The Return on Assets and Profitability Growth of Islamic Banks

Dr. Syed Muhammad Ali Tirmizi[a*], Mr. Mohammad Rohan Ghazi[b], Dr. Shahbaz Khan[c], Dr. Shahzad Hussain[d], Prof. Dr. Syed Mutahir Hussain Shah[e], [a]Associate Professor, Department of Business Administration, Faculty of Management Sciences, Foundation University Islamabad, Rawalpindi Campus, Pakistan. [b]Lecturer (Instructor) Commerce, Government College of Commerce, Rawalpindi, Pakistan. [c]Assistant Professor, Department of Economics & Finance, Faculty of Management Sciences, Foundation University Islamabad, Rawalpindi Campus (FURC), Pakistan. [d]Assistant Professor, Department of Business Administration, Faculty of Management Sciences, Foundation University Islamabad, Rawalpindi Campus (FURC), Pakistan. [e]Visiting/ Adjunct Professor, Institute of Business & Management (IB&M), University of Engineering & Technology, Pakistan. *Corresponding Author, Email: [a*]dr.alitirmizi@fui.edu.pk, [b]m.rohanghazi@gmail.com, [c]shahbaz.khan@fui.edu.pk, [d]shahzad.hussain@fui.edu.pk, [e]mutahir5@gmail.com

In this study the impact of bank specific microeconomic factors including capital adequacy, liquidity and investment to total assets on Return on Assets, the profitability measure of the Islamic banks operating in Pakistan has been investigated with special focus on assets. Financial statements of Islamic banks including Bank Islami, Meezan Bank, Dubai Islamic Bank, Al Baraka Bank and Burj Bank have been utilised to analyse financial data over the period 2008 to 2015. The outcome of panel data regression has highlighted that capital adequacy has impacted negatively and significantly due to tight control measures and prevalence of risk. However, liquidity has impacted positively but insignificantly, while investment to total assets has a positive and significant influence on the profitability. This implies that, it is vital for Islamic banks to focus more aggressively on a return on assets driven investment approach in order to gain and maintain sustainability in their profit margins. Moreover, Islamic banks may increase their year-on-year profitability in the future if they accordingly plan adjustments in liquidity and capital adequacy allocations by deploying moderate control measures and risk management practices.

Keywords: *Islamic Banks, Investment, Capital Adequacy, Liquidity, Profitability, ROA.*

1. Introduction

Indeed, it's a fact that a vibrant banking system is vital to support an efficient flow of capital from savers to borrowers in an economic system. This is true when a banking system in a country is thriving to facilitate financial markets. Utmost importance therefore rests on the innovative financial instruments being offers by the banking system to its customers. However, conditions of financial markets like these are much to be seen in developed parts of the world. But factually, in developing parts of the world conditions of financial markets and banking systems are not so vibrant and thriving and thus call for regular reporting of conditions of these markets. In the Muslim world, communities' western banking system normally called conventional banking is not much appreciated due to interest-based banking transactions. Therefore, the concept of Islamic banking is largely accepted by Muslim communities as an alternative system that is free from interest-based banking normally considered 'Haram' in the religion of Islam.

In the Muslim part of the world, Islamic banking makes reference to a banking framework that agrees to Islamic laws (Shariah principles) and functions on the basis of profit and loss sharing ideology. In Pakistan, the roots of Islamic finance emerged during 1977, when the Government of Pakistan owned two mutual funds namely National Investment Trust and Investment Corporation of Pakistan. These institutions began wiping-out interest (i.e., Riba 'usury' as per Islamic Shariah law) from their functions which was further followed by the House Building Finance Corporation (HBFC) in July 1979.

Since January 1, 1981, special premium free counters began to work in all public sector banks to improve PLS basis deposits. Islamic banking, in light of its esteemed ethos and character, empowered it to get funds from the Muslims and non-Muslims simultaneously. Since then, Islamic banks in Pakistan are progressively creating investment and financing instruments that are beneficial and contain moral values which have been an indication to abolish Riba from the Islamic societies. Thus, as a result, in Pakistan as an Islamic country more emphasis had been converged to flourish Islamic banking as compared to the conventional banking model of financing and investment activities.

This gradual change in banking system transition endorsed by the State Bank of Pakistan had generated many questions, one of which was, what is the capital allocation of bank deposits and profit generation capacities of Islamic banks? (Khemaies, 2017). Therefore, as an alternate means of conventional banking system, it is imperative to gauge the profitability of Islamic banks fundamentality in reference to the theory of financial intermediation by Allen and Santomero (1998) which explain the banking practices where the greater role of banks as intermediaries have to be recognised as agents of change that significantly impact asset prices in the market. Therefore,

trading activities in a market must rely on participation costs and financial risk management services offered by the financial intermediaries in the modern financial world of the industrial revolution 4.0 [Tirmizi, Malik and Hussain, (2020)].

In this research, with reference to the theory of financial intermediation we aim to investigate the bank specific factors of Islamic banks, which tend to influence the profitability of Islamic banks in Pakistan. Earlier studies done in this domain had explored the factors of conventional banks' profitability, but there exists some space in the literature concerning elements of favourable profits of Islamic banks in Pakistan. So, this attempt is to fill this gap by including the three variables of capital adequacy, financing (liquidity) and investment to total assets, and further testing their association with the Islamic banks' profitability in terms of investment in a total assets driven ROA approach [Husain and Abdullah (2008); Muhammad et al., (2016); Rahaman and Akhter (2016); Salike and Ao (2018); Purna (2018); Aslam et al. (2019); Aslam and Haron (2020b)]. Consequently, the study of Pak (2020) endorsed that the asset growth measured by ROA and lending had a positive impact on the Net Interest Margins (NIM) of the Eurasian Economic Union banks and this fact had also been validated by the work of [Garcia-Herrero et al. (2009), Entrop, Memmel, Ruprecht, and Wilkens (2015), Tan (2017)].

The fundamental importance to include these variables is their capability to measure the overall growth of a bank [Saeed, Shahid and Tirmizi (2020); Shahid, Saeed and Tirmizi (2015)]. In this modern age of innovation and technology, it seems mandatory to identify those instruments/factors which have an impact on the profitability of Islamic banks so that they may be proficient to compete with their conventional counterparts (Eljelly, 2013). Accordingly, policy makers are also keen on such research which may provide them updated information on those determinants of Islamic banks' profitability which could constructively facilitate in the development of effective policies. Last but not the least, from the Islamic banker's perspective, this study may provide useful insights in order to better prioritise, monitor and manage assets of the Islamic banks in the country.

The outcomes of panel data regression analysis reveal that capital adequacy relates negatively and significantly, liquidity relates positively and insignificantly, and investments relate positively and significantly with a bank's profitability. Therefore, outcomes of this study demonstrate that it is crucial for Islamic banks to use investment in a total assets driven ROA approach for bringing about sustainability in their profit margins. Therefore, in the light of the pertinent literature review, ROA has been considered the most important and vital determinant of Islamic banks profitability due to its significance in explaining the operational performance of the bank.

Precisely, the research paper is arranged as follows; the introduction part of the research paper is followed by the review of the pertinent literature, further research method applied has been

explained which is proceeded by the details relating the financial data sources utilised, time frame of the study, panel data statistical analyses, results, discussion and finally conclusion of the study ends the paper in a well-articulated manner.

2. Literature Review

In this section, various articles have been cited to examine the elements of the profitability of Islamic banks which have facilitated us towards the development of hypotheses and enriched the scope of the study.

Initiating debate on the banking industry begins with reference to the theory of financial intermediation by Allen and Santomero (1998) which had explained financial resources allocation by an institution that act as intermediary with the motive to reduce transaction costs and asymmetric information in the market place. This perspective was further probed by Allen and Santomero in the context of risk management. This fact had been highlighted as central to any intermediary to operate in an efficient manner in the best interest of shareholders and stakeholders. In this context and according to Afzal (1993), western banks gained grounds in the world during the 19th century when Muslims were facing an economic downturn in all fields of financial affairs due to the fall of Ottoman Empire. This was the era when western conventional banks flourished and expanded in almost all the Muslim countries around the globe. Allen and Santomero further added that banks existed in the world from ancient times however recent advancements and modernisations in financial markets, made banks as well as insurance companies play an important role in an economy as intermediaries. Thus, the importance of banks in an economy is evident and central to boost the economic activity, but it is possible in reality banks as intermediaries apply risk management tools in an effective and efficient manner. However, the changing situation in Muslim countries has now converged towards reliance on an Islamic banking system due to its interest free and profit and loss sharing approach defined in the Shariah Islamic Jurisprudence.

In the study of Goddard et al., (2004), they examined elements of development and profitability from five noteworthy European Union countries in the mid 1990's. The investigation utilised dynamic panel and cross-sectional regression analysis. Results of the study demonstrated that banks utilising high capital asset proportion which develops gradually while banks maintain liquidity proportion resulting in low profitability.

The study conducted by Petria et al., (2015) had investigated important elements of bank profitability operating in 27 European Union countries by evaluating panel data ranging from 2004 to 2011. The findings of their study showed that liquidity risk, management efficiency and credit are inclined to significantly impact bank profitability. Earlier, Kyriaki (2008) investigated a sample

of 23 banks to explore the factors influencing productivity of banks and reported that higher bank capital and low cost to income ratio have a high return on average assets. Similarly, Ramadan (2011) had examined the bank specific factors of profitability by analysing financial data from 2000 to 2010. After applying liner regression analysis on unbalanced panel data, results revealed that efficient management, well capitalised banks, and higher credit hazard prompted higher profit on assets. Additionally, Adeusi et al., (2014) critically analysed the elements examining a bank's profitability operating in Nigeria. The results of panel data tests using a sample of 14 bank's financial data from the year 2000 to 2013 revealed that management efficiency, asset quality, and economic growth are the important drivers of profitability.

The study of Sufian (2009) investigated the variables of effectiveness of banks in China. Sufian took a sample of 12 joint stock commercial banks (JOCB) and 4 government banks during the period 2000 to 2007. The results of the study recommended capitalisation and credit risk as significant drivers of profitability of banks (Abbas, Azid and Besar, 2016). Similarly, Liu and Wilson (2010) conducted a study in Japan and found that high capitalisation with lesser credit risk tend to be better than less capitalised counter parts with high credits. Furthermore, in another study by Sufian and Habibullah (2009), determinants of banks' profitability in a developing country like Bangladesh were regressed to test econometric models including return on average total assets (ROAA) as one of the dependent variables. Sufian and Habibullah reported that all the bank specific factors had positive and significant relationships with bank profitability, except non-interest income over total assets, which resulted in a negative relationship during the period of the study ranging from 1997 to 2004.

The empirical study of Olalekan and Adeyinka (2013) reported that capital adequacy significantly and positively impacts bank profitability in Nigeria. The capitalisation was also found to be an indicator of risk management efficiency and minimizes losses which could not be recovered with current earnings. In another research study by Yamuna (2013) the impact of bank specific elements on private commercial bank profitability operating in Sri Lanka during the period 2003 to 2011 had been investigated. The results of the study showed that liquidity, capital ratio and size had a positive association with the profitability of the sample banks. Whereas, overhead and activity mix had been negatively associated with bank profitability. Likewise, the study of Abdullah et al., (2014) had been conducted to examine the micro and macro-economic factors of profit of banks in Bangladesh during the period 2008 to 2011. The results of the study suggested that higher asset efficiency, higher concentration, bank size, and capitalisation affected profitability of the Bangladeshi banking sector.

Javaid, Anwar, Zaman and Gafoor (2011) had investigated 10 Pakistani banks' by taking into account financial data from 2004 to 2008 and applied pooled ordinary least square method which

showed results that deposits and equity capital significantly influence bank profitability significantly. Similarly, another Pakistani researcher Akhtar et al., (2011) evaluated factors influencing profitability of commercial banks in Pakistan during the period 2006 to 2009. The results of multivariate regression analysis suggested that asset management, gearing ratio and NPL's ratio positively impact bank profitability.

The study of Muhammad et al., (2016) investigated the elements of changes in the profitability of banks and showed that capitalisation positively impacts the profitability of Islamic banks. Additionally, Salike and Ao (2018) investigated the factors of profitability of Asian bank by analysing a sample of 947 banks from 12 Asian countries during the timeframe 2001 to 2015. The outcomes of panel data fixed effect model demonstrated that income diversification, operating efficiency and capital adequacy were the main factors of a bank's profitability. Moreover the study of Asadullah (2017) investigated the elements of profitability of Islamic banks. Asadullah collected information from five Islamic banks in Pakistan from 2006 to 2015. Application of panel regression revealed that liquidity and size significantly influence the profitability of Islamic banks. Consequently, Almazari (2014) examined internal determinants that influenced profitability of bank. A sample from 23 Jordanian and Saudi banks was utilised during the period 2005 to 2011. The application of regression generated results represented the profitability of Saudi banks as significantly and positively associated with equity to total assets and investment to total assets, while profitability of Jordanian banks was positively correlated to total equity to total asset. Likewise, the study of Khasharmeh (2018) investigated the influence of liquidity on profitability of Islamic banks from 2010 to 2015, in which the data from six Islamic banks from Bahrain was utilised and evaluated statistically. The result showed that investment to total deposits, due from banks to total deposits and cash were positively correlated.

The cited literature relating Islamic banking research conducted across the globe reported that investment to total assets and Return on Assets (ROA) have to be considered as the measures of Islamic bank profitability because it is considered as the true measure of the operational performance of the banks [Akhtar et al. (2011); Dawood (2014); Muhammad et al. (2016); Salike and Ao (2018); Aslam et al. (2019); Aslam and Haron, 2020b; Rehman, Aslam, and Iqbal (2021)].

After analysing relevant literature the following hypotheses have been formulated for statistical testing in this research paper.

H_1 = Capitalisation positively and significantly impacts the profitability of Islamic banks of Pakistan.
H_2 = Liquidity positively and significantly impacts the profitability of Islamic banks of Pakistan.

H_3 = Total investment to total assets positively and significantly impact the profitability of Islamic banks of Pakistan.

Null: Otherwise.

3. Research Methodology

This study intended to examine the effect of capital adequacy, liquidity that is financing to total assets and investments to total assets on the return on assets representing profitability of the five state banks of Pakistan registered Islamic banks including; Bank Islami, Meezan Bank, Burj Bank, Dubai Islamic Bank and Al Baraka Bank, all of which have legitimate operations in Pakistan. The financial data of these Islamic banks has been acquired from the banks' yearly financial reports easily accessible from their official websites online.

3.1. Measurement of Variables

Capitalisation, liquidity, and investment to total assets are the independent variables which have been analysed to record their influence on return on assets, which is the representation of operational performance of the Islamic Banks. These variables are briefly discussed as under:

3.1.1. Return on Assets - ROA (Dependent Variable)

Return on Assets is computed by dividing net income after taxes by total assets. If the Return on Assets ratio is high it shows that the assets are utilised in an efficient way for profit generation. Return on Assets indicates proficiency of the administration in using the assets of an organisation (i.e., bank) to generate profits (Bashir, 2003) [Bashir (2003); Aslam et al. (2019); Aslam and Haron, 2020b; Rehman, Aslam, and Iqbal (2021)].

3.1.2. Capital Adequacy (Independent Variable)

Capitalisation means the provision of capital for the organisation. It is calculated by equity to total assets. The literature suggests it as a key determinant of profitability. Basically capitalisation provides a shield of safety to the organisation from becoming bankrupt. Due to high capitalisation the default risk is minimised and thus improves profitability. Empirical evidence showed a mixed indication of the influence of capitalisation on profitability (Nisar, Susheng, Ahmed, and Ke, 2015). For example, Olakekan and Adeyinka (2013) found that capitalisation positively influences bank profitability, while Ahmad et al., (2012) found that it negatively impacts bank profitability,

but where the capitalisation and bank profitability had been associated negatively, it shows that high capital leads to high tax resulting in low profitability.

3.1.3. Liquidity Ratio (Independent Variable)

Liquidity ratio is represented by financing to total assets, which shows the liquidity of a bank tied to financing (Bashir, 2003; Wasiuzzaman & Tarmizi, 2010). It shows how much of the assets are converted in to financing activities. Generally it is likely that the financing to total assets ratio positively influences bank profitability. Moreover, it shows that if more assets are converted into financing than there will be more profit for the financial institution [Omar, and Muhammad (2012); Ebenezer, Omar, and Kamil (2017)].

3.1.4. Investment to Total Assets (Independent Variable)

It is generally represented as total investments to total assets ratio. It explains how efficiently an organisation is making investment decisions to produce profits, so that it is expected to impact a bank's profit margins positively (Almazari, 2014).

3.2. Graphical Representation of Financial Data

The basic graphical representations of the ratios which have been calculated for all the variables including ROA, ITA, CPA and LQTY of the research model are subsequently provided next to illustrate the complete picture of financial performance of Islamic banks during the study period ranging from 2008 to 2015.

Figure 1: ROA of Islamic banks during the period 2008 till 2015
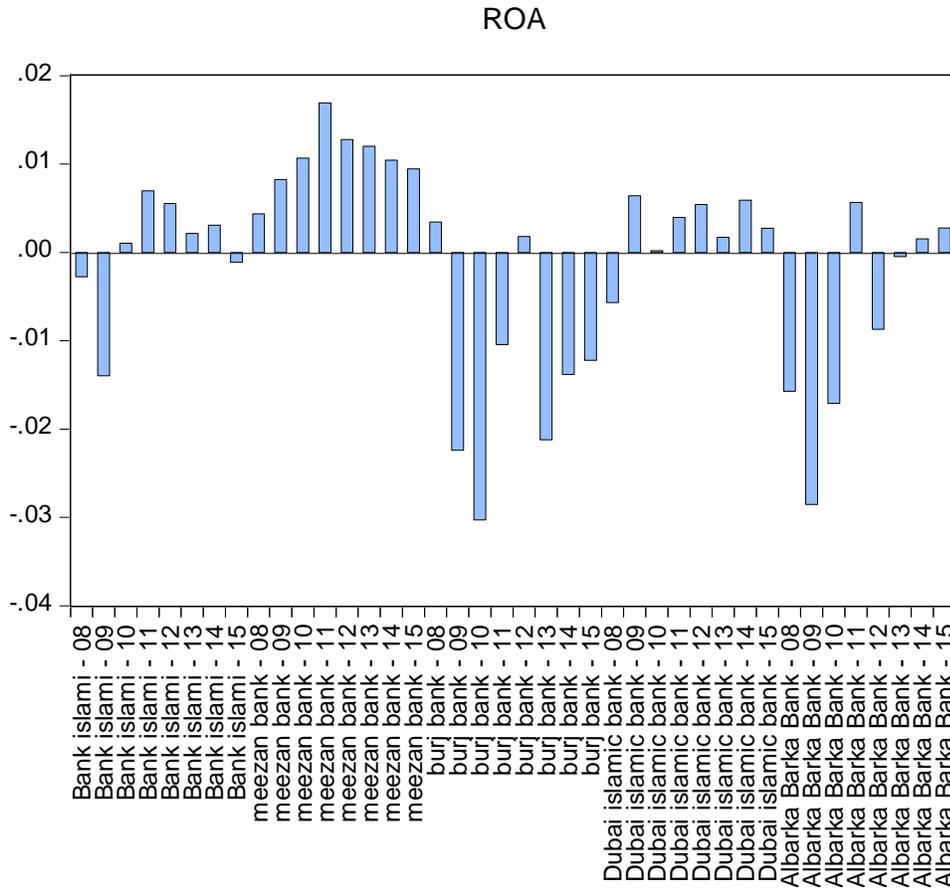
Figure 1 relating the ROA of Islamic banks illustrates that except for Meezan Bank all other Islamic banks have a negative ROA. It is a notable factor because in terms of market competitiveness the Islamic banks are facing extreme pressure to maximise halal profitability which seems quite difficult to achieve under the prevailing market conditions when Islamic banks are compared to conventional banks in terms of market penetration and profitability (Girardone, Molyneux, and Gardener, 2007).

Figure 2: ITA of Islamic banks during the period 2008 till 2015
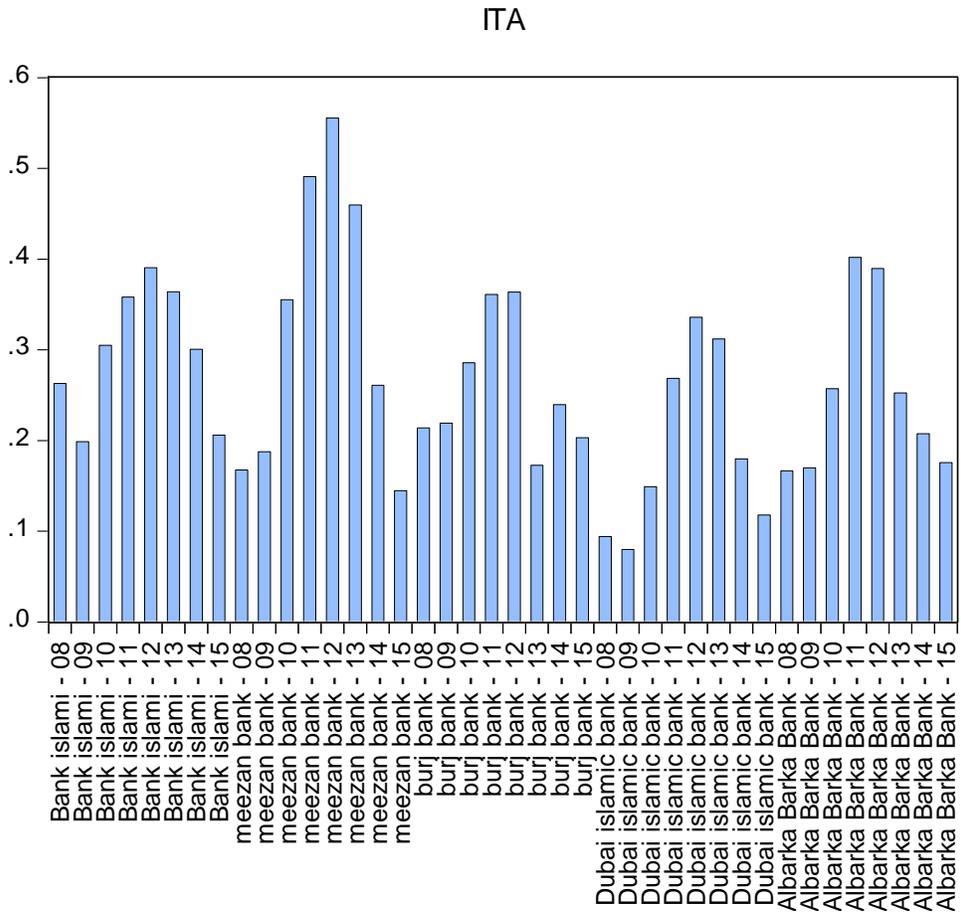
According to figure 2, it is evident that Meezan bank during the study period had the highest investment to total assets (ITA), especially between the years 2011 and 2013. However, the lowest ITA had been for Dubai Islamic bank and a similar situation was the case for two other Islamic banks including Bank Islami and Burj bank.

Figure 3: CPA of Islamic banks during the period 2008 till 2015

CPA
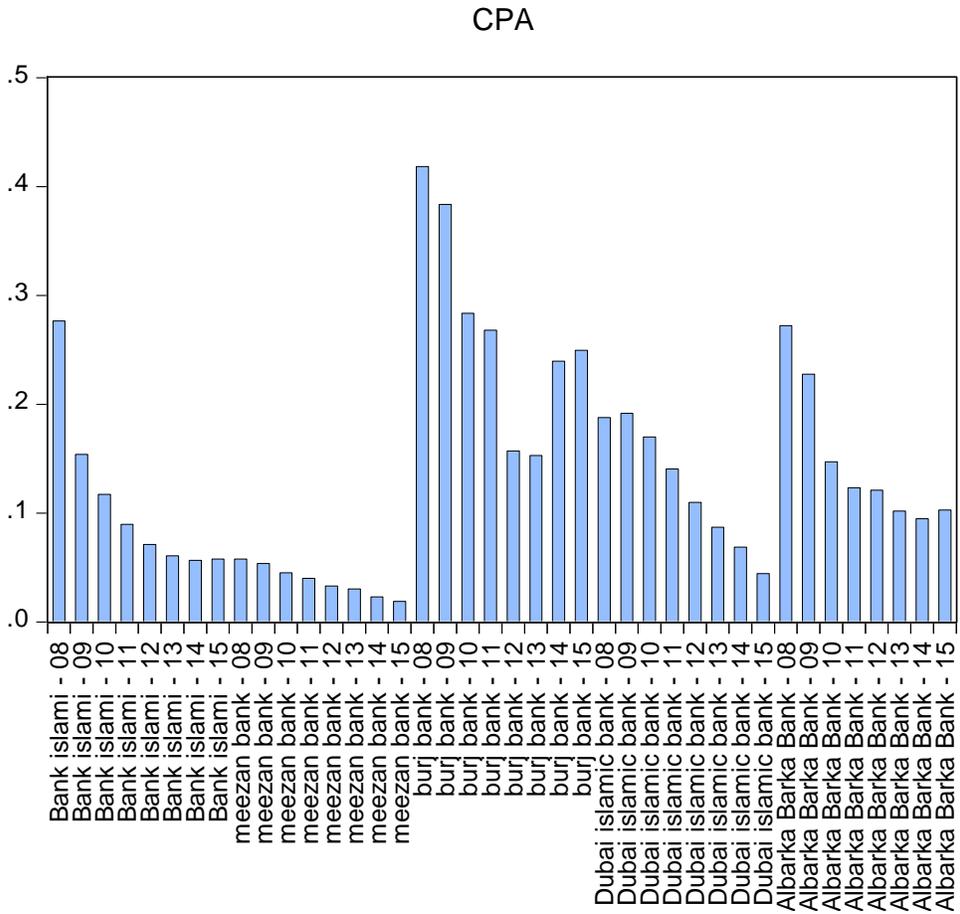
Figure 3 show Capital Adequacy (CA) of the banks during the study period. According to this figure it is clear that Burj bank has the highest capital adequacy as compared to the rest of the Islamic banks. The lowest capital adequacy had been reported for Meezan Bank. However, a sharp decrease in capital adequacy had been the case for Bank Islami. All the Islamic banks had experienced a decline in capital adequacy during the study period.

Figure 4: LQTY of Islamic banks during the period 2008 till 2015
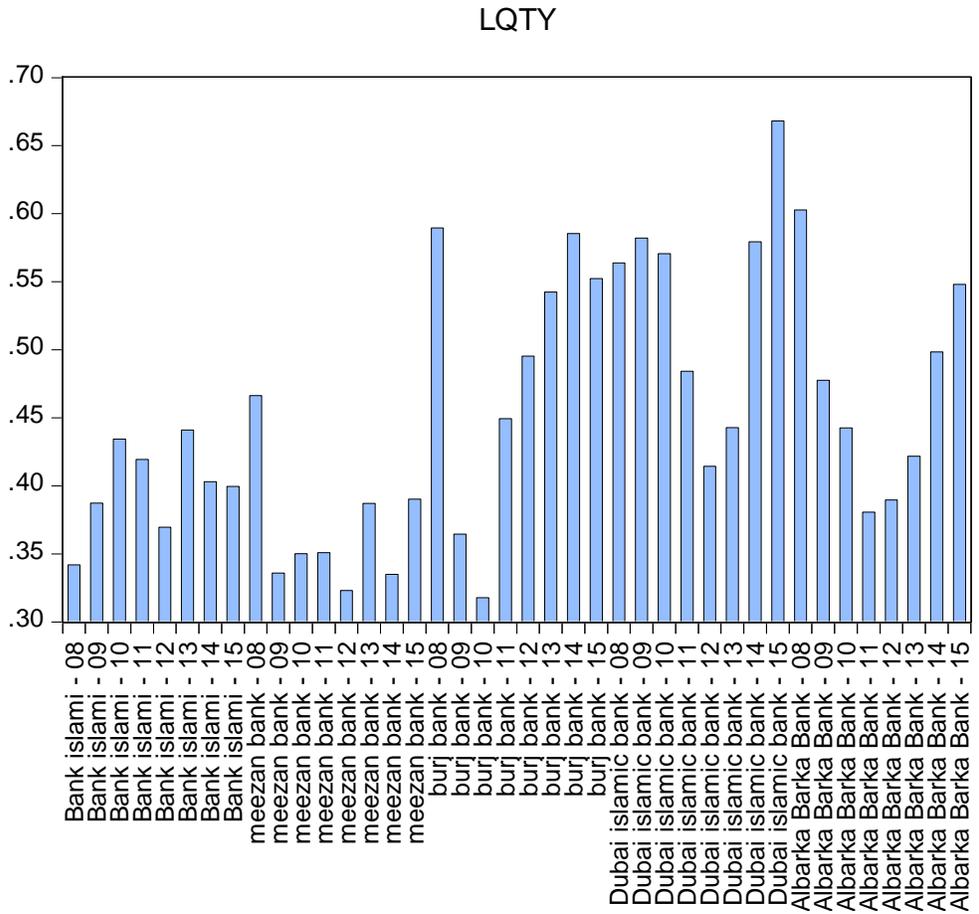
LQTY

Figure 4 is relating the Liquidity (LQTY) of the Islamic banks observed during the study period. It is clear from the figure that highest liquidity was reported by Dubai Islamic bank for the years 2008, 2009, 2010, 2014 and 2015. Similarly, Burj bank has higher liquidly in the year 2008, 2012, 2013, 2014 and 2015. However, the remaining Islamic banks had reported a fluctuation in liquidity and thus had higher levels of volatility during the study period.

A box plot of dependent as well as independent variables of the econometric model of the research study are provided below:

Figure 5: Box Plots of Islamic bank data for the period 2008 till 2015
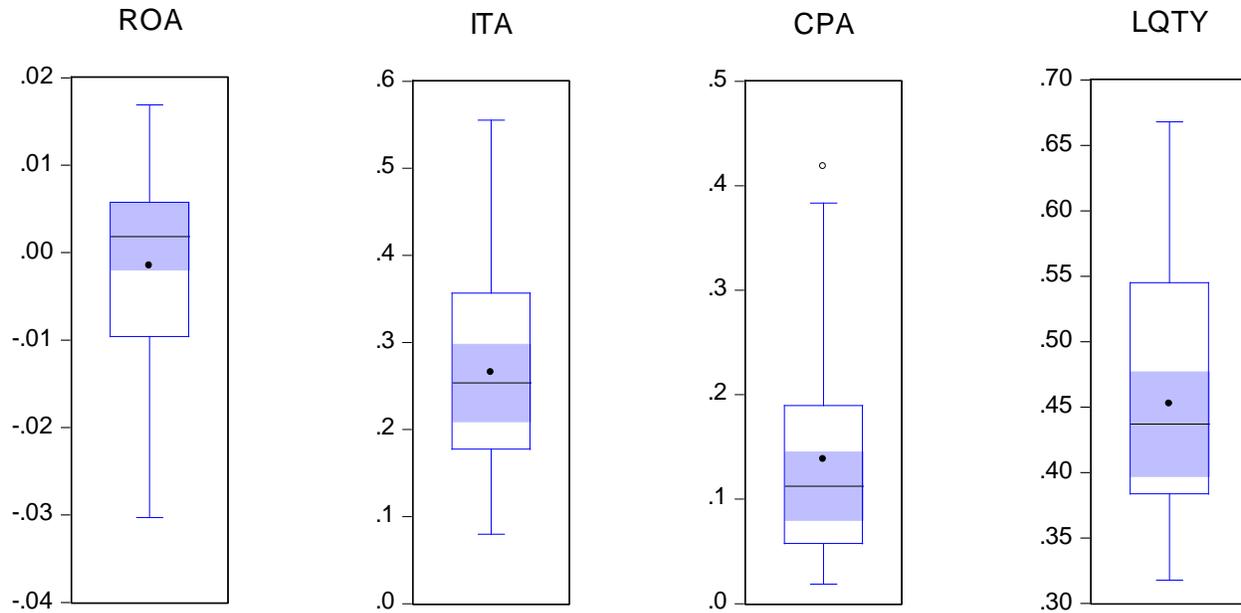
The box plots presented in figure 5 above explains that the highest data range is for liquidity and the rest of the variables have a similar range. The upper quartile of ROA is comparatively shorter as compared to the rest of the variables. However, ITA, CPA and LQT are relatively positively skewed as compared to ROA which seems negatively skewed. The median ROA is approximately near to zero, ITA is between 0.2 and 0.3, CPA is near to 0.1 and LQTY is around 0.45. The interquartile range (IQR) of all the variables are different, where it is evident that a third interquartile of ROA is smallest as compared to the largest in the case of the third interquartile of the LQTY.

Table 1: Notations and expected signs of the variables

Variables	Notation	Explanation	Expected Signs
Return on Assets	ROA	Net profit /Total Assets	Constant
Capital Adequacy	CPA	Equity/Total Assets	+
Liquidity	LQTY	Total Financing/Total assets	+
Investment to Total Assets	ITA	Total Investments/Total Assets	+

3.3. Mathematical Function and Econometric Models of the study

The literature review suggested mathematical function and econometric equations for further empirical testing and analyses are as follows:

ROA = f (CPA, LQTY, ITA)

Where ROA is the dependent variable and represents Return on Assets and CPA, LQTY and ITA are the functions of ROA.

$$ROA_{it} = \beta_0 + \beta_1(CPA)_{it} + \beta_2(LQTY)_{it} + \beta_3(ITA)_{it} + e_{it} \dots \dots \dots \dots \dots \dots \dots \dots . Equation\ 1$$

$$ROA_{it} = \beta_0 + \beta_1(CPA)_{it} + \beta_2(LQTY)_{it} + \beta_3(ITA)_{it} + \alpha_i + e_{it} \dots RE\ Model\ Equation\ 2$$

The Symbols used in the aforementioned econometric equations have the following meanings:

CPA = Capital Adequacy of Islamic bank i in year t
LQTY = Liquidity of Islamic bank i in year t
ITA = Total Investment to Total Asset Ratio
ROA_{it} =Return on Assets of Islamic bank i in year t
β_0 = Constant
α_i = It is time invariant and homoscedastic for the Islamic Bank i
$\beta_1, \beta_2, \beta_3$ = regression coefficients
$(CPA)_{it}$ = Capital Adequacy of Islamic bank i at year t
$(LQTY)_{it}$ = Liquidity (financing to total assets) of Islamic bank i at year t
$(ITA)_{it}$ = Total Investment to Total Assets of Islamic bank i at year t
e_{it} = Model error term
RE = Random Effects Model

4. Results & Discussion

The results have been generated by using the raw data by transforming it and further evaluating it by E-Views Software. Furthermore, results have been discussed with respect to their significance and applicability towards Islamic banks operating in Pakistan.

4.1. Descriptive Statistics

Table 2 explains the descriptive statistics of the study. The results shown that the skewness value is near zero and the kurtosis value is near 3, which shows that data is normally distributed.

Table 2: Descriptive Statistics

	ROA	**CPA**	**LQTY**	**ITA**
Mean	0.001484	0.138191	0.452480	0.265614
Median	0.001964	0.113538	0.437760	0.254776
Maximum	0.016911	0.418256	0.668098	0.555538
Minimum	-0.030297	0.018854	0.317736	0.079808
Std. Dev.	0.011517	0.098987	0.093175	0.109922
Skewness	-0.897042	1.030923	0.451931	0.580876
Kurtosis	3.014609	3.475920	2.112552	2.853860
Jarque-Bera	5.364924	7.462854	2.674219	2.285041
Observations	40	40	40	40

4.2. Correlation Analysis

Table 3: Correlation Analysis

	CPA	Lqty	ITA
CPA	1	0.285	-0.281
Lqty	0.288	1	-0.610
ITA	-0.281	-0.610	1

In the correlation analysis as shown in table 3 above, the linear relationship is calculated among the explanatory variables. Moreover, the correlation test shows that the correlation between the independent variables is below 0.7 which signifies no multicollinearity. Here it is important to mention that multicollinearity is the occurance of higher intercorrelations among independent variables that exists if correlation is greater than 0.80 or 0.90 (Kennedy, 2008, p. 196).

4.3. Panel Unit Root Test

Table 4: Unit Root Test

Variables	Method	Levin, Lin & Chu t*	ADF - Fisher Chi-square	PP - Fisher Chi-square
CPA	Statistic	-3.48396	27.9631	41.7189
	Prob.**	0.0002	0.0018	0
	Cross-sections	5	5	5
	Obs.	30	30	35
Liquidity	Statistic	-4.89045	27.5858	34.2619
	Prob.**	0	0.0021	0.0002
	Cross-sections	5	5	5
	Obs.	30	30	35
ITA	Statistic	-12.3836	33.8229	6.40261
	Prob.**	0	0.0002	0.7804
	Cross-sections	5	5	5
	Obs	30	30	35

In table 4 above it has been considered that the null hypothesis signified data as not stationary. Therefore, application of the panel unit root test of independent variables shows that the data is almost stationary, relating variables evident from ADF and PP test probability values, which are mostly less than 0.05.

4.4. Hausman test for the selection of panel model

The Hausman test is utilised to test that random effect model or fixed effect model is more suitable. The table for which Hausman test has been applied to test random effect model is as follows:

Table 5: Hausman Test
Correlated Random Effects - Hausman Test
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.290420	3	0.1517

The results shown in table 5 above relating the Hausman test confirm the suitability of the random effect model. The outcome of the Hausman test shows the p-value (0.1517) being more than 0.05 which calls for the acceptance of null hypothesis and this signifies random effects model. Therefore, use of random effects model is considered suitable to proceed with the financial data analysis of the model.

4.5. Random Effects Model

Table 6: Analysis of Random Effects Model

Dependent Variable: ROA				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
CPA	-0.042659	0.016855	-2.530888	0.0159
Lqty	0.035823	0.018374	1.949698	0.0590
ITA	0.037138	0.013882	2.675225	0.0112
C	-0.021662	0.011587	-1.869522	0.0697
R-squared	0.323648	Mean dependent var		-0.000651
Adjusted R-squared	0.267285	S.D. dependent var		0.008753
S.E. of regression	0.007492	Sum squared resid		0.002021
F-statistic	5.742236	Durbin-Watson stat		1.485408
Prob(F-statistic)	0.002566			

The results shown in table 6 above explain that the R-square is 0.3236 which expresses that the independent variables collectively explain 32.36% variation in the dependent/explained variable. Capital adequacy is significantly and negatively associated with profitability. The regression results show that if there is a 1 percent change in capital adequacy it will reduce profitability by 0.0426 percent. Liquidity shows a positive but insignificant association with profitability and show that a 1 percent change in liquidity will increase profitability by 0.0358 percent. Also, investment to total assets indicates a significant and positive influence on profitability.

The Durbin Watson statistic is 1.4854 which is near to the value of 2 which signify that there are no or negligible issue of autocorrelation. The F-statistic is 5.74, and the P value of (F-statistic) is less than 5% which shows overall significance of the econometric model. Regression results show that capital adequacy negatively and significantly influences the profitability of Islamic Banks in Pakistan. This supports some early studies by [Ali, Akhtar and Ahmed (2011); Tariq, Usman, Mir, Aman, and Ali (2014), Ahmad et al., (2012), Dodi et al. (2018), Nahar and Prawoto (2017)]. However, liquidity is positively but insignificantly impacts profitability and investment to total assets positively and significantly influences return on assets (ROA). This is further supported by the studies conducted by Almazari (2014) and; Anwar and Jadoon (2018).

The future oriented market position of Islamic banks in terms of capital allocation is imperative in order to conform to the directives of State Bank of Pakistan which explains that all Islamic banks have to maintain a 14 percent (CRR) Cash Reserve Requirement and according to a recent report of SBP Islamic banks are holding excess reserves of cash over and above the CRR. This fact is highlighted by the study results which shows an insignificant impact of Islamic banks liquidity on profitability. It is further noted that according to the report of SBP issued from domestic market and monetary management department for the reserve period Oct to Nov 2016, Albaraka bank was holding PKR 313 Million and Meezan Bank was holding PKR 105 Million in excess reserves of cash over CRR. Therefore, as according to the results of this research study, Islamic banks need to focus on the allocation of excess reserves toward market based investments that could enhance investment to total assets and ultimately reap fruits in the maximisation of Islamic bank profitability in terms of ROA. These investments could be an increase in branch network, Ijarah based banking products, Government of Pakistan (GOP) Ijarah Sukuk, Diminishing Musharakah, corporate financing portfolio, trade and assets under management.

5. Conclusion

The study used the financial data of five fully-fledge Islamic banks operating in Pakistan during 2008 to 2015 to examine the internal factors of profitability of Islamic banks. Panel data driven econometric analysis results have showed that capital adequacy negatively and significantly impacts profitability, whereas liquidity positively but insignificantly impacts profitability. However, investments (investment to total assets) impact positively and significantly on Islamic bank's profitability in Pakistan. The outcomes demonstrate that capital adequacy and investments are the variables of higher importance for Islamic banks operating in Pakistan like mostly other countries. A more comprehensive and inclusive econometric model including many other micro and macroeconomic factors could also be formulated as a part of future investigations to enhance the scope of the research. It is also suggested that the policy makers should emphasise the capitalisation and investment decisions of Islamic banks in Pakistan. The tier 1 as well as tier 2 capital along-with capital conservation buffer are requirements alongside Islamic banks investments in total assets certainly enhances profitability in terms of income generated as non-interest income for the Islamic Banks. Therefore, it is recommended that the Islamic banks should consider utilisation and deployment of suitable capital structures, and target investments to total assets as tools to enhance assets efficiency in terms of return generation and growth of Islamic banks profitability.

REFERENCES

Abdullah, M. N., Parvez, K., & Ayreen, S. (2014). Bank specific, industry specific and macroeconomic determinants of commercial bank profitability: A case of Bangladesh. *World Journal of Social Sciences, 4*(3), 82-96.

Abbas M., Azid, T., & Besar, M. H. A. H. (2016). Efficiency, effectiveness and performance profile of Islamic and conventional banks in Pakistan. *Humanomics,* 32(1), 2-18. doi: 10.1108/H-09-2015-0058

Adeusi, S. O., Kolapo, F. T., &Aluko, A. O. (2014). Determinants of commercial banks' profitability, panel evidence from Nigeria. *International Journal of Economics, Commerce, and Management, 2*(12), 1-18.

Afzal, M. (1993). Theory and Practice of Islamic Banking. *Pakistan Social and Economic Review,* 31(2), 102-117. Retrieved from http://www.jstor.org/stable/25825095

Ahmad, S., Nafees, B., & Khan, Z. A. (2012). Determinants of profitability of Pakistani banks: Panel data evidence for the period 2001-2010. *Journal of Business Studies Quarterly, 4*(1), 149-165.

Akhtar, M. F., Ali, K., & Sadaqat, S. (2011). Factors influencing the profitability of Islamic banks of Pakistan. *International Research Journal of Finance and Economics, 66*, 125-132.

Ali, K., Akhtar, M. F., & Ahmed, H. Z. (2011). Bank-specific and macroeconomic indicators of profitability-empirical evidence from the commercial banks of Pakistan. *International Journal of Business and Social Science, 2*(6), 235-242.

Allen, F. and Santomero, A. M. (1998). The Theory of Financial Intermediation, *Journal of Banking & Finance, 21*, 1461-1485.

Almazari, A. A. (2014). Impact of internal factors on bank profitability: Comparative study between Saudi Arabia and Jordan. *Journal of Applied finance and banking, 4*(1), 125-140.

Anwar, J., & Jadoon, M. (2018). Islamic Banking in Pakistan: Analysing Growth and Determinants of Profitability. *COMSATS Journal of Islamic Finance*, *3*(1), 84-100. doi: 10.26652/cjif.3201816

Asadullah, M. (2017). Determinants of Profitability of Islamic Banks of Pakistan–A Case Study on Pakistan's Islamic Banking Sector. Paper presented at the International Conference on Advances in Business, Management and Law (ICABML) 2017. Available at: https://pdfs.semanticscholar.org/d1d4/567e087ff8a0cc024282cd7504ba734d8494.pdf?_ga=2.225423962.1754363333.1621240577-398731945.1618603271

Aslam, E., & Haron, R. (2020a). Does corporate governance affect the performance of islamic banks? New insight into Islamic Countries. *Corporate Governance: The International Journal of Business in Society*, *20*(6), 1073-1090. doi: 10.1108/CG-11-2019-0350

Aslam, E., Kalim, R., & Fizza, S. (2019). Do cash holding and corporate governance structure matter for the performance of firms? Evidence from KMI 30-and KSE 100-indexed firms in Pakistan. *Global Business Review*, *20*(2), 313-330. doi: 10.1177/0972150918825202

Bashir, A.-H. M. (2003). Determinants of profitability in Islamic banks: Some evidence from the Middle East. *Islamic Economic Studies, 11*(1), 31-57.

Dawood, U. (2014). Factors impacting profitability of commercial banks in Pakistan for the period of (2009-2012). *International Journal of Scientific and Research Publications, 4*(3), 1-7.

Dodi, D., Supiyadi, D., Arief, M., & Nugraha, N. (2018). Islamic Bank Profitability: A Study of Islamic Bank in Indonesia. *The International Journal of Business Review (The Jobs Review), 1*(1), 55-66.

Ebenezer, O. O., Omar, W. A. W. B., & Kamil, S. (2017). Bank Specific and Macroeconomic Determinants of Commercial Bank Profitability: Empirical Evidence from Nigeria. *International Journal of Finance & Banking Studies, 6*(1), 25-38. doi: https://doi.org/10.20525/ijfbs.v6i1.627

Eljelly, A. M. (2013). Internal and external determinants of profitability of Islamic banks in Sudan: evidence from panel data. *Afro-Asian Journal of Finance and Accounting*, *3*(3), 222-240. doi: 10.1504/AAJFA.2013.054424

Entrop, O., Memmel, C.h., Ruprecht, B., & Wilkens, M. (2015). Determinants of bank interest margins: Impact of maturity transformation. *Journal of Banking and Finance*, *54*, 1-19. doi: https://doi.org/10.1016/j.jbankfin.2014.12.001

Garcia-Herrero, A., Gavila, S., & Santabarbara, D. (2009). What explains the low profitability of Chinese banks? *Journal of Banking and Finance*, *33*, 2080-2092.

Girardone, C., Molyneux, P., & Gardener, E. P. (2007). Analysing the determinants of bank efficiency: the case of Italian banks. *Applied Economics, 36*(3), 215-227. doi: https://doi.org/10.1080/0003684042000175334

Goddard, J. A., Molyneux, P., & Wilson, J. O. (2004). Dynamics of growth and profitability in banking. *Journal of Money, Credit, and Banking, 36*(6), 1069-1090.

Husain, A. O., & Abdullah, A. M. (2008). Bank-Specific Determinants of Profitability: The case of Kuwait. *Journal of Economic and Administrative Sciences, 24*(2), 20-34. doi: 10.1108/10264116200800006

Javaid, S., Anwar, J., Zaman, K., & Gafoor, A. (2011). Determinants of Bank Profitability in Pakistan: Internal Factor Analysis. *Mediterranean Journal of Social Sciences, 2*(1), 59-78.

Kennedy, P. (2008). A Guide to Econometrics, 6th edn. Blackwell Publishing, Malden.

Khasharmeh, H. (2018). Does Liquidity Influence Profitability in Islamic Banks of Bahrain: An Empirical Study? *International Journal of Financial Research, 9*(2), 236-248. doi: https://doi.org/10.5430/ijfr.v9n2p236

Khemaies, B. (2017). Determinants of bank profitability in Tunisia: does corruption matter? *Journal of Money Laundering Control, 20*(1), 70-78. doi: 10.1108/JMLC-10-2015-0044

Kyriaki, K. (2008). The determinants of banks' profits in Greece during the period of EU financial integration. *Managerial Finance, 34*(3), 146-159. doi: 10.1108/03074350810848036

Liu, H., & Wilson, J. O. S. (2010). The profitability of banks in Japan. *Applied Financial Economics, 20*(24), 1851-1866. doi: 10.1080/09603107.2010.526577

Nahar, F. H., & Prawoto, N. (2017). Bank's Profitability in Indonesia: Case Study of Islamic Banks Period 2008-2012. *Jurnal Ekonomi & Studi Pembangunan, 18*(2), 164-172. doi: 10.18196/jesp.18.2.4043

Nisar, S., Susheng, W., Ahmed, J., & Ke, P. (2015). Determinants Of Bank's Profitability In Pakistan: A Latest Panel Data Evidence. *International Journal of Economics, Commerce and Management, 3*(4), 1- 16.

Olalekan, A., & Adeyinka, S. (2013). Capital adequacy and banks' profitability: An empirical evidence from Nigeria. *American International Journal of Contemporary Research*, *3*(10), 87-93.

Omar, M., & Muhammad, A. (2012). Bank-specific and macroeconomic profitability determinants of Islamic banks: The case of different countries. *Qualitative Research in Financial Markets, 4*(2/3), 255-268. doi:10.1108/17554171211252565

Pak, O. (2020). Bank profitability in the Eurasian Economic Union: Do funding liquidity and systemic importance matter?. *North American Journal of Economics and Finance*, *54*, 1-24. doi: https://doi.org/10.1016/j.najef.2020.101265

Petria, N., Capraru, B., &Ihnatov, I. (2015). Determinants of Banks' Profitability: Evidence from EU27 Banking Systems. *Procedia Economics and Finance, 20*, 518-524. doi: https://doi.org/10.1016/S2212-5671(15)00104-5

Purna, S. P. (2018). The Determinants of Profitability on Full-Fledged Islamic Bank and Islamic Window Bank in Indonesia and Malaysia from 2011-2016. Available at: https://dspace.uii.ac.id/handle/123456789/6559

Rahaman, M. M., & Akhter, S. (2016). Bank-Specific Factors Influencing Profitability of Islamic Banks in Bangladesh. *Journal of Business and Technology (Dhaka), 10*(1), 21-36. doi: https://doi.org/10.3329/jbt.v10i1.26904

Ramadan, I. Z. (2011). Bank-Specific Determinants of Islamic Banks Profitability: An Empirical Study of the Jordanian Market. *International Journal of Academic Research, 3*(6), 73-80.

Rehman, A. U., Aslam, E., & Iqbal, A. (2021). Intellectual capital efficiency and bank performance: Evidence from islamic banks. *Borsa Istanbul Review,* Published online. doi: https://doi.org/10.1016/j.bir.2021.02.004

Saeed, M. S. (2014). Bank-related, industry-related and macroeconomic factors affecting bank profitability: a case of the United Kingdom. *Research journal of finance and accounting, 5*(2), 42-50.

Saeed, H., Shahid, A. & Tirmizi, S. M. A. (2020). An empirical investigation of banking sector performance of Pakistan and Sri Lanka by using CAMELS ratio of framework. *Journal of Sustainable Finance & Investment*, *10*(3), 247-268. doi: 10.1080/20430795.2019.1673140

Salike, N., & Ao, B. (2018). Determinants of Bank's Profitability: Role of Poor Asset Quality in Asia. *China Finance Review International, 8*(2), 216-231. doi:10.1108/CFRI-10-2016-0118

Shahid, A., Saeed, H., & Tirmizi, S. M. A. (2015). Economic development and banking sector growth in Pakistan. *Journal of Sustainable Finance & Investment*, *5*(3), 121-135, doi: 10.1080/20430795.2015.1063976

Sufian, F. (2009). Determinants of Bank Profitability in a Developing Economy: Empirical Evidence from the China Banking Sector. *Journal of Asia-Pacific Business, 10*(4), 281-307. doi: https://doi.org/10.1080/10599230903340205

Sufian, F. & Habibullah, M. S. (2009). Determinants of Bank Profitability in a Developing Economy: Empirical evidence from Bangladesh, *Journal of Business Economics and Management*, *10*(3), 207-217. doi: https://doi.org/10.3846/1611-1699.2009.10.207-217

Tan, Y. (2017). The impact of competition and shadow banking on profitability: Evidence from the Chinese banking industry. *North American Journal of Economic and Finance*, 42, 89-106. doi: https://doi.org/10.1016/j.najef.2017.07.007

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

Tirmizi, S. M. A., Malik, Q. A., & Hussain, S. S. (2020). Invention and Open Innovation Processes, and Linkages: A Conceptual Framework. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(4), 159. doi: 10.3390/joitmc6040159

Wasiuzzaman, S., & Tarmizi, H. (2010). Profitability of Islamic banks in Malaysia: an empirical analysis. *Journal of Islamic Economics, Banking and Finance, 6*(4), 53-68.

Yamuna, S. (2013). Determinants of Profitability in the Banking Sector: A study with special reference to Private Commercial Banks in Sri Lanka, *Proceedings of the Third International Symposium (SEUSL),* 6-7 July, Oluvil, Sri Lanka.