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DETERMINANTS OF BANK PROFITABILITY: ISLAMIC VERSUS CONVENTIONAL BANKS

Abstract

This research analyzes the determinants of bank profitability by investigating the internal factors that affect the profitability of Islamic banks and conventional banks. It then compares the results from the two types in order to understand how they differ from each other. As previous researchers focus on either Islamic or conventional banks, this research will analyze both by comparing how they are each influenced by profitability factors. Few researches have attempted to compare the profitability of Islamic and conventional banks using a relatively small sample. This research uses a fixed effect panel data analysis on a large sample of 68 banks (42 Islamic and 26 conventional banks) from 13 MENA countries, covering the period of 2006 until 2016. Using several variables, including bank size, equities to assets, loans to assets, deposits to assets, cash to assets and securities to assets, the results show that bank size, equities to assets and deposits to assets have a significant positive effect on Islamic banks' profitability, while they have a significant negative effect on conventional banks' profitability; loans to assets and cash to assets have no effect on bank profitability for either Islamic or conventional banks; and securities to assets has a significant negative effect on Islamic banks' profitability, while it has a significant positive effect on conventional banks' profitability. The results also show that bank size, equities to assets, deposits to assets and cash to assets contribute more to Islamic banks' profitability compared to conventional banks, while loans to assets and securities to assets contribute more to conventional banks' profitability compared to Islamic banks.

INTRODUCTION

The recent financial crisis led to an important question: whether the current financial system is adequate and convenient for facing such a crisis. Regulators and researchers have attempted to find solutions within the current conventional financial system to solve the financial crisis and prevent future crises from happening. However, even with all efforts being made, the current financial system and its institutions cannot be regarded as a perfect solution to a financial crisis.

While regulators and researchers were investigating the financial crisis to understand its reasons and causes, they discovered something very important: some financial institutions and corporations have not been affected by the financial crisis as much as others. These institutions and corporations were the ones that did not mainly depend on the conventional financial system; many of these institutions and corporations were using Islamic financing and Islamic financing tools to finance their operations. Even for the financial institutions and corporations who did not use Islamic financing and Islamic financing tools to run their operations, their methods of operating were closer to Islamic than conventional financing (see Čihák & Hesse, 2010; Hennie & Zamir, 2008; Zamir & Abbas, 2011). As a result of their investigations, more attention has been focused on Islamic finance and

institutions. Many countries and firms have begun to use Islamic financial tools to finance their needs. As these tools present an alternative source of financing, this could help to prevent the financial system from facing future financial crises.

The Islamic finance system, institutions, firms and tools base their operations on interest-free transactions and profit and loss sharing. Accordingly, all parties share the risks, returns and losses. This system and operation present fairness by rewarding all parities the actual return on their invested capital, as well as distributing the losses and risks among all participants.

In spite of the fact that most Islamic finance tools have existed and been used even before Islam, Islamic banks as independent financial institutions only began to operate in the 1970s. Islamic banks operate in a way that is significantly different from conventional banks. Conventional banks provide their clients with direct credit facilities (loans) with fixed interest, whilst Islamic banks participate with their clients in projects and investments; they finance their clients' needs and share the profits, risks and losses with their clients through Islamic financing tools including: *Musharkah* (joint venture contract), *Mudarabah* (a trustee financing contract), *Murabaha* (cost-plus sale), *Ijara* (leases) and *Istisna* (manufacturing order).

In this research, the author will compare the profitability of Islamic and conventional banks so as to understand whether Islamic banks perform better than conventional banks and whether they can survive and compete with these conventional banks; in order to do so, the author will focus on how Islamic banks use their assets to generate profit.

The remaining of this paper will be as follows: in section one, the literature on the topic will be provided; in section two, the data and methodology will be presented; the results and findings of this paper will be discussed in section three; and finally, in the last section, the conclusion of this paper will be presented.

1. LITERATURE REVIEW

Samad (2015) examines the factors that affect the profitability of banks on a sample of 42 commercial banks from Bangladesh using ordinary least square regression (OLS), for the period from 2009 to 2001. He uses both internal specific characteristics of the banks (which include banks' sizes, banks' operational efficiency, capital efficiency and banks' financial risk) and economic growth as an external factor to capture the macroeconomic effect. The results show that banks' operational efficiency and capital efficiency have a significant positive effect on the profitability of banks; banks' financial risk has a significant negative effect on the profitability of banks, while economic growth and banks' size have no effect on bank's profitability.

Noman (2015) investigates the effect of macroeconomic and bank's specific factors of seven Islamic Bangladeshi banks over the period between 2003 and 2013 on bank's profitability. Using pool regression model and GMM model, the results show that there is a negative relationship between bank's prof-

itability and capitalization, cost efficiency and loan ratio, there is a positive relationship between the size of the bank and the profitability of the bank, while macroeconomic factors including GDP, inflation, real interest rate and stock market turnover have no significant effect on the bank's profitability.

Muda et al. (2013) examine the profitability determinants of banks by comparing a sample of 17 foreign and domestic Islamic banks operating in Malaysia. Using panel data analysis on quarterly based data during the period between 2007 and 2010, the results show that domestic banks are more profitable compared to foreign banks.

Bashir (2003) investigates the effect of external and internal factors on Islamic banks' performance, based on a sample of 14 Islamic banks form 8 middle-eastern countries for the period from 1993 to 1998. The results show that profitability increases as the ratio of loan to assets and the ratio of capital to assets increase, banks with foreign ownership have higher profitability, and when the economic conditions are favorable, banks' profitability will increase.

On the other hand, taxes have a negative effect on banks' profitability.

Khan et al. (2014) investigate the internal and external variables that affect Islamic banks profitability. Using 5 Islamic banks from Pakistan over the period from 2007 to 2014, the results show that there is a positive significant effect of asset management, non-performing loans to assets ratio and gearing ratio on banks profitability, and there is a negative significant effect of deposit ratio, and consumer price index on banks profitability.

Wahidudin et al. (2012) analyze the determination of banks profitability by comparing Islamic and conventional banks in Asian countries during the period from 2004 to 2009. They found that the capital of the banks affects the profitability positively, operating costs affect banks profitability negatively, while banks' size does not provide any evidence of the economics of scale.

Akhtar et al. (2011) investigate the determinants of profitability in Islamic banks, on a sample of six banks in Pakistan over the period from 2006 to 2009. They found that capital adequacy and gearing ratio have a significant positive effect on banks' profitability, while other factors, including operating efficiency, non-performing loan ratio, assets management and bank's size have no significant effect on bank's profitability.

Alshatti (2016) investigates the determinants of commercial banks in Jordan, using a sample of 13 banks over the period from 2005 to 2014. The results show that capital ratio, leverage and capital adequacy have a positive influence on the profitability of banks, while banks profitability is negatively influenced by the quality of the banks' assets.

Menicucci and Paolucci (2016) investigate how bank's profitability is affected by the specific characteristics of the banks, by investigating 35 banks in the euro-zone between 2009 and 2013. They found that loan ratio, deposit ratio, capital ratio and size have a positive effect on profitability, while loan loss provision has a negative effect on profitability.

Husain et al. (2015) investigate the determinants of banks profitability on a sample of 16 Islamic Malaysian banks from 2008 to 2012. They found

that bank size has a positive effect on profitability, assets quality has a negative effect on profitability and capital adequacy, liquidity and deposits ratio have no effect on banks' profitability.

Ramlan and Adnan (2016) analyze the profitability of Islamic and conventional banks, using a sample of three Islamic banks and two conventional banks in Malaysia from 2006 to 2011. The result shows that Islamic banks are more profitable in comparison with conventional banks.

Tariq et al. (2014) examine the determinants of 17 commercial banks in Pakistan over the period from 2004 to 2010. The results show that loan loss provision, capital ratio and assets quality have a positive effect on profitability, and inflation and non-interest income have a negative effect on profitability.

Bucevska and Misheva (2017) investigate the banks' profitability determinants in Balkan reign using a sample of 127 banks from Slovenia, Croatia, Serbia, Bosnia and Herzegovina, Montenegro, and Macedonia covering the period from 2005 to 2009. The results show that external factors including growth and inflation have no effect on profitability; internal factors including size, concentration, market share, efficiency, credit risk, equity ratio and ownership also have no effect on profitability, on the other hand, efficiency has a significant positive effect on bank's profitability.

The literature provides us with varied results regarding the differences between the profitability of Islamic and conventional banks. Some papers found that Islamic banks were more profitable than conventional banks, whilst others revealed the better performance of conventional banks, and some papers found that there was no significant difference between the profitability of the two groups.

2. DATA AND METHODOLOGY

Based on a sample of 42 Islamic banks and 26 conventional banks from 13 MENA countries (including Bahrain, Egypt, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi, Sudan, Syria, UAE and Yemen) between 2006 and 2016, the researcher used fixed effect panel data analysis to analyze

the profitability of Islamic banks and conventional banks in order to capture any firm and/or year specifications, and then compare the results of the two groups.

Using the return on assets (ROA) as a measure of profitability, profitability can be measured using various measures, such as return on equities (ROE) and net interest margin (NIM). NIM was irrelevant, since Islamic banks do not deal with interest. Between ROA and ROE, ROA was chosen as a measure of profitability, since ROA considers the effect of financial leverage. The dependent variable was return on assets (ROA) measured as net income/loss after taxes divided by the total assets for both Islamic and conventional banks. This ratio measures the bank's ability to generate profit for each unit of money invested in assets.

The independent variables are as follows:

- Bank size (*SIZE*): bank size is measured as the natural logarithm of the total assets for both Islamic and conventional banks. Larger banks are more able to generate profits; these larger banks are more able to diversify their investments and expand their services, which will also help them take advantage of the economics of scale.

- Capital adequacy (*CAPTL*): capital adequacy is measured as the total equity to total assets for both Islamic and conventional banks. As capital ratio increases, this will mean less debt financing with low cost associated with debt, which will lead to low profitability.

- Loan to assets (*LOAN*): loan to assets is measured as total loans to total assets for conventional banks. For Islamic banks, it is measured as total Islamic financing tools (including *Musharkah*, *Mudarabah*, *Murabaha*, *Ijara* and *Istisna*) to total assets. As banks increase their investments in loans, their profitability is expected to increase as loans generate the highest rate of return among other types of assets.

- Deposits to assets (*DEPST*): deposits to assets is measured as customer deposits to total assets for both Islamic and conventional banks.

Since customer deposits represent a cheap source of financing, having more customer deposits is expected to increase the bank's profitability.

- Cash to assets (*CASH*): cash ratio is measured as cash and cash equivalents to total assets for both Islamic and conventional banks. Banks with more cash and cash equivalents will have low profitability as cash does not generate any income for the bank.

- Securities to assets (*SEC*): securities to assets is measured as investment in securities to total assets for both Islamic and conventional banks given that Islamic banks can only invest in Sharia compliant securities. When banks hold more financial assets, they can generate income from these securities unless they are held to provide a secondary defence line to meet liquidity needs.

All variables were calculated based on numbers taken from annual reports, which were taken from the annual reports of banks. The following model was applied to measure the profitability of Islamic and conventional banks:

$$ROA_{i,t} = \alpha + \beta_1 SIZE_{i,t} + \beta_2 CAPTL_{i,t} + \beta_3 LOAN_{i,t} + \beta_4 DEPST_{i,t} + \beta_5 CASH_{i,t} + \beta_6 SEC_{i,t} + \varepsilon_{i,t}. \tag{1}$$

Below, the results from the Islamic and conventional banks will be compared to understand the differences between the two groups.

3. RESULTS AND ANALYSIS

Table 1 shows the descriptive results of Islamic banks between 2006 and 2016.

From Table 1, one 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 from different countries and some of these banks were new, while others were relatively older.

Table 1. Descriptive results of Islamic banks

Source: Calculated from banks' annual reports, period 2006–2016.

Variables	Mean	Median	Maximum	Minimum	Standard deviation
ROA	1.49%	1.22%	12.85%	−6.28%	2.43%
SIZE	21.59	21.68	25.16	14.55	1.75
CAPTL	17.97%	14.12%	97.06%	2.38%	12.87%
LOAN	48.17%	52.13%	91.69%	0.00%	21.69%
DEPST	41.23%	36.70%	91.62%	0.00%	25.19%
CASH	27.67%	22.85%	89.43%	1.56%	19.87%
SEC	10.69%	9.23%	47.63%	0.00%	8.48%
Observations	346	346	346	346	346

Table 2. Descriptive results of conventional banks

Source: Calculated from banks' annual reports, period 2006–2016.

Variables	Mean	Median	Maximum	Minimum	Standard deviation
ROA	1.62%	1.59%	11.22%	−2.72%	1.51%
SIZE	22.21	22.22	26.01	17.43	1.77
CAPTL	13.50%	11.84%	72.45%	1.06%	7.25%
LOAN	46.42%	50.22%	84.23%	0.00%	21.30%
DEPST	68.41%	71.00%	98.18%	0.00%	15.95%
CASH	30.14%	23.86%	93.31%	3.79%	19.45%
SEC	15.71%	10.83%	69.93%	0.00%	14.41%
Observations	244	244	244	244	244

Table 2 shows the descriptive results of conventional banks between 2006 and 2016.

From Table 2, one can also note that the research variables range widely; the most likely reason for this wide range is that the sample included banks of different sizes from different countries and some of these banks were new, while others were relatively older.

Table 3 shows the correlation matrix of Islamic banks between 2006 and 2016.

Table 4 shows the correlation matrix of conventional banks between 2006 and 2016.

Table 5 shows the regression results for both Islamic and conventional banks between 2006 and 2016, as well as the difference between them.

Table 3. Correlation matrix of Islamic banks

Source: Calculated from banks' annual reports, period 2006–2016.

Variables	ROA	SIZE	CAPTL	LOAN	DEPST	CASH	SEC
ROA	1.0000						
SIZE	0.0175	1.0000					
CAPTL	0.0517	−0.3558	1.0000				
LOAN	0.0096	0.6218	−0.3169	1.0000			
DEPST	0.0669	0.2809	−0.2166	0.1686	1.0000		
CASH	−0.0503	−0.5793	0.1816	−0.6760	−0.0841	1.0000	
SEC	0.0495	0.1073	−0.0162	−0.1356	−0.0630	−0.2913	1.0000

Table 4. Correlation matrix of conventional banks

Source: Calculated from banks' annual reports, period 2006–2016.

Variables	ROA	SIZE	CAPTL	LOAN	DEPST	CASH	SEC
ROA	1.0000						
SIZE	0.0716	1.0000					
CAPTL	0.0495	−0.3850	1.0000				
LOAN	−0.0011	0.4829	0.0065	1.0000			
DEPST	−0.0949	0.1491	−0.5299	−0.0531	1.0000		
CASH	−0.0681	−0.5698	0.1636	−0.6661	0.1607	1.0000	
SEC	0.0897	0.2690	−0.2793	−0.2520	0.4056	−0.2664	1.0000

Table 5. Regression analysis and differences between Islamic and conventional banks

Variables	Islamic banks	Conventional banks	Difference
SIZE	0.0112***	−0.0230***	0.0342***
CAPTL	0.0803***	−0.0705***	0.1508***
LOAN	0.0082	0.0197	−0.0114***
DEPST	0.0467***	−0.0209	0.0676***
CASH	0.0009	−0.0015	0.0025***
SEC	−0.0399**	0.0346***	−0.0745***
Adj. R square	59.67%	50.56%	
F statistic	9.9543***	7.0606***	
Likelihood ratio test	371.7323***	208.3148***	
Hausman test	20.9034***	61.1095***	
Observation	346	244	

Table 5 shows the results for the regression model; from Table 5 one can learn the following (see sub-sections 3.1-3.3).

3.1. Profitability of Islamic banks

The size of Islamic banks has a significant positive effect on the bank's profitability, as Islamic banks have a better position to diversify their investments and asset portfolio; they can also enjoy the benefits of economics of scale. Larger banks will be seen as safer, thereby helping them to enhance their profitability.

Capital adequacy shows a significant positive effect on the bank's profitability; this result might be seen as unusual for a bank, but in fact the characteristics and the ways Islamic banks work make this result very normal. Since Islamic banks share the profits with their depositors based on the profit-loss sharing principle, financing their assets from debt or equity sources will become relatively irrelevant from a cost point of view as in either case the banks will share the profit with the debt or equity-holders. Having more equity capital provides a source of financing, which will not be subject to withdrawal, unlike the debt capital, meaning that the bank will be able to invest in long-term profitable assets, which will enhance the bank's profitability.

Loans (in the case of Islamic banks, loans refer to Islamic financing tools) have a positive insignificant effect on the Islamic banks' profitability.

As loans represent the most profitable assets for a bank, loans are expected to have a significant positive effect on profitability. These insignificant results can be explained by the high competition in the market; both Islamic and conventional banks are competing in the credit market to provide funds to customers. In order to maintain their market share, banks might accept less profitable loans, which will lead to this insignificant result.

Deposits have a significant positive effect on the bank's profitability, as these 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. Cash has an insignificant relationship with the bank's profitability, since cash does not generate any income, and because it is held as a reserve requirement it is expected to have no effect on profitability. Securities have a negative significant effect on the bank's profitability. Islamic banks are limited in the choice of securities they can invest in; as these securities must pass several criterions to be accepted, Islamic banks mainly invest in securities as a secondary defence line to meet liquidity needs.

The entire model for Islamic banks was significant, with an explanatory power of 59.67%. The analysis of the model also confirms that fixed effect panel data is the most appropriate among ordinary least square and random effect models based on the significance of the likelihood ratio and Hausman tests.

3.2. Profitability of conventional banks

The size of conventional banks has a significant negative effect on the bank's profitability. Although larger banks are expected to be more profitable, in many cases a larger size might lead to more bureaucracy; conventional banks are older compared to Islamic banks, which supports the idea that conventional banks are more bureaucratic.

Capital adequacy shows a significant negative effect on the bank's profitability; as equity capital has a higher cost compared to debt financing, banks with a higher equity to assets ratio are expected to be less profitable. Loans have a positive insignificant effect on conventional banks' profitability for the same reasons as Islamic banks, discussed above. Deposits have a negative insignificant effect on banks' profitability; conventional banks must pay fixed interest to their depositors, whether they make a profit or not, so the results are inconclusive on how deposits affect banks' profitability. Cash has an insignificant relationship with banks' profitability for the same reasons as Islamic banks, discussed above. Securities have a positive significant effect on banks' profitability, as conventional banks can achieve income by investing in high income securities.

The entire model for conventional banks was also significant, with explanatory power of 50.56%. The analysis of the model also confirms that fixed effect panel data is the most appropriate among ordinary least square and random effect models based on the significance of the likelihood ratio and Hausman tests.

3.3. Profitability difference

Comparing Islamic and conventional banks provides us with the following results.

The size of the bank in Islamic banks contributes to the bank's profitability better than conventional banks. As Islamic banks are much younger than conventional banks, they do not suffer from bureaucratic procedures in the same way as conventional banks; they get the benefits of this large size and economics of scale.

Islamic banks are better at achieving profits from their equity capital compared to conventional banks. They are also better at achieving profits from their deposits compared to conventional banks; these results indicate better costs-revenues management. As Islamic banks work under the principle of profit-loss sharing, this strategy requires the bank to be more efficient, leading to better costs-revenues management.

Conventional banks are more able to generate profits from investing in securities compared to Islamic banks. As conventional banks enjoy a variety of securities to invest in, while Islamic banks are limited in their investment choices, conventional banks can create a better portfolio of securities and achieve a higher return.

Loans and cash were both found to be insignificant for Islamic and conventional banks. The results showed that Islamic banks are better at generating profits from cash, while conventional banks are better at generating profits from loans.

CONCLUSION

The last 40 years have witnessed the emergence of Islamic banks, and in recent years they have begun to operate as strong competitors to conventional banks. Few papers have studied the performance of Islamic banks and compared their performance with conventional banks. The results from these limited researches are also various, mainly because the sample sizes are small.

This research used a larger sample of 68 banks (42 Islamic and 26 conventional banks) from 13 MENA countries (including Bahrain, Egypt, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi, Sudan, Syria, UAE and Yemen), covering the period of 2006 to 2016. Using fixed effect panel data analysis to capture any firm and/or year effect, the results of this paper showed that the profitability of Islamic banks is significantly positively affected by the bank size, the capital adequacy ratio and the size of customers' deposits, significantly negatively affected by investments in securities, and insignificantly

affected by loans and cash held. Conventional banks, on the other hand, were found to be significantly positively affected by investments in securities, significantly negatively affected by bank size and the capital adequacy ratio, and insignificantly affected by loans, deposits and cash held.

Comparing the results from Islamic and conventional banks revealed that bank size, capital adequacy ratio, customers' deposits and cash held contributed to Islamic banks' profitability more than they did to conventional bank profitability, while investments in securities and loans were found to contribute to conventional banks' profitability more than that of Islamic banks.

It is recommended that the results of this paper be confirmed on another sample from different regions. Further, it is also recommended that a comparison of Islamic and conventional bank performance doesn't just consider profitability.

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