

# Empirical analysis of impact of macroeconomic indicators on Profitability of Islamic Banking Industry in Pakistan

Muhammad Muzammil

Lecturer

Karachi University Business School, University of Karachi, Pakistan

Dr. Danish Ahmed Siddiqui

Associate Professor

Karachi University Business School, University of Karachi, Pakistan

## Abstract

The Islamic banking has been found showing a great performance around the globe, which make it an important to understand the factors affecting the Islamic banking. This paper is aimed at studying the role of Interest Rate as economic indicator, Total assets and credit risk as bank specifics, on maintaining sustainable profitability measures, ROE and ROA of all full fledged Islamic banks in Pakistan during the period of 2006-2018. The data collection includes all full fledged Islamic banks of Pakistan i.e., Al Baraka Bank (Pakistan) Ltd, Bank Islami Pakistan Ltd (BIPL), Dubai Islamic Bank Pakistan Limited (DIB) and Meezan Bank Limited. Furthermore, there are two measures of profitability i.e. Return on equity (ROE) & Return on assets (ROA). The regression analysis in the results show that there is a significant role of bank specific variables (total assets, and credit risk) and macroeconomic indicator (interest rate) on ROE, moreover, the role of Credit Risk and Interest Rate is also found significant in influencing the ROA.

**Keywords:** Profitability, Interest Rate, Credit Risk, ROE and ROA

**DOI:** 10.7176/EJBM/11-33-14

**Publication date:** November 30<sup>th</sup> 2019

## 1. Introduction

The Islamic banking took birth in Egypt in 1963, from that date the Islamic banking has never stopped growing with significant level of performance around the globe. This could be affirmed by the fact that the Islamic banks have been grown to 170 Islamic banks globally, which includes Malaysia, Sudan, Saudi Arabia, Iran, Kuwait, Turkey, Qatar, and United Arab Emirates representing almost 87% of the Assets of the International banks, as perceived from the study by Johnes, Ongena, Pappas, Tsionas, & Izzeldin(2017). Additionally, even the conventional banks are found with a window fixed for Islamic Banking.

In all these banks the growth rate remains a common factor growing with time, while the profitability of these banks are said to be influenced by various specifics of banks and economic factors. This makes it important for the Islamic banks to ensure that they understand the role played by these factors and counter them in such a way that the profitability is not affected, negatively(Chowdhury, 2015).

In Pakistan, the count for Private Sector Banks is seventeen, Public Sector Banks is five, Foreign Banks is six and so on, and mainly there are four full fledged Islamic banks. For all the banking sectors here, the State Bank of Pakistan (SBP) is the sole supervisory jurisdiction and regulatory body for the Islamic banks. Even though there are just four Islamic banks in Pakistan, but as per the Islamic Banking Bulletin of the State Bank of Pakistan, they are having a 15% share in assets and 15.6% shares in deposits of overall banking industry (Nosheen & Rashid, 2019).

However, there are fewer studies focused on this matter in Pakistan, hereby it is important to study the matter and get holds of the important factors influencing the profitability of the Islamic banks. The studies related to this subject show that there is a great role played by various bank specifications and economic factors, which are really important to be investigated in order to understand the methods through which the Islamic Banking could be made more profitable in Pakistan (Nadeem, Raza, & Mubarik, 2018).

Hereby, the main objective of this research paper would remain to understanding the role of the bank specifics and economic indicators in strengthening the sustainable profitability of the Islamic Banks. For this purpose, this

study will make use of the Total Assets and Credit Risk as bank specific variable and also the macroeconomic indicators, including inflation, interest rate, exchange rate and GDP. All these independent variables are used for interpreting their effect on the profitability ratios that are ROA and ROE of the chosen Islamic Banks for the period 2006 – 2018.

The proposed Hypothesis for investigating the said problem are:

H<sub>1</sub>: There is strong evidence that Total Assets, Credit Risk, inflation, interest rate, exchange rate and GDP are playing a significant role on ROE in strengthening the profitability of Islamic Banks.

H<sub>2</sub>: There is strong evidence that Total Assets, Credit Risk, inflation, interest rate, exchange rate and GDP are playing a significant role on ROA in strengthening the profitability of Islamic Banks.

This hypothesis testing could be rationalized by the fact that there are few studies found testing the impact of the chosen variables on the profitability of the banks, for instance, Athanasoglou, Brissimis and Delis (2008) inspected factors affecting profitability of banks of Greece in which he identified Bank specifics, industry specific as well as macroeconomic factors.

## 2. Literature Review

There are few of studies which have been found studying the impact of the bank specifics and macroeconomic indicators on the profitability of the Islamic Banks around the globe. These studies treat the independent variables that are banks specifics as internal factors and macroeconomic indicators as external factors, which are influencing the performance of the Islamic banks. Similarly, the ROA and ROE are treated as the performance indicators, mainly the profitability of the banks are calculated through these two profitability ratios in studies (Rashid & Jabeen, 2016).

Zarrouk, Ben Jedidia, and Moualhi (2016) worked on understanding the forces driving the profitability in Islamic bank within the Middle East and North African region. Research was undertaken through determinants of bank specific and macroeconomic indicators from 51 Islamic Banks applying system-generalized method of the moment estimators. The result from this study determines that both the bank specifics and economic factors are having a significant impact on the profitability of the Islamic banks. Also, there has been a positive impact of the asset quality, level of capitalization, and cost-effectiveness on the profitability of the Islamic banks. Among the economic indicators the economies with better GDP are found better using the Islamic Banking System for more profitability rather than the economies having a high inflation rate which has a negative impact on the profitability of the Islamic banks.

The study by Trad, Trabelsi, and Goux (2017) is aimed at examining if the profitability of the Islamic banks could be increased to point that it would become substitute of traditional financial system. It utilizes 78 Islamic Banks based on 12 countries. This study also uses the ROA and ROE as the determiners of the profitability. This study estimates five regressions by making use of GMM system. The findings from this study the banks specific that are bank's size and its capital majorly assist in increasing the profitability of the Islamic banks, also it helps in reducing the credit which has a negative impact on the Islamic banks' profitability.

The profitability of the Islamic banks in the Gulf Cooperation Council (GCC) region has been studied during the global financial crisis of 2008 by Hussien, Alam, Murad, and Wahid(2019). This study uses the database of the Bank Scope and certain macroeconomic indicators using the International Financial Statistics, from which panel data of 30 Islamic banks (2005 to 2011) has been collected for investigation. Through this study the structural break of Islamic banking during the year of financial crisis year has also been determined. The factors which were found influencing the profitability were financial risk, liquidity, credit risk, and bank sector development, growth rate of money supply, operational efficiency, capital adequacy, inflation rate, gross domestic product, and bank size. The study also indicated that the Islamic bank performed well during the crisis and there were no adverse effects, mainly due to the timely structural changes which were made.

Darayseh and Chazi (2018) used the financial models and agency theory in their literature in order to analyze the banks performance. This study also uses accounting information of the banks and the macroeconomic variables, taken from local and international banks in the GCC countries. The results of this study show that the all the financial indicators and macroeconomics factors chosen for the study are having a significant impact on the bank

performance and profitability. This makes it quite clear that the financials of the banks and macroeconomic indicators are indeed an important aspect to cater better profitability of the banks.

The internal and external factors of accessing the Islamic banks are further studied by Chowdhury, Haque and Masih (2017), the data used was from the Islamic banks of GCC region on which the GMM, wavelet coherence approaches along with Quantile regression to identify the factors influencing the performance of Islamic banks. The factors analyzed for this purpose are operating efficiency, equity financing, inflation, money supply, which had significant impact on the profitability of the Islamic Banks. However, there were several factors which found insignificant for instance, equity ratio, cost-efficiency ratios and credit risk.

Another study by Rashid and Jabeen(2016) also worked on the Islamic banking and conventional banking for determining the impact on the performance of the banking systems. The methodology used in this study remains the regression analysis, which was applied on the annual panel data for the time period of (2006 – 2012). For extracting results from the data, the Generalized Least Squares (GLS) was used, which shows that the reserves, overheads and operating efficiency of the banks are appropriate determiners of the Bank's performance. On other hand, the lending interest rate and GDP are having a negative impact on the performance of the banks. The study constitutes the idea that the managers of the banks should concentrate on controlling overheads and operating costs to improve profitability on the grounds that, concurring the empirical results displayed in the investigation, both of these factors are contrarily identified with the Foreign Portfolio Investment (FPI). These outcomes propose that advancements in overall practices of the management and new models in financial risk and operating efficiency the executives are necessary to improve profitability of Islamic banks.

Kassem and Sakr's (2018) study has discovered examining the connection between bank-explicit components and the productivity of Egyptian banks. In this manner, there was finding that the primary inward qualities for accomplishing higher productivity remain important to be understood. In this study, Ordinary least Square based regression analysis has been utilized to inspect the connection between bank-explicit qualities and bank's productivity, using 19 banks of Egypt data extracted for the years 2007-2016. This study discloses that the profitability of the Islamic banks are best determined through its size and ratio of loan loss, which demonstrate a huge association with all calculations of productivity. Other than this, the Capital ratio determines a critical association with ROA and Net Interest Margin (NIM), yet they are having insignificant impact on the ROE. In any case, deposit ratio and loan ratio are not found having any influence on the profitability of the banks.

There are certain aspects of the profitability of the Islamic Banking that are also studied by Chowdhury (2015) , as the study takes it as a significant instrument for evaluating the operations of the banks, improving the performance, and determining administration intentions to help in expanding the opportunity for the banks to get by in competitive markets. This research tries to fill the gap in the writing by giving new experimental proof on the variables that impact the profitability of the financial part of the Islamic Banks in Malaysia. The study uses Ordinary Least Square Regression Analysis method, which is applied on the yearly data of the 11 Islamic Banks in Malaysia, from the 2007 to 2013.

Therefore, to assess the financial performance of these Islamic banks the productivity is estimated utilizing the profitability's indicator that is Return on Assets (ROA). The results obtained from this study uncovers that explicit factors of the bank, for example, the efficiency ratio (also known as overhead cost) is having a negative impact on the profitability, which means that it has a statistically significant impact on the profitability as well. The Liquidity and Credit risks are not important in this case, as they are not significant and have no or little impact on the profitability of the Banks. The study also includes the macroeconomic indicators, for instance the inflation Gross National Income (GNI) (Chowdhury, 2015).

The study reveals that the inflation has a positive relationship with the profitability of the banks while the GNI has a negative impact on the profitability of the bank. While point to be noted here remains they both have significant influence on the profitability of the Islamic banks and hereby should be considered critically while evaluating the profitability of the Islamic Banks(Zarrouk, Ben Jedidia, & Moualhi, 2016).

The review of the above literature concludes that mostly all the banks specifics are influencing the profitability of the Islamic banks, especially the size of the banks, and credit risk. Furthermore, the macroeconomic indicators such as interest rate are found having significant impact on the profitability of the Islamic banks. These studies on the Islamic banks are usually based on the Middle East, GCC, or other Islamic states, while there are very few which focus the profitability in the Pakistan's Islamic banks. Hereby it is important to study these internal and external factors and their influence on the profitability of the Islamic banks in order to attain meaningful results

understand and structure the Islamic banking in Pakistan in such a way that will turn out to be profitable (Darayseh & Chazi, 2018).

### 3. Data Collection and Research Methodology

This study uses four major Islamic banks of Pakistan that are, Islamic banks, Al Baraka Bank (Pakistan) Ltd, Bank Islami Pakistan Ltd (BIPL), Dubai Islamic Bank Pakistan Limited (DIB) and Meezan Bank Limited. The data has been taken from the financial statements of these banks which are available on their website and rest of the data for the economic indicators is taken from the State bank of Pakistan. The time period for which this data has been collected is from 2006 to 2018. For this analysis the ROA and ROE of these banks have been taken as dependent variables (Rashid & Jabeen, 2016).

While the independent variable includes Total Assets, Credit Risk, and Interest Rate. This further includes the control variable, which are used to better understand these internal and external factors impact on the profitability of the Islamic banks in Pakistan. These control variables include, Efficiency Ratio, Spread Ratio, Total loan to total assets (TL/TA), Gross Domestic Product (GDP) growth rate, Exchange Rate and Consumer price Inflation rate (CPI)(Darayseh & Chazi, 2018).

All these variables could be better understood through below definitions:

**Return on Equity (ROE):** It is the ratio between the Net Profit and stockholders' equity.

**Return on Assets (ROA):** It is a profitability indicator of the assets' management in order to produce better profits. It is measured through ratio of Net Profit and Total Assets.

**Total Assets (LNTA):** The total assets of the banks are the indicator of the size of the banks when their natural logarithm has been taken (Nosheen & Rashid, 2019).

**Credit Risk (CR):** When the total loss provisions of the banks are divided by their total loans it gives the Credit Risk. The theories related to the credit risk have indicated that the increase in the credit risk causes negative impact on the profitability of the banks.

**Interest rate (IR):** Interest rates effect on the bank's profitability and Discount rate has been used for analysis (Kassem & Sakr, 2018).

Coming to the control variables, some of the bank specific and macroeconomic indicators which are used for the analysis are defined below,

**Efficiency Ratio (ER):** The efficiency ratio is used to calculate the efficiency of the banks by using the ratio between the administrative expense and profit before tax.

**Spread Ratio (SR):** The spread ratio is calculated through dividing the net markup to markup.

**GDP growth rate (GDP):** The GDP is the growth in the activities of the economy, where the inflation has already been adjusted (Kassem & Sakr, 2018).

**Exchange Rate (ER):** It refers to the value of the currency of one country against which it has been converted to other currencies.

**Consumer price Inflation rate (CPI):** It is the determinant of the increase in the total percentage of the Consumer Price Index taken for all goods and services.

**TL/TA:** The ratio of the total loan to total assets is calculated by dividing the bank's loan to the total assets acquired by it (Chowdhury, 2015).

### 4. Research Analysis and Research Model

For the analysis of the study and testing the hypothesis, the multiple regression analysis has been used. In this the dependent variables remain the ROA and ROE, while the independent variables are all the chosen bank specifics and macroeconomic factors and also the control variables (Trad, Trabelsi, & Goux, 2017).

The general model of Multiple Regression is as follows:

$$y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_p x_{ip} + \epsilon_i \text{ for } i = 1, 2, \dots, n$$

Considering the chosen variables or this study, the Multiple Regression Models to be tested in this study remains:

$$\text{Profitability} = \beta_0 + \beta_1 \text{LNTA}_{it} + \beta_2 \text{CR}_{it} + \beta_3 \text{SR}_{it} + \beta_4 \text{TL/TA}_{it} + \beta_5 \text{GDP}_t + \beta_6 \text{CPI}_t + \beta_7 \text{IR}_t + \beta_7 \text{ER}_t + \epsilon_{it}$$

Where,

I refer to the Individual Bank

T refer to Time Period in Years  
 $\beta_i$  refer to Co-Efficient Of Regression  
 Profitability is measured by using ROA and ROE  
 LNTA refers to the Log of the Total Assets  
 CR refers to the Credit Risk  
 SR refers to the Spread Ratio  
 TL/TA refers to Total Loan to Total Assets  
 GDP refers to the growth rate of the Gross Domestic Product  
 ER refers to the Efficiency Ratio  
 CPI refers to the Consumer Price Inflation Rate  
 IR refers to the Interest rate

E Views software is used for the analysis and obtaining the results.

## 5. Results and Findings

The results that are obtained for the ROE by entering the model in the software are as follows:

Table 1: Regression Analysis for Return on Equity				
<b>Dependent Variable: ROE</b>				
Method: Panel Least Squares				
Date: 11/15/19 Time: 07:46				
Sample: 2006 2018				
Periods included: 13				
Cross-sections included: 4				
Total panel (balanced) observations: 52				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.275473	0.232310	-5.490403	0.0000
CREDIT RISK	-0.299929	0.217798	-1.377097	0.0000
LNTA	0.085980	0.015829	5.431770	0.0000
EFF RATIO	0.000341	0.000393	0.866621	0.3911
SPREAD RATIO	0.007000	0.130506	0.053634	0.9575
TL TA	-0.236791	0.141561	-1.672707	0.1018
GDP	0.861112	0.712101	1.209256	0.2333
INTEREST	0.882202	0.783996	1.125263	0.0090
INFLATION CPI	-0.542481	0.387552	-1.399764	0.0168
EXCHANGE RATE	-0.001069	0.000677	-1.578465	0.1220
R-squared	0.657547	Mean dependent var		0.046126
Adjusted R-squared	0.584164	S.D. dependent var		0.089468
S.E. of regression	0.057694	Akaike info criterion		-2.696290
Sum squared resid	0.139800	Schwarz criterion		-2.321051
Log likelihood	80.10355	Hannan-Quinn criter.		-2.552433
F-statistic	8.960492	Durbin-Watson stat		1.305999
Prob(F-statistic)	0.000000			

The models significance could be best determined if the variables used in the models for testing the hypothesis are significant. The above results for the model of ROE show the Value of F-statistics to be 8.96. The F-statistics is used for testing the significance of overall model especially in the multiple regression analysis. The F-critical for this data at 5% level of significance would be  $f\text{-critical}(0.05, 51, 50) = 1.596$ . This means that the F-statistics of this model is greater than the F-critical and hereby, the independent variables chosen for this study are significant.

The marginal significance level that is the Prob(F-statistics) is 0.00. This means that the p-value is less than the significance level of 1%, hereby it could be concluded that all the variables are playing a significant role in influencing the dependent variable that is ROE. For understanding the successfulness of the model, the R square could be used for this model which is 0.657 or 65.7%. This refers to the idea that the independent variables are successfully explaining 65.7% change in the dependent variable. Hence through these statistics it could be seen that the chosen model is a good fit for testing the role played by bank specific and macroeconomic factors in influencing the profitability of the banks.

The value of the constant,  $\beta_0$ , is -1.275. This refers to the idea that in the absence of all these factors the profitability of the Islamic banks would be negatively influenced and so, there will be a great chance of loss face by the banks. The above table shows that among the analyzed independent and control variables, credit risk, log of total assets, interest rate and inflation rate are significantly related to ROE, as their p-value is less than 0.05 level of significance. Looking at the rest of the variables, it becomes important to look at the Durbin Watson value in order to understand if the model has any link from the serial correlation problem. The Durbin Watson value for this model is 1.305 that is near to 2, hereby we can say that there is no serial correlation in the model and it is a good fit.

The model resulted from the above analysis is as follows:

$$\text{ROE} = -1.27 + 0.085 \text{LNTA}_{it} - 0.29\text{CR}_{it} + 0.0003 \text{EFR}_{it} + 0.007 \text{SR}_{it} - 0.236 \text{TL/TA}_{it} + 0.861 \text{GDP}_t - 0.54\text{CPI}_t + 0.882\text{IR}_t - .001\text{ER}_t$$

This model further shows that there is a negative role played by Credit Risk, Total Loan to Total Assets ratios, Consumer Price inflation rate, and efficiency ratio. While the growth in the profitability is directly related to rest of the banks specifics and macroeconomic indicators.

The results that are obtained for the ROA by entering the model in the software are as follows:

Table 2: Regression Analysis for Log of Return on Assets				
Dependent Variable: LNROA				
Method: Panel Least Squares				
Date: 11/15/19 Time: 07:47				
Sample: 2006 2018				
Periods included: 13				
Cross-sections included: 4				
Total panel (balanced) observations: 52				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.23026	6.722977	1.819173	0.076
CREDIT_RISK	6.398585	6.303014	1.015163	0.0318
LNTA	-0.56369	0.45809	-1.230524	0.2253
EFF_RATIO	-0.071441	0.01138	-6.277922	0.0000
SPREAD_RATIO	-1.307045	3.776809	-0.346071	0.7310
TL_TA	-5.278638	4.096747	-1.288495	0.2046
GDP	5.017491	20.608	0.243473	0.8088
INTEREST	-22.86297	22.68863	-1.007684	0.3194
INFLATION__CPI__	18.41545	11.21565	1.641943	0.1081
EXCHANGE_RATE	0.000206	0.019596	0.010534	0.9916
R-squared	0.672346	Mean dependent var		-3.451027

Adjusted R-squared	0.602135	S.D. dependent var	2.647014
S.E. of regression	1.669645	Akaike info criterion	4.034141
Sum squared resid	117.0841	Schwarz criterion	4.40938
Log likelihood	-94.88767	Hannan-Quinn criter.	4.177999
F-statistic	9.576005	Durbin-Watson stat	1.628846
Prob(F-statistic)	0.00000		

The significance of the second model in the above table, could be seen from the Value of F-statistics, which is 9.576. The F-critical for this model will be same as for the first model that was f-critical (0.05, 51, 50) = 1.596 at 5% level of significance. Since, the F-statistics of this model is greater than the F-critical therefore, the independent variables chosen for this study are significant for testing their role in influencing the LN ROA. This could further be seen from the marginal significance level, Prob(F-statistics) is 0.00. This concludes that the p-value is less than the significance level of 1%, and all the variables are providing a significant influence on the dependent variable that is LNROA.

The R square for this model is 0.672 or 67.2%, which refers to the idea that the independent variables are successfully explaining the dependent variables that is LN ROA. Hence the model is a good fit as concluded by the above estimators. Furthermore, the above table also includes that there is a significant relationship between the credit risk and efficiency ratio, as their p-value is less than 0.05 level of significance. This refers to the idea that there are certain aspects that cause an insignificant relation between the rest of the independent variables and the dependent variable.

For testing serial correlation problem in this model the value of the Durbin Watson extracted is 1.62, which is again near 2 and hence the serial correlation problem does not exist and hence the variables chosen for the study are identified as good fit for this testing.

The model resulted from the above analysis is as follows:

$$ROA = 12.23 - 0.563 LNTA_{it} + 6.39 CR_{it} - 1.307 SR_{it} + 0.000206 EFR_{it} - 5.27 TL/TA_{it} + 5.01 GDP_t + 18.41CPI_t - 22.86 IR_t - 0.071ER_t$$

This above model further indicates that there is a negative influence of the log of total assets, spread ratio, Total Loan to Total Assets ratios, interest rate and exchange rate on the profitability of the Islamic banks. While the Credit Risk, efficiency ratio, Consumer Price inflation rate, and GDP growth rate.

Looking at the above results from both of the models, it could be seen that the significance of the bank specific and macroeconomic indicators on the Islamic banks of Pakistan is significant and hence the hypothesis chosen for this study are accepted as could be seen from the f-statistics of both the models. This refers to the idea that there is a significant role played by the chosen bank specific and macroeconomic factors on the performance and more specifically the profitability of the Islamic banks.

## 6. Conclusion

This paper investigated the role played by the Bank specific and the macroeconomic indicators in strengthening the profitability of the Islamic banks of Pakistan. The bank specifics that were chosen for this purpose comprise of log of Total Assets, and Credit Risk, and the macroeconomic indicators that is Interest rate (IR), and several control variables including, Efficiency Ratio (ER), Spread Ratio (SR), GDP growth rate (GDP), Exchange Rate (ER), Consumer price Inflation rate (CPI) and Total Loan to Total Assets Ratios (TL/TA), all these were gathered for the time period from 2006 to 2018.

The results from the regression analysis of both models indicate that hypothesis should be accepted as the bank specifics and macroeconomic indicator play a significant role in strengthening the profitability of the Islamic banks of Pakistan. While the factors having negative impact on the ROE and ROA, which include credit risk,

inflation rate, exchange rate and so on, should be critically analyzed by the Islamic Bankers of Pakistan while structuring the bank's strategies. This will help in better performance of the banks and the improved profitability, which will directly add to the growth of the GDP of the economy.

## 7. Reference

- Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of international financial Markets, Institutions and Money*, 18(2), 121-136.
- Chowdhury, M. A. (2015). Which is more important in terms of profitability of Islamic banks: Bank specific factors or macroeconomic factors? An empirical study on Malaysian Islamic banks. *European Journal of Islamic Finance*(2).
- Chowdhury, M. A., Haque, M. M., & Masih, M. (2017). Re-examining the determinants of Islamic bank performance: new evidence from dynamic GMM, quantile regression, and wavelet coherence approaches. *Emerging Markets Finance and Trade*, 53(7), 1519-1534.
- Darayseh, M., & Chazi, A. (2018). Bank specifics, economics environment, and agency theory: Determinants of banking performance in GCC. *The Journal of Developing Areas*, 52(4), 199-212.
- Hussien, M. E., Alam, M. M., Murad, M. W., & Wahid, A. (2019). The performance of Islamic banks during the 2008 global financial crisis: Evidence from the Gulf Cooperation Council countries. *Journal of Islamic Accounting and Business Research*, 10(3), 407-420.
- Johnes, J., Ongena, S., Pappas, V., Tsionas, E. G., & Izzeldin, M. (2017). Another Great Convergence? Are Islamic and Conventional Banks Converging in Efficiency across All Countries?
- Kassem, N. M., & Sakr, A. (2018). The Impact of Bank-Specific Characteristics on the Profitability of Commercial Banks in Egypt. *Journal of Finance*, 6(2), 76-90.
- Nadeem, M., Raza, H., & Mubarak, F. (2018). Determinants of Profitability of Banking Industry in Pakistan. *NICE Research Journal*, 17-38.
- Nosheen, & Rashid, A. (2019). Business orientation, efficiency, and credit quality across business cycle: Islamic versus conventional banking. Are there any lessons for Europe and Baltic States? *Baltic Journal of Economics*, 19(1), 105-135.
- Rashid, A., & Jabeen, S. (2016). Analyzing performance determinants: Conventional versus Islamic banks in Pakistan. *Borsa Istanbul Review*, 16(2), 92-107.
- Trad, N., Trabelsi, M. A., & Goux, J. F. (2017). Risk and profitability of Islamic banks: A religious deception or an alternative solution? *European Research on Management and Business Economics*, 23(1), 40-45.
- Zarrouk, H., Ben Jedidia, K., & Moualhi, M. (2016). Is Islamic bank profitability driven by same forces as conventional banks? *International Journal of Islamic and Middle Eastern Finance and Management*, 99(1), 46-66.