The Determinants of Rate of Return Deposits In Islamic Banks

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Abstract

This article aims to identify the determinates of the rate of return on deposits in Islamic banks. The study, according to the best of my knowledge, is the first study to investigate the factors affecting the rate of return in Islamic banks using cross-country data with a large sample of banks and for a prolonged period. To achieve its aim, the author used data from almost all Islamic banks in the world for a 20-year period (1989-2008). The data were analyzed using a two-way fixed-effect model. The empirical results demonstrate that capital adequacy (default risk), credit risk, age, economic growth, and concentration significantly and negatively influenced the return on deposits in Islamic banks. The results also suggest that foreign ownership, size, inflation, and oil prices had significant and positive effects on the rate of return. Moreover, the results indicated that deposit insurance (positive), interest rates (positive), and deposit growth (negative) are not determinants of the rate of return in Islamic banks.

Keywords: Rate of Return on Deposits, Internal Factors, External Factors, Islamic Banking.

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Introduction

Islamic banking dates to the early days of Islam (600 AD) but the decline of the Islamic empires and the increase of European influence made many Islamic countries to adopt the European banking model in the 19th

century. This trend continued in all Islamic countries until the middle of the 20th century, when the calls to establish Islamic financial institutions gained momentum when many Islamic countries gained independence (Alharbi, 2015). The first fully-fledged Islamic commercial bank in modern history was established in 1975; the Dubai Islamic bank. The number of fully-fledged Islamic banks has grown since then, with the amount reaching 118 banks by the end of 2008 and the majority of them concentrated in Organization of Islamic Cooperation (OIC) states (94%). The amount of banks continued to rise, reaching 200 in 2017.

This development has not been met with an increase in literature investigating the dynamics affecting the rate of return on Islamic banks deposits. Only two studies address this issue using cross-country data. The setting of the rate of return on deposits (RROD) in banks is one of the most important challenges facing banks as banks must sustain their profitability growth, while simultaneously maintaining their customers.

Theoretically, the relationship between investment accounts (restricted and unrestricted) holders and Islamic banks is participatory; the two parties share the profit and loss. In reality, Islamic banks use the concept of *tabarrui* (voluntary payment) and *takafual* (mutual guarantee) to guarantee its customers deposits and pay them a competitive return. Maali & Atmeh (2015) found that Islamic banks use the social welfare concepts of *tabarrui* and *takafual* to guarantee deposits and shift risk. In this way, Islamic banks guarantee deposits and the return on it, they mimicking conventional banks. In line with this, the study by Anuar *et al.* (2014) in Malaysia implies that there is a gap between Islamic banking theory and practice because their findings suggest that there is a link between profit rates in Islamic banks and interest rates in conventional banks.

The findings of Anuar *et al.* (2014) are supported by the study by Cevik & Charap (2015), which was conducted on Malaysian and Turkish

banks. Customers from Islamic banks are motivated by profit, which was established in the study by Akhtar *et al.* (2017). Diaw & Mbow (2011) found that there is no fairness in the profit distribution policies adopted by Islamic banks. They based this on their findings, which suggest that ROE is higher than the return on *mudharabah* deposits (ROMD). ROA affects ROE more than ROMD and ROMD is highly correlated with interest rates in comparisons to ROE. With these studies in mind, an investigation of the elements that affect the rate of RROD in Islamic banks will yield results that are new and relevant.

Two studies were found in the literature that use cross-country data to explore the factors affecting the rate of return on deposits in Islamic banks. These are the studies by Hamza (2016) and Meslier *et al.* (2017). Hamza (2016) used a sample of 60 Islamic banks for the period from 2004 to 2012 to examine the compliance of investment deposit return with a profit and loss sharing principle. The results of the study demonstrated that capital adequacy, profitability, ownership concentration, dual monetary system, and interest rates affected the rate of return positively and significantly. Conversely, GDP growth, size, investment deposits growth, concentration, asset structure of Islamic banks, age and Islamic deposit insurance correlated negatively and significantly with the return on Islamic banks' investment accounts. Foreign ownership had a negative, but insignificant, relationship with the rate of return.

Hamza concluded that the return on investment deposits is not reflecting the profit and loss sharing principle. In relation to this study data, the author did not take into account some issues related to it. First, the author obtained the data from the financial statements of the examined banks, which have different accounting standards, without indicating how they standardized the data. Second, some of the banks, such as Kuwait International Bank (converted in 2007) and Bank Al Ahli United (converted

in 2010), transformed from conventional banking to Islamic banking. The author did not specify if they removed the period before conversion from the sample.

The second study was conducted by Meslier *et al.* (2017). They analysed the determinants of deposit rates in Islamic and conventional banks in a dual banking system. They used a sample of 98 Islamic banks and 386 conventional banks from 20 countries during the period from 2000 to 2014. They investigated the rate of return of both banking types by controlling for market power and controlling for competition. They used three models with the first as the base line regression. The results revealed that profitability had a positive and significant effect on the rate of return of Islamic banks in the three models. The effect was slightly positive for conventional banks when controlled for market power. The results were positive and significant for both banking types.

Conversely, the effect of credit risk was significant, but with different signs, as it was positive for Islamic banks and negative for conventional banks. In the same vein, concentration linked negatively and significantly with conventional banks but had the opposite effect for Islamic banks (positive and insignificant). GDP growth affected conventional and Islamic banks negatively but the results were significant in the case of conventional banks. Regarding capital adequacy, the results were inconsequential for conventional banks (negative) and Islamic banks (positive). Concerning the data, the authors used the Bankscope database for the banks' data and, despite their effort to ensure they included only fully-fledged commercial Islamic banks; they excluded investment banks and did not account for converted banks. They did not report if they excluded conventional banks with Islamic windows from their sample. Moreover, they included conventional banks as Islamic banks. As such, Saudi Arabia has three Islamic banks, not five, and Egypt has two Islamic banks, not three. In addition, they

did not include all the banks in Sudan and did not include Iran despite the fact that both countries Islamized their financial systems. Despite these data limitations, both of these studies contributed significantly to the literature related to this study.

This paper will explore the factors affecting the rate of return on deposits in Islamic banks using some of the variables used by the previous studies and including new variables, which are off-balance sheet activities and oil prices. The exoplanetary variables used by this study are demonstrated below.

Research and Method

The data used in this study have been obtained from the Bankscope database. The sample covers all Islamic banks operating in OIC countries from 1989 to 2008. This sample includes nearly all Islamic banks operating in the world, as most Islamic banks operate in OIC countries (see Table 1).Until 2008, the majority of Islamic banks concentrated in OIC countries with few expectations and they are as follow: one bank in South Africa, one bank in Bosnia and Herzegovina and five banks in the UK (the first bank established in 2005).

The data in this study refined to only pure commercial Islamic banks. This is because the Bankscope database incorrectly classifies some conventional banks as Islamic banks and vice versa. In addition, there are converted banks (converted from conventional banking to Islamic banking) that Bankscope classifies as Islamic banks without indicating that they have converted banks (there are few exceptions such as Emirates Islamic bank which highlighted by Bankscope as converted bank). As such, the inclusion of the period before and during the conversion makes the sample bias. Moreover, Bankscope's database classifies some Islamic firms as Islamic

banks and some investment Islamic banks as commercial Islamic banks. These issues were considered and so different sources were used for this research to purify the sample, such as banks' websites, newspaper articles, and journal articles. This produced a sample of 110 banks.

This study employs a two-way fixed effect (FE) model to test the relationship between RROD in Islamic banks and the determinants described above. The advantages of an FE model are that it can allow the individual and/or time-specific effects to be correlated with explanatory variables, and does not require an investigator to model their correlation patterns (Hsiao, 2007). Moreover, the results of the Hausman test, which are used to decide between the FE and random-effect model, suggest that FE is appropriate for this study.

The equation:

$$Y = \beta_0 + \beta_1 X_{1,it} + \ldots + \beta_k X_{k,it} + \gamma_2 E_2 + \ldots + \gamma_n E_n + \delta_2 T_2 + \ldots + \delta_t T_t + u_{it}$$

Where Y is the dependent variable (where i = entity and t = time), X_{it} is the independent variables, β_k is the coefficient of the independent variables, E_n is the entity n (because they are dummies, n-1 entities are included in the model), γ_2 is the coefficient for the binary regressors (entities), T_t is time as binary is variable (dummy; so there are t-1 time periods), δ_t is the coefficient for the binary time regressors, and u_{it} is the error term.

Extreme outliers were removed. The result of the Durbin-Watson test (2.35) shown in Table 6 specifies that the data are not auto-correlated as it is within the critical limit of 1.5–2.5. The results of the Pearson product-moment correlation coefficient show that the correlation between the variables is small (see Table 5). The R-square value is 76.56, which indicates that the model is fit.

Results and Discussion

Table 3 exhibits the descriptive statistics of the variables used in this study and includes mean, median, maximum, minimum, and standard deviation (SD). The mean of RROD is 4.56 with a maximum value of 39.78, a minimum value of -5.62, and a SD of 5.96. This indicates that Islamic banks offer a restrained rate of return, which applies to all countries in the study because the SD value is small. The results also demonstrate that Islamic banks are well-capitalized (CAP) as it has an average of 12.42, although there are some differences between countries. The ROA average is 1.62, suggesting that Islamic banks are profitable. This is the case for all of the countries in this sample. Likewise, the mean of the credit risk (LLPSN) is 1.6, indicating that Islamic banks are risky and the ratio reached 68.42 for the period with no significant difference between the countries (SD = 4.92). The statistics also illustrate that the average deposit growth is 46.35 during the period. However, there was a considerable decline in the rate of growth, reaching -99.86. There was a large variance between countries as the SD is high (87.30). This decline in deposits could be attributed to economic downturn and financial crisis.

The arithmetical results suggest that majority of Islamic banks are small. It should be noted that large Islamic banks are concentrated in GCC countries and Iran. The average age of banks is 32.29 years, indicating that they are old (more than 20 years). In terms of economic and financial variables, the GDP per capita average is 8947.01 with a minimum value of 360.8 and a deviation of 10857.28. This demonstrates that most countries have a lower GDP per capita. The real interest rate and inflation rate is not high. The results show that there was an increase in oil prices during the period. Finally, it can be observed in the table that the banking sector in OIC countries is highly concentrated with a mean of 2252.43.

Table 4 illustrates the economic and financial indicators of the countries in the study. The table shows that the bulk of the countries have an implicit deposit insurance scheme. Countries that have been producing oil for more than 20 years are categorized as producers, otherwise the date that a country became a producer is indicated. It should be notes that during the period of the study there was an increase in oil prices.

Discussion of results

Table 6 shows the regression results of the two-way FE model. The first variable to be discussed is capital adequacy (default risk), which correlated negatively and significantly ($p < 0.01$) with the rate of return on deposits. This corroborates the argument that banks holding capital above the minimum requirements signaling their creditworthiness and should pay a lower rate because they can absorb losses on its loan portfolio. The outcome of this study aligns with the findings of Hamza & Saadaoui (2013)but contradicts Hamza (2016) and Meslier *et al.* (2017). Similarly, credit risk as predicted affected the rate of return on deposits negatively, at a level of one percent. This suggests that economic downturns and financial instability reduces banks' profitability leading to a lower rate of return on deposits. These findings contradict the results of Meslier *et al.* (2017) for Islamic banks but are in accordance with conventional banks' conclusions. Likewise, profitability affected the rate of return on deposits negatively and significantly ($p < 0.01$), indicating that Islamic banks retain some of its profit to strengthen its capital or Islamic banks prefer to distribute its profits to its shareholders as argued by Diaw & Mbow (2011)

This challenges the findings of Hamza (2016) and Meslier *et al.* (2017) but supports Chowdhury & Rahman (2014). Age, as expected, entered the regression with a negative sign but its effect is trivial ($p < 0.10$), suggesting that mature banks could offer a lower rate of return because they

have a good reputation. This is similar to Hamza (2016) findings. Similarly, deposit growth has a negative effect on the rate of return on deposits in Islamic banks but the effect is inconsequential. The negative sign is in accordance with Hamza (2016) and Relasari & Soediro (2005). However, the irrelevancy of the results could be related to the variance of the deposit level between banks (see Table 3). The results of this variable could be due to the fact that Islamic banks engage in risky transactions.

Conversely to the above banks' characteristics, the final three characteristics (OBS, FRGN and SIZE) have a positive and evocative relationship with the rate of return on deposits. Beginning with OBS activities, this variable as predicted had a positive and highly significant effect on RROD. This is in line with the assumption that banks in developing and underdeveloped countries depend on OBS activities to increase its profit particularly during the periods of financial crisis and economic downturns. The studies conducted by Sufian (2012), Al-Awawdeh & Al-Sakini (2017) and Alharbi (2017) linked banks' profitability to OBS activity. The result of foreign ownership is positive and significant at level of 10 percent. This indicates that foreign capital reduces risk and they not affected by the economic conditions of the host country leading to a higher rate of return on deposits. Bikker & Gerritsen (2017) and Azam & Siddiqui (2012) results confirm these findings but contradict Hamza (2016). The final bank variable size is closely correlated with the rate of return on deposits (p < *0.01*), suggesting that large banks operate efficiently (economies of scale) and have diversified portfolios, leading to higher rates of return. This result contradicts Hamza (2016) and Bikker and Gerritsen's (2017) findings but supports Meslier et al.'s (2017) study for both banking types.

In terms of external variables, economic growth, as expected, negatively and significantly (level of 1%) affected RROD. The studies of Hamza (2016), Bikker and Gerritsen (2017), and Meslier et al. (2017) align

with these findings. The negative sign could be attributed to the fact that during economic growth banks take higher risks, leading to lower profitability and a poorer rate of return. However, inflation contributes positively to the rate of return ($p < 0.05$), which marries with the findings of Meslier et al. (2017) and contradicts Hamza (2016). Regarding interest rate, the effect is insignificant with a positive sign. The positive effect is in concurrence with the bulk of the literature (Anuar et al., 2014; Chong and Liu, 2009; Hamza, 2016; Ismal, 2011) but it could be explained that Islamic banks compensate its depositors during periods when interest rates are high, to a certain limit. In relation to oil prices, this variable as assumed had highly positive and significant effect on the rate of return on deposits in Islamic banks ($p < 0.01$; t-statistic = 3.45). This indicates that high oil prices increase Islamic banks profitability leading to higher rate of return on deposits. This positive effect of high oil prices on Islamic banks performance documented by Chowdhury & Rasid (2016) and Alharbi (2017) study.

Concentration, as projected, correlated negatively and significantly with the rate of return on deposits ($p < 0.01$), which supports the structure-conduct-performance hypothesis. This result confirms Hamza (2016) and Bikker and Gerritsen's (2017) findings. Conversely, the result of this variable contradicts the deductions of Meslier et al. (2017) for Islamic banks but ratifies their findings for conventional banks. As predicted, deposit insurance scheme variables enter the regression with a positive sign that is insignificant. This could mean that the lack of the scheme forces banks to offer high rates of return to its depositors due to higher risk.

Conclusion

This paper contributes to the limited literature related to the dynamics affecting the rate of return in Islamic banks. The two-way FE regression results demonstrate that capital adequacy, credit risk age, and

profitability affected the rate of return negatively and significantly. The findings suggest that OBS activities, size, and foreign ownership contribute positively and significantly to the rate of return. Externally, economic growth reduces the rate of return on deposits in Islamic banks due to the high risk Islamic banks take during economic upward cycles, leading to lower profitability and lower rate of return. Similarly, concentration reduces the rate of return. By contrast, inflation and oil prices contribute positively to the rate of return. Real interest rates (positive) and deposit insurance schemes (positive) have no effect on the rate of return in Islamic banks.

In a practical sense, this study recommends that Islamic banks must improve its risk management techniques to increase its profitability and its rate of return. Additionally, Islamic banks must increase its size, attract more foreign capital, and diversify its business. In relation to oil prices, Islamic banks must accumulate funds when oil prices are high to act as a cushion during periods when oil prices are low or during financial crisis. Regarding deposit insurance schemes, the regulatory and authority bodies must establish an explicit deposits insurance scheme to take into account the effect on depositors' confidence and moral hazard. In the long run, this will increase banks' profitability and the RROD. Islamic banks became viable alternative to the conventional banks, however they face too many challenges that they need overcome.

Reference

Akhtar, B., Akhter, W. & Shahbaz, M. (2017). Determinants of deposits in conventional and Islamic banking: A case of an emerging economy. *International Journal of Emerging Markets*, *12*(2), 296–309.

Al-Awawdeh, H. & Al-Sakini, S. (2017). Off-balance items and their impact on the financial performance standards of the banks: An empirical study on the commercial banks of Jordan. *International Business and Management*, *15*(2), Int. Bus. Manag.

Alharbi, A. (2015). Development of the Islamic Banking System. *Journal of Islamic Banking and Finance*, *3*(1), 12–25.

Alharbi, A. (2017). Determinants of Islamic banks' profitability: International evidence. *International Journal of Islamic and Middle Eastern Finance and Management*, *10*(3), 331–350.

Anuar, K., Mohamad, S. & Shah, M. (2014). Are deposit and investment accounts in Islamic banks in Malaysia interest free? *JKAU: Islamic Economics*, *27*(2), 27–55.

Azam, M & Siddiqui, S. (2012). Domestic and foreign banks' profitability: Differences and their determinants. *International Journal of Economics and Financial Issues*, *2*(1), 33–40.

Bacha, O. (2008). The Islamic interbank money market and a dual banking system: The Malaysian experience. *International Journal of Islamic and Middle Eastern Finance and Management*, *1*(3), 210–226.

Bikker, J. & Gerritsen, D. (2017). Determinants of interest rates on time deposits and savings accounts: Macro factors, bank risk, and account features. International Review of Finance. *International Review of Finance*, *18*(2), 169–216.

Cevik, S. & Charap, J. (2015). The behavior of conventional and Islamic bank deposit returns in Malaysia and Turkey. *International Journal of Economics and Financial Issues*, *5*(1), 111–124.

Chong, B. & Liu, H. (2009). Islamic banking: interest-free or interest-based?'. *Pacific-Basin Finance Journal*, *17*(1), 125–144.

Chowdhury, M. & Rahman, S. (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(1), 33–34.

Chowdhury, M. & Rasid, M. (2016). Determinants of performance of Islamic banks in GCC countries: Dynamic GMM approach. In D. Mutum, M. Butt & M. Rashid (Eds.). *Advances in Islamic Finance, Marketing, and Management: An Asian Perspective*, 49–80.

Diaw, A. & Mbow, A. (2011). A comparative study of the returns on Mudhārabah deposit and on equity in Islamic banks. *Humanomics*, *27*(4), 229–242.

Ergeç, E. & Arslan, B. (2013). Impact of interest rates on Islamic and conventional banks: The case of Turkey. Applied Economics. *Impact of Interest Rates on Islamic and Conventional Banks: The Case of Turkey. Applied Economics*, *45*(17), 229–242.

Hamza, H. & Saadaoui, Z. (2013). Investment deposits, risk-taking and capital decisions in Islamic banks. *Studies in Economics and Finance*, *30*(3), 244–265.

Hamza, H. (2016). Does investment deposit return in Islamic banks reflect PLS principle? *Borsa Istanbul Review*, *16*(1), 32–42.

Hassan, K. & Sackley, W. (2002). Determinants of the US saving and loan off-balance sheet activities: An empirical investigation. *Finance India: The Quarterly Journal of Indian Institute of Finance*, *16*(3), 915–931.

Hsiao, C. (2007). Panel data analysis—advantages and challenges. *Test*, *16*(1), 1–22.

Ismal, R. (2011). Depositors' withdrawal behavior in Islamic banking: Case of Indonesia. *Humanomics*, *27*(1), 61–76.

Kasri, R. & Kassim, S. (2009). Empirical determinants of saving in the Islamic banks: Evidence from Indonesia. *JKAU: Islamic Econ*, *22*(2), 181–201.

Khambata, D. & Bagdi, R. (2003). Off-balance sheet credit risk of the opt 20 Japanese banks. *Journal of International Business Regulation*, *5*, 57–71.

Maali, B. & Atmeh, M. (2015). Using social welfare concepts to guarantee Islamic banks deposits. *International Journal of Islamic and Middle Eastern Finance and Management*, *8*(2), 134–149.

Meslier, C., Risfandy, T. & Tarazi, A. (2017). Dual market competition and deposit rate setting in Islamic and conventional banks. *Economic*

Modelling, *36*, 318–333.

Nwakoby, I., Onwumere, J., Ibe, I. & Okanya, O. (2016). The impact of deposit insurance scheme on bank intermediation in Nigeria. *European Journal of Social Sciences*, *53*(1), 64–79.

Park, S. & Peristiani, S. (1998). Market discipline by thrift depositors. *Journal of Money, Credit and Banking*, *30*(3), 347–364.

Relasari, I. & Soediro, A. (2005). An econometric analysis of conventional and Islamic bank deposits in Malaysia. *Review of Islamic Economics*, *9*(1), 31–52.

Sufian, F. (2012). Determinants of bank profitability in developing economies: Empirical evidence from the South Asian banking sectors. *Contemporary South Asia*, *20*(3), 375–399.

Yusoff, R. & Wilson, R. (2005). An econometric analysis of conventional and Islamic bank deposits in Malaysia. *Review of Islamic Economics*, *9*(1), 31–52.