Assessing the Liaison between Financial Risk and Profitability in Islamic Finance: A Critical Analysis

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Abstract

The aim of study is to empirically analyze the impact of financial risk on the profitability of Islamic banks. To fulfill the aim of study, required data, ranging from 2018 to 2022, were obtained from the database of World Bank, Global Economy, Trading Economy and annual reports. Unit root test and ordinary least square models were used to normalize the data and to estimate the relation of financial risk with profitability respectively. It was determined that credit risk and liquidity risk had no relation with profitability and lagged return on asset had positive significant relationship. Study had not found any relationship between financial risk and performance of Islamic Banks.

***Keywords**: Banking sector; financial risk; Credit risk; Liquidity risk; Macroeconomics; Profitability*

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Introduction

Islamic banking system was introduced in Malaysia in 1983. The name of first Islamic bank opened in Malaysia is Bank Islam Malaysia Berhad. The banks which deal as commercial banks, merchant banks and various companies were started to provide the products and services of Islamic banking in 1993. Commercial banks accept deposit and advancing loans on interest basis but Islamic banks deal according to the Islamic rule and regulations. Islamic banks deal with the Islamic mode of financing like Musharka, Mudarbah, Ijarah and Istisna describe by (Idrees 2013). Everywhere Islamic banking system is growing with the passage of time. For get rid from interest Islamic banking system introduced in Pakistan. There is a better performance of

commercial banks in term of profitability. But the Islamic bank is better performing in the credit risk and liquidity risk (Abduallah Al-Mamun 2014; Ma et al., 2022; Zhu et al., 2024)

According to findings of the Rashid and Nishat performance of Islamic banks are poor in terms of the profit maximization, operating efficiency and the investor management areas. The economy growth is depending on that the banking sector growth. (Chowdhury 2015) conclude that the increment of return on assets of commercial banking is higher as compared to Islamic banking. But Islamic banking and conventional banking both are contributing in the development of economy of Pakistan with the passage of time. Islamic banks capture the attention of people because Islamic banks provide the opportunity to them for investing the money and get huge profit in order to follow the Islamic rules and regulations.

Therefore, the growth of Islamic banking is enhancing day by day. In Pakistan, businesses are running on the basis of interest. But Islam does not allow to interest because it is prohibited in Islam. Meezan bank plays a very important role for eliminating the interest. SBP also allows to the all banks for running the banking business according to the Islamic rules and regulations or Shariah compliant.

Major risks such as credit risk and liquidity risks which are being faced by the banks. They may lead to lower the bank profitability. Credit risk is select in the various risks of banking sectors. Credit risk has a great impact because the stakeholder diversity affected. The bankruptcy and the failure of businesses affect the lenders, shareholders of banks, bank managers, customers, suppliers, financial institutions, competitors of government and regulators authorities. However, there is a powerful and profitable system of bank to raise the stability and the economy's supply to harmful shocks of macroeconomic. The banks get high return due to the high risk (Anas Fathul Ariffin 2014).

Some studies have been conducted on the impact of financial risk on Islamic banks profitability over the past decades. (Anas Fathul Ariffin 2014) have worked on that purpose. According to their empirical analysis, there is not significant positive impact of bank size and inflation rate on the profits of the Islamic banking. However the GDP growth and profitability have negative relationship and do not have the impact significantly. In the financial risk perspective, on the profitability the credit risk has significant negative effect. The liquidity risk has positive and not significant impact of the profitability of Islamic banks.

(Fauziah Hanim Tafri 2009) have analyzed that credit risk impact negatively on the profitability and it is significant statistically showing that margin will be lower in case of high risk. Islamic banks do not deal transactions on the basis of interest but the interest rate risks are exposed by the banks. However, the impact of interest rate risk has insignificant impact on Islamic banks profitability. (Asma' Rashidah Idris 2011) examined that there is a positive relation between bank size and profitability. They suggested that various factors are involved in order to determining the profitability. But only the bank size attracts the customers and gained

the confidence of consumers. Due to the enhancement of the bank size, ultimately the profitability of banks increases.

Financial sector is back bone of any economy. All sectors working in the country are connected with their banking sector to full-fill its financial needs and to overcome risk and losses. Banking sector is more dynamic in nature. It faces more risk comparatively to other sectors due to high involvement in financially transactions. Banking sector have also very much restriction from banking supervision and country business cycle also put pressure on banks earning and working. Although the problems of less profitability are create due to the impact of financial risks. There is a need to overcome the financial risk to stabilize the profitability.

Study of financial risk and its impact on profitability is very much important to make effective decisions by regulatory authorities to stabilize Islamic banking sector (Anas Fathul Ariffin 2014). So aim of study is to determine the impact of financial risks with the profitability of Islamic banking system in Pakistan and also to identify the impact of lagged return on asset on the Islamic bank's profitability.

(Fauziah Hanim Tafri 2009) have expected a negative relationship between profitability and Credit risk in 2009 and also same expectation by (Anas Fathul Ariffin 2014). Because credit risk lead to decrease the profitability of banks. But a positive relation between credit risk and profitability was expected (Al-Tamimi 2015). (J. A. Goddard 2004) predicted the negative relationship between liquidity risk and Islamic banks profitability. (Idrees 2013) and (Al-Tamimi 2015) expected that the liquidity risk positively impact the profitability. Profits are predicted to be high, due to the transfer of deposits into the loans.

Basically the study examines the impact of financial risk on the profitability of Islamic banks. For achieving the purpose, data is taken from 2018 to 2022. Unit root test, descriptive statistics, correlation and OLS are applying to find the impact of financial risk on the profitability of Islamic banks. The study is significant to increase the profitability of Islamic banks to overcome the financial risks.

Islamic banks perform their functions in international and as well as domestic level. In their operations Islamic banks face various challenges. For this situation, there is necessary for Islamic banks to business strengthen in order to meet their competition in international and domestic level. High level of profitability is very important for stabilizing the system of banks. When there is increment in interest rate it definitely lead to credit risk in term of number of defaults. Interest rate enhancement also creates the problems of liquidity. Liquidity problems occur when financial institutions are not able to pay the short term debts. There is a need to control the risk factors which are expected to influence the profitability of Islamic banks. Credit risk also relates to size of banks, the size of bank larger then it would refer to lower credit risk and vice versa.

Literature Review

The study found impact of financial risk on the profitability of Islamic banking. Different researchers studied empirically and found different results as (Al-Tamimi 2015) investigated the relation of financial risk and profitability of Islamic banks. The study used ROA and ROE to represent the profitability. Researchers employed regression analysis. The study found negative relation with profitability. (Anas Fathul Ariffin 2014) analyzed the impact of financial risk on profitability of Islamic banks. They gathered panel data from 2004 to 2011. Study concluded that liquidity risk and credit risk had positive and negative but insignificant impact on profitability consequently.

(Suseno 2017) investigated the impact of bank risk on the profitability of 75 islamic banks from 24 countries. They measured the profitability in term of Return on average assets and return on average equity also in term of value added. They concluded liquidity risk, credit risk and insolvency has no influence on profitability of Islamic banks. Determinants of profitability and financial risk was explored by (Mohammad Taqiuddin Mohamad 2019) in Malaysia. They took data from 1994 to 2015 for 17 Malaysian banks. Regression results interpret that liquidity risk, capital ratio and financial loss provision has significant influence on the profitability.

(Naama trad 2017) studied 78 Islamic banks for the period of 2004 to 2013 in 12 countries. Credit risk and insolvency risk was checked for profitability in term of ROA and ROE. Study concluded that credit risk has negative influence, liquidity risk has no link and macro-economic indicators other than inflation have significant and positive influence with the profitability. (Samir Belkhaoui 2020) they work for Islamic banking and risk determinants. Their study indicated that high risk is associates with Musharakah and Mudarabah but the the same time Islamic finance increases profitability.

Impact of Islamic Finance on profitability in Jordan was analyzed by (Mahmoud Al-Rdaydeh 2017). They consider data period from 2006 to 2015. Liquidity risk and ROE has no significant influence for both commercial and Islamic banks, cases, anyhow liquidity risk and ROA has significant influence for both type of banking systems. (Dodi 2018) explained the factors that affect the profitability in Indonesia. Credit and liquidity risk showed negative influence on profitability. Internal and external factors influences the profitability was studied by (Muhammad Istan 2020). GDP, inflation, interest rates were observed in link with profitability. Only GDP has negative influence with ROA all other indicators were insignificant.

Related study was conducted by (Idrees 2013) on the determinants of Islamic banking profitability in Malaysia. These determinants included bank specific, industry specific and macroeconomics indicators. Regression analysis was applied by researcher and showed a significant positive relation of inflation and positive but insignificant relation of liquidity risk with profitability. Furthermore, credit risk insignificantly correlated with profitability. (Bashir 2003) focused on the financial environment that effect the Islamic system. Study was based on

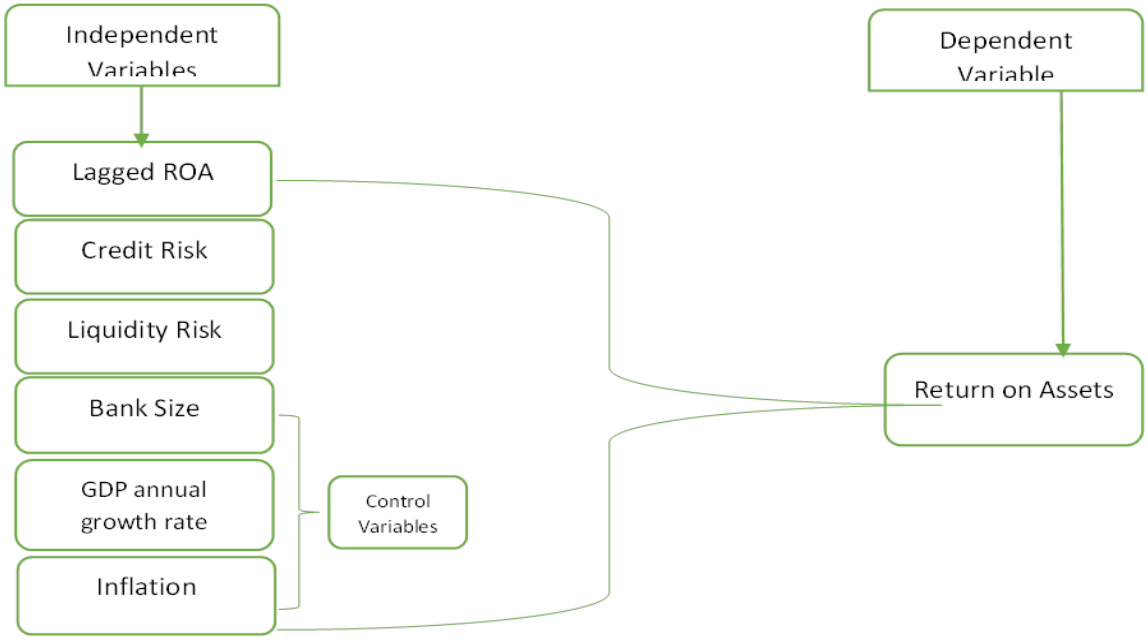
eight Middle Eastern countries. They used regression analysis and concluded that foreign banks were more profitable. And Macro-economic indicators have positive impact on profitability.
(Bashir 1999) examined risk and profitability determinants. Study indicated positive relationship between size and profitability and when size of banks was increased, Islamic banks became more profitable. (Asma' Rashidah Idris 2011) were empirically analyzed the indicators of profitability and applied GLS panel data regression analysis. Only bank size indicated positive and significant impact on profitability.

(Said 2013) examined the risk and efficiency of Islamic banks. The study was based on three stages. At first stage study used nonparametric model to examined efficiency. Second stage of study focused on credit and liquidity risk and third stage was involved to determine the Pearson correlation analysis between risk and profitability. The study revealed negative relation between credit risk and efficiency. Liquidity risk showed an insignificant relation with efficiency.

(Fauziah Hanim Tafri 2009) studied the relation between risk and profitability and made a comparison between Islamic and conventional banking in Malaysia. Study imposed GLS model and concluded that credit risk had a significant impact on the profitability of both Islamic and commercial banking but liquidity showed insignificant impact. (Austay 2007) estimated the profitability of Islamic banks. Study was based on internal and external determinants. Data were gathered for six years. Regression analysis was used in study. Results were indicated that profit had generated from funding activities and inflation had positive impact on profitability.
(Ibrahim 2015) studied the impact of size, liquidity and capital adequacy on the profitability of Islamic and conventional banks. Data were gathered from 2010 to 2014 and applied t-test to made comparison. Results were found statistically significant relation of liquidity with profitability of both commercial and Islamic banks.

(Chowdhury 2015) investigated the bank specific factors and macroeconomic factors to determine that which factor is more important for the profitability of Islamic banks. Study employed OLS technique to reach at results. Liquidity risk and credit risk were indicated insignificant impact on profitability while inflation had a positive and significant impact on the profitability of Islamic banks. (Pejman Abedifar 2012) examined the risk in Islamic banking. Data were collected for 24 countries from 1999 to 2009. Results were indicated lower credit risk in Islamic banks as compare to conventional banks in countries that had more Muslim population.

Theoretical model



Research Hypothesis

H0: There is a negative relationship between credit risks and profitability of banks.

H1: There is a positive relationship between credit risks and profitability of banks.

H0: Liquidity risk negatively impact the profitability of Islamic banks.

H2: Liquidity risk positively impact the profitability of Islamic banks.

H0: lagged return on asset has significant negative impact on profitability.

H3: Lagged return on asset has significant positive impact on profitability.

Data and Methodology

Sample banks were selected from different countries like Pakistan, Malaysia, Iran, Sudan, and Kuwait. All sample banks were licensed from their supervisory authority or central bank of their country in which they were operating. Data of sample banks were gathered from annual reports for the period of 2018-2022.

Data for macroeconomic variables like growth rate of gross domestic product (Bashir 2003), and Inflation (Bashir 2003), for each country from the database of World Bank, global economy and trading economy. Data for other variables, included lagged return on assets (Mohd. Heikal 2014), credit risk (Anas Fathul Ariffin 2014), liquidity risk (Said 2013), and bank size (Anas Fathul Ariffin 2014), were calculated from annual reports of selected banks.

Description of Variables

Return on asset was considered the dependent variable of study. Lagged ROA was dependent variable of study. Credit risk, liquidity risk, bank size, growth rate of gross domestic product and inflation were considered as independent variables of study. Detail description of all variables is mentioned below.

Return on Assets (ROA)

(Mohd. Heikal, 2014). ROA was measured by dividing net income after interest and taxes with total assets. It indicated that how much banks had earned by utilizing of its asset (Mohd Heikal, 2014).

Financial Risk

Financial risk was considered independent variable of the study. Financial risk was expressed through different proxies of credit risk and liquidity risk (Al-Tamimi 2015) and (Anas Fathul Ariffin 2014).

Credit Risk (CR)

Credit risk determined by loan loss provisions divided by total loans. All financial institution which deals in assigning of loans suffered with the credit risk it means higher the credit risk, lower the profitability. Negative and positive relation of credit risk with profitability was expected (Anas Fathul Ariffin 2014) and (Al-Tamimi 2015) respectively.

Liquidity Risk (LR)

Liquidity risk raised at a time when there were differentiation among the assets and liabilities maturities. The cause of this differentiation indicated due to much or smaller cash for funding purpose, (Muhammad farhan akhtar 2011). Liquidity risk was measured by total deposits divided with total loans (Anas Fathul Ariffin 2014). Both negative and positive relations of liquidity risk with profitability were established in previous study (J. A. Goddard 2004) and (Al-Tamimi 2015) respectively.

Control Variables

Bank size, growth rate of gross domestic product and Inflation were used as control variables. Control variables influenced the profitability significantly but the concentration of our study was on the financial risk so it was necessary to control the impact of bank size, growth rate of gross domestic product and inflation to isolate the impact of financial risk on the profitability. (Anas Fathul Ariffin 2014).

Bank Size (BS)

Bank size was expected to impact positively on the profitability because of economies of scale, cost became lesser and caused to increase in profitability (Asma' Rashidah Idris 2011).

Growth Rate of Gross Domestic Product (GRGDP)

It was expected that Growth rate of GDP has a positive relation with profitability (Bashir 2003).

Inflation (INF)

Inflation became a cause to increase in costs as well as in income. If income increased more rapidly as compared to costs then inflation impacted the profitability positively and vice versa (Idrees 2013).

Econometric Model

Multiple regression model was used to analyze the impact of financial risk on the profitability used followed by previous studies such as (Anas Fathul Ariffin 2014) and (Asma' Rashidah Idris 2011). Growth rate of GDP, inflation and bank size characterized as control. Below mentioned model was used in the study.

$$ROA_{it} = \beta_0 + \beta_1 LROA_{it-1} + \beta_2 CR_{it} + \beta_3 LR_{it} + \beta_4 \ln BS_{it} + \beta_5 GDP_{it} + \beta_6 INF_{it} + \epsilon_{it}$$

Where,

ROA	= Return on assets
LROA	= Lagged return on assets
CR	= Credit risk
LR	= Liquidity risk
BS	= Bank size
GDP	= Growth rate of gross domestic product
INF	= Inflation rate
β	= Coefficients of variables
i	= It showed number of sample bank
t	= it denotes time period of data collection
t-1	t-1 used to represent the data of previous year

Empirical Results

Unit Root Test

Unit root test had widely used to know the stationarity of variables. (ADF) unit root test had been applied for each variable to find the relevancy of independent variables in the econometric model. Stationary indicated that values of mean, variance and autocorrelation does

not changed within the passage of time. Credit risk, liquidity risk, lagged return on assets, and inflation were statistically significant at the level of 1%, GDP growth rate was significant at level of 5%, bank size and inflation became stationary at first difference.

Table 1: Unit Root Test

	At level		First difference	
Variables	ADF statistics	Critical values	ADF statistics	Critical values
ROA	-4.298125*** (0.0007)	1% -3.48465 5% -2.88525 10% -2.57949		
CR	-7.450628*** (0.0000)	1% -3.48375 5% -2.88485 10% -2.57928		
LR	-4.627216*** (0.000]ok'l;2)	1% -3.48375 5% -2.88485 10% -2.57928		
LROA	-7.992961*** (0.0000)	1% -3.48375 5% -2.88485 10% -2.57928		
BS	-2.292341 (0.1761)	1% -3.48375 5% -2.88485 10% -2.57928	-10.76625*** (0.0000)	1% -3.48465 5% -2.88524 10% -2.57949
GDPGR	-1.872004** (0.03445)	1% -3.48375 5% -2.88586 10% -2.57981		
INF	-1.702292 (0.4275)	1% -3.48606 5% -2.88586 10% -2.57981	-4.644244*** (0.0002)	1% -3.48606 5% -2.88586 10% -2.579849

Descriptive Statistics

Table 2 showed the descriptive statistics of all variables. Mean values of all variables indicated their average values. Credit risk, liquidity risk, lagged return on assets, bank size, GDP growth rate and

inflation presented their mean values, 0.02189, 0.75931, 0.01729, 7.63362, 2.78146 and 13.18781 respectively. Instead of GDP growth rate all other variables were positively skewed which distorted right direction of sleekness. GDP growth rate is negatively skewed and indicated in left direction. Kurtosis indicated peakedness of return on assets due to the various variables. Kurtosis values of variables = 3 were indicate mesokurtic, when kurtosis value > than 3 it called leptokurtic and when value < 3 it showed platykurtic, (Sajid 2015). Bank size and inflation were platykurtic and kurtosis values of all other variables were indicated leptokurtic. Study was consisted on 125 observations.

Table 2: Descriptive Statistics

	ROA	CR	LR	LROA	BS	GDPGR	INF
Mean	0.01957	0.02189	0.75931	0.01729	7.63362	2.78146	13.18781
Median	0.01150	0.00979	0.72577	0.01168	7.67381	3.50703	7.68950
Maximum	0.33631	0.30769	1.57589	0.33631	10.09532	9.62844	39.26636
Minimum	-0.02404	0.00000	0.10290	-0.03030	5.08437	-6.60869	1.65536
Std. Dev.	0.04285	0.03758	0.27570	0.03709	1.09886	3.50069	12.26598
Skewness	5.14606	4.40824	0.75264	5.72254	0.01311	-0.74081	0.90793
Kurtosis	33.9839	29.7450	4.12331	46.25113	2.54347	3.41476	2.48243
Jarque-Bera	5551.71	4130.34	18.373	10425.5	1.08912	12.32943	18.56890
Probability	0.00000	0.00000	0.00010	0.00000	0.58010	0.00210	0.00009
Sum	2.44605	2.73674	94.91393	2.16185	954.20303	347.68299	1648.47571
Sum Sq. Dev.	0.22772	0.17508	9.42514	0.17063	149.72918	1519.60162	18656.33224
Observations	125	125	125	125	125	125	125

Correlation

Table 3 showed correlation between return on assets and liquidity risk, credit risk, lagged return on assets, bank size, GDP growth rate and inflation. Credit risk, liquidity risk, lagged return on assets, bank size and inflation had a positive relationship with profitability. On the other hand GDP growth rate showed a negative correlation with return on assets. Multi Coo-linearity could be checked through correlation results for independent variables and correlation of 0.7 and more, reflected as highly correlated, (Anas Fathul Ariffin 2014). Correlation table showed all correlation values less than 0.7 which indicated variables were not highly correlated with return on assets. Only lagged return on assets showed value 0.7044 which indicated its high co-linearity with performance of Islamic banks.

Table 3: Correlation Analysis

	ROA	CR	LR	LROA	BS	GDPGR	INF
ROA	1.00000						
CR	0.10734	1.00000					
LR	0.12128	-0.40103	1.00000				
LROA	0.70447	0.06978	0.15036	1.00000			
BS	0.18911	0.14552	-0.01793	0.25006	1.00000		
GDPGR	-0.09797	-0.07264	-0.13767	-0.16254	-0.13943	1.00000	
INF	0.25204	0.04534	0.17486	0.28211	0.42513	-0.53949	1.00000

Ordinary Least Square Analysis

Table 4 displayed ordinary least square regression analysis for all variables. Credit risk and liquidity risk were insignificantly associated with profitability (Coef. = 0.0927, p = 0.25) and (Coef. = 0.0065, p = 0.51) respectively. Lagged return on assets were positively related with profitability at the significance level of 1% (Coef. = 0.7891, p = 0.00) indicated that 1 unit changes in LROA brought 0.78 units changes in the profitability of Islamic banks. Bank size was insignificantly linked with ROA (Coef. = -0.0010, p = -0.43). Growth rate of GDP and inflation were insignificantly related with performance (Coef. = 0.0009, p = 0.33) and (Coef. = 0.230002, p = 0.23) correspondingly.

Value of Durbin-Watson statistics was more than 2 which indicated autocorrelation of error terms were efficient and valid. R-square showed value of 0.5079 which showed that 50.79% variations took place because of changes in credit risk, liquidity risk, lagged return on assets, bank size, GDP growth rate and inflation. At the same time remaining 49.21% changes brought in ROA, might be due to randomness and other factors that were not indicated in study.

Discussion

Table 4 presented the OLS results for panel data to determine the impact of financial risk on the profitability of Islamic banks. Credit risk showed a positive relation in explaining the ROA. The indication of result accepted the alternative hypothesis that ROA has a positive relation with credit risk. The results were consistent with (Chowdhury 2015). Results of study were also contrary with Hussein and (Al-Tamimi 2015), (Anas Fathul Ariffin 2014) and (Said 2013). Liquidity risk has a positive impact on the profitability of Islamic banks which rejected the null hypothesis and accepted the alternative hypothesis that there is a positive relation between performance and liquidity risk consistent with M. Ashraf-ul-Ferdous Chowdhury

(2015), (Al-Tamimi 2015), (Anas Fathul Ariffin 2014), at the same time the study is contrary with (Said 2013).

Table 4: OLS

Dependent Variable: ROA

Method: Least Squares
Date: 12/14/16 Time: 13:33
Sample: 1 125
Included observations: 125

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CR	0.092753	0.0810985	1.1437189	0.255035
LR	0.006586	0.0101397	0.649552	0.517233
LROA	0.789167	0.0781470	10.098492	0.000000
BS	-0.001076	0.0013736	-0.783903	0.434654
GDPGR	0.000910	0.0009401	0.968772	0.334623
INF	0.000348	0.0002943	1.182949	0.239187

R-squared	0.507904	Mean dependent var	0.019568
Adjusted R-squared	0.487228	S.D. dependent var	0.042853
S.E. of regression	0.030686	Akaike info criterion	-4.083171
Sum squared resid	0.112058	Schwarz criterion	-3.947411
Log likelihood	261.198191	Hannan-Quinn criter.	-4.028019
Durbin-Watson stat	2.117582		

Lagged return on assets has positive and significant impact on the profitability. OLS regression results confirm the alternative hypothesis that lagged return on assets have a positive impact on ROA. Outcomes are constant with (Anas Fathul Ariffin 2014), who investigated the impact of financial risk on the profitability and found positive and significant relation between Lagged ROA and ROA. Bank size inversely affect the profitability of Islamic banks that showed study is stable with (Bashir 1999) but study is inconsistent with (Idrees 2013), (Asma' Rashidah Idris 2011).

GDP growth rate and inflation indicated positive insignificant impact on the performance of Islamic banks. Regression analysis rejected the null hypothesis and affirm that there is a positive impact of macroeconomic indicators with profitability. Consequences are consistent with (Anas Fathul Ariffin 2014) and contrary with (Fauziah Hanim Tafri 2009). Results showed by (Idrees 2013) are consistent with Inflation and in against of GDP growth rate.

Conclusion

The study examined the impact of financial risk on the profitability of Islamic banks. To attain the objectives of study, data were gathered from annual statements of banks for five years from 2018 to 2022. The effect of GDP growth rate and inflation has been controlled to segregate the effect of financial risk on the performance of Islamic banks. OLS Regression model has been applied to grasp the objectives of study.

Regression results indicated a positive and significant association between return on assets and lagged return on assets. Credit risk, liquidity risk, GDP growth rate and inflation had positive insignificant relation with ROA. Bank size had negative insignificant impact on the performance.

Study used only ROA for profitability indicator. The study focused on risk factors such as credit risk and liquidity risk. The Study limited with only these two risk indicators. Study does not use the risk measurements as rate of return risk and credit related off balance sheet activities. Furthermore the research work is limited with only five Islamic countries.

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