




## THE EFFECT OF CORPORATE GOVERNANCE MECHANISMS ON BANK PERFORMANCE EVIDENCE FROM SAUDI BANKING SECTOR



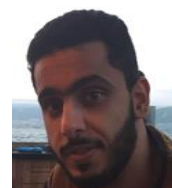
 Naif AlSagr<sup>1+</sup>  
Samir Belkhaoui<sup>2</sup>

 Abdullah Aldosari<sup>3</sup>

<sup>1</sup>Lecturer of Finance, Shaqra University, KSA  
Email: [nalsagr@su.edu.sa](mailto:nalsagr@su.edu.sa) Tel: 0096650445853

<sup>2</sup>Assistant Professor of Finance, Shaqra University, KSA  
Email: [belkhaoui.samir@yahoo.fr](mailto:belkhaoui.samir@yahoo.fr) Tel: 0021698229053

<sup>3</sup>Assistant Professor of Accounting, Shaqra University, KSA  
Email: [aldossari@su.edu.sa](mailto:aldossari@su.edu.sa) Tel: 00966555586000



(+ Corresponding author)

### ABSTRACT

#### Article History

Received: 12 June 2018

Revised: 26 July 2018

Accepted: 20 August 2018

Published: 7 September 2018

#### Keywords

Corporate governance mechanisms  
Bank performance  
Saudi banking sector  
ROA  
ROE  
Board independence  
Ownership of the largest Shareholder  
Foreign ownership  
Audit committee size.

This study investigates the effect of Corporate Governance Mechanisms on bank performance, using a sample of nine Saudi banks during the period 2011-2016. The study employed six corporate governance mechanisms to examine their effect on two performance measures; ROA and ROE. In addition, the study used three control variables to separate the effect of the corporate governance variables on bank performance. Using panel data regression, the results indicated that board independence and the ownership of the largest three shareholders were the only corporate governance mechanisms that have a negative and significant effect on ROA. Board independence and the ownership of the largest three shareholders had a negative and significant effect on ROE, while the ownership of the largest shareholder and the size of audit committee had a positive and significant impact on ROE.

**Contribution/ Originality:** This study is one of very few studies which have investigated the effect of corporate governance on the performance of Saudi banks. Most previous studies have been done before issuing the last principles of corporate governance in 2014.

## 1. INTRODUCTION

Corporate governance has attracted a great deal of debate among researchers during the last three decades. Corporate governance can be defined as the system, structure, and processes through which businesses are directed and controlled (Lee, 2008). Many previous researchers (such as Brick *et al.* (2005); Kajola (2008); Jackling and Johl (2009); Black and Kim (2012); Zaman R. (2015); Taguchi and Wanasilp (2018)) found that a good corporate governance enhances profitability and increases firm's performance.

According to Todorovic (2013) good corporate governance can prevent corporate scandals and fraud, reduce its civil and criminal liability, enhance its image and reputation and increase the confidence of stakeholders. Moreover, Narwal and Jindal (2015) indicated that for developing economies, good corporate governance is an essential tool for globalization of business organizations.

Given the importance of the banking sector in developed and developing countries, many researchers have studied the role of corporate governance in enhancing the safety and strength of the banking sector and increasing its resilience to shocks and internal or external crises.

Mulbert (2010) indicated that corporate governance is considered a central issue for the modern banking industry. While Caprio *et al.* (2007) suggested that corporate governance helps assure the efficiency of resources allocation and the soundness of the financial system. Moreover, Mangla (2012) indicated that good corporate governance is an essential element for enhancing financial performance of a bank in both developed and developing countries. Accordingly, good corporate governance is expected to improve banks' performance.

Based on the above, this study aims at examining the effect of corporate governance mechanisms on banks performance, using a sample of Saudi banks.

## 2. RESEARCH PROBLEM

In March 2014, Saudi Arabian Monetary Agency (SAMA) issued a revised version of the Corporate Governance Principles for banks operating in Saudi Arabia. Empirically, it is not yet clear how the application of corporate governance principles will affect the performance of banks. In addition, evidence-based research is insufficient to ensure whether Saudi Arabia's corporate governance principles are effective and sufficient to enhance overall banking performance and increase the efficiency and effectiveness of the Saudi banking sector.

There have been few studies investigating the effect of corporate governance on firms' performance in Saudi Arabia in the last decade (see for example Buallay *et al.* (2017); Al-Ghamdi and Rhodes (2015); Al-Smadi (2013); Al-Sahafi *et al.* (2015); Fallatah and Dickins (2012) and Fallatah and Dickins (2012); Al-Hussain and Johnson (2009)). However, most of these studies examined the effect of corporate governance on banks' performance at relatively early stages of implementing corporate governance in Saudi Arabia.

## 3. THEORETICAL FRAMEWORK

### 3.1. Literature Review

Many previous researchers examined the relationship between corporate governance and banks' performance.

Choi and Hasan (2005) examined the effect of ownership and corporate governance on Korean bank's performance. They found that the existence of one foreign director on the board improves bank performance significantly, but multiple foreign directors on the board do not improve bank's performance. Kyereboah-Coleman and Biekpe (2006) investigated the role of boards and CEOs in the performance of the Ghanaian banking sector. They concluded that the more independent the board is, the worse the profitability of a bank, also they showed a positive relationship between the board size and ROA. Tandelilin *et al.* (2007) examined the correlation among corporate governance, risk management and bank performance in the Indonesian Banking Sector. They found that there is a relationship between corporate governance and risk management and a relationship between corporate governance and bank performance which are sensitive to the type of bank ownership. Furthermore, risk management has a significant effect on bank performance and vice versa.

Yung (2009) examined the relationship between corporate governance and bank performance in Hong Kong. He found a significant positive relationship between board size and bank performance and significant negative relationship between the level of related-party loans and bank performance. Kim and Rasiah (2010) studied the relationship between corporate governance and bank performance in Malaysia during the pre and post Asian Financial Crisis using 11 banks for the period 1995 -2005. They found evidence that CAR has significant positive relationship performance. They also found that foreign owned banks have better corporate governance practices than domestically owned private banks. Al-Hawary (2011) investigated the effect of governance on the performance of Jordanian commercial banks. He measured corporate governance using many mechanisms, while he measured the bank performance by Tobin's Q. He found that CEO duality, and percentage of non-executive directors had

statistically significant positive effect on performance; whereas leverage had statistically significant negative effect on performance.

Fanta *et al.* (2013) examined the corporate governance mechanisms and their impact on the performance of commercial banks in Ethiopia. They assessed the relationship between selected internal and external corporate governance mechanisms and bank performance as measured by ROE and ROA. They found that board size and existence of audit committee had a significant negative effect on bank performance, while bank size had a significant positive effect on bank performance. Similarly, capital adequacy ratio, as a measure of external corporate governance mechanism, had a statistically significant positive effect on bank performance. James and Joseph (2015) investigated the influence of corporate governance mechanisms on the bank performance, using a sample of 18 Malaysian banks during the period (2009-2013). They found that the regulatory mechanisms were the most important governance mechanisms that affect bank performance. Bhattra (2017) investigated the relationship between financial performance and corporate governance based on a sample of 13 commercial banks in Nepal during the period 2010-2015. He examined the effects of board size, audit committee, and a portion of independent directors on return on equity and nonperforming loan. He found that the board size negatively impacts the financial performance of commercial banks in Nepal whereas audit committee size and a portion of independent directors positively impact the financial performance of commercial banks in Nepal.

There have been number of studies investigating the issues relating to effect of corporate governance on banks performance in Saudi Arabian firms. Al-Hussain (2009) investigated relationships between the efficiency of corporate governance structure and bank performance. He found a strong relationship between the efficiency of corporate governance structure and bank performance when using return on assets as a performance measure, while when using stock return as a performance measure, he found a weak positive relationship between the efficiency of corporate governance structure and bank performance. Al-Smadi (2013) examined the relationship between corporate governance and banks' performance and risk in Saudi Arabia for the period 2008-2013. He used seven corporate governance variables, and three measures of ownership structure. He found that board's size, committees of the board of directors; ownership concentration and institutional ownership have a significant impact on bank's performance.

Al-Sahafi *et al.* (2015) examined the relationship between corporate governance variables and financial performance of all listed banks in Saudi Arabia for the period 2009-2012. They used different variables of corporate governance (board size, independence, CEO status, and audit committee and ownership concentration) and three measures of financial performance (ROA, ROE and Tobins' Q). Their results showed that board size, board independence, and bank size have a significant positive relationship with banks' financial performance, whereas ownership concentration and leverage ratio have a significant negative association with banks' financial performance. However, the CEO status, audit committee size, and audit committee independence are not related to banks' financial performance.

Meteb (2015) reviewed theoretically the various concepts, main features and objectives of corporate governance, the fundamentals upon which governance is based, and the internal and external determinants that control the performance of governance. He also identified the status quo of the corporate governance in Saudi Arabia.

Alhassan *et al.* (2015) examined the determinants of financial performance by Saudi listed banks during the period of 2007-2012. They used three corporate governance mechanisms namely; board size, board composition, and board meeting and two firm variables namely firm size and leverage. Their results indicated that firm size is the only significant variable associated with the financial performance measured by ROA.

Al-Maghzom (2016) investigated whether the levels of voluntary risk disclosure in Saudi listed banks are value-relevant or not and explored corporate governance and the demographic traits of top management teams as the determinants of voluntary risk disclosure practices. He found that external ownership, audit committee

meetings, gender diversity, education levels and profitability are primary determinants of risk disclosure practices in Saudi listed banks. Also, he found that there is a positive significant association between the levels of voluntary risk disclosure and firm value.

Bace (2017) examined the effect of corporate governance on performance of Saudi Arabian banks over the period 2010–2015. He measured bank performance by return on equity (ROE) and measured corporate governance by a number of factors including board size, number of board committees and the ratio of independent directors to total. He found that the number of board members is positively linked with Saudi bank profitability, while the opposite relation is observed for independent directors and the number of the committee.

### 3.2. Corporate Governance Mechanisms

The literature testing the relationship between corporate governance and banks' performance used different corporate governance mechanisms including; CEO duality, board size, board structure, non- executive directors, board committees, ownership structure and concentration and others. The results of the studies were mixed for all the individual mechanisms of corporate governance, which support the fact that not all the elements of corporate governance have a positive impact on performance.

For example, Kyereboah-Coleman (2008) indicated that the size of audit committee has a positive effect on performance. Black and Kim (2012) found that audit committee is positively correlated with firm performance in large companies. While Kajola (2008) did not find a significant impact of the audit committee on firm performance.

Regarding size of the board, Kajola (2008); Jackling and Johl (2009) and Adams and Mehran (2012) found that board size has a positive impact on performance. Similarly, Setia-Atmaja *et al.* (2009) argued that larger boards could improve financial performance. Nevertheless, Cheng (2008); Guest (2009) and Uwuigbe and Fakile (2012) found negative correlation between board size and firm performance in developed economies.

Regarding the existence of composition of non-executive directors on the board, Weir *et al.* (2002); Mashayekhi and Bazaz (2008) and Gupta and Fields (2009) found a positive correlation between the proportion of non-executive directors and firm performance. Bozec (2005) and Guest (2009) found a negative correlation between the proportion of non-executive directors and firm performance, while Klein (1998) and Kajola (2008) didn't found a link between the two variables.

The structure of board was also used in previous studies as a feature of corporate governance. Bhagat and Black (2001) indicated that the right mix of internal and external managers can enhance performance. Ehikioya (2009) examined the link between corporate governance structure and firms' performance in Nigeria, and he did not find a relationship between board structure and firm performance. Becht *et al.* (2011) revealed that banks with less independent boards incurred fewer losses, while Stepanova *et al.* (2012) found a positive relationship between board independence and bank performance.

With respect to the managerial ownership, Brick *et al.* (2005) found no correlation between managerial ownership and firm performance. While Kaserer and Moldenhauer (2005) found of a positive link between them.

Agrawal and Knoeber (1996) and Grove *et al.* (2011) found that the separation between CEO and chairman leads to better financial performance.

### 3.3. Bank Performance

Usually, the financial performance of banks is measured using a number of financial ratios. However, profitability ratios are considered the most important ratios in assessing bank performance as they offer clues about the ability of the bank to undertake risks and to expand its activity.

The widely used profitability ratios to assess banks' performance are return on assets (ROA) and return on equity (ROE). These measures have been used by analysts and bank regulators in assessing bank performance,

forecasting market structure trends (to predict bank failures and mergers) and for other purposes where a profitability measure is wanted (Gilbert and Wheelock, 2007; Abedin and Dawan, 2016).

1. Return on Asset (ROA): This is the primary ratio that relates the bank's income to the bank's total assets. ROA provides information about management's efficiency in using the assets of the business to generate income (Bodie *et al.*, 2009).
2. Return of equity (ROE): This ratio relates the bank's income to the shareholder's equity and measures the financial performance and the managerial efficiency of bank by identifying how much profit a bank generates on the money invested by shareholders. The higher ROE, the more efficient is the financial performance or profitability of a bank (Adam, 2014).

### 3.4. An Overview of the Saudi Banking Sector

Banking sector in Saudi Arabia is one of the most important economic sectors. It has been able to grow quantitatively and qualitatively, and able to provide funding requirements for the national economy (Al-Smadi, 2013).

The number of banks operating in Saudi is 26 banks, of them; 12 are local banks that listed in the capital market and thus comply by the rules of the Capital Market Authority (CMA), and 14 foreign banks.

Total assets of banks operating in Saudi grew from USD 377.4 billion in 2010 to USD 601.7 billion at the end of 2016, with an average annual growth rate of 9.4%. The ratio of banks' assets to GDP accounted for 91.2%. Banks deposits increased by an average of 8.2% annually to reach USD 431.2 billion in 2016. The credit facilities also grew by 9.7% annually and stood at USD 373.4 billion at the end of 2016 (Saudi Arabian Monetary Authority (SAMA), 2017).

Regarding soundness indicators of the Saudi banking sector, non-performing loans (NPLs) remained relatively low and reached to 1.4% at the end of 2016, indicating the banks' ability to absorb any deterioration in asset quality. Despite the increase in NPLs, they remain relatively low. Also, banks' Capital Adequacy Ratio (CAR) increased to reach 19.5% in 2016, reflecting banks' strong capitalization which serves as a solid buffer to any unforeseen shocks to the quality of their assets. Moreover, banks' liquidity registered comfortable levels as the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) remained above the minimum requirements (SAMA, 2017).

### 3.5. Corporate Governance in Saudi Banking Sector

In 2012, Saudi Arabian Monetary Agency (SAMA), the central bank of Saudi, has issued principles of corporate governance for banks operating in Saudi Arabia.

In March 2014, SAMA has issued a revised version of the principles of corporate governance for banks operating in Saudi Arabia, which complements the regulations, rules and circulars previously issued by SAMA regarding the core principles of corporate governance, and the mandatory corporate governance code issued by CMA in 2006 to enhance the effectiveness of the financial market. The revised principles were intended to assist banks in enhancing their corporate governance frameworks, and to help board members and senior managers to oversee the bank's activities.

## 4. DATA AND METHODOLOGY

### 4.1. Data

The data for this study uses a random sample of 9 local Saudi banks that are listed on the Saudi Stock Exchange (Tadawul). These banks include:

1. The National Commercial Bank
2. The Saudi British Bank
3. Saudi Investment Bank
4. Banque Saudi Fransi
5. Riyadh Bank
6. Al Rajhi Bank
7. Arab National Bank
8. Bank AlBilad
9. Bank AlJazira

The study analyses the annual reports of those nine Saudi banks during the period 2011 – 2016. The study uses secondary data collected from the audited annual reports of the sample banks and from Tadawul website.

#### 4.2. Econometric Model

This study used the panel data regression to investigate the relationship between dependent variables and independent variables. The dependent variables include two widely used performance measures; return on assets (ROA) and return on equity (ROE).

The proxies that are used for corporate governance as independent variables are board size (BSIZE), board independence (INDP), the ownership of the largest shareholder (LARG1), the ownership of the three largest shareholder (LARG3), audit committee size (ASIZE) and foreign ownership (FORN).

Bank Size (SIZE), Leverage Ratio (LEV) and loans ratio (LOAN) are used as control variables. The following regression models are developed:

$$ROA_{i,t} = \beta_1 BSIZE_{i,t} + \beta_2 INDP_{i,t} + \beta_3 LARG1_{i,t} + \beta_4 LARG3_{i,t} + \beta_5 ASIZE_{i,t} + \beta_6 FORN_{i,t} + \beta_7 SIZE_{i,t} + \beta_8 LEV_{i,t} + \beta_9 LOAN_{i,t} + \varepsilon_t \quad \dots (1)$$

$$ROE_{i,t} = \beta_1 BSIZE_{i,t} + \beta_2 INDP_{i,t} + \beta_3 LARG1_{i,t} + \beta_4 LARG3_{i,t} + \beta_5 ASIZE_{i,t} + \beta_6 FORN_{i,t} + \beta_7 SIZE_{i,t} + \beta_8 LEV_{i,t} + \beta_9 LOAN_{i,t} + \varepsilon_t \quad \dots (2)$$

Where:

$ROA_{i,t}$ : is the returns on assets for bank i at time t.

$ROE_{i,t}$ : is the returns on shareholders' equity for bank i at time t.

$BSIZE_{i,t}$ : is the board size for bank i at time t.

$INDP_{i,t}$ : is board independence for bank i at time t.

$LARG1_{i,t}$ : is the ownership of the largest shareholder in bank i at time t.

$LARG3_{i,t}$ : is the ownership of the largest three shareholders in bank i at time t.

$ASIZE_{i,t}$ : is audit committee size in bank i at time t.

$FORN_{i,t}$ : is the foreign ownership in bank i at time t.

$SIZE_{i,t}$ : is the size of bank i at time t.



$LEV_{i,t}$ : is the leverage ratio of bank  $i$  at time  $t$ .

$LOAN_{i,t}$ : is the loans ratio of bank  $i$  at time  $t$ .

### 4.3. Measurement of Variables

#### 4.3.1. Dependent Variables

In order to measure banks' financial performance, this study will use two financial performance measures, namely; return on assets (ROA) and return on equity (ROE). ROA is an important measure of how well a bank is managing its business (Dickie, 2006). ROA is estimated by dividing net income over bank's total assets. ROE is a measure of how successful a bank is in using shareholders' equity (Dickie, 2006) and it is measured by dividing net income over shareholder's equity. These two measures were used extensively in previous studies to examine the relationship between banks' performance corporate governance, and the results were different depending on the used measure (Fallatah and Dickins, 2012).

#### 4.3.2. Independent Variables

Following the methodology used by previous studies such as Buallay *et al.* (2017); Al-Sahafi *et al.* (2015) and Hussainey and Al-Nodel (2008) this study will use six variables to represent governance variables.

-Board Size (BSIZE): The board of directors is the important part of the control system in any firm which is responsible for monitoring managements' action and protecting shareholders' interest (Jensen, 1993). Nahar Abdullah (2004) indicated that larger boards are expected to be more effective in monitoring management, which is consistent with the findings of Adams and Mehran (2003) and Dalton and Dalton (2005) who found a positive relationship between board size and firms' performance. Nevertheless, there are some empirical research such as Uwuigbe and Fakile (2012); Adams and Mehran (2008) and Haniffa and Hudaib (2006) who revealed a negative link between board size and firm performance. Given that the importance of board size and its effect on bank performance (Pathan *et al.*, 2007) this study will investigate this variable.

-Board Independence (INDP): many empirical researches examined the relationship between board independence and firm performance. Results of previous studies were different and contradictory. Bhagat and Black (2001) found no positive correlation between the degree of board independence and four measures of firm performance. While Becht *et al.* (2011) revealed that banks with less independent boards incurred fewer losses. Stepanova *et al.* (2012) found a positive relationship between board independence and bank performance. We measured board independence by dividing the number of independent members over the size of the board.

-Ownership concentration: The ownership structure is considered an important factor in shaping the corporate governance system (Amran and Ahmad, 2013). Within the same context, ownership concentration meaning if a firm is owned by one or few large owners (concentrated) or by multiple smaller owners (Thomsen and Conyon, 2012). This study will use two measures of ownership concentration, namely, the ownership of the largest shareholder (LARG1), and the ownership of the largest three shareholders (LARG3). According to Jensen and Meckling (1976) the concentration of ownership is beneficial to companies as large shareholdings allow for greater monitoring of managers. Nevertheless, Mura (2007) suggested a negative relationship between firm performance and the proportion of shares held by large shareholders.

-Audit Committee Size (ASIZE): The size and effectiveness of the Audit Committee could be an indicator of transparency and develops confidence in the organization (Watts and Zimmerman, 1986). Audit Committee may also play a significant role in the oversight of the company's risk management policies and programs (Ertugrul and Hegde, 2009). Kyereboah-Coleman (2008) indicated that the size of audit committee has a positive effect on performance. Therefore, this study will use audit committee size as one of corporate governance mechanisms.

-Foreign ownership (FORN): Dahlquist *et al.* (2003) indicated the existence of a close relationship between corporate governance and the portfolios held by foreign investors. This is because the existence of good corporate governance increases the confidence of foreign investors and encourages them to invest in a firm. Douma *et al.* (2006) indicated Significant differences between companies with foreign ownership and companies with domestic ownership, as companies with foreign shareholders presumably have superior access to technical and financial resources. Kiruri (2013) studies the effects of ownership structure on bank profitability in Kenya, and he found that the foreign ownership and the domestic ownership are positive correlated with bank profitability. Foreign ownership will measure by the fraction of shares held foreign investors.

#### 4.3.3. Control Variables

Many previous researches indicated that bank specific characteristics affects bank performance and may, therefore, have possible impacts on the way how corporate governance affects performance (Markarian and Parbonetti, 2007). Based on the above, and Similar to previous studies such as Arouri *et al.* (2011) and Fallatah and Dickins (2012) this study will use three bank specific factors, namely; bank size, leverage ratio, and loans ratio to separate the effect of the corporate governance variables on bank performance. Bank size (SIZE) will be measured by the natural logarithm of bank's total assets. Leverage ratio (LEV) will be measured by dividing bank's total liabilities over bank's total assets. While loans ratio (LOAN) will be measured by dividing bank's credit facilities over bank's total assets.

## 5. RESULTS AND DISCUSSIONS

### 5.1. Summary Statistics

Table 1 shows some descriptive statistics for study's variables. Based on this table, we can make the flowing observations:

#### 5.1.1. Dependent Variables:

##### -Return on Assets (ROA) and Return on Equity (ROE):

The average ROA and ROE for sample banks during the period 2011-2016 was amounted 1.9% and 12.9% respectively. ROA was ranged from 0.8% to 3.3% with a standard deviation of 0.5%, while ROE was ranged from 0.9% to 22% with a standard deviation of 5.2%. These statistics indicate that the Saudi banking sector was considered a profitable sector. Nevertheless, there are obvious differences among Saudi banks' profitability. Both dependent variables seem to follow a normal distribution as shown by Skewness, kurtosis and Jarque Bera statistics.

#### 5.1.2. Independent and Control Variables:

##### - Corporate Governance Mechanisms:

The board size (BSIZE) for sample banks during the period 2011-2016 averaged 9 to 10 members, with a minimum number of 8 members and a maximum of 11 members.

The average of independent members of the board (INDP) reached to 35.5% of the board, and ranged from 11.1% to 62.5%, which indicating the inconsistency among Saudi banks in terms of board independence.

The average ownership of the largest shareholder (LRG1) reached 25.6% and ranged from 5.8% to 44.3%, while the average ownership of the largest three shareholders (LARG3) amounted 45.7% and ranged from 11.8% to 66.7%. These statistics may indicate concentrated ownership structure of the Saudi banks.

The size of audit committee (ASIZE) averaged almost 4 members and ranged from 3 to 5 members, which may reflect the adequate size of audit committee in the Saudi banks.



Finally, the percentage of foreign ownership (FORN) in the sample banks during the period 2011-2016 reached 15.2%, with a minimum of 0% and a maximum of 40.8%, which indicates the variability of foreign ownership in Saudi banks.

#### - Control Variables:

The average total assets (SIZE) of sample banks during the period 2011-2016 was 8.143 logarithm (about USD 37 billion), and ranged from 7.443 logarithm to 8.652 logarithm, which indicates the differences in the sizes of Saudi banks. Leverage ratio (LEV) for sample banks reached 77.8% on average, and ranged from 9.25% to 89.2%, indicating the big differences among Saudi banks in terms of their leverage.

Finally, the average of loans ratio (LOAN) represented 61.8% of Saudi banks' assets, while a minimum of 44.9% and a maximum of 67.9%, indicating the moderate credit policy adopted by those banks.

Table-1. Summary Statistics of Study's Variables

	ROA	ROE	BSIZE	INDP	LARG1	LARG3	ASIZE	FORN	SIZE	LEV	LOAN
Mean	0.0186	0.1287	9.3889	0.3551	0.2562	0.4572	3.8148	0.1517	8.1426	0.7779	0.6177
Median	0.0186	0.1320	9.0000	0.3636	0.2175	0.5261	4.0000	0.0774	8.2305	0.8605	0.6257
Maximum	0.0334	0.2203	11.0000	0.6250	0.4429	0.6669	5.0000	0.4084	8.6519	0.8921	0.6795
Minimum	0.0078	0.0089	8.0000	0.1111	0.0583	0.1183	3.0000	0.0000	7.4429	0.0925	0.4492
Std. Dev.	0.0050	0.0524	0.8560	0.1208	0.1272	0.1787	0.8259	0.1673	0.3153	0.2391	0.0514
Skewness	0.4601	-0.7586	0.2587	0.0766	-0.0024	-0.6815	0.3525	0.6600	-0.4578	-2.4590	-1.5594
Kurtosis	3.1744	3.4964	2.4807	2.3192	1.7107	2.1058	1.5795	1.6314	2.3619	7.0868	5.2628
Jarque-Bera	5.0087	5.7333	1.2091	1.0956	3.7402	5.9789	5.6583	8.1348	2.8023	91.9999	33.4058
Probability	0.0817	0.0569	0.5463	0.5782	0.1541	0.0503	0.0591	0.0171	0.2463	0.0000	0.0000
Observations	54	54	54	54	54	54	54	54	54	54	54
Cross sections	9	9	9	9	9	9	9	9	9	9	9

Source: Constructed by Author Using Data from Audited Annual Reports of the Sample Banks

## 5.2. Regression Results

### 5.2.1. Regression Results for the First Study Model

Table 2 shows the results of panel data regression for the first study model that investigates the effect of corporate governance mechanisms and other control variables on ROA. Based on this table we can note that only two corporate governance mechanisms have a significant effect on ROA, Namely; INDP and LARG3. While the other corporate governance mechanisms seem to have no effect on ROA.

The board independence (INDP) had a negative and significant effect on ROA, indicating that the increase in the percentage of independent board member will harm bank performance. This result is consistent with the findings (Becht *et al.*, 2011) who indicated that banks with less independent boards incurred fewer losses.

The ownership of the largest three shareholders (LARG3) revealed a negative and significant effect on ROA, indicating that banks with less concentrated ownership structure have a better performance. This result is consistent with the findings of Mura (2007) who found a negative relationship between firm performance and the proportion of shares held by large shareholders.

Board size (BSIZE) didn't have a significant effect on ROA, which may due to the relatively similar size of board among Saudi banks. Interestingly, the ownership of the largest shareholder (LARG1) didn't affect ROA, which may indicate the weakness of the largest shareholder in monitoring management performance. Moreover, the size of audit committee (ASIZE) had no effect on ROA, which may due to the relative stability in the number of audit committee members during study period. Finally, the foreign ownership (FORN) in Saudi banks seems to be insignificant, which may due to the relatively small share of foreign investors in most Saudi banks.

Two control variables; banks size (SIZE) and leverage ratio (LEV), revealed a positive and significant effect on ROA, indicating that larger bank are more profitable, and the bank with higher leverage ratio (that is depending

less on equity) have a higher ROA. However, loans ratio didn't had a significant effect on ROA, which may due the relative stable loans ratio among Saudi banks during study period.

Regarding the regression statistics, the adjusted R-squared for the model were about 52%, which represent the good explanatory power of independent variables in explaining the change in ROA. Moreover, Durbin-Watson statistic was close to 2, which indicates the absence of autocorrelation problem. Finally, F-statistic and its probability indicate the goodness of fit of the ROA model.

$$ROA_{i,t} = \beta_1 BSIZE_{i,t} + \beta_2 INDP_{i,t} + \beta_3 LARG1_{i,t} + \beta_4 LARG3_{i,t} + \beta_5 ASIZE_{i,t} + \beta_6 FORN_{i,t} + \beta_7 SIZE_{i,t} + \beta_8 LEV_{i,t} + \beta_9 LOAN_{i,t} + \varepsilon_t$$

**Table-2.** Regression Results for the First Study Model\*

Variable	Coefficient	t-Statistic	Prob.
C	-0.03081	-1.40741	0.16630
BSIZE	0.00064	0.61535	0.54150
INDP	-0.01316	-2.23044	0.03090
LARG1	0.02713	1.94635	0.05800
LARG3	-0.03499	-2.56126	0.01390
ASIZE	-0.00008	-0.12813	0.89860
FORN	0.00714	1.43495	0.15840
SIZE	0.00600	2.34722	0.02350
LEV	0.01372	3.93715	0.00030
LOAN	0.01019	0.92359	0.36070
Regression Statistics			
R-squared	0.56173		
Adjusted R-squared	0.51799		
S.E. of regression	0.00373		
Durbin-Watson stat	1.89751		
F-statistic	5.77925		
Prob. (F-statistic)	0.00003		

\* Using White (1980) heteroscedasticity standard errors and covariance.

### 5.2.2. Regression Results for the Second Study Model

Table 3 shows the results of panel data regression for the second study model that investigates the effect of corporate governance mechanisms and other control variables on ROE. A quick look at this table reveals that the results become more significant compared to ROA model.

Four corporate governance mechanisms showed a significant effect on ROE, Namely; INDP, LARG1, LARG3 and ASIZE. While the remaining corporate governance mechanisms seem to have no effect on ROE.

Similar to the results of ROA model, the board independence (INDP) had a negative and significant effect on ROE, which is consistent with the findings (Becht *et al.*, 2011). Also, the ownership of the largest three shareholders (LARG3) revealed a negative and significant effect on ROE, which is similar to the findings of Mura (2007).

Unlike the findings of ROA model, LARG1 and ASIZE became significant factors affecting ROE. The ownership of the largest shareholder (LARG1) had a positive and significant impact on ROE, which is similar to the findings of Jensen and Meckling (1976). Moreover, the size of audit committee (ASIZE) had a positive and significant impact on ROE, which is similar to the findings of Kyereboah-Coleman (2008) who indicated a positive effect of the size of audit committee on performance. Similar to the findings of ROA model, board size (BSIZE) and foreign ownership (FORN) in Saudi banks seems to be insignificant and thus have no effect on ROE.

One control variable; leverage ratio (LEV), revealed a positive and significant effect on ROA, indicating that bank with higher leverage ratio (and thus, lower equity ratio) have a higher ROE.

The adjusted R-squared for the model was about 81%, which indicates the high explanatory power of the independent variables in explaining the change in ROE. Moreover, Durbin-Watson statistic was close to 2, which indicates the absence of autocorrelation problem. Finally, F-statistic and its probability indicate the goodness of fit of the ROE model.

$$* \quad ROE_{i,t} = \beta_1 BSIZE_{i,t} + \beta_2 INDP_{i,t} + \beta_3 LARG1_{i,t} + \beta_4 LARG3_{i,t} + \beta_5 ASIZE_{i,t} + \beta_6 FORN_{i,t} + \beta_7 SIZE_{i,t} + \beta_8 LEV_{i,t} + \beta_9 LOAN_{i,t} + \varepsilon_t$$

Table-3. Regression Results for the Second Study Model

Variable	Coefficient	t-Statistic	Prob.
C	-0.09599	-0.67794	0.50140
BSIZE	0.00262	0.41970	0.67670
INDP	-0.09998	-2.87312	0.00620
LARG1	0.45354	4.95134	0.00000
LARG3	-0.41037	-5.03381	0.00000
ASIZE	0.00815	2.55548	0.01410
FORN	0.04437	1.51635	0.13660
SIZE	0.02975	2.00653	0.05100
LEV	0.21377	11.15118	0.00000
LOAN	-0.05524	-0.61462	0.54200
Regression Statistics			
R-squared	0.84139		
Adjusted R-squared	0.80895		
S.E. of regression	0.02291		
Durbin-Watson stat	1.85726		
F-statistic	25.93509		
Prob. (F-statistic)	0.00000		

\* Using White (1980) heteroscedasticity standard errors and covariance.

## 6. CONCLUSIONS

Banking sector in Saudi Arabia is one of the most important economic sectors. The number of banks operating in Saudi is 26 banks, of them; 12 are local banks and 14 foreign banks. Banks operating in Saudi witnessed a significant growth during the period 2010-2016, as assets, deposits and credit facilities of banks grew by 9.4%, 8.2% and 9.7% respectively.

Following the best international practices related to corporate governance, Saudi Arabian Monetary Agency (SAMA), issued the principles of corporate governance for banks operating in Saudi in 2012, and it issued a revised version of the principles in March 2014.

Given the importance of Saudi banking sector and based on the role of corporate governance in enhancing bank performance, this study empirically investigates the effect of corporate governance on Saudi banks' performance during the period 2011-2016. The study employed six corporate governance mechanisms to examine their effect on two widely used performance measures; ROA and ROE. In addition, the study used three control variables to separate the effect of the corporate governance variables on bank performance. The results reveal that Saudi banking sector was more efficient to maintain its profitability during the period 2011-2016 in terms of ROE and ROA. In relation to corporate governance mechanisms, the size of the board of directors of Saudi banks consists of 9 to 10 members; the ratio of independent members is 35.5%, the ownership of the largest shareholders 25.6%, while the ownership of the largest three shareholders is 4.7%. Moreover, the size of audit committee is 4 members, while the percentage of foreign ownership in Saudi banks is 15.2%. The results of the panel data regression indicated that board independence and the ownership of the largest three shareholders were the only corporate governance mechanisms that have a negative and significant effect on ROA. □

While the results of ROE model indicated that four corporate governance mechanisms have a significant effect on ROE. Board independence and the ownership of the largest three shareholders had a negative and significant effect on ROE, while the ownership of the largest shareholder and the size of audit committee had a positive and significant impact on ROE. In general, there are some concerns regarding the effectiveness of the principles of corporate governance in Saudi banking. These concerns arise from the insignificant effect of some governance mechanisms such as board size. In addition, the low level of foreign ownership may be an indicator of a poor governance structure in Saudi banks. The above results suggest many important recommendations; first, the number of independent board members in a bank board should be kept to a minimum size. Second, the ownership of the largest shareholders is an important issue that affects bank performance; therefore, it should be monitored and regulated effectively by SAMA, especially in light of bank performance. Third, the principles of corporate governance in Saudi banking sector should be revised periodically to match best international practices and should be amended considering the findings of empirical studies. Finally, future research should focus on assessing the impacts of other corporate governance mechanisms on Saudi banks' performance.

**Funding:** This study received no specific financial support.

**Competing Interests:** The authors declare that they have no competing interests.

**Contributors/Acknowledgement:** All authors contributed equally to the conception and design of the study.

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