

Determinants of Islamic Bank Profitability

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Investigating the determinants of profitability has been one of the more popular topics among researchers in banking studies. For the past three decades, researchers have managed to examine and identify various factors that have a significant influence on bank's profitability. All previous profitability studies, however, have been of conventional banks and until now there has been no study to determine the profitability of Islamic banks. This study examines the effects the factors that contribute towards the profitability of Islamic banks. This study finds that internal factors such as liquidity, total expenditures, funds invested in Islamic securities, and the percentage of the profit-sharing ratio between the bank and the borrower of funds are highly correlated with the level of total income received by the Islamic banks. Similar effects are found for external factors such as interest rates, market share and size of the bank. Other determinants such as funds deposited into current accounts, total capital and reserves, the percentage of profit-sharing between bank and depositors, and money supply also play a major role in influencing the profitability of Islamic banks.

Introduction

Since the first institution was established in 1963, Islamic banks have gained a footing in almost every majority Muslim country and in a few non-Muslim countries. Not only do Islamic banks provide profit-sharing (instead of predetermined interest payments) banking facilities, but they are also expected to undertake business and trade activities on the basis of fair and legitimate profits. In such banks, ensuring fair practices in dealings with customers and shareholders takes centre stage, more so than in conventional banking where much fair practice needs to be imposed by external regulation (further details on the concepts and operations of Islamic banking system are available elsewhere, e.g. Haron, 1995).

While there is an abundance of literature on performance studies, these studies are confined to conventional banks. Up to this date, there has been little

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research on the profitability of Islamic banks. Nienhaus (1983) tried to link the profitability of Islamic banks with the market structure. Based on his simplistic equilibrium model, he postulated that the profit-sharing ratio (the percentage of profit paid by the entrepreneur) of Islamic banks was positively related to the lending rate of the conventional banks. Nienhaus (1983) not only suggested that Islamic banks use the interest rate as a basis for calculating profit-sharing ratio, but also recommended that the profit-sharing ratio be equivalent to the interest rate offered by the conventional banks. He also believed that in the long run, interest-based banking would be more successful than Islamic banking. Unfortunately, Nienhaus's hypothesis were not supported by any empirical evidence.

Khan (1983) expanded Nienhaus's model and postulated that the average return of an Islamic bank in the long run will be higher than the interest rate. Khan believed that Nienhaus's argument was valid in the case where profit-sharing products were provided by conventional banks. Interestingly, Khan acknowledged that the profit-sharing ratio would have a positive relationship with interest rate. Like Nienhaus, Khan's framework was not empirically verified. Using 'adaptive expectation model', Haron and Ahmad (2000) verified Nienhaus's (1983) and Khan's (1983) hypothesis and found that conventional interest rates had a strong positive relationship with deposits of Islamic banks.

The work by Samad (1999) is considered the pioneer study, which links efficiency and performance of Islamic banks. Comparing the efficiency of conventional and Islamic banks, Samad found that Islamic banks tend to become inefficient when operating within the dual banking environment. Applying financial ratios in their works, Samad and Hassan (1999) observed that in some aspects Islamic banks outperformed conventional banks. Hassan and Bashir (2003) studied the effects of controlled and uncontrolled variables on Islamic banks profitability. While factors such as capital, overhead, gross domestic product and conventional interest rates were positively related to profitability; loan ratios, reserve taxes, and size were adversely related.

The objective of this study is to examine the impact of profitability determinants on performance of Islamic banks in a manner analogous to such studies conducted with conventional banks. This paper is divided into five sections. The literature review on determinants of bank performance is highlighted in Section Two. Section Three examines the methodology used in analysing the relationship between the variables used in this study and the performance indicators of Islamic banks. Section Four elaborates on the findings and Section Five concludes this study. The words in *italic* characters in this paper are the Arabic words widely used in Islamic banking literature.

Literature Review

The literature divides the determinants of conventional bank profitability into two categories: internal and external. Internal determinants of profitability, which are within the control of bank management, can be broadly classified into two categories, namely, financial statement variables and non-financial statement variables. While financial statement variables relate to the decisions, which directly involve the items in the balance sheet and income statement, non-financial statement variables involve factors that have no direct relation to the financial statements. The examples of non-financial variables within this category are number of branches, status of the branch (e.g., limited or full-service branch, unit branch or multiple branches), location and size of the bank. Number of branches, status of branches, and location are considered controllable variables when decisions on those matters are within the discretion of management. In the case of a decision to establish new branches or services available where the locality is restricted by regulations, these variables are considered external to the bank. Similarly the size of the bank is considered an internal determinant on the assumption that management of the bank is responsible for expanding their organisation by acquiring additional assets and liabilities. Some researchers (Short, 1979 and Bourke, 1989) therefore considered size as an external variable.

External variables are those factors that are considered to be beyond the control of the management of a bank. Among the widely discussed external variables are competition, regulation, concentration, market share, ownership, scarcity of capital, money supply, inflation, and size.

1. *The Effects of Internal Determinants*

Among the researchers who have studied the effects of internal determinants on bank profitability are Hester and Zoellner (1966), Haslem (1968,1969), Fraser and Rose (1971), Fraser, Philips and Rose (1974), Heggsted (1977), Mullineaux (1978), Kwast and Rose (1982), Smirlock (1985), Bourke (1989), Molyneux and Thornton (1992), and Stienherr and Huveneers (1994). Most of these studies were conducted using American data except studies conducted by Bourke (1989), Molyneux and Thornton (1992) and Stienherr and Huveneers (1994) in which international data were used.

Hester and Zoellner (1966) studied the relationship between balance sheet items and the earning of 300 banks in Kansas City and Connecticut. They found that changes in balance sheet items had a significant impact on a bank's earnings. While all asset items obtained positive results, liability items such as demand, time and saving deposits adversely affected profits. Haslem (1968) used 64 operating ratios in order to measure the effects of management, size,

location and time on profitability of commercial banks. Haslem's findings indicated that all variables tested were significantly related to profitability. Fraser and Rose (1971) found that loan rate, time deposit rate, loan-to-deposit ratio, service charges and portfolio selection had no effect on profitability. Fraser, Philips and Rose (1974) considered operating costs, deposit and loan compositions as factors within the control of management. They found that the factor, which had the biggest influence on bank performance, is bank cost followed by bank's deposit and loan composition. Mullineaux (1978) used a profit-function approach in his study and found that balance sheet structure had a significant impact on profitability and, depending on the nature of the balance sheet items, the relationship can be either negative or positive.

With regards to deposit structure, Heggsted (1977) found that banks heavily committed to time and savings deposits earned considerably lower returns than banks, which have a higher dependence on demand deposits. Smirlock (1985) confirmed that demand deposits were a cheaper source of funds and had a positive impact on bank profits. Kwast and Rose's (1982) study, however, claims that operating efficiency had nothing to do with profitability. They found that there was no compelling evidence that high-profit banks were characterised by a greater level of efficiency than low-profit banks.

Bourke (1989) was the first researcher to include internal variables in a profitability study involving cross-country data. The internal variables used were capital ratios, liquidity ratios and staff expenses, and the dependent variables were comprised of the net profit before taxes against a total capital ratio, and the net profit before taxes against a total assets ratio. All the internal variables related positively to profitability. Molyneux and Thornton (1992) duplicated Bourke's study using all European banks as their sample and found similar results. Stienherr and Huveneers (1994) studied the performance of banks in the United States, Great Britain, Western Europe, and Japan. They found that overhead expenditures were positively correlated significantly with profitability. Liquidity relationship was significant in only certain countries. Similarly, investment in equity was positively correlated in certain samples but had an adverse relationship with others.

Hester and Zoellner (1966) included number of branches as one of the independent variables in their profitability study. They found that number of branches had no effect on profitability. Emery (1971) studied the relationship between the status of the branch and profitability. He divided his sample into three categories, unit branch, limited branch and statewide branch. Using analysis of variance, Emery found that there was a significant difference in terms of return among these three categories of branches. Vernon (1971) included location as one of the profitability determinants in his study and found

that location had a significant relationship with profitability. Kwast and Rose (1982) also included location as one of the independent variables. The findings of Kwast and Rose revealed that location had a significant relationship with profitability, and their results confirmed the finding of Vernon (1971).

2. *The Effects of External Determinants*

Although competition is considered in the literature as one of the important determinants of profit for conventional banks, debate in this area has not been fully resolved. Philips (1964) believed that public regulation, private organisation and institutional market characteristics made industry performance insensitive to differences in market structure and made competition difficult to observe. In view of the difficulties of measuring the impact of competition, most banking researchers prefer to incorporate this aspect within the scope of market structure or regulations.

Emery (1971) was among the first researchers to measure the effect of competition on bank profitability. He used entry into the market as a proxy for competition. Emery's findings were that competition had no significant impact on profits. Rhoades (1980) examined the effect of new entry on competition. His result indicated that there was no relationship between entry and competition. Similarly, Lindley et. al. (1992) found a weak adverse relationship between competition and the rate of entry. Steinherr and Huveneers (1994) examined the impact of foreign banks on the profitability of domestic banks. They found that the existence of foreign banks produced an unwavering impact on the profitability of various types of banks.

The banking industry is among one of the most heavily regulated industries in the world. The main reason for regulation is to provide a sound, stable and healthy financial system. Peltzman (1968) was among the first researchers to empirically test the effects of regulation on performance. Instead of profit, he used the bank's capital as a proxy for performance. Peltzman's findings indicated that a prohibition on interstate branching and a legal restriction to new entry had a significant impact on the market value of a bank's capital.

Fraser and Rose (1972) studied whether the opening of new institutions had any significantly adverse effects on the growth and profitability of competing institutions. They found that, despite some evidence of slowing in the growth rate of deposit, the profitability of existing institutions was not adversely affected by the opening of new branches by their competitors. The finding of Fraser and Rose, however, was not supported by McCall and Peterson (1977). Similarly, Mullineaux (1978) found that regulations on the setting-up of banks had a significant impact on profitability. The findings of McCall and Peterson (1977) and Mullineaux (1978) confirmed the studies of Vernon (1971) and Emery (1971).

A similar approach was used by Smirlock (1985) and his results also confirmed Vernon's and Emery's findings.

Concentration is defined as the number and size of firms in the market. The term has emerged from the structure-conduct-performance (SCP) theory, which is based on the proposition that market concentration fosters collusion among firms. The assumption is that the degree of concentration in a market exerts a direct influence on the degree of competition among its firms. Highly concentrated markets will lower the cost of collusion and foster tacit and/or explicit collusion on the part of firms. As a result of this collusion, all firms in the market earn monopoly rents. This theory was first used by researchers using manufacturing firm data and gained popularity among researchers in banking studies in the 1960s.

The effects of concentration on the banking structure were further expanded in the 1970s and continued into the 1980s. Heggsted (1979), in his survey of studies undertaken from 1961-1976, found that concentration had either a significant or a small effect on dependent variables such as profitability, loan rates, deposit rates and the number of bank offices in only 26 of the 44 banks studied. Similarly, Gilbert (1984) summarised the response of bank performance measures to a change in market concentration and found that in only 27 of the 56 studies reviewed did concentration significantly effect performance in the predicted direction.

Many have studied the effect of concentration on profitability, including Emery (1971), Fraser and Rose (1971), Vernon (1971), Heggsted (1977), Short (1979), Kwast and Rose (1982), Smirlock (1985), Bourke (1989), and Molyneux and Thornton (1992). While the findings of Heggsted, Kwast and Rose, Short, Bourke, and Molyneux and Thornton indicated that concentration had a significantly positive relationship on profits, a significant relationship, but in the opposite direction, was found in Vernon's study. The effect of concentration was insignificant in Emery's, Fraser and Rose's and Smirlock's studies.

Market share is considered as a profitability determinant under the assumption that as a result of their efficiency, firms will obtain a bigger market share and increase their profitability. A bigger market share also means more power to a bank in controlling the prices and services it offers to its customers. Heggsted and Mongo (1976) found that the greater the market share, the greater a bank's control over its prices and the services it offers. Heggsted (1977) and Mullineaux (1978) however, found that market share had an adverse relationship with profitability.

Short (1979) believed that some banks might sacrifice current's profits by growing at a faster rate or expanding their market share with the intention of

earning more profits in the future. He used the growth of assets rate as a proxy for measuring the effect of market share on profitability and found that growth of assets did not have a significant effect on profit. Smirlock (1985) not only believed that market share influenced profitability but that growth in the market created more opportunities for a bank and thus generated more profits. His finding indicated that growth had a significant positive relationship with profits.

The effect of ownership on bank profitability is not fully resolved in the literature. In his study, Vernon (1971) examined the performance of management-controlled banks and owner-controlled banks. He found that owner-controlled banks did not earn higher rates of return on invested capital when compared to management-controlled banks. Mullineaux (1978) divided his sample into two: only-bank holding company banks and multi-bank holding company banks. He found that only-bank holding company banks were more profitable than their counterparts.

Short (1979) believed that government ownership would have an impact on profitability, on the grounds that government banks were non-profit oriented banks. He found that the government ownership variable was significantly adverse towards profits, thus confirming the hypothesis that as the amount of a bank's capital owned by the government increases, the lower the profits generated by those banks. Both Bourke (1989) and Molyneux and Thornton (1992) included government ownership in their studies. While Bourke's result indicated a weak adverse relationship, a significant positive relationship was found by Molyneux and Thornton.

The usage of scarcity of capital as one of the profitability determinants was introduced by Short (1979). Short (1979) believed that scarcity of capital can be used to measure the economy-wide profitability of all industries in a particular country. In his study, Short used both central bank discount rates and the interest rates on long-term government securities. He found that these variables had a significant positive relationship with profitability. Short's hypothesis was further tested by Bourke (1989) and Molyneux and Thornton (1992). The findings of these two studies also found that capital scarcity had a significant positive relationship with profitability.

Bourke (1989) also believed that market expansion could produce a capability for earning increased profits. In his study, Bourke used the annual growth in money supply as a proxy for growth in the market. He found that money supply had a significant positive relationship with profits. Molyneux and Thornton (1992), who replicated Bourke's study, found a similar result.

The effect of inflation on bank profitability was first discussed by Revell (1980). Revell believed that inflation could be a factor in the causation of

variations in a bank's profitability. This hypothesis was empirically tested by Bourke (1989) and Molyneux and Thornton (1992). Using the consumer price index (CPI) as a proxy for inflation, both studies found that inflation had a significant relationship with profit. Although the first empirical testing on inflation was done by Bourke (1989), Heggsted (1977) in his study tried to measure the effect of inflation on profitability. Heggsted however, used per capita income as an independent variable instead of using the CPI. Heggsted's finding, however, did not indicate any relationship between per capita income and a bank's profitability.

Economies of scale are commonly defined as reductions in the cost per unit of a product being manufactured and sold. Economic theory suggests that if an industry is subject to economies of scale, larger institutions will be more efficient and can provide services at a lower cost, *ceteris paribus*. Since large banks are assumed to enjoy economies of scale, they are able to produce their outputs or services more cheaply and efficiently than can smaller banks. As a result, large banks will earn higher rates of profit if entry is impeded. The effect of economies of scale on profitability, however, has not been fully resolved by researchers in banking.

Emery (1971) and Vernon (1971) were among the earliest researchers to link bank size with profitability. Emery classified his sample according to total assets and found that the larger banks had greater returns. Similarly, Vernon used total assets as a proxy for size but found that there was no significant relationship between size and profitability. Vernon's finding was confirmed by Heggsted (1977), Kwast and Rose (1982) and Smirlock (1985).

Short (1979) found that the relationship between the profit rates of 60 banks and the growth of assets was significant but inverse. Molyneux et al. (1994), who examined the competitive conditions of European banking for the four-year period from 1986 to 1989, also included bank assets as an independent variable. Their regression results, however, produced inconsistent results among countries as well as within countries from one year to another. Stienher and Huveneers (1994) also included the size of banks as one of the independent variables in their profitability study and found that it had mixed effect on the performance of various groups of banks.

Methodology

The data used for this study from a pooled time series cross-sectionally: the data are taken from the annual reports of Islamic banks in selected Muslim countries. The list of participating banks in Appendix 1. An advantage of using panel data is that more observations on the explanatory variables are available. This has the effect of helping overcome the inherent multicollinearity which

probably exists between the independent variables. Since this study involves cross-country data, a dummy variable model will be applied (Griffiths, et al, 1993). A general statement of the model is represented by:

$$y_{it} = \beta_0 + \gamma_2 D_2 + \gamma_3 D_3 + \dots + \gamma_J D_J + \beta_1 X_{it,1} + \beta_2 X_{it,2} + \dots + \beta_k X_{it,k} + \varepsilon_{it}$$

$$i = 1, 2, \dots, J$$

$$j = 1, 2, \dots, 13$$

$$t = 1, 2, \dots, T$$

The dummy variables element is represented by $\gamma_j D_j$, $\beta_k X_{it,k}$ is for the independent variables, J represents the number of banks and T is for the total number of observations for each bank. This model implies that marginal effects β_k is the same across all banks. That is, a one unit change in variable X_k has the same effect on profit for all banks. However if the dummies are included, it means that a different intercept applies to each bank. Therefore, the model for each bank is as follow:

$$\text{Bank 1: } y_{it} = \beta_0 + \beta_1 X_{it,1} + \beta_2 X_{it,2} + \dots + \beta_k X_{it,k} + \varepsilon_{it}$$

$$\text{Bank 2: } y_{it} = (\beta_0 + \gamma_2) + \beta_1 X_{it,1} + \beta_2 X_{it,2} + \dots + \beta_k X_{it,k} + \varepsilon_{it}$$

$$\text{Bank J: } y_{it} = (\beta_0 + \gamma_J) + \beta_1 X_{it,1} + \beta_2 X_{it,2} + \dots + \beta_k X_{it,k} + \varepsilon_{it}$$

The above models indicate that for a given value of each regressor $X_1, X_2, \dots, X_k$, the average level of profit is different for each bank. The inclusion of dummies is verified using the F-test based on the following hypothesis (Doran and Guise, 1984):

$$H_0: \text{average level of profit is same for each bank } (\gamma_2 = \gamma_3 = \dots = \gamma_J = 0)$$

$$H_1: \text{average level of profit is not same for each bank } (\gamma_2 = \gamma_3 = \dots = \gamma_J \neq 0)$$

In the case where H_0 is being rejected, dummies should be included in the equation for it represents the most appropriate model which produces efficient results. On the other hand, if H_0 is accepted, the following model (ordinary least square) is applied.

$$y_{it} = \beta_0 + \beta_1 X_{it,1} + \beta_2 X_{it,2} + \dots + \beta_k X_{it,k} + \varepsilon_{it}$$

The internal variables for this study are as follows:

1. LIQ : Total financing as a percentage of total deposits,
2. CRTA : Total capital and reserves as a percentage of total assets,
3. DECA : Total deposits in current accounts as a percentage of total assets,

4. DESA : Total deposits in savings accounts as a percentage of total assets,
5. DEIA : Total deposits in investment accounts as a percentage of total assets,
6. FIPS : Total funds in profit-sharing principles as a percentage of total assets,
7. FIMK : Total funds in mark-up principles as a percentage of total assets,
8. FIIV : Total funds in investment activities as a percentage of total assets,
9. IFIN : Incomes from financing activities as a percentage of total financing,
10. IBNK : Bank's share of income as a percentage of total savings and investment deposits,
11. TEXP : Total expenditures as a percentage of total assets,
12. SEXP : Staff expenses as a percentage of total assets,
13. PEXP : Provision for loan losses as a percentage of total assets, and
14. OEXP : Other expenses as a percentage of total assets.

The following external variables are also included in this study. They are:

1. MKTPL : A dummy variable representing two different markets, 1 - when a bank operates in a monopolistic market; and 0 otherwise,
2. MKTSH : Market share (total deposits of the Islamic bank as a percentage of a country's total deposits),
3. INT : The discount rate for each country for each year (IMF),
4. MON : Growth in money supply (M_2) for each country for each year (IMF),
5. CPI : Percentage increase in the consumer price index for each country for each year (IMF),
6. LogSIZE : Total assets in common currency (US dollar)- in logarithm.

Although concentration is considered by many researchers as one of the factors that has a direct influence on a bank's profitability, this factor will not

be included in this study for a number of reasons. Firstly, the data for total Islamic bank deposits or total assets (to compute concentration ratio) is not available. Secondly, six out of fourteen banks in the study operate in monopolistic market, thereby negating the use of concentration. And finally the results of earlier studies generally indicate that concentration tends to have insignificant impact on profitability. Since most Islamic banks are privately owned banks, the ownership factor is also excluded in this study.

There are many profitability ratios which measure firm's performance. Some of the ratios, however are either beyond the scope of this study or insignificant in value. The following ratios are considered relevant and use as proxies for profitability.

1. TITA : Total income as a percentage of total assets.
2. BITA : Bank's portion of income as a percentage of total assets,
3. BTTA : Net profit before tax as a percentage of total assets.
4. BTCR : Net profit before tax as a percentage of capital and reserves.
5. ATCR : Net profit after tax as a percentage of capital and reserves.

Total incomes as a percentage of total assets ratio (TITA) is used to capture the effects of internal and external determinants on a bank's profitability. In the case of BITA (bank's portion of incomes as a percentage of total assets), this ratio will also capture the effect of determinants on profitability. It is expected that all determinants will have similar impacts on both TITA and BITA. BTTA (net profit before taxes as a percentage of total assets) is used to measure the effect of total expenditures on a bank's profitability. The effects of profitability determinants on returns to shareholders is measured by two ratios, net profit before taxes as a percentage of total capital and reserves (BTCR) and net profit after taxes as a percentage of capital and reserves (ATCR).

While most of the variables employed in this study are those used by earlier researchers, several new variables are introduced. The application of these variables is in line with the Islamic banking system that operates differently from conventional banks. The usage of new variables such as FIPS, FIMK, and FIIV is deemed necessary because Islamic banks used *shariah* principles in delivering their products and services. Among the *shariah* principles in Islamic banking system are *mudharabah*, *musyarakah*, *murabaha*, *ijarah*, and *bai-salam* (details on these principles are available elsewhere, eg Haron, 1995).

Findings

The results for the F-test which measure the applicability of dummies in all profitability measure equations (TITA, BITA, BTTA, BTCR and ATCR) used

by this study are reported in Table 1. As indicated in Table 1, except for regression 5 (ATCR) where the ordinary least square method is used for predicting the relationship between policy measures and profitability of Islamic banks, the dummy variable model is considered a better model for other equations. Results for all regression runs are reported in Table 2.

Table 1
The Summary of Results for Statistical Tests Which Validate the Inclusion of Dummy Variables

Equation	F-value	Critical value at 5%	Results
Equation 1 (TITA)	4.49	≈ 1.88	Reject H_0
Equation 2 (BITA)	2.04	≈ 1.88	Reject H_0
Equation 3 (BT TA)	3.09	≈ 1.88	Reject H_0
Equation 4 (B TCR)	2.39	≈ 1.88	Reject H_0
Equation 5 (ATCR)	1.53	≈ 1.88	Accept H_0

As indicated in Table 2, the value of the adjusted coefficient of determination ($\text{adj } R^2$) for equations 1 and 2 is high in value, i.e. 0.8791 and 0.8943. Higher R^2 indicates that the variability in profitability of Islamic banks is well explained by the linear relationship with all internal variable items. In the case of TITA, about 88% of the variability in total income is explained by its linear association with variables included in the equation. As for equations 3, 4 and 5, the corresponding values adjusted R^2 are 0.5817, 0.6189 and 0.3979. A relatively small value of adjusted R^2 does not necessarily mean that the model is inappropriate to measure the relationship between independent and dependent variables. The value of adjusted R^2 is usually influenced by a number of predictor variables relative to the sample size and it becomes smaller as we have fewer observations per predictor variable (Hair, et al., 1995). The adequacy of a model as a predicting tool is validated by the F-test. As indicated in Table 2, the value of all F-ratios are statistically significant, i.e. 203.349 for equation 1, and 153.58, 19.433, 14.886 and 14.217 for equations 2, 3, 4, and 5 respectively. The results of these tests confirmed that the models applied are useful for measuring the relationship between internal variable items and the profitability ratios.

1. The Effects of Internal Variables

This study found that liquidity had a significant positive relationship with total incomes received by the bank (TITA), the bank's portion of income (BITA), and income before tax to total assets (BT TA). No significant relationship was found between liquidity and profitability measures which were deflated against total capital and reserves (B TCR and ATCR).

Table 2
The Summary of Regression Results of a Complete Profitability Model

<i>Equation</i>	<i>Significant at 0.01</i>	<i>Significant at 0.05</i>	<i>Significant at 0.10</i>	<i>Not Significant</i>
TITA Adj R ² : 0.8791 F: 203.349 P: 0.000	FIIV (-0.041) IFIN (0.247) TEXP (0.898)	LIQ (0.032) MKTSH (-0.207) INT (0.076) LogSIZE (1.909)		CRTA, DECA, DESA, DEIA, FIPS, FIMK IBNK, MKTPL, MON, CPI.
BITA Adj R ² : 0.8943 F: 153.580 P: 0.000	CRTA (0.053) DECA (0.034) TEXP (0.940) INT (-0.046)	LIQ (0.018)	IFIN (0.046) MKTSH (-0.106) MON (0.011)	DESA, DEIA, FIPS, FIMK, FIIV, IBNK, MKTPL, CPI, LogSIZE
BTTA Adj R ² : 0.5817 F: 19.433 P: 0.000	LIQ (0.030) CRTA (0.069) DECA (0.036) FIPS (-0.077)	IFIN (0.066)	INT (-0.032)	DESA, DEIA, FIMK, FIIV, IBNK, TEXP, MKTPL, MKTSH, MON, CPI, LogSIZE.
BTCR Adj R ² : 0.6189 F: 14.886 P: 0.000	IBNK (0.265) MON (0.443)	INT (-0.806)	CRTA (-0.721) MKTPL (45.715)	LIQ, DECA, DESA, DEIA, FIPS, FIMK, FIIV, IFIN, TEXP, MKTSH, CPI, LogSIZE.
ATCR Adj R ² : 0.3979 F: 14.217 P: 0.000	INT (-0.290) MON (0.278)		CRTA (-0.365) FIIV (-0.173)	LIQ, DECA, DESA, DEIA, FIPS, FIMK, IFIN, IBNK TEXP, MKTPL, MKTSH, CPI, LogSIZE.

The regression coefficients in parentheses

The coefficients for insignificant variables are omitted for reasons of space

Since this study used the total financing to total deposits ratio as a proxy for liquidity, the result is in line with conventional banking theory, which postulates that an increase in financing is followed by an increase in profits. The positive relationship between profitability ratios and liquidity is in line with the findings of Molyneux and Thornton (1992) and Stienherr and Huveneer

(1994), but contradict the findings of Bourke (1989). As indicated in Table 2, each 1% increase in total financing increased TITA by 0.032%, BITA by 0.018% and BTTA by 0.026 %.

In line with the findings of Bourke (1989), Molyneux and Thornton (1992), and Stienherr and Huveneers (1994), this study found a positive relationship between capital structure and profitability measures ratios which were deflated against the total assets. These relationships were at a significant level in two equations (BITA and BTTA). The capital structure, however, had no significant relationship with the total income (TITA). This means additional capital will not generate more income for the bank. While CRTA had a positive significant relationship with BITA and BTTA, a significant inverse relationship was found between CRTA and profitability measures which were deflated by total capital and reserves (BTCR and ATCR). An inverse relationship means that any injection of capital into a bank's capital structure would reduce these profitability measures. In the case of BITA and BTTA, for every 1% increase in capital the percentage of BITA would increase by 0.053% and 0.069% for BTTA.

An inverse relationship between CRTA and BTCR and ATCR indicates that an increasing amount of capital does not lead to an increase in income to shareholders. Instead of producing more income, the existing level of income is shared by both present and new shareholders. In other words, the injection of 1% of capital will reduce BTCR by 0.721% and ATCR by 0.365%.

Deposits structure was represented by three variables, i.e. current (DECA), savings (DESA) and investment (DEIA) accounts. Most previous studies have found that savings and time deposits have an inverse relationship with profitability, while a positive relationship has been found for current account deposits.

Almost all deposits structure variables had no significant relationship with the profitability ratios. DECA was the only variable which had a significant relationship with BITA and BTTA. Each 1% increase in current account holdings will increase the bank's portion of income by 0.034% and profit before tax by 0.036%. This result is in line with the findings of Smirlock (1985). Since a current account facility is considered a cost-free service, it is expected that the more funds deposited into this account, the more Islamic banks stand to profit. Interestingly, DECA had no significant relationship with TITA. This finding indicates that an increase in current accounts do not generate more income to the bank as a whole, but only function as a cost saving measure. That is, no rewards are paid to these depositors.

In the case of savings accounts (DESA) and investment accounts (DEIA), although the relationship was at an insignificant level with all profitability

ratios, the signs of their regression coefficients warrant further explanation. No contradiction with the findings of conventional banking literature with regard to savings accounts was apparent. An inverse relationship was found between DESA and the profitability measures. An inverse relationship means an increase in savings accounts will decrease profits. This finding is in line with the findings of some previous studies (Hester and Zoellner, 1966; Heggsted, 1977).

The results for DEIA, however, were not in line with the findings of earlier research. Hester and Zoellner (1966) and Heggsted (1977), for example, found that fixed deposit facilities had an inverse relationship with profitability. Since some of the characteristics of investment deposits at Islamic banks are similar to the fixed deposit facilities of conventional banks, it is expected that more funds deposited into these accounts would result in less profit to the bank. In contrast, Smirlock (1985) believed that an increasing amount in fixed deposits would have a positive relationship with a bank's profitability. This study found that DEIA had a positive relationship with all profitability measures. Thus, this study confirmed Smirlock's hypothesis.

The assets structure was represented by three variables: funds in profit-sharing financing activities (FIPS), funds in mark-up (FIMK) and funds in investment (FIIV). The findings of previous studies indicate that asset items have a positive relationship with profitability. However, this study found that, where a relationship existed, asset items had an inverse relationship with profitability measures.

In the case of FIPS, for example, a significant inverse relationship was found only with BTTA. Each 1% increase in FIPS will decrease the percentage of net income before tax by 0.077%. No significant relationship was found between FIMK and the profitability measures. In the case of FIIV, the only significant relationship was with ATCR. Each 1% increase in FIIV will decrease ATCR by 0.173%.

An inverse relationship between assets structure and profitability ratios warrants further discussion. Generally, Islamic banks tend to concentrate their financing activities in mark-up financing activities (FIMK). This method of financing is short term in nature, thus generating less returns relative to long-term investment. Therefore, it is obvious that an increasing amount of funds for these activities will not increase the percentage of profitability measures. Similarly, in the case of FIPS, business ventures undertaken by banks using this concept of financing do not generate immediate returns. Since the reward is based on profits made by the project in which the bank has a share, the bank does not receive its share immediately upon disbursement of funds. Therefore, any increase in funds using this concept will be immediately followed by a decrease in profitability. In the case of funds placed in investment activities

(FIIV), an insignificant amount of funds channelled by Islamic banks into this activity could be the reason for this inverse relationship. In countries such as Bangladesh, Sudan, Tunisia, and Turkey non-existent Islamic financial markets prevent banks from making such investments.

Like Bourke (1989) and Molyneux and Thornton (1992), who found a significant positive relationship between expenditures and profitability measures, this study also found a positive relationship with profitability. The significant relationship, however, was found in two profitability measures, TITA and BITA. For each 1% increase in expenditures, TITA and BITA will increase by 0.898% and 0.94% respectively.

This study found that the percentage of incomes from financing activities (IFIN) had a positive significant relationship with all profitability measures deflated by total assets. Each 1% increase in the percentage of income from financing activities will result in an increase in the percentage of TITA, BITA and BTITA by 0.247%, 0.046% and 0.066% respectively. This finding indicates the incremental increase of Islamic banks' income from financing activities. Therefore, the result seems to suggest that the profit-sharing ratio between Islamic banks and the users of funds favours the bank.

In the case of a bank's share of financing income (IBNK), a significant positive relationship was recorded only with BTCR. Each 1% increase in the bank's share of income from financing activities will increase BTCR by 0.265%. This result indicates that the percentage of the profit-sharing ratio between bank and depositors is to the advantage of the shareholders.

2. *The Effects of External Variables*

The effects of regulation and competition were not consistent across profitability measures. A significant relationship at a 10% level was found only with BTCR. This finding indicates that for any given scenario related to profit before tax, deflated by total capital and reserves, those Islamic banks in a monopolistic market are better off by 45.715% than banks in a competitive market. This finding is in line with the common belief that under monopoly conditions, welfare of the firm or shareholder is maximised.

With regard to other equations, though there were no significant relationships, further elaboration is needed. Equation 1 (TITA), for example, suggests that Islamic banks in a monopolistic market earned more than banks in the competitive market. For any given scenario, Islamic banks in monopolistic markets are better off by 0.823% than their counterparts in competitive markets. Interestingly, when it comes to Equation 2 (BITA), the income of monopolistic banks is less than the income of those banks which operate in a competitive

market. This finding indicates that depositors in a competitive market are being rewarded less than depositors at banks in a monopolistic market. For given conditions, the income of competitive banks is higher by 1.474% than that of monopolistic banks. In the case of BTTA, i.e. the equation which measures the effect of expenditures on profitability, it seems that banks in a monopolistic environment earn more than their counterparts in a competitive market. Using total expenditures as an indicator for productivity and efficiency, this finding provides evidence to reject the common belief that any business organisation in a competitive environment is better managed than those which have a monopolistic status. In any given scenario, the net income of monopolistic banks is higher by 0.597% than their counterparts in a competitive environment.

The findings of earlier studies indicate that expansion in market share is not necessarily followed by an increase in a bank's profit. While Short (1979) and Smirlock (1985) found that market share had a significant positive relationship with profits, both Heggsted (1977) and Mullineaux (1978) found otherwise.

This study found that market share had a significant inverse relationship with two profitability measures, i.e. TITA and BITA, and was not significant for other equations. These results indicate that an increase in market share will result in a decrease in the percentage of TITA and BITA. Each 1% increase in market share will decrease the percentage of TITA by 0.207% and 0.106% for BITA.

Like Smirlock (1985), this study used total deposits placed at an Islamic bank as a percentage of deposits in the country's banking system but found an inverse result. Among the possible explanations for this finding is an excess in liquidity, that is, an over-concentration in short-term financing. It is widely known that Islamic banks are facing problems in disposing of their surplus liquid funds (Ahmad, 1987). Islamic financial markets are non-existent in most countries and Central Banks in most countries do not issue Islamic securities (Bank Negara Malaysia is the only Central Bank to issue Islamic securities. The Kuwaiti government, however, through its Central Bank issued Islamic bonds for the purpose of constructing housing projects for people). In the case of Bank Islam Malaysia Berhad, the average annual percentage of total liquid assets (comprising cash, bank balance, balance with the Central Bank, and marketable securities) against the total assets for the period under study was 35.51%. For other banks, the corresponding figures were 24% for Islami Bank Bangladesh Limited, 32% for Jordan Islamic Bank, 25.21% for Kuwait Finance House, 35.33% for Faisal Islamic Bank of Sudan, 41.39% for El-Gharab Bank of Sudan, 55.24% for Tadamon Islamic Bank of Sudan, and 30.03% for Faisal Finance Institution of Turkey. Therefore, there is a possibility that funds

deposited by customers are lying idle as liquid assets, thus generating little or no income to the banks.

Bourke (1989) and Molyneux and Thornton (1992) found that money supply had a positive relationship with net profit before tax at a significant level. This study also found a positive relationship between money supply and all profitability measures. While the relationship was insignificant with TITA and BTITA, a significant relationship at the 10% level was recorded with BITA and ATCR at a 1% level with profitability measures which were deflated by total capital and reserves. Each 1% increase in money supply will increase BITA, BPCR and ATCR by 0.011%, 0.443% and 0.278% respectively. This finding confirmed that growth in the economy as proxies by money supply is shared by Islamic banks.

While the findings of Bourke (1989) and Molyneux and Thornton (1992) indicated that interest rates had a positive significant relationship with net profit before taxes, the results here are mixed. This study found that the interest rate had a positive relationship with total incomes received by Islamic banks. Each 1% increase in the interest rate level tends to increase the percentage of total income by 0.076%. As for BITA, BTITA, BPCR and ATCR, a 1% increase reduces the percentage of these ratios by 0.046%, 0.032%, 0.806% and 0.29% respectively.

This finding indicates that Islamic banks are in fact using the interest rate as a benchmark in fixing their charges to the users of funds and the rewards given to their depositors. The allegation that Islamic banks are using market interest rates as their benchmark is, in fact, nothing new (Homoud, 1994). Incidentally it has been suggested that Islamic banks used it as a basis for calculating their profit-sharing ratio and recommended that the profit-sharing ratio be equivalent to the interest rate offered by the conventional banks (Nienhaus, 1983). This study confirms that Islamic banks will increase their charges to customers (e.g. the mark-up ratio and profit-sharing ratio to the bank's advantage), and thus increase their total incomes. At the same time, banks have to increase rewards to depositors and this will reduce their portion of income.

The findings of Bourke (1989) and Molyneux and Thornton (1992) indicate that the Consumer Price Index (CPI) had a significant positive relationship with profits. Although this study also found that the CPI had a positive relationship with all profitability measures, this relationship, however, was not statistically significant.

There has been no consistency in the findings of previous studies with regard to size. This study has also given mixed results. Size had a significant positive relationship with TITA but was not significant to other profitability

measure variables. This finding indicates that the larger the bank's size, the higher the total income accruing to the bank.

Conclusions

This study is a modest attempt to establish the first empirical evidence on the determinants of profitability for Islamic banks. The finding of this study suggest that all three sources of funds for Islamic banks are positively related with profitability. These findings serve as an indicator that the more deposits placed by depositors with the bank, the more income is received by the bank. This study also validates the current practices of Islamic banks which use mark-up principles in their financing activities. This is because an application of profit-sharing principles will have an inverse relationship with profitability.

This study also provides information on the impact of the profit-sharing ratio agreement between the banks and the providers of funds and between the bank and the users of funds. The profit-sharing ratio between banks and the users of funds seems to be very favourable to the bank, whereas the profit-sharing ratio between the banks and the providers of funds indicates a mutual advantage. In terms of expenses management, this study offers no peculiar findings. The positive relationship between profitability and total expenses is the normal characteristic of a firm. The similarity of results between asset-liability management and profitability for both conventional and Islamic banks is a strong indicator that many of the tools and techniques developed in conventional banking literature are potentially suitable for an Islamic banking environment. Therefore, further studies which involve asset-liability management of an Islamic bank are considered one of the more interesting and more promising areas for future research.

While interest rates, inflation and size have significant positive impact on the profits of conventional banks, similar results were found for Islamic banking in this study. In the case of market share and money supply, these variables were found to have an adverse effect on profits and these results are opposed to the findings of earlier studies. This study found that there was no significant variation in earnings between Islamic banks in competitive and monopolistic markets. However, there was strong evidence that indicate firm's and shareholders' welfare was maximised in the monopolistic market. To the contrary, a depositor's welfare was paramount to Islamic banks in the competitive market. The results of this study indicated that banks in a competitive market were better managed than their counterparts. Therefore, it is obvious that protectionism policy adopted by some Muslim governments is inappropriate and could distort future development of Islamic banking. Establishment of more Islamic banks will give more benefits to the depositors.

APPENDIX 1

List of Participating Islamic Banks

1. Al-Baraka Islamic Investment Bank of Bahrain
2. Bahrain Islamic Bank
3. Bank Islam Malaysia Berhad
4. Beit Ettamwill Tounsi Saudi of Tunisia
5. Dubai Islamic Bank
6. El Gharb Islamic Bank of Sudan
7. Faisal Finance Institution of Turkey
8. Faisal Islamic Bank of Kibris
9. Faisal Islamic Bank of Sudan
10. Islami Bank Bangladesh Limited
11. Jordan Islamic Bank
12. Kuwait Finance House
13. Tadamon Islamic Bank of Sudan

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