ATLANTIS PRESS

Advances in Economics, Business and Management Research, volume 65

1st International Conference on Economics, Business, Entrepreneurship, and Finance (ICEBEF 2018)

The Determinants of Bank Profitability:

Empirical evidence from Indonesian Sharia Banking Sector

Dedi Supiyadi
Sekolah Pascasarjana
Universitas Pendidikan Indonesia
Bandung, Indonesia
supiyadi@student.upi.edu

Meta Arief, Nugraha Nugraha
Departemen Akuntansi
Universitas Pendidikan Indonesia
Bandung, Indonesia
metaarief@upi.edu, nugraha@upi.edu

***Abstract*—This paper aims to examine the internal and external determinants of sharia banks profitability in Indonesia over the period 2010 – 2017. The bank profitability is measured by return on assets (ROA) as a function of bank-internal and external determinants. Using balances data set and fixed effect model, the empirical results have found strong evidence that both internal and external factors have a strong influence on the profitability. The internal factors of the bank i.e., capital adequacy, credit risk, and asset size have a significant and negatif effect on bank profitability, while liquidity have a positive and significant impact on banks profitability. However, the external factors only inflation has a significant and positive effect, while GDP has a negatif and significant effect on banks profitability. This result suggest that banks can improve their profitability through increasing banks liquidity, reinforce their capital structure, reduce their assets sizes and credit risk, in addition banks should be anticipate the external factors, thus sharia banks will be more competitive than conventional banks.**

Keywords—asset size; capital adequacy; credit risk; sharia banking; inflation; liquidity; profitability; GDP

I. INTRODUCTION

Sharia Banking and finance is one of the fastest growing segments of the global financial industry, there are a number of factors that contribute to the growth of Sharia banking and finance, including strong demand for sharia products, progress in legal aspects and Sharia financial regulatory framework, increasing demand from conventional investors and industrial capacity to develop a number of financial instruments that meet the needs of both corporate and individual investors [1]. In the global context Sharia banking is growing very fast both in Muslim and non-Muslim countries [2], with the total assets of US $ 2,293 trillion, GIFR, 2016.

Based on IFCI 2017 data (Sharia Finance Country Index), the financial and banking industry in Indonesia occupies the 7th position at the world level, in a national scope based on sharia banking statistics, the number of Sharia banks in Indonesia until 2017 is 201 banks consisting of 13 Sharia Commercial Banks, 21 Sharia Business Units and 167 BPRS, with total assets of 409.31 trillion (ICB 279.95, SBU 119.15 and BPRS 10.21), and the number of offices 2633 spread throughout Indonesia.

The banking industry has a strategic role in economic growth, weak management, inaccuracy in credit, and capital that cannot cover all risks can reduce Sharia Bank performance. It could be increase-banking risk, lower profitability, reduce public thrush, investors, business and government and The Sharia banks must improve their performance. One indicator of Sharia banking performance is profitability, and the higher the level of profitability shows the best performance of the banking. The performance of Sharia banking will determine the sustainability, provide certainty to investors and provide shareholder returns. Profitability is an important information for both investors and managers, describes the stability and banks performance [3]. The bank profitability indicates the success of the management and it is one of the most important indicators for the investors. Changes in profitability contribute to economic growth, because a rise in profits improves the cash flow position of companies and offers greater flexibility.

There are many studies investigating Sharia bank profitability both in Indonesian and in other countries, to examine the Determinants of Sharia Bank Profitability [3-7]. According to study, found that capital, size, higher economic growth and inflation increase bank's profitability whereas credit risk and operating efficiency reduce it [8]. Bank characteristics and macroeconomics variables are important in explaining Sharia banks profitability.

According to Masood, a bank with the large asset and with efficient management leads to greater profitability [9]. Furthermore Rafsanjani, Wahyuningsih, and Supiyadi, found that profitability is strongly influenced by liquidity and credit risk [10-12]. Mukhlis and Mahmudah finds that profitability is influenced by internal and external factors [13,14]. According to Sriyana Liquidity is the main predictor of Sharia bank profitability, the profitability is very dependent on profit margins and fund mobilization [15].

Recent study Cheouwdhury found capital and macroeconomic variables such as inflation had a positive effect on the Sharia banks profitability [5]. The results of the study, found that the banks size, capital credit risk, GDP and exchange rates are the determinants of Sharia banks profitability [16].

In view of these facts, the main objective of this study was to analyze the Determinants of Sharia Bank Profitability in

Indonesia. The study is expected to contribute to the enrichment of the literature to fill Sharia Financial Management and business research gaps and as empirical evidence and reference for further research.

II. Literature Review

The studies of Sharia bank profitability are focused either on cross and panel data of Sharia banking, the study on bank specific, industry specific and macroeconomic determinant. The result of the studies varied one to another depending on dataset, method and environment differences. The study of conventional banking profitability has been done by many researchers but the study on the Sharia banking profitability is still on early stage, especially in developing countries such as Indonesia.

Recent studies on Sharia banks profitability found evidence that the profitability is largely determined by cost-effectiveness, asset quality and capital level [3,7]. The study also found that non-financial activities increase the profitability of Sharia banks. There is no determinant difference in profitability between conventional and Sharia banks. Furthermore, the study found that Sharia banks are more profitable than conventional banks [17], and more efficient in managing credit risk [18], bank size and customer growth are the most important factors in improving bank profitability.

According to Haron, Sharia bank profitability is influenced by liquidity, total expenditures, funds invested in Sharia securities, the percentage of profit-sharing ratio between banks and debtors, interest rates, market share, bank size, total capital, and money supply [19]. The next study found that bank profitability was influenced by Credit Risk [20], because credit risk requires special attention of all financial institutions [12]. Bank institutions that have the highest level of Credit Risk due to the inability to pay the debtor, and the highest risk of financial institutions derived from loans. The high credit risk is not only sourced from the activities of the Investment Bank itself but is sourced from Credit Risk, Liquidity Risk and Market Risk [21], both important to be considered to maintain the bank profitability [22]**.** According to study, the study found that credit risk negative effects on banking performance and increased credit risk reduces profitability [6,23-25].

According to Trad, the main factors responsible increasing profitability and stability of Sharia banks and reducing their credit risk are bank size and capital, it's also found GDP are able to improve bank stability [6]. In their study Hariyanto, stated that the credit risk is very influential factor on banks profitability [26], the study Daly also found that credit risk and operating efficiency are the most important factors in improving bank profitability [27]. The study on the determinants of Sharia banking performance conducted by Supiyadi [28], revealed that the main factors affecting the profitability of Syariah banks are bank size and consumer growth. According to Bertin, Sharia bank profitability is influenced by Credit Risk, Capital Adequacy Ratio, Company Size and Liquidity Risk [29]. The study finds that credit risk and liquidity risk have a positive effect while Capital Adequacy and firm size have a negative effect, the study finds that inflation has insignificant effect on performance of Sharia banking in Indonesia.

The impact of bank-specific and macroeconomic factors has been done by Bertin, the results show that bank profitability is positively related to bank specific factors, such as service diversification, size, capital ratio, and specialization degree, and macroeconomic factors such as economic growth, inflation, and bank concentration [30]. On the other hand, the results show that bank performance is negatively related to credit risk, liquidity risk, and operational inefficiencies. Sufian F, Habibullah, examine determinants of bank profitability in a developing economy, he found size has a negative impact on return on average equity (ROAE), while the opposite is true for return on average assets (ROAA) and net interest margins (NIM) [31]. As for the impact of macroeconomic indicators, inflation has a negative relationship with banks profitability, [32]. Alharthi, examines the determinant profitability of Sharia banks, the study found that credit and capital risk negatively affect profitability, while bank size, loan intensity, and deposit ratio have a positive effect on profitability; macroeconomic variables such as GDP negatively affect the profitability of Sharia banks [33].

Based on the study conducted by Baltagi the factors that determine the profitability of Sharia banks are large capital, loan to asset ratio, and macroeconomic conditions [34]. The study found statistically significant and positive effect for the loan's activities ratio and capital adequacy on the Sharia banks profitability. A study conducted by Masood, found capital adequacy shows positive relationship with return on assets (ROA) and negative relationship with return on equity (ROE) and assets size has positive and significant impact on the profitability of Sharia banks [9].

III. Method

To investigate Sharia Bank Profitability in Indonesia, we applyling the panel data technique, panel data is a combination of cross section and time series data, it can provide more informative, better detect and measure effects that cannot be observed in cross section and time series data.

A. Data

The data was taken from Otoritas Jasa Keuangan, Bank Indonesia and annual report each Sharia Bank, Macroeconomic indicators were captured from Badan Pusat Statistik Indonesia. The period of the data was from the year 2010 to the year 2017. Our sample is a balanced panel data set of 34 Sharia banks, based on 272 observations over an eight-year period from 2010 to 2017. Table 1, shows the variables in this study to analyze Determinants of Sharia bank profitability.

TABLE I. SUMMARY OF VARIABLES

	Variables	Notation	Measure
Independent Variables	Capital Adequacy	CAR	Equity/Assets
	Asset Size	AS	Natural Log of Total Asset
	Credit Risk	CR	NPF/Total Financing
	Liquidity	LIQ	Total Financing/Total Asset
	Gross Domestic Products	GDP	Natural logarithm of gross domestic products
	Inflation	INF	Annual Inflation Rate
Dependent Variable	Profitability	ROA	Net profit/TA

B. Model

Referring to the previous study by Chowdhury, Trad, Alshatti [5,6,25]. We apply panel data techniques to analyze Sharia Bank Profitability, the basic model is the following panel regression model as written bellow:

$$y_{nt} = \alpha + \beta x_{nt} + \varepsilon_{nt} \quad (1)$$

Where y_{nt} is profitability, α is intercept, β is ekplanatory variable and x_{nt} is observed variable that is 1 x k, t = 1, ..., T; n = 1, ..., N, then the panel regression model is given by:

Profitability = f (Bank specific variables + Macro-economic Variables) (2)

Where profitability is Return on Assets (ROA), *Bank specific variables* are capital, asset size, credit risk, liquidity, operating effeciency, net profit margin, z-score, and labour productivity, and *Macro-Economic Variables* are gross domestic product and inflation. By extending equation (2) then obtained equations as follows:

$$Prof_{it} = \beta_0 + \beta_1 CAR_{1it} + \beta_2 AS_{2it} + \beta_3 CR_{3it} + \beta_4 LQ_{4it} + \beta_5 GDP_{5it} + \beta_6 LQ_{6it} + \varepsilon \quad (3)$$

Equation (3) is estimated through a fixed effects regression analysis, taking each measure of bank's profitability as the dependent variable. The option of a fixed effects model rather than a random effects one has been verified with Hausman test [35], we also used the Breusch–Pagan test to check for residual heteroscedasticity.

IV. RESULTS

The descriptive statistical analysis result as shown in Table.2 describes an overview of mean value of Sharia bank profitability over period 2010–2017. The result shows that the profitability of Sharia banks in Indonesia has mean value of 2.17, it means that the profitability of Sharia banks has met the standards set by Bank Indonesia. Bank specific variables, Capital, Credit Risk, Bank Size, Liquidity, have mean values of 17.85, 3.30, 14.68, and 97.56, respectively. The mean values of macro-economic variables, GDP and Inflation respectively are 4.641 and 5.108, over all variables, liquidity have the highest standard deviation of 31, it can be concluded that bank specific and macroeconomic environment are stable in Indonesia.

TABLE II. SUMMARY OF DESCRIPTIVE STATISTICS

	Mean	Maximum	Minimum
ROA	2.17	11.19	-20.13
CAR	17.851	76.39	1.98
CR	3.305	43.99	0.01
SIZE	14.685	18.292	11.684
LIQ	97.569	289.2	16.93
GDP	4.641	7.48	2.45
INF	5.108	8.39	2.66

The coefficient of determination (R^2) essentially measures the ability of the model in explaining the dependent variable, or how much the percentage of the variation of the independent variable is able to explain the dependent variable. Based on Table II the coefficient of determination has an adjusted R^2 of 81.59% it means that the Sharia banks profitability is influenced both internal and external factors and 18.41% is influenced by other factors not explained in this study. This research model is very strong to explain the variables that affect the profitability of Sharia banking in Indonesia.

V. DISCUSSION

This section provides an empirical evidence on analysis of Sharia bank profitability as presented in table 2, Capital adequacy is the most important factor for the banking sector, capitalization represents the resilience to face risks and uncertainty of investment in the banking sector. The effect of capitalization is positive and highly significant as we expected. There are many reasons explaining that higher capitalization improves bank profitability. (1), Sharia banks with higher capital ratio and PLS is engaged in prudent lending. (2), Sharia bank with a sound capital position is able to pursue business opportunities more effectively and increased profitability. (3), the high owned capital allows the bank to have lower risk and lower funding cost, and well capitalized banks are able to reduce costs and enhance their profitability. (4), a well-capitalized bank needs to borrow less to support a given level of assets. (5), PLS principle allows the Sharia bank to make additional financing with beneficial return which should imply higher profitability, [3,36-41].

TABLE III. SUMMARY OF ESTIMATION RESULT

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.708796	0.932741	6.12045	0.0000
CAR	-0.025127	0.005450	-4.61068	0.0000
CR	-0.262096	0.038405	-6.82452	0.0000
AS	-0.262896	0.061599	-4.26787	0.0000
LIQ	0.003910	0.001446	2.70310	0.0074
GDP	-0.064849	0.020196	-3.21102	0.0015
INF	0.032702	0.013633	2.39876	0.0173
R-squared	0.845110	Mean dependent var		3.369415
Adjusted R-squared	0.815899	S.D. dependent var		2.973908
S.E. of regression	1.175251	Sum squared resid		314.9169
F-statistic	28.93061	Durbin-Watson stat		1.832817
Prob(F-statistic)	0.000000			

Capital is the most important factor for Sharia banking, strong capital shows the stability and resilience of banks in the face of risks and uncertainties in investment in the banking sector [42].The results of the study found that capital adequacy negatively affects the profitability, these findings indicate that the level of capitalization of banks is inadequate, Sharia banks

have not maximized capital in their operationalization, most of the financing activities in Sharia Bank is not covered by capital, so that financing activities have high risk that affects profitability, thus Sharia banks need to maximize and improve capital, which means lowering capitalization leads to decrease in profitability. This evidence suggests that Sharia bank in Indonesia has low capitalization that reduces their profitability [3,13,15,33,43].

Asset Size describes the firm's ability to compete with its competitors. In addition, large-sized firms, both in terms of total assets, number of employees and market value, will increase the value of investment options and delay competition factors by calculating investment projects with the concept of opportunity cost. The results of our study found that bank size on negatively effects on Sharia banks profitability, this finding shows that any increase in assets can reduce the profitability of Sharia banks, Sharia banks with large size tend to be low profitability, due to increased diversification can increase the risk that results in decreased profits. Increasing firms size can increase profitability, including greater market strength, improve technology efficiency, and the ability to secure funding at lower costs. However, an increase in size beyond a certain point can lead to inefficiencies caused by organizational bureaucracy and other factors [34,44-49].

Credit risk is the most common source of risk for Sharia banks and conventional banks that are the main source of bank failure. Credit risk plays an important role on the performance of financial institutions because the risk of bad debts will affect the performance of financial institutions. According to Rivai and Shaista, credit risk is defined as the risk of failure of the debtor to meet its obligations or the deteriorating repayment capacity of the borrower [50,51]. In line with previous research, the study found that credit risk had a significant and negative impact on the profitability, indicating that Sharia banking in Indonesia is high risky meaning that Sharia banking is not able to manage the credit risk properly [6-9,12,23-25,33,52,53].

Banking profitability is inseparable from the liquidity of the bank itself, banks with high liquidity describe the level of bank health. The intermediary function works well if the bank has adequate liquid assets, liquidity will determine the level of the bank's ability to handle short-term liabilities that are due. If banks have liquidity difficulties, it will be difficult for Sharia banks to fulfill obligations when investment opportunities arise. Liquidity risk occurs if the bank cannot provide the cash to meet the customer's transaction needs and fulfil the obligation to be repaid within a certain period, the customer withdraws a large amount of money and when the demand for credit increases [21]. The factor affecting low liquidity is the inability of banks to maximize their revenue because of the urgency of liquidity needs.

The study found significant and positive liquidity risk to the profitability, these findings indicate that Sharia banks in Indonesia have a high liquidity or low liquidity risk resulting in increase to profitability [19,49,52,54-56].

Profitability is very sensitive to macroeconomic conditions. In general, high economic growth tends to increase bank profitability. High inflation decrease purchasing power as a result of highest market prices. The size of the inflation rate will affect the company's financial performance, especially in terms of profitability. The results of the study found that significant and positive inflation affects the profitability of Sharia banks in Indonesia [3,8,30-32,57]. These findings illustrate that the Indonesian Muslim community despite inflation still has significant purchasing power.

Gross Domestic Product (GDP) is a macroeconomic indicator that also affects bank profitability. If GDP rises, it will be followed by an increase in income so that the ability to save also increases. In line with the study, our study found that GDP has significant effect on the profitability of Sharia banks [6,9,33,52,57]. That the average income of the Indonesian population has not been able to set aside their income for saving, whereas some Indonesian workers are outsourced employees with low bargaining power both in legal and income aspects, and this affects the decrease Sharia Banks Profitability.

Based on the results of the study, the model in this study differs from previous studies i.e.: Malaysia, GCC (Gulf Cooperation Council), MENA, Jordan and Fakistan. This finding shows that the sharia bank profitability in Indonesia is influenced by 6 very strong factors, these factors are capital adequacy, credit risk, asset size, liquidity, economic growth (GDP) and inflation. It can be concluded the bank has not been able to maximize the above factors as the most important factors in increasing the sharia bank profitability in Indonesia, it indicates that the bank has not maximized their profitability.

VI. Conclusion

This study aims to examine the Determinants of Sharia Bank Profitability in Indonesia, which consists of 34 Sharia banks for the period 2010-2017, for the purposes of this study, the study used fixed effect approach. The empirical findings indicate that internal and external factors have a significant effect on Sharia Bank profitability. Capital, asset size, credit risk, operating efficiency have significant negative effect while liquidity, net profit margin and labur productivity have a positive effect on the profitability of Syariah bank in Indonesia. GDP has significant negative effect and inflation has positive effect on profitability.

The study found that to increase profitability, Sharia banks in Indonesia must reinforce their capital structure, growth their assets and Sharia banks not only function as intermediaries which have become portfolio but Sharia banks must begin to move forward through increasing income from fee based income, thus Sharia banks it will be more competitive than conventional banks, not as a market follower but as market challenger to conventional banks.

Sharia banks must pay attention to macro-economic conditions, inflation and GDP growth need to be predicted well, accuracy predicts macroeconomic conditions as a form of anticipation of Sharia banks in determining the margin level of Profit Lost Sharing and other Sharia banking products, so it is expected to provide maximum contribution to the profitability of Sharia banks.

ACKNOWLEDGMENT

I would like to thank Dr. Nugraha, SE., AK., CPA., MSi and Dr. Meta Arief, M. Si, who gives me much guidance, advice and helped me complete this publication, especially to Dr. Meta Arief, M. Si for her sponsorship. I want to express my deep gratitude and blessing to all of you.

REFERENCES

[1] Hasan M, Dridi J. The Effects of the Global Crisis on Islamic and Conventional Banks: A Comparative Study. *IMF Work Pap* 2010; 02: 163–200.

[2] Azmi MA and W. Impact of Islamic Banking on Economic Growth and Volatility: Evidence from the OIC Member Countries. In: *Palgrave CIBFR Studies in Islamic Finance*. Gewerbestrasse 11, 6330 Cham, Switzerland: Springer International Publishing AG, 2017, pp. 15–32.

[3] Zarrouk H, Jedidia K, Moualhi M. Is Islamic bank profitability driven by same forces as conventional banks ? *Int J Islam Middle East Financ Manag* 2016; 9: 46–65.

[4] Ramlan H, Adnan MS. The Profitability of Islamic and Conventional Bank: Case Study in Malaysia. *Procedia Econ Financ* 2016; 35: 359–367.

[5] Chowdhury MAF, Haque MM, Masih M. Re-Examining the Determinants of Islamic Bank Performance: New Evidence from Dynamic GMM, Quantile Regression, and Wavelet Coherence Approaches. *Emerg Mark Financ Trade* 2017; 53: 1519–1534.

[6] Trad N, Trabelsi MA, Goux JF. Risk and profitability of Islamic banks: A religious deception or an alternative solution? *Eur Res Manag Bus Econ* 2017; 23: 40–45.

[7] Munir B, Salwa U, Bustamam A. Camel Ratio on Profitability Banking Performance (Malaysia Versus Indonesia). *Int J Manag Innov Entrep Res* 2017; 3: 30–39.

[8] Khediri K Ben, Sami BAM, Hichem B-K. Bank-specific, Industry-specific and Macroeconomic Determinants of African Islamic Banks. *Int J Bus Manag Sci* 2010; 3: 39–56.

[9] Masood O, Ashraf M. Bank- specific and macroeconomic profitability determinants of Islamic banks. *Qual Res Financ Mark* 2012; 4: 255–268.

[10] Rafsanjani H, Ningsukma H. Pengaruh Internal Capital Adequency Ratio (CAR), Financing To Deposit Ratio (FDR), dan Biaya Operasional Per Pendapatan Operasional (BOPO) dalam Peningkatan Profitabilitas Industri Bank Syariah di Indonesia. *J Apl Manaj Univ Airlangga Surabaya* 2016; 14: 161–168.

[11] Wahyuningsih T, Oemar A, Suprijanto A. Pengaruh Car, Npf, Fdr, Bopo, Dan Gwm Terhadap Laba Perusahaan (Roa) Pada Bank Umum Syariah Di Indonesia. *J Account*; 1.

[12] Supiyadi D, Dodi D, Machmud A. Factors that Influences Credit Risk of Financing Institutions in Indonesia. In: *Proceedings of the 2nd International Conference on Economic Education and Entrepreneurship*. SCITEPRESS - Science and Technology Publications, 2017, pp. 159–163.

[13] Mukhlis I. Kinerja keuangan bank dan stabilitas makroekonomi terhadap profitabilitas bank syariah di Indonesia. *J Keuang dan Perbank* 2012; 16: 275–285.

[14] Mahmudah N, Harjanti RS. Analisis Capital Adequacy Ratio , Financing To Deposit Ratio , Non Performing Financing , Dan Dana Pihak Ketiga Terhadap Tingkat Profitabilitas Bank Umum Syariah. In: *Prosiding Seminar Nasional Iptek Terapan*. 2016, pp. 134–143.

[15] Sriyana J. Islamic banks' profitability amid the competitive financing in Indonesia. *Int J Appl Bus Econ Res* 2015; 13: 1695–1710.

[16] Trabelsi MA, Trad N. Profitability and risk in interest-free banking industries: a dynamic panel data analysis. *Int J Islam Middle East Financ Manag* 2017; 10: 454–469.

[17] Ramlan H, Sharrizat M. The Profitability of Islamic and Conventional Bank : Case study in Malaysia. In: *7th International Economics & Business Management Conference*. Elsevier B.V., 2016, pp. 359–367.

[18] Hassan A. Risk management practices of Islamic banks of Brunei Darussalam. *J Risk Financ* 2009; 10: 23–37.

[19] Haron S. The effects of management policy on the performance of Islamic banks. *Asia Pacific J Manag* 1996; 13: 63–76.

[20] Boahene SH, Dasah J, Agyei SK. Credit risk and profitability of selected banks in Ghana. *Res J Financ Account* 2012; 3: 6–14.

Mohammad S. Liquidity Risk Management in Islamic Banks: A Survey. *Afro Eurasian Stud* 2013; 1: 215–230.

[21] Ben I, Mahdi S, Abbes MB. Relationship between Capital , Risk and Liquidity A comparative study between Islamic and conventional banks in MENA region. *Res Int Bus Financ* 2017; 1–21.

[22] Kayode OF, Obamuyi TM, Ayodeleowoputi J, et al. Credit Risk and Bank Performance in Nigeria. *IOSR J Econ Financ* 2015; 6: 21–28.

[23] Bayyoud M, Sayyad N. The Relationship between Credit Risk Management and Profitability between Investment and Commercial Banks in Palestine. *Int J Econ Financ* 2015; 7: 163.

[24] Djalilov K, Piesse J. Determinants of bank profitability in transition countries: What matters most? *Res Int Bus Financ* 2016; 38: 69–82.

[25] Alshatti AS. The Effect of Credit Risk Management on the Financial Performance of Commercial Banks in Kenya. *Invest Manag Financ Innov* 2015; 12: 338–345.

[26] Harianto S. Rasio Keuangan dan Pengaruhnya Terhadap Profitabilitas Pada Bank Pembiayaan Rakyat Syariah di Indonesia. 2017; 7: 41–48.

[27] Daly S, Frikha M. Determinants of bank Performance : Comparative Study Between Conventional and Islamic Banking in Bahrain. *J Knowl Econ* 2017; 8: 471–488.

[28] Supiyadi D, Mulyadi D, Fitriani M, et al. Credit Risk Management and Performance of Islamic Banking Evidence from Indonesia. In: *The 1st International Conference on Islamic Economics, Business, and Philanthropy (ICIEBP)*. Bandung, ID: scitepress, pp. 1–8.

[29] Jara- Bertin M, Arias Moya J, Rodríguez Perales A. Determinants of bank performance: evidence for Latin America. *Acad Rev Latinoam Adm* 2014; 27: 164–182.

[30] Sufian F, Habibullah MS. Determinants of bank profitability in a developing economy: Empirical evidence from Bangladesh. *J Bus Econ Manag* 2009; 10: 207–217.

[31] Sufian F, Chong RR. Determinants of bank profitability in a developing economy: PHILIPPINES. *Asian Acad Manag J Account Financ* 2008; 4: 91–112.

[32] Alharthi M. *The Determinants of Efficiency, Profitability and Stability in the Banking Sector: A Comparative Study of Islamic, Conventional and Socially Responsible Banks*. Plymouth University, Plymouth, 2016. Epub ahead of print 2016. DOI: 10.1017/CBO9781107415324.004.

[33] Hassan MK, Bashir A-HM. Determinants of Islamic Banking Profitability. *Islam Perspect Wealth Creat* 2005; 118–140.

[34] Baltagi BH. *Econometric Analysis of Panel Data*. 3rd ed. The Atrium, Southern Gate, Chichester, West Sussex PO19 8SQ, England: JohnWiley & Sons Ltd, 2005.

[35] Bourke P. Concentration and Other Determinants of Bank Proftability in Europe, North America and Australia. *J Bank Financ* 1989; 13: 65–67.

[36] Demirgüç-Kunt A, Huizinga H. Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence. *World Bank Econ Rev* 1999; 13: 379–408.

[37] Pasiouras F, Kosmidou K, Doumpos M, et al. Assessing performance factors in the UK banking sector: a multicriteria approach. *Cent Eur J Oper Res* 2006; 14: 25–44.

[38] Pasiouras F, Gaganis C, Zopounidis C. The impact of bank regulations, supervision, market structure, and bank characteristics on individual bank ratings: A cross-country analysis. *Rev Quant Financ Account* 2006; 27: 403–438.

[39] Athanasoglou PP, Brissimis SN, Delis MD. Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Int Financ Mark Institutions Money* 2008; 18: 121–136.

[40] Al-Qudah AM, Jaradat MA. The Impact of Macroeconomic Variables and Banks Characteristics on Jordanian Islamic Banks Profitability: Empirical Evidence. *Int Bus Res* 2013; 6: 153–162.

[41] Kalifa W, Bektaş E. The impacts of bank-specific and macroeconomic variables on the capital adequacy ratio : evidence from Islamic banks. *Appl Econ Lett* 2017; 00: 1–5.

[42] Tan Y, Floros C. Bank profitability and GDP growth in China : a note. *J Chinese Econ Bus Stud* 2012; 10: 37–41.

[43] Abduh M, Idrees Y. Determinants of Islamic Banking Profitability in Malaysia. *Aust J Basic Appl Sci* 2013; 7: 204–210.

[44] Pasiouras F, Kosmidou K. Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Res Int Bus Financ* 2007; 21: 222–237.

[45] Akhtar M, Ali K, Sadaqat S. Factors Influencing the Profitability of Islamic Banks of Pakistan. *Int Res J Financ Econ* 2011; 66: 1–8.

[46] Ben Selma Mokni R, Rachdi H. Assessing the bank profitability in the MENA region. *Int J Islam Middle East Financ Manag* 2014; 7: 305–332.

[47] Almazari AA. Impact of Internal Factors on Bank Profitability : Comparative Study between Saudi Arabia and Jordan. *J Appl Financ Bank* 2014; 4: 125–140.

[48] Erlangga OP, Mawardi I. Pengaruh Total Aktiva, Capital Adequacy Ratio (Car), Finance To Deposit Ratio (Fdr) nan Non Performing Financing (Npf) Terhadap Return On Assets (Roa) Bank Umum Syariah Di Indonesia 2010-2014. *J Ekon Syariah Teor dan Terap* 2016; 3: 561–574.

[49] Millar R, Anwar H. *Islamic Finance: A Guide for International Business and Investment*. 1st ed. Hereford House 23-24 Smithfield Street London EC1A 9LF United Kingdom: GMB Publishing Ltd, (2008).

[50] Rivai V, Veithzal AP, Idroes FN. *Bank and Financial Institution Management: Conventional & Sharia System*. 1st ed. Jakarta: Raja Grafindo Persada, (2007).

[51] Shaista Wasiuzzaman H-ABAT. Profitability of Islamic Banks in Malaysia : An Empirical Analysis. *J Islam Econ Bank Financ* 2010; 6: 53–68.

[52] Idris R, Fizari Abu Hassan Asari F, Asilah Abdullah Taufik N, et al. Determinant of Islamic Banking Institutions' Profitability in Malaysia. *World Appl Sci JournalSpecial Issue Bols Econ Sustain Bank Negara Malaysia* 2011; 12: 1–7.

[53] Haron S. Determinants of Islamic Bank Profitability. *Glob J Financ Econ* 2004; 1: 1–22.

[54] Haron S, Azmi WN. Profitability Determinants of Islamic Banks : A Cointegration Approach. *Islam Bank Conferr Union Arab Bank* 2004; 4: 2–18.

[55] Samad A, Hassan MK. The Performance of Malaysian Islamic Bank during 1984-1997: An Exploratory Study. *Int J Islam Financ Serv* 1999; 1: 1–14.

[56] Khediri K Ben, Khedhiri H Ben. Determinants of Islamic bank profitability in the MENA region. *Int J Monet Econ Financ* 2009; 2: 409–426.

[57] Alharbi AT. Determinants of Islamic banks profitability : international evidence. *Int J Islam Middle East Financ Manag* 2015; 1: 1–21.