Volume 41, Issue 3

Econometric study of the effect of deposits on Islamic Banks profitability: Evidence from Malaysia

Roukia Bouhider
University of Jijel

Abstract

The main objective of this paper is to analyze the relationship between the deposit and the profitability of fourteen Malaysian Islamic banks over the period 2010-2019, using a fixed effect panel data analysis and the least squares method. The findings of this study have reported a strong positive relationship between the bank deposits assets ratio and profitability. Moreover, the Capital adequacy and the Financing to Deposits Ratio have shown a significant positive impact on profitability. The Gross Domestic Product, Inflation, and The exchange rate, have shown a significant negative impact. However, the Risk-Weighted Assets, the Total Asset, the Operating Cost Ratio, the Market Share and the Deposit interest rate have no significant impact on the ROA. The study recommended Islamic banks in Malaysia to embark on a serious effort to develop their own instruments to mobilize the deposits, and to use them in order to foster economic and social development, which increases its future profitability and reduces its costs.

1. Introduction

The Islamic Bank is an institution that accepts deposits and uses funds for financing purposes in order to avoid dealing with Riba' (Interest Rate), to stay away from acts contrary to Islamic Shari'ah practices (Islamic Law) and to promote profit-sharing in the conduct of banking business (Alani & Yaacob, 2012; Ali, 2011). In Islamic banks, there are three major kinds of deposits. The first one is the current deposit accounts, also called Al-Wadiah Account, which deems the Islamic banks a trustee of funds. The Islamic bank may use these funds in its business operations at its own risk (see Al-Muharrami, 2014, Bello & Bt Hassan, 2014), or in providing interest-free loans to businesses as well as to consumers. The second type is saving deposits, there are two types of savings deposits: Al-Wadia savings deposit in which the depositors authorize the Islamic bank to use the funds at the owner's risk; who guarantees to its customer the full deposited funds with any voluntary profit (see Khan et al., 2008, Kettell, 2011, Qaed, 2014). Al-Mudaraba (Profit Sharing) savings deposits in which the depositors give the Islamic bank exclusive rights to manage the deposits. The third kind is Profit-Sharing Investment Accounts (PSIA), which can be either 'unrestricted' or 'restricted' depending on whether or not the Rabb-Ulmal (The Financier) gives the bank specific instructions relating to the investment. In both cases, Islamic banks will invest these funds and share the profits with the PSIA holders, who are no longer creditors, but investors with the right to claim profits and shoulder the risk of having low, or even no return on their deposits (see Archer et al., 2009, Arshad & Nurfadilah, 2017, Mullineux, 2003). AL-Mudarabah (Profit Sharing) is a partnership between Rabb-Ulmal (The Financier) who provides a particular amount of capital and AL-Mudarib (The Manager) who acts as a trustee (Sapuan, 2016). The partners share profits, according to an agreed ratio, but subject to the exception the Rabb-Ulmal(The Financier) bears any losses because the Mudarib (The Manager) having no capital in the partnership to absorb losses (Alaeddin et al., 2017). The Mudarib (Islamic bank) does not permit to provide any security for the fixed and main return (Kahf, 2013). The availability of different types of Islamic deposit products is aimed at meeting a diverse consumer's financial needs such as transaction, emergency and investment purposes (Amin, 2013).

Islamic deposit facilities help moving the funds from the surplus units to the deficit units, according to the Shari'ah (Islamic Law). Deposits can be considered as the most important source of banks' fund and plays a major role in running the Islamic banking industry. The expansion of Islamic banks is mainly influenced by the ability to attract deposits from various segments of the society (Khan, 2018). Depositor's funds are an essential source of Islamic banks, which can raise the bank capacity and shareholders' profit (Arshad & Nurfadilah, 2017). Islamic banks face hard competition from conventional banks. The competition is often convenient for conventional financing activities in conventional banks that provide a fixed interest rate; whereas the depositor remuneration in Islamic banks is an ex-post rate of return (Hamza, 2016). So, Islamic banks have to pay a rate of return which is close to the interest rate of conventional banks to protect depositors. Some studies found a relationship between investment deposit return and interest rate concerning conventional banks (see Chowdhury & Rahman, 2014, Haron & Ahmad, 1999). Khan (2003) claims that the protection of depositors is an essential and crucial question in terms of developing a viable Islamic banking system by using AL- Murabaha (Cost-Plus Financing) and concept of Etabarru (Voluntary Donation). However, Hassan and Lewis (2009) claim that this approach would eliminate any difference between Islamic and conventional banking. Both Islamic and conventional banks compete with each other to attract deposits, which leads to ask a crucial question about the influence of deposits on the profitability of Islamic banks, particularly in the Malaysian dual-banking system.

In their early years, Islamic banks were able to mobilize deposits driven by depositor's emotional attachment and religiosity rather than perceived service quality. However, depositor behavior has changed and became seek returns and Sharia-compliant (Islamic Law) products at the same time. The depositors who believed that interest was prohibited and conventional banks were not Halal (allowed) decreased (Ismal, 2011). In Malaysia, under IFSA 2013, Islamic banks are required to separate the funds of Islamic deposit and investment accounts. The clearly defined investment account given by IFSA 2013 represents a shift towards a risk sharing model (Budiman et al., 2019). Prior to the introduction of IFSA 2013, Islamic banks sacrifice a portion of their profits to pay depositors under competitive pressure to maintain the customer loyalty. Currently, Islamic banks in Malaysia cannot do this, which results high risks of withdrawing investment accounts and transfer it to conventional banks. In this case, Islamic banks face a problem in obtaining funds because deposits are more important for Islamic banks than conventional banks, as interest is prohibited (Abduh, 2014). So, in a dual banking system like Malaysia, knowing the impact of deposits on the profitability of Islamic banks is necessary to improve the uses of banks, ensure the continuity of their profits to maintain depositors, and seek alternative sources of financing in times of decline in deposits.

In addition to this introduction, the study includes four more sections. Section two presents a brief revision of the relevant literature. Section three exposes the study methodology. Section four presents our main findings. Finally, section five includes the conclusion of the study.

2. Literature review

Many literature reviews and previous studies analyzed the profitability of Islamic banks from various perspectives. In this section we are going to present some of them to give a wider picture of banking profitability. According to previous studies, the current research formulates the following hypotheses to determine the impact of Malaysia Islamic banks' deposits on their profitability:

H1: There is a significant positive relationship between deposits and profitability of Malaysian Islamic banks over the 2010-2019 period.

H2: There is a significant relationship between other bank-specific and profitability of Malaysian Islamic banks over the 2010-2019 period.

H3: There is a significant relationship between industry-specific and profitability of Malaysian Islamic banks over the 2010-2019 period.

H4: There is a significant relationship between macroeconomic indicators and profitability of Malaysian Islamic banks over the 2010-2019 period.

The majority of existing studies on the determinants of profitability of Islamic banks focused on bank-specific, industry-specific and macroeconomic variables. Shah Khan et al. (2014) indicate that the profitability of Islamic banking in Pakistan is significantly affected by bank-specific factors and external factor. Gearing ratio, non-performing loans ratio, asset management ratio, capital adequacy ratio, and operating efficiency have significant positive impact on ROA. The deposit ratio and consumer price index have a negative impact on ROA. Later, Aslam et al. (2016) found that Size, financing, and market share have a positive impact on ROA and ROE. Whereas Deposits, GDP and Inflation have a negative impact on ROA and ROE of Islamic banks operating in Pakistan over 2007- 2014.

In Malaysia, Idris et al. (2011) revealed that the bank size has a significant positive relationship with the profitability from nine Islamic banks listed on the Bursa Malaysia for the period 2007-2009. Capital adequacy, credit risk, liquidity, and management of expenses have no significant impact. Later, Husain et al. (2015) investigate the relationship between return on assets and bank size, capital adequacy, liquidity, deposits and asset quality of

Islamic banks. The study revealed that only bank size and asset quality are significant in determining the profitability with positive and negative relationship respectively. Recently, Suppia and Arshad (2019) investigate the relationship between bank-specific characteristics and profitability of Islamic and conventional in Malaysian banking sector from 2008 to 2016. The result shows that the capital ratio and deposit ratio gives impact on its profitability. Meanwhile, the bank size and liquidity ratio give impact on the profitability of Conventional banks.

In Bangladesh, Noman (2015) seeks to find out the factors that explain the profitability of seven full-fledged Islamic banks from 2003 to 2013. The obtained results indicated that the size, inflation and real interest rates affect positively on the profitability. While the credit risk, loan ratio, cost efficiency, equity capitalization, GDP growth and stock market turnover impact negatively the profitability. Hassan et al. (2019) in a study on banking industry considering the 2010–2017 data stated that capital-to-risk assets, bank size, and cost-to income are negatively correlated to bank profitability. However, investment-to deposit and non-performing investment positively correlated.

Obeidat et al. (2013) found a significant positive relationship between return on assets (ROA) and the cost of deposits, restricted investment deposits, and money supply (M2) in Jordan. Also, there is a significant negative relationship with total deposits, total expenditures, Mudaraba (Profit Sharing) loans, and market share. The relationship between ROA and total loans, discount, interest rate, and consumer price index (CPI) is positive, but not significant. Daribi et al. (2017) examined the impact of liquidity on the profitability of five Islamic banks in the United Kingdom from 2005 to 2015. The results showed a co-integration through the variables in the short and long run. Moreover, liquidity influences negatively the profitability of these banks. Minny et al. (2017) analyzed the relationship between the interest rate changes and the profitability of three major participation banks in Turkey during the period 2008 Q1 to 2016 Q3. The obtained results showed that the interest rate and profitability are co-integrated, and their relationship is significantly positive.

Chowdhury and Rasid (2015) showed that operating efficiency ratio has a negative impact on the profitability of the Islamic banks. The equity financing and inflation have a positive significant impact on profitability. Whereas, the credit risk, liquidity risk and GDP growth rate have no significant impact on profitability of forty-four Islamic banks from the Asian and African regions. Trad et al. (2017) indicated that bank size and capital are the main factors responsible for increasing the profitability and stability of seventy-eight Islamic banks in twelve countries over the period 2004–2013. The macroeconomic variables, except inflation, are able to improve Islamic banks' stability. Javaid and Alalawi (2018) indicated a significant positive relationship between capital adequacy and both ROA and ROE which, reflecting the good financial condition of nine Islamic Banks in Saudi Arabia over the period 2000- 2013. Mennawi and Ahmed (2020) investigate the effect of bank-specific and industry characteristics along with macroeconomic variable (the inflation) on the profitability of a sample of 10 Islamic banks in Sudan. The results reveal that bank capitalization, operational cost efficiency, investment in short-term securities and inflation variables are significantly affecting the profitability of Islamic banks in Sudan. In contrary, the deposit-size of the bank as a market share indicator is not a significant determinant of banks' profitability.

Many studies have addressed the different factors that affect the profitability of Islamic banks, but there is a few of literature seeks to identify the impact of deposit on the bank performance. Studies have reached different results. Our study aims to clarify the relationship between deposits and profitability in the light of changes in the Islamic banking industry in Malaysia over the 2010-2019 period.

3. Methods and Materials

The Sample of this study covers fourteen Malaysian Islamic Banks between 2010 and 2019. This period followed the global financial crisis; most Islamic banks in Malaysia had overcome their challenges and stabilized their businesses. These banks make up approximately 92% of the total Islamic banking sector assets in 2019. They are chosen on the basis of data availability and covering local, foreign, large and small banks. In this study, we used the fixed effects panel data analysis since it allows more observations on the explanatory variables. This choice is due to the fact that the inherent multicollinearity problem between the independent variables can be totally avoided. The data used in this research paper is derived from the financial statements of Malaysian Islamic banks. The gross domestic product (GDP), inflation, deposit interest rate and exchange rate were retrieved from World Bank Database. In Islamic banks, there are many profitability ratios that have been used by researchers while measuring the bank performance, such as the return on assets (ROA) and the return on equities (ROE). In this study, the dependent variable is return on assets (ROA) measured as net income/loss after taxes divided by the total assets. (ROA) measures the bank's ability to generate profit for each unit of money invested in assets. The independent variables are given as follows:

Deposits to Assets ratio (DA): The deposits to asset ratio are a liquidity indicator that represents the total deposits to total assets. For Islamic banks, customer deposits represent a cheap source of financing, and thus, having more customer deposits is expected to increase the bank's profitability. However, the investment deposits can affect negatively profitability. Alzoubi(2018) shows that deposits have a significant positive effect on the bank's profitability, whereas Shah Khan et al. (2014) state that deposit ratio has a negative relationship with profitability.

Risk-Weighted to Assets (RWAs): Risk-weighted to assets are used to determine the minimum amount of regulatory capital that must be held by banks to maintain their solvency. This minimum amount is based on a risk assessment for each type of bank risk exposure: credit, market, and operational. According to Department of Finance (2019), the RWAs are a measure of a bank's assets (mostly loans) adjusted for their perceived risks. Das and Sy (2012) found that the stock returns are lower for banks with higher risk-weighted assets.

Capital adequacy (CAR): The capital adequacy is measured as the total equity to total Risk-Weighted to Assets (RWAs) for Islamic banks in accordance with the requirements of the Basel Committee. Agbeja et al. (2015) and Olalekan and Adeyinka (2013) found that the capital adequacy ratio has a positive effect on bank profitability. Barnor and Odonkor (2012) show a negative relationship between capital adequacy ratio CAR and ROA, ROE.

Operating Cost Ratio (OCR): The Operating Cost Ratio (OCR) is a measure of the cost of operating products or services relative to the revenue they generate. This ratio is used to see the effect of efficiency of management regarding expenses on bank's profitability (Rahman et al., 2015). In fact, it reflects the ability of the bank to generate revenue from its expenditure (Ivan D et al, 2018). The lower the ratio, the more efficient is the bank. The study of Boateng (2019) demonstrated that OCR had a negative significant relationship with profitability while addressing Ghanaian banks. Also, Mathuva (2009) found that the OCR is negatively related to ROA and ROE in Kenyan banks.

Total Asset (TA): The Total Asset (TA) of banks indicates the bank risk, and it is used to evaluate how size is related to the profitability made by the Islamic banks. Larger banks are normally associated with lower cost and earn profit more than smaller banks. The ratio of bank size will be taken as the logarithm of the total asset. The bank size can affect a bank's profitability positively or negatively. Staikouras and Wood (2004) found that the bank size has a negative impact on large banks and a significant positive impact on small banks. For his part, Gaber (2018) concluded that bank size has a significant positive impact on ROE, which

implies that banking sector exhibits economies of scale in the banking sector of Palestine over the period 1995-2015.

Financing to deposits Ratio (FDR): FDR is a ratio that measures the level of bank liquidity and shows the ability of banks to fulfil loan demand using the bank's total deposit. The higher this ratio gives an indication of the lack of bank liquidity. Shiri et al. (2015) found a significant negative relationship between loans to deposits ratio and bank profitability. Noman (2015) showed a negative correlation of the loan and bank performance, which implies that higher deposit transmission into loan, does not generate profit for the Islamic banks in Bangladesh. The study of Rengasamy (2014) indicated that there was a positive impact of (FDR) on the profitability (ROA) of Malaysian commercial banks for the period 2009 to 2013.

The market share (MS): The market share is measured by the total Islamic banks' asset as a percent of the total asset banking system. Consequently, it examines the impact of competition between Islamic and conventional banks on Islamic banking profitability. Al Arif and Awwaliyah (2019) showed that the market share has not a direct effect on the profitability of the Islamic banking in Indonesia. These results indicated that a higher market share does not mean higher profit or vice versa.

Gross Domestic Product (GDP): This study uses the GDP as a measure of the cyclical input effects, which are expected to have a positive relationship with bank profitability. It is predicted that when GDP slows down, there will a decline in credit quality which will lead to an increase in defaults, thus, reducing profits. Udom and Onyekachi (2018) showed a significant negative relationship between the GDP Growth and the ROA of Commercial Banks in Nigeria between 1996 and 2016.

Inflation(INF): High inflation decreases purchasing power as a result of higher market prices, consumer will consume more and save less, therefore deposits will decline and the bank profitability decreases (Dodi et al., 2018; Asadullah, 2017). Mimouni et al. (2019) found a positive correlation between inflation and profitability. This result indicates that with inflation, bank profitability increases more than it costs. Noman (2015) shows that inflation influence profitability positively.

Deposit interest rate (DINT): In Malaysia, both Islamic and conventional banks compete with each other to attract deposits from Customers, as there is no pre-determined rate of return involved in the Islamic banking system, Islamic bank customers are guided by the interest rate (Zulkhibri, 2018). The interest rate has a negative impact on bank's profitability because they have to pay more the depositor due to increase in interest rate (Muzammil & Siddiqui, 2020).

The exchange rate (TCH): The exchange rate measures the relative value of a country's currency against the value of the currency of its trading partners (Tumewang, Isnaini, & Musta'in, 2019). Islamic banks dealing with imported products are vulnerable to fluctuations in the exchange rate of their local currency against the dollar. Ali et al. (2018) claimed that a higher exchange rate may considerably increase the profitability of Bruneian Islamic banks. Kusuma and Rahman (2018) show a positive and significant influence of exchange rate on the profitability of Islamic banks in Indonesia over the period 2012-2015.

In this study, we used a set of panel data from 2010 to 2019 which contains one dependent variable (ROA) and eleven independent variables, i.e., DA, RWAs, CAR, OCR, TA, FDR, MS, GDP, INF, DINT, and TCH. The following equation will be used:

$$(ROA)_{i,t} = \alpha + \beta 1 LOG(DA)_{i,t} + \beta 2 LOG(RWAs)_{i,t} + \beta 3 LOG(CAR_{i,t}) + \beta 4 LOG(OCR)_{i,t} + \beta 5 LOG(TA)_{i,t} + \beta 6 LOG(FDR)_{i,t} + \beta 7 LOG(MS)_{i,t} + \beta 8 LOG(GDP)_{i,t+} \beta 9 LOG(INF)_{i,t+}$$
$$B10 \ LOG \ (DINT)_{i,t+} B11 \ LOG \ (TCH)_{i,t} \tag{1}$$

The study uses secondary data which are collected from different sources to test the relationship between the profitability of the bank and its particular determinants and macroeconomic variables. The individual Islamic banks' financial statements are the fundamental data source; they are submitted by the Central Bank of Malaysia for supervisory purposes.

4. Results and discussion

Table I shows a summary of descriptive statistics for the panel data of fourteen Malaysian Islamic Banks between 2010 and 2019. The cited table is considered as a basic summarization that will help the researcher in getting an early prediction of the model. Usually, it consists of mean, median, maximum, minimum, and standard deviation.

Table I: Descriptive statistics of Islamic banks

Variables	Mean	Median	Maximum	Minimum	Std. Dev.
ROA	0.73	0.78	1.72	-4.46	0.59
DA	72.53	75.91	91.87	24.29	15.57
RWAs	57.50	59.52	88.29	24.05	15.57
CAR	16.59	15.77	31.26	10.66	3.67
FDR	92.26	87.10	277.3	44.08	31.98
TA	34.98	22.15	245.23	4.07	40.89
OCR	56.96	53.07	129.31	23.31	19.09
MS	27.58	26.70	34.60	20.70	4.55
GDP	1029.97	1037.89	1420.49	559.55	221.84
INF	2.12	2.09	3.87	0.66	0.96
DINT	2.95	2.98	3.14	2.50	0.17
TCH	3.71	3.77	4.48	3.05	0.52
Observations	140	140	140	140	140

In this study, the mean value of ROA for the fourteen Islamic banks is 0.73%, with a standard deviation of 0.59, the maximum is 1.72%, and the minimum is -4.46 %. The mean of DA is 72.53% and a standard deviation of 15.57 with a maximum of 98.97%, and the minimum is 24.29%. From Table I, we can see that the research variables range widely; the most likely reason for this wide range is that the sample included banks of different sizes; some of these banks were new, while others were relatively older. Table II shows the correlation matrix. Clearly, the correlation matrix shows that all the variables are not strongly related to each other (values less than 0.7) which could indicate the absence of multicollinearity.

Table II**:** Correlation matrix of Islamic banks

	ROA	DA	RWS	CAR	FDR	TA	OCR	MS	GDP	INF	DINT	TCH
ROA	1.0											
DA	0.36	1.0										
RWS	-0.23	-0.06	1.0									
CAR	-0.28	-0.45	-0.03	1.0								
FDR	-0.01	-0.59	-0.193	-0.02	1.0							
TA	0.23	0.16	-0.52	-0.01	0.08	1.0						
OCR	-0.44	-0.40	0.41	0.43	0.09	-0.43	1.0					
MS	0.05	0.01	-0.13	0.41	0.17	0.26	-0.01	1.0				
GDP	0.08	0.05	-0.14	0.34	0.11	0.27	-0.04	0.88	1.0			
INF	-0.15	-0.06	0.02	-0.09	0.07	-0.08	0.054	-0.03	-0.22	1.0		
DINT	0.034	0.04	-0.11	0.10	0.08	0.17	-0.024	0.49	0.72	-0.04	1.0	
TCH	-0.01	-0.02	-0.12	0.38	0.21	0.23	0.05	0.83	0.75	-0.13	0.56	1.0

The results of the regression model are shown in Table III.

Table III**:** Results of the Regression Analysis (ROA)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.398998	4.168265	-1.295263	0.1978
LOGDA	2.204371	1.253028	2.759235	0.0212*
LOGRWS	0.246108	0.792314	2.310619	0.0567
LOGCAR	1.454793	1.003497	2.449723	0.0499*
LOGFDR	1.825054	0.834556	2.186856	0.0308*
LOGTA	0.944313	0.553500	1.706075	0.0907
LOGOCR	-0.961501	0.625577	-1.936982	0.0870
LOGMS	3.754363	2.519090	1.490365	0.1389
LOGGDP	-2.223036	1.898361	-1.871029	0.0440*
LOGINF	-0.527804	0.223697	-2.359465	0.0200*
LOGDINT	6.973334	4.232973	1.647385	0.1022
LOGTCH	-3.050991	1.528789	-1.995691	0.0483*
		Effects Specification		
Cross-section fixed (dummy variables)				
R-squared	0.699521	F-statistic		5.782497
Adjusted R-squared	0.625073	Prob(F-statistic)		0.000000
		Durbin-Watson stat		1.890193

Note: * denotes that the coefficient is significant at 5% level

From Table III we can learn the following:

$ROA_{i,t}$ = -5.39 + 2.20$LOGDA_{i,t}$ +0.24$LOGRW_{i,t}$+1.45$LOGCAR_{i,t}$ +1.82$LOGFDR$ +0.94$LOGTA_{i,t}$ - 0.96$LOGOCR_{i,t}$ +3.75$LOGMS$ -2.22$LOGGDP_{i,t}$ -0.52$LOGINF_{i,t+}$ 6.97$LOGDINT_{i,t}$ – 3.05$LOGTCH_{i,t}$

The regression shows that six variables are significant at the 5% level, which are: LOGDA**,** LOGCAR, LOGFDR, LOGGDP, LOGINF, and LOGTCH. Durbin Watson's value shows that there is no issue of autocorrelation among variables as this value is closer to 2. The value of R square is 69.95%, which means that our independents variables contribution over the profitability of Islamic banks in this study is 69.5%. Thus, a variation of 30.05% in ROA is not explained. The lower value of R square in this model depicts that the profitability of Islamic banks cannot be fully explained using only these variables. Hence, there are still other variables that have an impact on the model, but those are out of the scope of our study. F-statistic 5.78 reflects an acceptable level of significance in defining the correlation among the variables. The p-value denoted as the probability (F-statistic) is close to zero and represents a high significance level. The correlation coefficient r = 83.63 shows a strong positive relationship between ROA and the explanatory variables.

The findings have reported a positive relationship between bank deposits to assets (DA) and profitability and it was statistically significant at the 5% level. The regression coefficient indicates that a one percent increase in the ratio of deposits to assets leads to a 2.20 percent rise in ROA. As shown in Table I, the Islamic banks rely heavily on deposits in their investment, which have accounted for 72.53% on average from total Liabilities. Furthermore, deposits represent a cheaper source of financing, especially if the deposits contain current accounts that will not participate in profits, thereby allowing the bank to reduce the cost and increase their profitability. Empirical results of the studies of Alzoubi (2018) Obeidat et al., (2013) are compatible with our findings. Besides, some studies revealed incompatible findings with this study by showing that there is a negative link between deposits and profitability (Aslam, et al., 2017; Husain et al., 2015; Shah Khan et al. 2014).

The regression analysis shows that LOGCAR have a positive and significant impact on return on assets. This result indicates that banks that have stronger capital levels are more profitable than those that have lower capital adequacy. This is consistent with the work of

Agbeja et al. (2015) and Olalekan and Adeyinka (2013), but contrary with results of Idris et al. (2011) and Barnor and Odonkor (2012). In addition, LOGFDR have a positive and significant impact on return on assets. Higher deposit transmission into financing Islamic does generate profit for the Islamic banks in Malaysia. The same result was achieved by Rengasamy (2014), but Noman (2015) achieved the opposite. The macroeconomic variables LOGGDP, LOGINF, and LOGTCH have a negative and significant impact on return on assets. This result means that Islamic banks in Malaysia are working under pressure from the economic environment, which negatively affects their profitability. Several studies have found this negative relationship (Udom & Onyekachi, 2018, Dodi et al., 2018, Shah Khan et al. 2014). Finally, the regression shows also that LOGRWS, LOGTA, LOGOCR, LOGMS and LOGDINT have no significant impact on return on assets of Islamic banks in Malaysia over 2010-2019.

The results obtained on the relationship between deposits and profitability of Islamic banks in Malaysia validated three hypotheses in our study, which are: H1, H2, and H4. The third hypothesis H3 was rejected.

5. Conclusion

A balanced panel of fourteen Islamic banks over the period 2010–2019 was used to analyze the effect of deposits on the profitability of Islamic banks in Malaysia. In addition to the Deposits Assets ratio (DA), we used other bank-specific, industry-specific and macroeconomic variables. The obtained results showed that deposit has a positive impact on ROA in Malaysian Islamic banks. LOGCAR, LOGFDR, LOGGDP, LOGINF, and LOGTCH have a significant impact on profitability of Malaysian Islamic banks. However, industry-specific has no significant impact on profitability in this study. The profitability of Malaysian Islamic banks during the period 2010-2019 has been positively affected by internal characteristics, including deposits, but has been negatively affected by the macro-economic variables excluding deposit interest rate. The industry-specific has no significant impact.

In the future, with the efforts of Bank Negara Malaysia to promote the use of Investment Account with IFSA 2013 could negatively affect the future profitability of Islamic banks and increase the displaced commercial risk. The competitive pressure, to attract more funds, will force Islamic banks to yield a part of own profits to pay depositors, in order to maintain their loyalty, as long as interest is prohibited and alternatives to fundraising are limited. Therefore, Islamic banks are invited to make great efforts to diversify their deposits and minimize their costs in order to increase their profitability in a competitive environment. The results of this study have several implications for Islamic banks' business strategy and prudential regulation in Malaysia and other countries adopting Islamic banking services.

References

Abduh, M. (Oct – Dec 2014) ''Withdrawal Behavior of Malaysian Islamic Bank Customers: Empirical Evidence from Three Major Issues'' *Journal of Islamic Banking and Finance*, 43-54

Agbeja, O., Adelakun, O.J., Olufemi, F. I. (Month: September-December 2015) ''Capital Adequacy Ratio and Bank Profitability in Nigeria: A Linear Approach'' *International Journal of Novel Research in Marketing Management and Economics* **2(3)**, 91-99.

Alaeddin, O., Archer, Rifaat, A.A.K.., & Rasid.M.E.S. (2017) ''Do Profit-sharing Investment Account Holders Provide Market Discipline in an Islamic Banking System'' *Journal of Financial Regulation* **3**, 212.

Alani, F.S., & Yaacob, H. (2012) ''Traditional Banks Conversion Motivation into Islamic Banks: Evidence from the Middle East'' *International Business Research* **5(12)**, 84.

Al Arif, M. N. R., & Awwaliyah, T. B. (2019) ''Market Share, Concentration Ratio and Profitability: Evidence from Indonesian Islamic Banking Industry'' *Journal of Central Banking Theory and Practice* **2**, 189-201.

Ali, AE.E.S. (2011) ''Islamic Banking Structures: Implications for Risk and Financial Stability'' Discussion Paper Series, Islamic Research and Training Institute.

Ali, Q., Maamor, S., Yaacob, H., & Gill, M .U. T. (2018) ''Impact of Macroeconomic Variables on Islamic Banks Profitability'' *Journal of accounting and applied business research* **2(2)**.

Al-Muharrami, S. (2014) ''Islamic Banking: Basic Guidelines for Researchers'' *European Journal of Social Sciences* **45(3)**, 264.

Alzoubi, T. (2018) '' Determinants of bank profitability: Islamic versus conventional banks'' *Banks and Bank Systems* **13(3)**, 106-113.

Amin, H. (August 2013) ''Some Viewpoints of Islamic Banking Retail Deposit Products in Malaysia'' *Journal of Internet Banking and Commerce* **18(12)**, 11.

Archer, S & Abdel Karim, R.A. (2009) ''Profit-Sharing Investment Accounts in Islamic Banks: Regulatory problems and possible solutions'' *Journal of Banking Regulation* **10(4)**, 303.

Arshad, N.C & Nurfadilah, D. (2017) ''The Factors Influencing the Changes of Deposit in Islamic Bank: Comparative Study between Malaysia And Indonesia'' *Journal of Islamic Banking and Finance* **5(02)**, 40.

Aslam, M. K., Inamullah, & Ismail, M. (June 2016) ''Determinants Affecting the Profitability of Islamic Banks: Evidence from Pakistan'' *International Journal of Operations and Logistics Management* **5(02)**, 115-127.

Barnor, C., Odonkor, TA. (2012) '' Capital Adequacy and the Performance of Ghanaian Banks'' *Journal of Business Research* **6(1-2)**.

Bank Islam Malaysia Berhad (2019) *Islamic Financial Services Act 2013*, 5.

Bank Negara Malaysia. (2019) *Financial Stability and Payment Systems Report 2018*, 3

Bello, S. A.A., & Bt Hassan R. (2014) ''Saving and current in the context of shari'ah'' *Arabian Journal of Business and Management Review* **1(12)** ,7- 8.

Boateng, K. (June. 2019) ''The Relationship between Efficiency, Productivity, and Profitability of Ghanaian Banks'' *Journal of Business and Management* **21(06)**, 52-60.

Budiman, I. K.; Abdulaziz, M.; Jaffar, A. and Lo, M. T. (2019) ''Impacts of the Islamic Financial Services Act 2013 on Investment Account products offered by Islamic Banks in Malaysia'' *International Journal of Management and Applied Research* 6(4). https://doi.org/10.18646/2056.64.19-024

Chowdhury, M. A.F., & Rahman, S. M. K. (June 2014) ''The Effect of Conventional Bank's Interest Rate & Islamic Bank's Profit Rate on Investment & Return: An Empirical Investigation in Bangladesh'' *Asia-Pacific Journal of Business* **5(01)**, 3-41.

Chowdhury, M. A.F., & Rasid, M. E. S M. (2015) ''The determinants of the profitability of Islamic banks: a cross-sectional study from Asia and Africa'' *International Journal of Business and Globalisation* **15(3)**, 375-388.

Dabiri, M.A., Yusof, R. M., & Abd wahab, N. (April 2017) ''Profitability and Liquidity of Islamic Banks in the United Kingdom'' *Asian Journal of Multidisciplinary Studies*, **5(4)**, 66-72.

Das, S., & Sy, A.N.R. (January 2012) ''How Risky Are Banks' Risk Weighted Assets? Evidence from the Financial Crisis'' IMF Working Paper, WP/12/*36*.

Department of Finance(2019) ''Risk Weighted Assets in Ireland The Link to Mortgage Interest Rates'' https://assets.gov.ie/6836/664f5174ebd34f7e938aea654bed6757.pdf

Dodi, Supiyadi, D., & Arief, M. (2018) ''Islamic Bank Profitability : A Study of Islamic Bank in Indonesia'' *The International Journal of Business Review (The Jobs Review)*, **1(1)**, 51–62. https://doi.org/https://doi.org/10.17509/tjr.v1i1.12291

Gaber, A. (2018) ''Determinants of Banking Sector Profitability: Empirical Evidence from Palestine'' MPRA Paper No. 89772, posted 30 Oct 2018 08:40 UTC.https://mpra.ub.uni-muenchen.de/89772/1/MPRA_paper_89772.pdf

Hamza, H. (2016) ''Does investment deposit return in Islamic banks reflect PLS principle?'' *Borsa _ Istanbul Review* **16(01)**, 33.

Haron, S., & Ahmad, N. (1999) ''The effects of conventional interest rate and rate of profit on funds deposited with Islamic banking system in Malaysia'' *International Journal of Islamic Financial Services* **1(4)**.

Hassan, S. M. R., & Ahmed, R. (2019) ''Internal Determinants of Islamic Bank Profitability: Evidence from Bangladesh'' *International Journal of Economics and Financial Research* **5(7)**, 171-176.

Husain, A., Affandi, S., & Abdul Shukur, N. (2015) '' The Internal Determinants of Islamic Banks' Profitability in Malaysia'' *Journal of Basic and Applied Scientific Research* **5(7)**, 17-21.

Idris, A. R., Asari, F. F A H., Taufik, N. A. A., Salim, N.J., Mustaffa, R., & Jusoff, K. (2011) ''Determinant of Islamic Banking Institutions' Profitability in Malaysia'' *World Applied Sciences Journal* **12** (Special Issue on Bolstering Economic Sustainability), 01-07.

Ismal, R. (Apr- Jun, 2011) ''Understanding characteristics of depositors to develop the Indonesian islamic banks'' *Journal of Islamic economics, banking and finance* **7(02)**, 32.

Ivan D.T., Nazaria Md. A, & Kho, Y. Y. J. (2018) ''Determinants of Commercial Banks' Profitability in Malaysia'' *MPRA Paper No. 85598,* posted 30 Mar 2018.

Javaid, S., & Alalawi, S. (2018) ''Performance and profitability of Islamic banks in Saudi: An empirical analysis'' Asian *Economic and Financial Review***8(1)**, 38-51.

Kahf, M. (2013) *Islamic Finance Contracts*, Al Manhal, 102.

Kettell, B. (2011) *Case Studies in Islamic Banking and Finance*, Wiley, 50-51.

Khan, M.F. (2003) ''Guaranteeing Investment Deposits in Islamic banking System'' *J.KAU: Islamic Econ* **16(1)**, 45-52

Khan, M.S.N., Kabir, H., & Shahid, I. A. (2008) ''Banking Behavior of Islamic Bank Customers in Bangladesh Banking and Finance'' *Journal of Islamic Economics*, 162.

Khan, T.(2018) ''Deposit Performance Analysis: A Comparison of Conventional and Islamic Banks in Bangladesh'' *International Journal of Economics* **6(4)**, 165-173.

Kusuma, D. B. W. & Rahman, D. F. (2018) ''Analysis of the impact of selected macroeconomic indicators on islamic banks' profitability in Indonesia'' *International Journal of Economics, Business and Management Research* **2(4)**, 142-159.

Mennawi, A. N. A. & Ahmed, A. A. (2020) ''Influential Factors on Profitability of Islamic Banks: Evidence from Sudan'' *International Journal of Economics and Finance* **12(6)**.

Mimouni, K., Smaoui, H., Temimi, A. & Al-Azzam, M. (2019) ''The impact of Sukuk on the performance of conventional and Islamic banks'' *Pacific-Basin Finance Journal* **54**, 42–54.

Minny, M., α Görmüş, Ş. (July 2017) ''The Impact Of Interest Rate Fluctuations On The Participation Banks Profitability: Turkey Case'' *International journal of Islamic economics and finance studies* **3(2)**, 55-73.

Muhammad, M. & Siddiqui, D. A. (July 2, 2020) ''Effect of Interest Rates and Bank Size on Profitability of Islamic Banks in an Interactive Model'' Available at SSRN: https://ssrn.com/abstract=3641634.

Mullineux, A.W., & Murinde, V. (2003) *Handbook of International Banking*, Edward Elgar Bublishing, 194.

Mathuva, DM. (2009) ''Capital adequacy, cost income ration and the performance of commercial banks: the Kenyan scenario'' *The international journal of applied economics and finance* **3 (2)**, 35-47.

Noman, A H. Md. (2015) ''An Empirical Investigation of Profitability of Islamic Banks in Bangladesh'' *Global Journal of Management and Business Research: C Finance* **15(4)**, 11-22.

Qaed, M.I.Q. (2014) ''The Concept of Wadiah and its application in Islamic Banking'' *Journal of Research in Humanities and Social Science* **2**, 70-74.

Obeidat, B. Y., El-Rimawi, Masa'deh, M., Maqableh, M.M., & Al-Jarrah, I M. (January 2013) ''Evaluating the Profitability of the Islamic Banks in Jordan'' *European Journal of Economics, Finance and Administrative Sciences* **56**, 27-36.

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

Rahman, M. M., Hamid, Md. K.., & Khan, Md. A M. (2015) ''Determinants of Bank Profitability: Empirical Evidence from Bangladesh'' *International Journal of Business and Management* **10(8)**, 135-150.

Rengasamy, D. (19-21 December 2014) ''Impact of Loan Deposit Ratio (LDR) on Profitability: Panel Evidence from Commercial Banks in Malaysia'' *Proceedings of the Third International Conference on Global Business, Economics, Finance and Social Sciences (GB14Mumbai Conference).* Mumbai, India.

Sapuan, N.M. (2016) ''An Evolution of Mudarabah Contract: A Viewpoint From Classical and Contemporary Islamic Scholars'' *International Economics & Business Management Conference.Procedia Economics and Finance* **35**, 349 - 358.

Shah Khan, M. M., Ijaz, F., α Aslam, E. (2014) ''Determinants of Profitability of Islamic Banking Industry: An Evidence from Pakistan'' *Business & Economic Review* **6(2)**, 27-46.

Shiri, A. T., Chirume, S., & Fields, Z. (2015) ''Determinants of Commercial Bank Profitability from Prior- to Post-Hyperinflation: Evidence from Zimbabwe'' *J Economics* **6(2)**, 129-139.

Staikouras, Ch. K.., & Wood, G. E. (2004) ''The Determinants Of European Bank Profitability'' *International Business & Economics Research Journal* **3(6)**, 57-68.

Suppia, N. M. I., & Arshad, N. C. (June 2019) ''Bank specific characteristics and profitability of Islamic and conventional banks in Malaysia'' *International Journal of Islamic Business* **4(1)**, 39-53.

Trad, N., Trabelsi, M. A., Franc¸J., & Goux, O. (2017) ''Risk and profitability of Islamic banks: A religious deception or an alternative solution? '' *European Research on Management and Business Economics* **23**, 40-45.

Tumewang, Y. K., Isnaini, R. N., & Musta'in, J. L. (December 2019) ''The impact of macro economy toward profitability of Islamic bank'' *Asian Journal of Islamic Management (AJIM)* 1**(2)**, 104.

Udom, I. S., & Onyekachi R.E. (January, 2018) ''Effect of Capital Adequacy Requirements on the Profitability of Commercial Banks in Nigeria'' *International Research Journal of Finance and Economics* **156**, 86.

Zulkhibri, M. (2018) ''The impact of monetary policy on Islamic bank financing: bank-level evidence from Malaysia'' *Journal of Economics, Finance and Administrative Science* **23(46)**, 308.