Indian Journal of Economics and Business
Vol. 20 No. 2 (July-December, 2021)

http://www.ashwinanokha.com/IJEB.php

Bank-Specific, Government-Specific and Macroeconomic Determinants of Profitability: Evidence from the Banking Sector of Saudi Arabia

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Received: 15th May 2021
Revised: 15th July 2021
Accepted: 21st July 2021

Abstract: This paper investigates the effect of bank-specific, government, and macroeconomic indicators on bank profitability in the Kingdom of Saudi Arabia (KSA) over the period from 2009 to 2018.Two-panel data estimators have been utilized:Prais-Winsten and Driscoll-Kraay standard models. The empirical analysis reveals that bank-specific determinants were the key factors in explaining profitability in comparison to government and macroeconomic variables.The assets utilization ratio, credit risk ratio, bank liquidity risk ratio, and investment deposit ratio were found positively and significantly related to the bank's profitability. In contrast, the bank size variable, and the earning assets ratio were found to have a negative impact on the profitability of bank-specific drivers. Similarly, inflation and the growth of gross domestic product were found in both models to have a negative and significant effect on profitability. On the other hand, government effectiveness was found to have a positive and significant influence on the first specification of both models. The study concluded that Saudi-owned banks should focus more on their asset utilization since it is the most important contributor to their profitability. At the same time, the government of Saudi Arabia must enhance the government effectiveness dimensions to be reflected positively on the Saudi financial system.

JEL Clasification: C33, G21, G28, O53
Keywords: Bank Profitability; Determinants, Macroeconomic Indicators, Panel Data Regression, Saudi Arabia.

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1. Introduction

Profitability is an accounting terminology and used to measure the performance of any organization or business entity. This is to include financial institutions of all types including commercial banks. On the other hand, commercial banks are considered to be the cornerstone of any economic development and growth where they can facilitate the transfer of funds between surplus units and deficit units. Thus, the soundness and health of commercial banks are considered to be of an utmost importance to regulatory agencies and central banks around the world. In the literature, bank profitability is measured by three key performance ratios. The first one is the return on assets (ROA) and calculated by dividing net income to total assets. On the other hand, return on equity (ROE) is the second important measure of profitability of banks. It can be calculated as the ratio net income to equity capital. The third proxy of bank profitability is the net interest margin (NIM) and can be obtained by subtracting interest expense from interest income and dividing the result by the assets of the bank. Nonetheless, profitability of banks is influenced by some internal factors and other external uncontrollable variables. Some of the internal factors that can affect the profitability of banks to include bank size, capital adequacy, liquidity ratios and expense management ratio. Whereas, external variables such as the growth rate of economic activities (GDP growth), inflation, interest rate, competition and government regulation could influence the profitability of banks.

This research adds to the existing literature of bank profitability determinations in three ways: first, by investigating the bank specific determinants; second, focusing on highlighting the informational power of two macroeconomic factors; third, inspecting these relationships between three government factors on the return on assets (ROA) of 12 Saudi-owned commercial banks.

This paper is organized into five sections as follows: Section 2 displays briefly recent previous studies. On the other hand, section 3 introduces data, the empirical model and methodology. Results and analysis of findings are detailed in section 4. The conclusion and recommendation are presented in section 5.

2. Literature Review

There are no shortages in the literature that investigated the determinants of banks profitability on most countries around the world. Therefore, this section will shed some lights on most important finding of recent studies.

A recent study by Al-Matari (2021) tested the determinants of bank profitability of the GCC countries. A sample of 68 banks operating in the six GCC countries was employed. The results of the ordinary least squares (OLS) revealed that bank size had a negative impact on profitability of banks. In contrast, assets management was found to have a positive and significant influence on bank's performance. Other bank-specific variables such as the level of capital, assets quality, and liquidity found to have insignificant influences on profitability of GCC banks.

Similarly, Batten and Vo (2019) examined factors that affect bank profitability in Vietnam utilizing several econometric panel data techniques on a sample covering the period 2006 to 2014. They concluded that bank size, and capital, in addition to operating expenses have a strong impact on bank profitability. Similar results of similar effects on profitability were also derived on variables related bank industry characteristics and macroeconomic indicators.

On the other hand, Kohlscheen and Contreras (2018) analyzed the determinants of bank profitability on 534 banks from 19 emerging market economies. The findings reveal that long-term interest rate is more important than short-term interest rate in boosting profitability. In addition, the study found that credit growth exerts more influence on profitability than GDP growth. In contrast, they study found an inverse relationship between the sovereign risk premia and bank profitability.

Likewise, Shamim et al., (2018) utilized bank-specific factors and macroeconomic forces to measure their influences on Saudi local banks. The results reveal that internal variables including: bank size, liquidity and credit risk, in addition to operational efficiency affected bank profitability significantly.

Menicucci and Paolucci (2016) tested the relationship between bank-specific factors and profitability of 35 top European banks. The findings show that all variables included in the model were statistically significant and impacted profitability of banks. However, higher and significant profitability were detected with the capital ratio, and the size of the bank variable. In contrast, higher loan loss provisions exhibited a lower profitability level.

In the same way, Petria et al., (2015) examined the effect of internal and external factors on bank profitability in EU 27 banking system over the period 2004-2011. The results concluded that both factors influenced bank profitability. This is to include: credit risk, liquidity risk, efficiency of management, diversification of business, competition and economic growth.

Similarly, Rodriguez (2015) examined the profitability of 45 commercial banks operating in Mexico. The results of the dynamic models estimators show that profitability is affected by the level of capital, the charging fees and commission, the controlling of operating expenses. In addition, market entry barriers contributed significantly to the profitability.

By the same token, Rahman et al., (2015) investigated factors that impacted bank profitability in Bangladesh. The findings suggested that bank size had a positive and significant impact on the return on assets. In addition, non-interest income, credit risk, and growth in the GDP are found to have an association with net interest margin. In contrast, inflation found to have a negative and significant effect on both measure of profitability, return on assets and return on equity.

Additionally, Al-Jafari and Alchami (2014) empirically tested the determinants of bank profitability in Syria. The results revealed that bank-specific determinants to include liquidity risk, credit risk, bank size and management efficiency influenced bank profitability in Syria significantly. Similarly, the inflation variable found to have a positive and significant relationship with profitability.

At the same time, Tariq et al., (2014) analyzed the determinants of commercial banks profitability in Pakistan. They utilized the fixed effect model on a sample of 17 commercial banks during the period 2004 to 2010. The findings reveal that a well-capitalized banks influence profitability significantly. In addition, assets quality and bank size had a positive impact on profitability. In contrast, inflation and risk of banks found to have an inverse effect on bank profitability.

Similarly, Almazari (2014) concluded that Saudi banks performed better than Jordanian banks, attributing that to the efficiency and effectiveness of management of managing bank assets. Therefore, a positive and significant correlation were found between profitability and each of the total investment to total assets ratio, total equity to total assets ratio and liquidity risk.

On the other hand, Obamuyi (2013) examined 20 banks in Nigeria from 2006 to 2012. The findings suggest that the level of capital, improving interest income, and managing operating expenses efficiently, in addition to favorable economic condition contributed positively to profitability and growth of banks in Nigeria.

In parallel, Ramadan et al., (2011) investigated the profitability of 10 banks in Jordan from 2001 to 2010. The findings show a significant and positive effect between bank profitability and the level of capital. In addition, high lending activities, low credit risk, and cost efficiency exhibited a significant association with bank profitability in Jordan.

Further, Staikouras and Wood (2004) tested factors that influence bank profitability in 13 European countries. They utilized a large sample of 685 banks comprised of 138 large banks and 547 small banks. Results of the fixed effects models show that management decision, in addition to macroeconomic conditions influenced banks profitability in Europe. The equity to assets ratio found to have a positive and significant impact on bank profitability, confirming that a well-capitalized banks enhance profitability. On the other hand, the loan to assets ratio found to have a negative and significant influence on return on assets. Similarly, the ratio of loan loss provisions to total loans found to have a significant but negative effect on profitability, while the funds gap ratio found to be positive and significantly influence profitability of banks.

3. Literature Review

3.1 Data

The sample covers 12Saudi-owned banks operating in KSA at the end of 2018. For the purpose of the analysis three types of variables were employed: the first variables are those related to the bank, while the second variables are those that are related to the government and its policies. The third variables are the macroeconomic variables. With regards to the bank's specific variables, seven variables were included in the study, namely: return on assets, asset utilization, bank liquidity risk, operation expenses, credit risk, investment deposit ratio, earning assets, and bank capital ratio. All the data on the bank specific variables as well as macroeconomic variables were obtained from SAMA, the Saudi Central Bank(https:www.sama.gov.sa).The government variables (government effectiveness, regulatory quality, and corruption) were acquired from Worldwide Governance Indicators WGI 2020, (worldbank.org).

We used the following formulas to calculate the bank-specific variables:

$$Return\ on\ assets\ (ROA) = \frac{Net\ income}{Total\ assets} \quad (1)$$

$$Asset\ utilization\ (AssetUtiliz) = \frac{Total\ operating\ income}{Total\ assets} \quad (2)$$

$$Bank\ liquidity\ risk\ (BankLiqRisk) = \frac{Liquid\ assets}{Total\ assets} \quad (3)$$

$$Operation\ expenses\ (OpExpenses) = \frac{Operating\ expenses}{Operating\ revenues} \quad (4)$$

$$Bank\ capital\ ratio\ (BankCar) = \frac{Total\ equity}{Total\ assets} \quad (5)$$

$$Credit\ risk\ (CreditRisk) = \frac{Loans\ and\ advances}{Deposits} \quad (6)$$

$$Investment\ deposit\ ratio\ (InvestDep) = \frac{Investment}{Deposits} \quad (7)$$

$$Earning\ asset\ ratio\ (EarnAsst) = \frac{Earning\ assets}{Total\ assets} \quad (8)$$

Other variables utilized related to government-specific and macroeconomic indicators and are:

Regulatory quality index *(ReqQuality)*is employed in the analysis to represent public perceptions and impressions of the capacity of the government to formulate and implement policies and regulations that are capable of allowing the private sector to expand and develop.

In addition, the corruption *(Corrupt)* variable is included tobuild on the argument that high corruption's level leads to increasing the non-performing loans, which in turn reduces banks profitability (Park, 2012). However, there is another school of thought which consider that corruption can contribute to the growth of the economy by affiliating the borrowing process and freeing it from the heavy restrictions that are usually placed.

Similarly, the variable of government effectiveness *(GovrEffectiv)* has been utilized based on the conviction of the government's ability to influence overall economic activity by easing bureaucratic restrictions and facilitating the public services.

Likewise, inflation *(INF)*affects the bank's profitability by influencing its performance indicators, as it inflates results and gives an ingenuine picture of the bank's actual performance. Thus, inflation must be excluded from profit indicators in evaluating bank's performance.

Finally, the growth of Gross Domestic Product *(GDP)* has been included based on the conviction that private banks are growing and expand in large and fast-growing economies.

3.2 The Empirical Model

The starting point will be with the following general panel regression model:

$$Y_{it} = \sum_{g=1}^{g} \beta_g X_{git} + v_i + u_t + \varepsilon_{it} (9)$$

Where Y_{it} is return on assets of the *i*th bank at time *t*, where *i*=1,.....,N(here it indicates Saudi owned banks), and *t* =1,.....,T (here it is from 2009 to 2018). X_{it} a vector of explanatory variables that vary across time and banks (determinants of profitability), v_i is the unobserved bank specific effect; u_t is the unobserved time specific effect which captures global shocks; and ε_{it} is the error term.

The specific equation augmented bank-specific, macroeconomic, and government variables expressed statistically as:

$$\begin{aligned} ROA_{it} = \propto + \beta_1 AssetUtiliz_{it} + \beta_2 OpExpenses_{it} + \beta_3\ CreditRisk_{it} + \beta_4 BLiqRisk_{it} + \beta_5 BankCar_{\ it} \\ + \beta_6 EarningAsset_{it} + \beta_7 InvesDep + \beta_8 GDP_{it} + \beta_9 CPI + \beta_{10} GovAffect \\ + \beta_{11} ReqQuality_{it} + \beta_{12} Corrupt_{\ it} + v_i + u_t + \varepsilon_{it} (10) \end{aligned}$$

Due to the small size of the panel considered in this study, and since the banking industry is described to be persistent as a result of being highly regulated industry. The specified model should consider this persistency.

The panel corrected standard errors (PCSEs) developed by Beck and Katz (1995) has been employed in this study. The use of (PCSEs) regression is based on its ability to accounts for the issues of finite sample bias, problems of heteroscedasticity and autocorrelation within the panels, Cameron & Trivedi (2009). The PCSE model yields Prais-Winsten estimates when the autocorrelation of the disturbances exists, but it yields OLS estimates when there is no evidence of autocorrelation, using the "xtpcse" command in STATA 16. In order to check the robustness of the benchmark results, we estimate the specified models (equation 10) using pooled OLS regression with Driscoll-Kraay standard errors,which is robust against autocorrelation, heteroscedasticity. Moreover, since it has been confirmed that this method is more proper than the previous method when the number of time periods is less than thenumber of the cross-sections, Hoechle (2007), using the "xtscc" command in STATA 16.Applying these methods may improve the efficiency of the estimated coefficients and residuals comparable to those which can be obtained if the OLS method is used.

4. Analysis, Procedures and Findings

4.1 Steps and Procedures

The following steps have been followed to check for different problems that might exist in the dataset:

* Ensure the absence of multicollinearity between the independent variables.
* Testing the stationarity of the variables.
* Examine cross section dependence.
* Testing for autocorrelation and heteroscedasticity.
* Estimating the models.
* Robustness checks to avoid unbiased statistical inferences in the benchmark model.

4.2 Descriptive Statistics

Descriptive statistics of all variables, used in this paper are stated in table 1. The description covers the mean, median, maximum value, minimum value, standard deviation, skewness, kurtosis of the variables, as well as the number of observation of each variable. The mean value of the dependent variable is 0.0183, while the standard deviation is 0.0059, suggesting that there is very small variability in the panel.

Table 1: Descriptive Statistics of the Variables

	ROA	ASSETUTILIZ	OPEXPENSES	CREDITRISK	BLIQRISK	BANKCAR	EARNINGASSET	INVESTDEP	GDP	INF	RQ	GE	CORR
Mean	0.0183	0.0374	0.0261	0.7392	0.3565	0.1553	0.8174	0.5236	3.5191	2.2344	0.0444	-0.5170	0.0856
Median	0.0183	0.0356	0.0241	0.8073	0.3429	0.1429	0.8200	0.5536	3.9816	2.5825	0.0281	-0.5312	0.0521
Max	0.0366	0.0708	0.0778	0.9328	0.6529	0.5857	1.6199	0.7934	40.5460	3.4000	0.1612	-0.4439	0.3638
Min	0.0006	0.0167	0.0145	0.0006	0.2404	0.0925	0.5313	0.0719	-17.4345	-0.8833	-0.0758	-0.5892	-0.3050
Std. Dev.	0.0059	0.0081	0.0099	0.2171	0.0685	0.0614	0.0995	0.1659	16.4294	1.2938	0.0663	0.0434	0.1998
Skew	0.0659	1.0922	2.1002	-2.4991	1.3988	4.4773	4.5439	-0.7669	0.8779	-1.3939	-0.0201	0.0209	-0.2489
Kurtosis	4.6752	5.9015	9.7924	8.2965	5.7545	27.9006	40.9372	2.9005	3.4335	4.0615	2.4573	2.0948	2.5366
No. Obs.	108	108	108	108	108	108	108	108	108	108	108	108	108

Source: Author's findings

4.3 Correlation Matrix and Multicollinearity

Correlation coefficients are one of the most common statistical tools used to assess the strength and the direction of association between variables. For this purpose, we applied the Pearson correlation coefficient.

Table 2: Correlation Matrix of the Independent Variables

Variable	AssetUtiliz	OpExpenses	CreditRisk	BLiqRisk	BankCar	EarningAsset	InvestDep	GDP	INF	RegQuality	GovEffect	corrupt
AssetUtiliz	1.000											
OpExpenses	0.382	1.000										
CreditRisk	0.151	-0.209	1.000									
BLiqRisk	0.134	-0.133	0.072	1.000								
BankCar	-0.035	0.444	-0.504	-0.053	1.000							
EarningAsset	0.148	-0.314	0.274	0.290	0.077	1.000						
InvestDep	-0.252	-0.496	0.325	0.312	-0.242	0.597	1.000					
GDP	0.149	0.347	-0.002	0.121	0.146	-0.040	0.001	1.000				
INF	-0.054	0.088	-0.079	0.032	-0.024	-0.289	-0.026	0.110	1.000			
RegQuality	-0.026	0.201	-0.054	0.081	0.053	-0.205	-0.124	0.286	0.382	1.000		
GovEffect	-0.053	0.028	0.020	-0.087	-0.047	-0.038	0.119	0.201	0.386	-0.180	1.000	
corrupt	0.091	-0.016	0.111	-0.088	0.011	0.267	0.090	0.213	-0.623	-0.425	0.234	1.000

Source: Author's findings

From the figures stated in table 2, it can be seen that the correlations between all of the variables included in the analysis don't indicate the existence of multicollinearity problem. Column 3 and 9 of table 3 reveals some of the critical results. In particular, Column 9 shows that the corruption has the highest level of correlation with inflation (r corruption and inflation = −0.623). In general, an absolute correlation coefficient exceeds 0.7 among two or more predictors indicates the presence of multicollinearity.

In addition, to scrutinize the presence of multicollinearity, we used the Variance Inflation Factor (VIF).The common rule of thumb is that VIFs exceed 5 warrant further investigation, whereas VIFs over and above 10 are signs of serious multicollinearity necessitating further action (Gujarati & Porter, 2009). It is clear from the figures in table 3 that none of the VIF values exceeding 4, so one can conclude that our panel isn't suffer from the multicollinearity problem.

Table 3:Variance Inflation Factors and Tolerance Level

Variable	VIF	1/VIF
INF	3.79	0.264182
Corrupt	3.42	0.292472
EarningAsset	2.92	0.34301
InvestDep	2.7	0.370503
OpExpenses	2.41	0.414531
govEffect	2.34	0.426978
BankCar	2.3	0.434259
AssetUtiliz	1.9	0.525464
RegQuality	1.67	0.597805
GDP	1.64	0.610064
CreditRisk	1.63	0.612996
BLiqRisk	1.28	0.78342
Mean VIF	2.33	

Source: Author's findings

4.4 Cross-Sectional Dependence Test

Since testing the stationarity of the variables included is the keystone of any econometrics work, thus testing the stationarity will be the first task to be executed. However, the choice of which generation of the stationarity tests should be used depends on whether the cross section existed or not. If the cross sections exist in the variables, then the first generation unit root tests are not appropriate.Accordingly, one should exam the cross-sectiondependency on a prior in order to select the unit root tests.

Table 4:Results of Cross-Sectional Dependence Test

Test	Statistics	Prob.
Breusch-Pagan LM	120.7264	0.0000
Pesaran scaled LM	4.76332	0.0000
Bias-corrected scaled LM	4.01332	0.0001
Pesaran CD	0.043235	0.9655

Source: Author's findings

Indeed, there are four statistical procedures proposed to test for cross-sectional dependence the Breusch and Pagan (1980) LM test, Pesaran (2004) scaled LM test, Pesaran (2004) CD test, and Baltagi et al., (2012) bias-corrected scaled LM test. The statistical procedures designed to test for cross-sectional in the case of large (N) cross-sections and smaller (T) is the Pesaran CD test (2004). Based on the figures reported in table 4, it can be concludedthat there is strong evidence against the hypothesis that the sampled banks move together, thus cross-sectional independence is present in the data.

4.5 Unit Root Tests

The first step was transforming the series in the panel to their natural logarithms to attain stationarity in variance.Two-unit root tests were used in this study: TheLevin, Lin, and Chu, as well as Hadri tests. The results of the unit root testsare reported in table 5.

Table 5:Results ofthe Unit Root Tests

Variable	Level				First difference			
	Levin, Lin, Chu (LCC)		Hadri		Levin, Lin, Chu (LCC)		Hadri	
	Statistics	Probability	Statistics	Probability	Statistics	Probability	Statistics	Probability
ROA	-8.11293***	0.00000	8.39814***	0.00000				
AssetUtiliz	-3.65233***	0.00010	15.4813***	0.00000				
OpExpenses	-32.5443***	0.00000	9.20116***	0.00000				
CreditRisk	-6.38077***	0.00000	10.1970***	0.00000				
BLiqRisk	-4.70591***	0.00000	12.5465***	0.00000				
BankCar	-7.37718***	0.00000	11.5926***	0.00000				
EarningAsset	-10.2528***	0.00000	21.7577***	0.00000				
InvestDep	-9.5269***	0.00000	10.5630***	0.00000				
GDP	0.16375	0.56500	11.0449***	0.00000	-17.819 ***	0.00000	35.9242***	0.00000
INF	8.17195	1.00000	6.83619***	0.00000	-22.691***	0.00000	7.7711***	0.00000
RegQualty	-11.1915***	0.00000	34.5832***	0.00000				
GovEffect	-4.87136***	0.00000	35.9242***	0.00000				
Corrupt	-34.402***	0.00000	11.1841***	0.00000				

Notes: Trend and intercept specification was used for both tests.***Indicate rejection of the null hypothesis at 1%.

Source: Author's findings

There are clear evidences that all bank-specifics as well as government variables are stationary at the level, while the variable of inflation and GDP are not. We then run a unit root test at first difference for both variables and they turned out to be stationary at the first difference.

4.6 Heteroscedasticity and Autocorrelation Tests

Since panel data is a combination of cross section data and time series, where the same unit cross section is measured at different times. One should check for a problem that often found in time-series data which is the serial correlation of the disturbance terms. At the same vein, it is expected that the problems of the cross section data may be subject to the panel data. Therefore, when the panel data is used, the probability of the existence of heteroscedasticity should be checked.

From the result reported in table 6, the probability value is less than 0.05. Thus, there is an autocorrelation problem in the panel with random effects regression.

Table 6:The Wooldridge Test for Autocorrelation

H0: no first order autocorrelation	
F(1,11)	prob.
6.385	0.0281

Source: Author's findings

Similarly, table 7 reported that the null hypothesis of no heteroscedasticity is rejected with a high significant p-value (0.0000 < 0.01); thus, there is a heteroscedasticity problem in the panel.

Table 7:The Likelihood Ratio (LR) Test for Heteroscedasticity

The H0 for this likelihood-ratio test is no heteroskedasticity.	
LR chi2(11)	prob.
301.21	0.0000

Source: Author's findings

The results outline that the panel dataset is serially correlated and heteroskedastic at the 5 percent significant level. Under such circumstances, it is advisable to use the Panel Corrected Standard Error Model, (Beck and Katz,1995).

4.7 Panel Estimating Results

Table 8 presents estimation results for the benchmark model well as Driscoll-Kraay regressions. Concerning the intercept coefficient, it is significant, which means that bank profitability affected by other variables which are not included in this model.

The estimates of the benchmark model reveal that only two of the bank-specific variables have no impact on the bank profitability in Saudi Arabia. More specifically, the credit risk (β_3= 0.0039; p > 0.05), and bank liquidity risk indicator (β_4 = -0.0004; p > 0.05) have no impact on the return on assets of the banking sector of KSA. However, the negative sign of the bank liquidity risk is consistent to the theory, an increased exposure to credit or liquidity risk results in decreased profitability. In addition, regression results show that asset utilization (β_1= 0.67108; p < 0.05), has a positive and significant impact on bank profitability, while earning assets (β_6= -0.01790; p < 0.05), has a negative and significant impact on Saudi banks profitability.

Moreover, the bank capital ratio is highly significant and positively related to profitability at 1% significant level. This resultsuggests that banks with high capital ratio are perceived to have more safety and such advantage can be rendered into higher profitability.

Our benchmark model's findings also suggest that Saudi commercial banks have lower profitability during the periods of economic boom(p-value of GDP = -0.00005; P < 0.05). The CPI (p-value of CPI = -0.0005 < 0.05), which is a proxy variable for inflation is negatively related to the bank profitability. According to Perry (1992) the effect of inflation on banks profitability depends on whether inflation is anticipated or unanticipated. This indicate that banks in KSA are unable to manage the expected inflation to increase profits.

Regarding the government variables, the prior expectation is that countries that obtain higher scores on the government effectiveness and control of corruption indexes as well as high regulatory quality will provide an environment that will foster performance growth, which in turn will affect positively the bank performance. According to our result, a one-unit increase in the score of government effectiveness will gain an increase in bank profitability score by 0.01703. The negative values obtained for the regulatory quality indexsuggest the fact that countries with underdeveloped institutional environments are unable to create a better environment for maximizing bank profits.

Variable	*Prais-Winsten*	*RE Driscoll-Kraay*
AssetUtiliz	0.67108***	0.69934***
	[0.0000]	[0.00300]
OpExpeses	-0.55109***	-0.56191***
	[0.0000]	[0.00000]
CreditRisk	0.00392	0.00325
	[0.12400]	[0.15400]
BLiqRisk	-0.0004	-0.00025
	[0.92900]	[0.96300]
BankCar	0.04869***	0.04536***
	[0.0000]	[0.00800]
EarningAsset	-0.01790***	-0.01900***
	[0.00100]	[0.03300]
InvestDep	0.00627**	0.00699
	[0.04700]	[0. 18000]
GGDP	-0.00005***	-0.00004***
	[0.00700]	[0.00100]
CPI	-0.0005***	-0.00059***
	[0.00620]	[0.00200]
RegQuality	0.00399	0.00387
	[0.31900]	[0.11400]
GovEffect	0.01703**	0.01663***
	[0.03200]	[0.00100]
Corrupt	-0.00191	-0.00177
	[0.34500]	[0.15000]
constant	0.01890***	0.01941***
	[0.00200]	[0.00100]
WALD	290.047***	7245.04***
R-SQ adj.	0.7583	0.8376
Rho	0.341094	0.1114023

Table 8: Regression Results and Panels Corrected Standard Errors (PCSEs)

Source: Author's findings

5. Conclusion and Recommendation

The main purpose of this research is to investigate the impact of bank-specific, government variables and macroeconomic indicators on bank profitability in KSA over the time period from 2009 to 2018. Results show that credit risk and bank liquidity risk has no significant impact on the Saudi banks. Other bank- specific variables namely, asset utilization, operation expenses, bank capital ratio, earring assets as well as the investment deposit ratio have significant impact on bank profitability. Among the government factors only government effectiveness has a significant impact on the bank profitability. Furthermore, our benchmark model, as well as RE Driscoll-Kraay resultsshow a significant and negative impact to the two macroeconomic variables.

The results point out the idea that in KSA government effectiveness have a positive impact on bank profitability. This result emphasizes the impact of quality of public services, the quality of the civil services and the degree of its independence as well as, the quality of policy formulation and implementation upon banks profit. Regarding the corruption factor, our resultsshow no impact to this variable on the profitability of the Saudi bank profits. The study suggests the importance of the public services and other dimensions of government influences on financial market development in KSA.

The main policy implication is that the Saudi-owned banks should pay more attention to their assets utilization since it is the most important contributor to their profitability. At the same time the government of the KSA should enhance the government effectiveness dimensions that will lead to a sound financial system as planned in the vision 2030.

REFERENCES

Al-Jafari, M. K. & Alchami, M. (2014). Determinants of bank profitability: Evidence from Syria.Journal of Applied Finance & Banking, 4(1),17-45.

Al-Matari, E. M. (2021). The determinants of bank profitability of GCC: The role of bank liquidity as moderating variable—further analysis.International Journal of Finance & Economics, 1-27. Saudi Digital Library. https://doi.org/10.1002/ijfe.2485

Almazari, A. A. (2014). Impact of internal factors on bank profitability: Comparative study between Saudi Arabia and Jordan. Journal of Applied Finance & Banking, 4(1),1-7.

Baltagia, B. H., Feng, Q. & Kao, C .(2012). A Lagrange multiplier test for cross-sectional dependence in a fixed effects panel data mode. Journal of Econometrics, 170(1),164-177.

Batten, J., & Vo, X. V.(2019).Determinants of bank profitability—Evidence from Vietnam. Emerging MarketsFinance and Trade, 55(6),1417-1428.

Beck, N., & Katz, J. N. (1995). What to do (and not to do) with time-series cross-section data. AmericanPolitical Science Review, 89(3), 634-647.https://doi.org/10.2307/2082979.

Breusch, T., & Pagan, A. (1980). The Lagrange multiplier test and its applications to model specification in econometrics. The Review of Economic Studies, 47(1),239-253. https://doi.org/10.2307/2297111

Cameron, A. C., & Trivedi, P. K.. (2009).Microeconometrics: Methods and applications. Cambridge University Press: Cambridge, UK.

Gujarati, D. N., & Porter, D. C. (2009).Basic econometrics. McGraw-Hill-Irwin, N.Y., USA.

Hoechle, D. (2007). Robust standard errors for panel regressions with cross-sectionaldependence. The Stata Journal, 7(3),281–312. https://doi.org/10.1177/1536867X0700700301

Kohlscheen, E., Pabón, A. M., &Contreras, J. (2018). Determinants of bank profitability in emerging markets. Monetary and Economic Department. Bank for International Settlements. BIS Working Papers No. 686.

Menicucci, E., & Paolucci, G. (2016).The determinants of bank profitability: Empirical evidence from European banking sector. Journal of Financial Reporting and Accounting,14(1), 86-115.

Obamuyi, T. (2013). Determinants of banks' profitability in a developing economy: Evidence From Nigeria. Organizations and Markets in Emerging Economies, 4(2), 97-111.

Park, J. (2012). Corruption, soundness of the banking sector, and economic growth: A cross-country study.Journal of International Money and Finance, 31(5),907–929.

Perry, P. (1992). Do banks gain or lose from inflation? Journal of Retail Banking,14(2), 25-30.

Petria, N., Capraru, B. &Iulian, I. (2015). Determinants of banks' profitability: Evidence from EU 27 banking systems. Procedia Economics and Finance,20,518-524.

Pesaran, M.H. (2004). General diagnostic tests for cross section dependence in panels. Cambridge WorkingPapers in Economics, No. 435.

Rahman, M. M., Hamid, Md. K., & Khan, A. M. (2015). Determinants of bank profitability: Empirical evidencefrom Bangladesh. International Journal of Business and Management, 10(8),135-150.

Ramadan, I. Z., Kilani,Q. A. & Kaddumi, T. H. (2011). Determinants of bank profitability: Evidence fromJordan. International Journal of Academic Research, 4(3), 180-191.

Rodríguez, R. C. (2015). Determinants of commercial bank profitability in Mexico. EconoQuantum, 12(1), 97-123.

Shamim, F., Aktan, B., Abdulla, M. A. &Sakhi, N. M. Y. (2018). Bank-specific vs. macro-economic factors: What drives profitability of commercial banks in Saudi Arabia. Banks and Bank Systems, 13(1),139-149.

Staikouras, C., &Wood, G. E.(2004). The determinants of European bank profitability. International Journal of Economics and Business Research, 3(6), 57-68. DOI:10.19030/iber.v3i6.3699.

Tariq, W., Usman, M., Mir, H. Z., Aman, I.,& and Ali, I. (2014). Determinants of commercial banks profitability: Empirical evidence from Pakistan. International Journal of Accounting and Financial Reporting,4(2), 1-22.