL Parameters

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**ABSTRACT**

Islamic banks are playing an important role in the financial sector in various economies, especially in Islamic nations. They provide most of the banking services as are provided by the conventional banks, albeit different in nomenclature and specific characteristics. So far, however, no econometric study has been reported in the literature which analyses and compares the contribution to shareholders' value by Islamic and conventional banks. This paper uses pooled OLS and random effect model to investigate and compare the contribution to shareholders' value by the Islamic and conventional banks in Saudi Arabia over the period 2000-2015. Our results indicate that Islamic banks in Saudi Arabia contribute more to the shareholders' value than conventional banks. We find that higher capital ratio and credit risk lead to a decline in shareholders' value of the conventional banks but this is not true in the case of the Islamic banks. We also find that higher level of loans decrease the conventional banks' shareholders' value but increase the same in the case of the Islamic banks. In contrast to Islamic banks, we find that conventional banks with higher liquidity have a lower shareholders' value. Lastly, our results indicate that in general, shareholders' value is associated negatively with declines in cost efficiency and bank size. Policy implications and possible strategic interventions have also been discussed.

**Keywords:** Shareholders' Value, Islamic Banks, Conventional Banks, CAMELs Model, Saudi Arabia
**JEL Classifications:** G20, G21, G01, G24, C23, L25, E40, O16

## 1. INTRODUCTION

In view of the fact that the banking system plays a critical role in the economic development of any country, an ongoing evaluation of the financial performances of banks assumes critical importance not only to the regulators but also to other policy planners in the country. Efficiency in the financial performance of banks is also a key to the balanced economic development of any country.

One of the most important challenges faced by bank managers, therefore, is how to optimally use their scarce financial resources available at their command to ensure intermediation and productive efficiency and contribute to shareholders' value. In-depth analysis and evaluation of the financial performance of different banks can identify not only their areas of strengths but also their underlying weaknesses that enable the stakeholders to initiate appropriate corrective action. In other words, analysis of financial performance provides an insight into how efficient a bank is in using its assets to generate profits and how the financial health was over a given period of time.

The banking sector, across the globe, has experienced profound changes over the past two decades. Globalization, deregulation, financial innovation, automation etc., have a major impact on the performance of the banking sector, Saudi Arabia being not an exception. Commercial banks in Saudi Arabia have undergone immense regulatory and technological changes since financial sector reforms in 1991. Saudi Arabian banks are facing increasing competitive market and other operating costs as a result of financial and technological innovation. In addition, they are also confronted with the rising regulatory cost in the aftermath of the recent global financial crisis. These changes had a dramatic effect

on the performance of the commercial and Islamic banks in the Kingdom of Saudi Arabia.

It needs to be highlighted that the Middle-East countries, particularly the oil-rich Gulf Cooperation Council (GCC) states, are increasingly becoming the destination for international investments. As a result, understanding the drivers of performance of the banking industry in this region is becoming increasingly important. This is particularly true for the largest economy in the GCC - Saudi Arabia, where in addition to its traditional role, the entire equity brokerage functions are also carried-out by the banks in the country.

Furthermore, Saudi Arabian Monetary Agency (SAMA), the central bank of the country established in 1952, has issued a number of rules and regulations to ensure orderly activities in the financial sector in the Kingdom, to improve its services, to promote governance and transparency, to protect the rights of its customers, and also to foster a competitive environment in the country. It also contributed to the provision of better financial services by banks to meet the emerging needs of the market at competitive prices. Up to the end of July 2015, SAMA has licensed 12 banks, 4 companies to conduct real estate financial activities and financial leasing, and 4 companies to carry out other financial activities. SAMA has also granted initial approvals for 11 applications for banking licenses, pending the completion of the legal requirements of the Ministry of Commerce and Industry (SAMA, 2015).

Several countries have set different standards for evaluating the financial performance of banks by using indicators of banking efficiency measurement, profitability measurement etc. In the early 1970s, federal regulators in the USA developed the CAMELs rating system to assess the health of banks. In 1979, the Uniform Financial Institutions Rating System is adopted to provide federal bank regulatory agencies with a framework for rating financial condition and performance of individual banks (Siems and Barr, 1998). CAMEL model aims to provide a consistent and accurate estimation on the financial health of banks regarding the bank capital, asset quality, management, earning ability, and liquidity which facilitates off-site and on-site investigations by the regulator and timely supervisory response to reduce the adverse effects of market forces on the health of the banks (Dang, 2011). The values of the CAMEL parameters validate the robustness of the health of banks and their ability to face market risk.

Several studies have been undertaken on the subject of the financial performance of commercial banks in many developed or emerging countries. There is, however, no comparative analysis between the financial performances of the listed Saudi Islamic and conventional banks using CAMELs model (Abraham, 2013; Akhtar, 2010; Almazari, 2013; Almumani, 2013; 2014). This study fills this important gap in the literature by looking at the financial performances of the Islamic and conventional bank on a comprehensive basis and hence represents an important contribution relevant to all concerned. The present study seeks to analyse the financial performance of the Islamic and conventional bank banks in the Kingdom of Saudi Arabia using CAMELs model over the period 2000-2014.

Our paper contributes to the banking literature in the following ways. First, to the best knowledge of the researchers, for the first time, both accounting-based and market-based measures are applied to measure bank shareholders' value. In other words, banking literature has only focused on the effect of CAMELs model on bank profitability (return on assets [ROA], return on equity [ROE], and net interest margin [NIM]), while their effect on bank shareholders' value has not been examined so far as is done in our study, despite that market-based shareholders' value (Tobin's Q) reflects the current discounted value and future likely earnings (Jonghe and Vennet, 2008). Second, we also analyse and compare between Islamic and conventional banks separately in our study. Third, we employ both of the traditional estimators of panel data: Pooled-OLS and random effects model to capture the relationship between CAMELs model and bank shareholders' value for both Islamic and conventional banks.

The remainder of the paper is structured as follows. Section 2 highlights the relevant literature and overview of the Saudi Arabian banking industry. Section 3 explains the data and methods used. Section 4 outlines the findings, and Section 5 concludes.

## 2. LITERATURE REVIEW

### 2.1. Related Literature on Bank Performance

Sangmi and Nazir (2010) examine the financial performance of the two main commercial banks in the Northern part of India using the CAMEL model for the period of 2001-2005. Their findings show that the two banks under review have a satisfactory and sound position based on the results of their management capability and liquidity, asset quality, and capital adequacy. Ongore and Kusa (2013) also study the impact of CAMELs models on 37 Kenyan commercial banks' profitability over the period 2001-2010 using multiple regression models. The findings show that capital adequacy, asset quality, and management efficiency are significantly related to ROA, ROE, and NIM, while liquidity management is insignificantly related to all profitability measures.

Shah and Jan (2014) evaluated the financial performance of 10 private commercial banks in Pakistan for the period 2006-2010 using ROA and interest income as a measure of performance. Using OLS regression, the findings show that ROA is negatively related with operational efficiency and bank size. Meanwhile, assets management ratio is positively related with ROA. There is a positive relationship between bank size and interest income, and a negative relationship between asset management and operational efficiency with net interest income.

Choong et al. (2012) examined the performance of 11 Malaysian Islamic commercial banks from the period 2006-2009. Their findings show that liquidity influence financial performance of Islamic commercial banks in Malaysia. In addition, the credit risk has a strong positive relationship with ROA and ROE. Using ROA and NIM for the period of 1995-2010 for 78 commercial banks in Latin America, Jara-Bertin et al. (2014) find that the relationship of bank' performance is positively significant with specialization degree and size, but the association with credit risk, operational inefficiencies, and liquidity risk (LIQR) is negative.

In Argentina, Doyran (2013) finds that the relationship among operating expenses (OE), liquidity and leverage is positive; the relationship between ROA and debt to total assets ratio is negative; while there is a positive relationship between NIM and OE. Arif and Anees (2012) find that the relationship between Pakistan banks' profitability and LIQR is negative and significant, while the relationship with non-preforming loans and liquidity gap is negative.

Akhtar (2010) uses interest expenses and non-interest expenses as inputs; and net interest income; non-interest income as outputs to assess the efficiency of 11 domestic banks listed on the stock exchange of Saudi Arabia for the period 2000-2006 using data envelopment analysis (DEA) Malmquist productivity index (MPI) to examine the change in total productivity. The findings show that there is an improvement in the productivity and gains of productivity resulting from technological development, for the findings on MPI; while the findings for DEA show there are technical inefficiencies. Almumani (2013b) evaluates the relative efficiency of 10 Saudi domestic banks (nine of them are listed on the Saudi stock exchange, while one is the national commercial bank which is not listed) from 2007 to 2011 using DEA and total deposits and total expense as inputs while used total loans and total investment are used as outputs. The findings of the study show that there is efficiency in resources of banks. Furthermore, the efficiency degree of banks is very stable and high, especially for the smaller banks. In addition, the Saudi Arabian banking sector is less risky due to the higher capital adequacy ratio (CAR).

Abraham (2013) examines the foreign ownership of 10 Saudi Arabia commercial banks listed during 2008-2009 using ROA, ROE, Tobin's Q, Tire-1 capital ratio, loan to assets, NIM, profit margin and assets to equity. Applying traditional parametric tests and non-parametric tests, the results show that foreign banks are more aggressive from where decreased capital adequacy, increased the financial leverage, higher loan to total assets, higher ROE and Tobin's Q. Almumani (2013a) estimates the LIQR management of 10 Saudi and 14 Jordanian banks from 2007 to 2011 using bank size, investment to asset ratio, capital to assets ratio, debt to equity ratio and loan to deposit ratio, ROA and ROE as independent variables. The findings show that liquidity position of Jordanian banks is higher than that of Saudi banks; this aided the banks in Jordan to pay off their debts and expose them to more risk in profits. Saudi banks have better ROE and ROA than Jordanian banks, indicating more profit is being generated by Saudi banks through the efficient and effective use of its resources.

Almazari (2013) assesses the cost income ratio, capital adequacy and performance of banks in Saudi Arabia for the period 2007-2011 using ROA and ROE as dependent variables; and total equity capital to total assets ratio, the cost to income ratio and bank size as core independent variables. The findings show that ROE and ROA are negatively associated with capital ratio; efficiency of Saudi Arabian banks is negatively associated with their profitability. Finally, Almumani (2014) studies the financial performance of Saudi commercial banks listed on Saudi stock exchange during 2007-2011. Using the ratio analysis and variables as well as inter company's analysis and trend analysis, the results show that there is a negative relationship between total assets, cost to income ratio and OE with the profitability of Saudi banks. The relationship between operating income and profitability is positive. In addition, Saudi joint banks are more able to make the profits, are dominant in ROE and absorb loan losses; however non-joint Saudi banks are more dominant in ROA and in absorbing asset losses.

Previous studies applying data either from emerging or developed economies and have provided mixed results relating the association between profitability and some bank-specific factors. Furthermore, banking literature has only focused on the effect of CAMELs factors on bank profitability, while their effect on bank shareholders' value has not been examined so far. Previous studies also suggest that Tobin's Q is used to estimate the market-based shareholders' value rather than stock return for listed banks because it reflects the current discounted value and future likely earnings (Jonghe and Vennet, 2008).

## 2.2. Review of Saudi Arabian Banking Industry

A review of the history of commercial banks development in the Kingdom of Saudi Arabia shows that SAMA through the duties assigned to it and collaboration with banks has worked to build a solid and modern banking sector, has been able to meet local needs for funding and provision of banking and financial services. SAMA is guiding banks to provide better banking services across the country. SAMA emphasizes that banks work on the principles of sound banking at par with the best international standards and practices. SAMA has been focusing on strengthening the financial structure of the banks and development of internal systems: Administrative, accounting and control. SAMA also focuses on human capital development to ensure management and staffs are up-to-date with modern and efficiency banking services and system.

The Saudi economy has witnessed a comprehensive growth across various sectors and activities over the past 15 years. The annual real growth of gross domestic product (GDP) averaged at about 5.2%; and the contribution of the private non-oil sector was high, rising its GDP at an annual rate of 6.7%, it is expected that this pace of growth will continue in future years. However, the contribution of the oil sector is low, increasing its GDP at an average annual growth of 1.5%, which is more volatile.

Saudi Arabia had a high liquidity in the banking sector due to the increase in the oil price during 2000 until 2014, excepting the years of 2001, 2002 and 2009, when the GDP growth of the oil sector declined to one percent. Saudi bank deposits represent about 90.5% of money supply money supply (M3) at the end of 2014 (SAMA Report, 2013). Non-interest expenses to income ratio increased from 25% in 2000 to 47% in 2014, suggesting that banks with a higher percentage of non-interest expenses to income means banks have become less and less cost efficient. Total commercial bank assets as a percentage of GDP went up by 77-149.9% in 2014 compared to 72.7% in 2000. Bank deposits as a percentage of GDP grew from 43% to 111% during the same period, whereas the total bank' loans as a percentage of GDP rose from 61.4% to 89% in 2014 compared to 27.6 in 2000.

Banking intermediation is still the preferred option in the Kingdom of Saudi Arabia, as in most emerging markets. Bank credit ratio to GDP went up by 61% in 2013 compared to 2000. The banking system's performance has strengthened over the years with proactive monitoring and guidance from SAMA. The banks have average Basel CAR of over 16% during the period of analysis of this study which is well above the mandated international standard of eight percent. This is the result of appropriate prudential regulations and close supervision of banks by SAMA (Table 1) and banks assigning high priority to achieve the capital standards.

The IMF noted that the Kingdom was among the first countries to implement Basel III capital standards, and opined that Saudi banks would face no difficulties in meeting capital, liquidity and leverage ratios set out by the Basel committee. Saudi banks continue to enjoy strong asset quality metrics. The non-performing loans (NPLs) to total gross loans ratio reached a post-global crisis low of 1.3% at the end of December 2014, depicting a steady yearly decline over the past few years (1.9% at the end of 2013 and 3.3 at the end of 2009). NPLs remain comfortably covered, with the provisions to NPLs ratio at 157.4% at the end of 2014 (145.1% at the end of 2013) as per the IMF. Those ratios are likely to remain favorable overall amidst positive macroeconomic conditions, ameliorating underwriting standards and government related project lending, as banks seize the opportunity to act as a partner to the real sector in the development of the domestic economy in the period ahead.

## 3. DATA AND METHODOLOGY

### 3.1. Data

The data covers the financial performances of 11 of the 12 banks listed in the Saudi Stock Market for the period 2000-2015. The National Commercial Bank was listed in the year 2014 and hence is excluded from the study. The final sample consists of 7 conventional banks and 4 Islamic banks. The data is collected from the Bureau Van Dijk's Bankscope database provided by the library of Universiti Teknologi MARA. In the first two stages, the performances of these two banking groups are carried out and in the third stage, comparative evaluation is performed.

### 3.2. Methodology

To examine the relationship between CAMELs parameters and the shareholders' value of Saudi listed banks, the following model is estimated:

$$\Pi_{ij,t} = \beta_{0_{it}} + \beta_{1_{it}} CAR_{it} + \beta_{2_{it}} AQ_{it} + \beta_{3_{it}} OE_{it} + \beta_{4_{it}} LIQR1_{it} + \beta_{5_{it}} LIQR2_{it} + \beta_{6_{it}} SIZE_{it} + \varepsilon_{it}$$

Where, $II_{ij,t}$ is the shareholders' value of bank i at time t as expressed by, Tobin's Q, Market-to-book ratio (MB), and ROE. While CAR is CAR, assets quality (AQ) is assets quality, OE is operational efficiency, LIQR1 is net loan to total deposits, LIQR2 is liquid asset to total assets, SIZE is Bank Size, and ε is an error term.

Following Pasiouras and Kosmidou (2007), Hahm (2008) and Trinugroho et al. (2014), the model (1) is estimated by both pooled OLS and random effects and fixed effects model. In order to choose the suitable model between random effects and fixed effects, the Housman test is conducted. If the null hypothesis is rejected, it suggests that random effects model is not appropriate and fixed effects model should be used and vice versa (Gujarati, 2003). Table 2 shows the measurements of the variables that are used in the study.

## 4. FINDINGS AND DISCUSSION

### 4.1. Descriptive Analysis

Table 3 shows a summary of the descriptive statistics for the dependent and independent variables for both conventional and Islamic banks in Saudi Arabia. Table 3 reflects that the average of Tobin's Q, MB, and ROE for conventional banks are 1.23, 0.46 and 17.81 compared to 1.51, 0.77 and 12.89 for Islamic banks respectively, indicating that Islamic banks on average have higher market-based shareholders' value than conventional banks.

**Table 1: Saudi banks performance and economic indicators**

| Year | Bank performance indicators | | | | | | Economic indicators | | |
|---|---|---|---|---|---|---|---|---|---|
| | Cost ratio% | Assets/GDP) | Deposits/GDP | Loans/GDP | ROE | Capital risk-weighted assets | Real GDP | Real oil GDP | Real non-oil GDP |
| 2000 | 25 | 72.7 | 43 | 27.8 | 0.2 | 19.9 | 4.9 | 6.9 | 4 |
| 2001 | 25 | 75.1 | 46.2 | 29.8 | 18.8 | 20.3 | 1 | −3.9 | 3.5 |
| 2002 | 30 | 80.7 | 53.7 | 33.4 | 28.8 | 21.3 | 0.1 | −7.5 | 3.7 |
| 2003 | 36 | 80.4 | 53.4 | 36.4 | 20.4 | 19.4 | 7.7 | 17.2 | 3.6 |
| 2004 | 45 | 88.4 | 58.8 | 44.8 | 23.6 | 17.8 | 9.3 | 3.5 | 12.1 |
| 2005 | 45 | 95.4 | 61.5 | 56.9 | 30.4 | 17.8 | 7.3 | 6.3 | 7.7 |
| 2006 | 43 | 102.5 | 70.4 | 59.2 | 32.6 | 21.9 | 5.6 | −1 | 8.5 |
| 2007 | 38.7 | 120.8 | 80.6 | 66.8 | 0.3 | 24.9 | 6 | −3.8 | 10 |
| 2008 | 51.1 | 135 | 87.7 | 77.2 | 0.2 | 20.7 | 8.3 | 4.3 | 9.8 |
| 2009 | 55.4 | 139.4 | 95.7 | 75 | 0.2 | 16 | 1.9 | −8 | 5.3 |
| 2010 | 55.4 | 134 | 93.2 | 73.4 | 0.1 | 16.5 | 7.5 | 0.3 | 9.6 |
| 2011 | 52.7 | 134.6 | 96.2 | 74.7 | 0.2 | 17.1 | 8.6 | 11 | 8 |
| 2012 | 46.9 | 142.8 | 103.8 | 82.4 | 0.1 | 19.6 | 5.8 | 5.7 | 5.8 |
| 2013 | 47.4 | 149.9 | 111 | 88.7 | 14.7 | 18.7 | 2.7 | −1 | 5.4 |
| 2014 | 47 | 152.7 | 153.9 | 93.6 | 15.5 | 18.7 | 3.6 | 2.9 | 5.1 |

Source: SAMA reports 2000-2014, GDP: Gross domestic product

Furthermore, on average, Islamic banks show a higher ratio of AQ (3.74%), OE (53.37%), LIQR1 (80.41%) and LIQR2 (24.20%) compared to the conventional banks. It is also, however, apparent that the Islamic Banks in the country are more active in their lending activities (higher LIQ-1), have lower asset quality, have much higher OE but have better liquidity. However, Islamic banks size (16.19%) is a bit smaller than conventional banks (16.90%) during the period under reference.

## 4.2. Correlation Analysis

As presented in Tables 4 and 5, the correlation between the independent variables for both conventional and Islamic bank is <0.90. This depicts that there is no problem of multicollinearity and that interpretation of the regression coefficient should not be affected adversely (Gujarati, 2003).

## 4.3. Empirical Results

This section reports the results of regression analysis on the shareholders' value for both conventional and Islamic banks in Saudi Arabia to decipher the relationship between the market-based shareholders' value measured by Tobin's Q, MB and ROE with CAMEL factors: Capital adequacy, asset quality, operational efficiency, net loan to total deposits, liquid assets to total assets as well as bank size.

### *4.3.1. Conventional banks*

Table 6 reports the empirical results of equation 1 for bank shareholders' value measured by Tobin's Q, MB, and ROE for conventional banks in Saudi Arabia. Columns 1-3 present the regression results of pooled estimations, while Columns 4-6 report the random effect panel data. The P-values of Hausman test is significant and more than 5% (P-value equals 0.0677, 0.0795,

**Table 2: Variables definitions**

| Symbol | Variable | Measurements | Expected Sign |
|---|---|---|---|
| Dependent variable | | | |
| Tobin's Q | Tobin's Q | Tobin's Q is the ratio of the market value of equity plus the book value of liabilities divided by the book value of assets | |
| MB | Market-to-book ratio | Market-to-book ratio is the ratio of the market value of equity divided by the book value of equity | |
| ROE | Return on equity | Net income/common equity | |
| Independent variables | | | |
| CAR | Capital adequacy ratio | (Tire 1 capital+Tire 2 capital)/risk weighted assets | ± |
| AQ | Assets quality | Non-performing loan/total loan | - |
| OE | Operational efficiency | Total OE/total income | ± |
| LIQR1 | Liquidity risk 1 | Net loans/total deposits | + |
| LIQR2 | Liquidity risk 2 | Liquid assets/total assets | + |
| SIZE | Bank size | Logarithm of total assets | ± |

LIQR: Liquidity risk, OE: Operating expenses, CAR: Capital adequacy ratio, AQ: Assets quality, ROE: Return on equity, MB: Market-to-book ratio

**Table 3: Descriptive statistics**

| Variable | Conventional Banks (N=1-120) | | | | Islamic Banks (N=1-64) | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean | Minimum | Maximum | SD | Mean | Minimum | Maximum | SD |
| Tobin's Q | 1.23 | 0.99 | 2.14 | 0.25 | 1.51 | 0.95 | 7.76 | 1.09 |
| MB | 0.46 | 0.18 | 1.35 | 0.26 | 0.77 | 0.16 | 7.17 | 1.10 |
| ROE | 17.81 | 1.53 | 34.06 | 6.65 | 12.89 | −8.27 | 46.41 | 11.59 |
| CAR | 12.45 | 7.85 | 17.90 | 2.40 | 21.68 | 9.25 | 98.93 | 18.11 |
| AQ | 2.56 | 0.24 | 11.78 | 2.27 | 3.74 | 0.00 | 27.46 | 5.72 |
| OE | 34.77 | 17.74 | 53.12 | 6.27 | 53.37 | 20.15 | 160.00 | 25.68 |
| LIQR1 | 66.63 | 37.56 | 86.14 | 12.88 | 80.41 | 44.68 | 147.53 | 22.35 |
| LIQR2 | 20.11 | 3.61 | 63.43 | 17.47 | 24.20 | 0.03 | 81.68 | 14.74 |
| SIZE | 16.90 | 15.11 | 17.95 | 0.66 | 16.19 | 14.13 | 18.25 | 1.13 |

LIQR: Liquidity risk, OE: Operating expenses, CAR: Capital adequacy ratio, AQ: Assets quality, ROE: Return on equity, MB: Market-to-book ratio, SD: Standard deviation

**Table 4: Correlations analysis of conventional banks**

| Variable | Tobin's Q | MB | ROE | CAR | AQ | OE | LIQR1 | LIQR2 | SIZE |
|---|---|---|---|---|---|---|---|---|---|
| Tobin's Q | 1 | | | | | | | | |
| MB | 0.987** | 1 | | | | | | | |
| ROE | 0.796** | 0.762** | 1 | | | | | | |
| CAR | −0.444** | −0.432** | −0.500** | 1 | | | | | |
| AQ | −0.067 | −0.049 | −0.175 | −0.253** | 1 | | | | |
| OE | −0.321** | −0.285** | −0.341** | −0.229* | 0.462** | 1 | | | |
| LIQR1 | −0.318** | −0.365** | −0.135 | 0.373** | −0.649** | −0.400** | 1 | | |
| LIQR2 | 0.106 | 0.149 | 0.003 | −0.282** | 0.650** | 0.454** | −0.774** | 1 | |
| SIZE | −0.405** | −0.459** | −0.187* | 0.505** | −0.329** | −0.238* | 0.537** | −0.556** | 1 |

**Correlation is significant at the 0.01 level, and *Correlation is significant at the 0.05 level, LIQR: Liquidity risk, OE: Operating expenses, CAR: Capital adequacy ratio, AQ: Assets quality, ROE: Return on equity, MB: Market-to-book ratio

**Table 5: Correlations analysis of Islamic banks**

| Variable | Tobin's Q | MB | ROE | CAR | AQ | OE | LIQR1 | LIQR2 | SIZE |
|---|---|---|---|---|---|---|---|---|---|
| Tobin's Q | 1 | | | | | | | | |
| MB | 0.988** | 1 | | | | | | | |
| ROE | 0.133 | 0.076 | 1 | | | | | | |
| CAR | 0.168 | 0.297 | −0.272 | 1 | | | | | |
| AQ | −0.010 | −0.166 | −0.135 | −0.237 | 1 | | | | |
| OE | 0.400** | 0.431** | −0.746** | 0.317* | 0.162 | 1 | | | |
| LIQR1 | 0.396** | 0.453** | −0.111 | 0.458** | −0.544** | 0.285 | 1 | | |
| LIQR2 | −0.036 | 0.025 | −0.005 | 0.143 | 0.514** | 0.05 | −0.506** | 1 | |
| SIZE | −0.265 | −0.296 | 0.420** | −0.237 | −0.537** | −0.593** | 0.209 | −0.485** | 1 |

**Correlation is significant at the 0.01 level, and *Correlation is significant at the 0.05 level, LIQR: Liquidity risk, OE: Operating expenses, CAR: Capital adequacy ratio, AQ: Assets quality, ROE: Return on equity, MB: Market-to-book ratio

**Table 6: Regression results for conventional banks in Saudi Arabia**

| Variables | Pooled OLS | | | Random effects | | |
|---|---|---|---|---|---|---|
| | Tobin's Q | MB | ROE | Tobin's Q | MB | ROE |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| CAR | −0.031*** | −0.027** | −1.686*** | −0.031*** | −0.027** | −1.686*** |
| | (−2.98) | (−2.48) | (−7.70) | (−2.98) | (−2.48) | (−7.70) |
| AQ | −0.029* | −0.034* | −0.960*** | −0.029* | −0.034* | −0.960*** |
| | (−1.72) | (−1.94) | (−3.45) | (−1.72) | (−1.94) | (−3.45) |
| OE | −0.015*** | −0.013*** | −0.486*** | −0.015*** | −0.013*** | −0.486*** |
| | (−3.68) | (−3.17) | (−5.94) | (−3.68) | (−3.17) | (−5.94) |
| LIQR1 | −0.008*** | −0.009*** | −0.156*** | −0.008*** | −0.009*** | −0.156*** |
| | (−2.80) | (−3.08) | (−2.64) | (−2.80) | (−3.08) | (−2.64) |
| LIQR2 | −0.011* | −0.008* | 0.030 | −0.010* | −0.008* | 0.030 |
| | (−1.72) | (−1.36) | (0.67) | (−1.72) | (−1.36) | (0.67) |
| SIZE | −0.111** | −0.140*** | 1.102 | −0.111** | −0.140*** | 1.102 |
| | (−2.31) | (−2.90) | (1.21) | (−2.31) | (−2.90) | (1.21) |
| Constant | 4.726*** | 4.429*** | 9.33*** | 4.726*** | 4.429*** | 49.35*** |
| | (5.95) | (5.45) | (3.33) | (5.95) | (5.45) | (3.33) |
| Observation | 105 | 105 | 105 | 105 | 105 | 105 |
| Number of banks | 7 | 7 | 7 | 7 | 7 | 7 |
| $R^2$ | 0.421 | 0.431 | 0.538 | 0.514 | 0.535 | 0.542 |
| F | 10.04 | 10.35 | 20.39 | 60.26 | 62.11 | 122.32 |
| Significant F-value | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hausman test P value | | | | 0.0677 | 0.0795 | 0.0848 |

The values in parentheses are t-statistics, ***Significant at the 1% level, **Significant at the 5% level, *Significant at the 10% level, LIQR: Liquidity risk, OE: Operating expenses, CAR: Capital adequacy ratio, AQ: Assets quality, ROE: Return on equity, MB: Market-to-book ratio

0.0848 >5%), indicating that the null hypothesis is not rejected, which confirm that random effects model is more suitable for the regression analysis of our study (Gujarati, 2003). The pooled OLS and random effects model have found similar coefficients and signs for all the variables in the study.

It is found that CAR for conventional banks has a negative and significant effect on all measures of bank shareholders' value as measured by Tobin's Q, MB, and ROE, suggesting that higher the capital ratio, lower is the shareholders' value. Furthermore, credit risk or AQ measured by non-performing loan to total loan is negatively and significantly related to Tobin's Q, MB, and ROE, indicating that credit risk lowers shareholders' value. Furthermore, there is a negative and significant association between OE to total income (OE) and Tobin's Q, MB, and ROE for conventional banks, indicating that decline in cost efficiency has a negative impact on the shareholders' value.

In terms of LIQR, the effect of loans to total deposit ratio (LIQR1) is also negative and significant on Tobin's Q, MB, and ROE at 1% level, implying that conventional banks with a higher proportion of loans in their loan portfolios have lower shareholders' value. Similarly, liquid assets to total assets (LIQR2) is negatively significantly association with only Tobin's Q and MB at 10% level, meaning that higher liquidity with more liquidity lowers the shareholders' value of conventional banks. Finally, bank size (SIZE) has a negative and significant effect on Tobin's Q, and MB, suggesting that the larger the bank, the lower is the shareholders' value of conventional banks.

### *4.3.2. Islamic banks*

Table 7 reports the estimation results of equation 1 for Islamic banks shareholders' value measured by Tobin's Q, MB, and ROE in Saudi Arabia. The estimation results of pooled OLS estimations are reported in Columns 1-3, whereas the results of the random effects model are recorded in Columns 4-6. The Wald test and Hausman test results suggest that the random effects model is more appropriate. Similar coefficients and signs for all variables are found by both pooled OLS and random effects model.

Table 7 shows that CAR and AQ for Islamic banks are negative but insignificantly related to Tobin's Q and MB; they have a negative and significant association with ROE at the 5% and 1% level respectively. These indicate that higher capital ratio and credit risk do not have any significant impact on shareholders' value of Islamic banks but they lead to a reduction in ROE. OE to total income (OE) has a negative and significant impact on Tobin's Q, MB, and ROE, implying that declines in cost efficiency lead to decrease in shareholders' value of Islamic banks.

Moreover, the relationship between loans to total deposit ratio (LIQR1) and Tobin's Q, MB, and ROE are positive and significant, which indicates that Islamic banks are active in lending activities have a higher contribution to shareholders' value; which also indicates their expertise in the management including monitoring and control of their loan book. Meanwhile, liquid assets to total assets (LIQR2) is not significantly association with Tobin's Q and MB, while positively and significantly related to ROE, implying that bank's liquidity has no effect on shareholders' value but only on ROE. Lastly, the relationship between SIZE and Islamic banks shareholders' value (Tobin's Q and MB) is also negative and significant, while it is negative but insignificant with ROE. These indicate that smaller banks have a higher shareholders' value.

### *4.3.3. Discussion on the empirical results on comparative basis between conventional and Islamic banks*

As shown in Table 8, CAR and AQ have a negative and significant effect on all measures of bank shareholders' value Tobin's Q, MB,

**Table 7: Regression results for Islamic banks in Saudi Arabia**

| Variables | Pooled OLS | | | Random effects | | |
|---|---|---|---|---|---|---|
| | Tobin's Q | MB | ROE | Tobin's Q | MB | ROE |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| CAR | −0.013 | −0.002 | −0.384** | −0.013 | −0.002 | −0.384** |
| | (−1.24) | (−0.23) | (−2.48) | (−1.24) | (−0.23) | (−2.48) |
| AQ | −0.0004 | −0.009 | −0.465* | −0.0004 | −0.009 | −0.465* |
| | (−0.01) | (−0.21) | (−1.85) | (−0.01) | (−0.21) | (−1.85) |
| OE | −0.021*** | −0.021*** | −0.503*** | −0.021*** | −0.021*** | −0.503*** |
| | (−5.23) | (−5.60) | (−7.89) | (−5.23) | (−5.60) | (−7.89) |
| LIQR1 | 0.015** | 0.014*** | 0.219** | 0.015** | 0.014*** | 0.219** |
| | (2.70) | (2.81) | (2.41) | (2.70) | (2.81) | (2.41) |
| LIQR2 | 0.008 | 0.007 | 0.371** | 0.008 | 0.007 | 0.371** |
| | (0.69) | (0.61) | (2.16) | (0.69) | (0.61) | (2.16) |
| SIZE | −0.298*** | −0.297*** | −2.037 | −0.298*** | −0.297*** | −2.037 |
| | (−3.44) | (−3.67) | (−1.46) | (−3.44) | (−3.67) | (−1.46) |
| Constant | 6.146*** | 5.267*** | 54.91* | 6.146*** | 5.267*** | 54.91* |
| | (3.56) | (3.26) | (1.97) | (3.56) | (3.26) | (1.97) |
| Observation | 51 | 51 | 55 | 51 | 51 | 51 |
| Number of banks | 4 | 4 | 4 | 4 | 4 | 4 |
| $R^2$ | 0.545 | 0.597 | 0.761 | 0.514 | 0.570 | 0.6437 |
| F | 6.79 | 8.38 | 20.21 | 40.76 | 50.26 | 121.24 |
| Significant F-value | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hausman test P value | | | | 0.0553 | 0.0529 | 0.0694 |

The values in parentheses are t-statistics, ***Significant at the 1% level, **Significant at the 5% level, *Significant at the 10% level, LIQR: Liquidity risk, OE: Operating expenses, CAR: Capital adequacy ratio, AQ: Assets quality, ROE: Return on equity, MB: Market-to-book ratio

**Table 8: Results summary of the measures of shareholders' value for both conventional and Islamic bank in Saudi Arabia**

| Variable | Conventional Banks | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Tobin's Q | | | MB | | | ROE | | |
| | + Significant | - Significant | Insignificant | + Significant | - Significant | Insignificant | + Significant | - Significant | Insignificant |
| CAR | | ✓ | | | ✓ | | | ✓ | |
| AQ | | ✓ | | | ✓ | | | ✓ | |
| OE | | ✓ | | | ✓ | | | ✓ | |
| LIQR1 | | ✓ | | | ✓ | | | ✓ | |
| LIQR2 | | ✓ | | | ✓ | | | | ✓ |
| SIZE | | ✓ | | | ✓ | | | | ✓ |
| **Islamic Banks** | | | | | | | | | |
| CAR | | | ✓ | | | ✓ | | ✓ | |
| AQ | | | ✓ | | | ✓ | | ✓ | |
| OE | | ✓ | | | ✓ | | | ✓ | |
| LIQR1 | ✓ | | | ✓ | | | ✓ | | |
| LIQR2 | | | ✓ | | | ✓ | ✓ | | |
| SIZE | | ✓ | | | ✓ | | | | ✓ |

"+ significant" represents that the variable is significantly and positively affect the bank profitability, "- significant" indicates that the variable is significantly and negatively affect the bank profitability, "insignificant" means that the variable is not significantly related to bank profitability, LIQR: Liquidity risk, OE: Operating expenses, CAR: Capital adequacy ratio, AQ: Assets quality, ROE: Return on equity, MB: Market-to-book ratio

and ROE for conventional banks, while in the case of Islamic banks they are only significant and negative on ROE. These indicate that higher capital ratio and credit risk (lower quality of assets) leads to a decrease in shareholders' value for conventional banks, while it is not true in the case of Islamic banks. These may be due to the Islamic precepts in the Islamic banks that prohibit earning without appropriate reason. OE measured by total OE to net interest income has a negative and significant effect on all measures of bank shareholders' value (Tobin's Q, MB, and ROE) for both conventional as well as for the Islamic banks. This may be due to poor cost efficiency that affects shareholders' value negatively.

For liquidity, loan to total deposit ratio (LIQR1) has a negative and significant relationship with Tobin's Q, MB, and ROE for conventional banks, however, it has a positive and significant association with these parameters in the case of Islamic banks. These suggest that a higher proportion of loans in the loan portfolios lead to decline in shareholders' value for conventional banks but the opposite is true in the case of the Islamic banks. This may due to that the risk level in Islamic banks are limited due to their adherence to the principles of Islam. It is also reflective of the fact that better management of loans assets, including monitoring and control, restrict the proliferation of loss assets in the lending book of the Islamic banks. Liquid assets to total assets (LIQR2) is negatively significantly related to Tobin's Q and MB for conventional banks, however, it has a positive but insignificant relationship on that for Islamic banks. These suggest that higher liquidity reduces the shareholders' value in the case of conventional banks, which is however not the case in the case of Islamic banks.

Finally, bank size (SIZE) for both conventional and Islamic banks are negatively and significantly related to Tobin's Q and MB while it is insignificant with ROE: Size appears to have a negative association with shareholders' value in the case of both the groups which is contrary to the popular belief that banks in general, gain in scale and scope efficiency as they grow in size.

## 5. CONCLUSION

The purpose of this paper is to examine and compare the shareholders' value measured by Tobin's Q, MB, and ROE of the Islamic and conventional banks in Saudi Arabia as assessed in terms of the CAMEL model parameters over the period 2000-2015. We consider 15 years panel data for 11 listed banks (7 conventional and 4 Islamic banks), using both Pooled OLS as well as random effects model. To our best knowledge, this study is a first study to examine and compare the impact of CAMEL parameters on the shareholders' value for both conventional and Islamic banks.

Our results indicate that Islamic banks in Saudi Arabia contribute more to their shareholders' value than conventional banks. We find that higher capital ratio and credit risk (lower quality of assets) lead to decline in shareholders' value for conventional banks but it does not any adverse effect in the case of Islamic banks. We also indicate that declines in cost efficiency have a negative impact on shareholders' value of both conventional and Islamic banks. Our findings further suggest that greater size of loans book decrease the conventional banks' shareholders' value but the opposite is true for Islamic banks. In contrast to Islamic banks, a higher level of liquidity has a negative and significant effect on the shareholders' value of conventional banks. In general, larger size reduces shareholders' value of banks in Saudi Arabia.

Our results have several policy implications. Findings indicate that regulators and policymakers need to keep a close watch on the lending activities of the conventional banks. Clearly, Islamic banks are playing a significant role in the Saudi Arabia banking sector, which is reflected in the significant positive association between shareholders' value and the liquidity and the lending activities of this group. SAMA, the central bank of the country, may like to impress upon the importance of implementing cost efficiency measure in the case of both the conventional as well as Islamic banks. Moreover, the SAMA may like to monitor the size of the banks in the country in view of the findings that size has a negative association with the shareholders' value both in the case of conventional and Islamic Banks.

Future research in this arena may incorporate economic value added measure as an additional parameter to reflect shareholders' value. In addition, macroeconomic parameters, which have a direct bearing on the performance of banks, may also be included.

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