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Assessing the Performance of Islamic Banks: Some Evidence from the Middle East

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Abstract

The study examines the determinants of Islamic banks' performance across eight Middle Eastern countries between 1993 and 1998. A variety of internal and external banking characteristics were used to predict profitability and efficiency. In general, our analysis of determinants of Islamic bank profitability confirms previous findings. Controlling for macroeconomic environment, financial market structure, and taxation, the results indicate that high leverage and large loans to asset ratios lead to higher profitability. The results also indicate that foreign-owned banks are more profitable than their domestic counterparts. Everything remaining equal, there is evidence that implicit and explicit taxes affect the bank performance measures negatively. Furthermore, favorable macroeconomic conditions impact performance measures positively. Our results also show that stock markets are complementary to bank financing

1. Introduction

How should policymakers think about Islamic banks? Are they relics of a bygone era, propped up by subsidies and distorting financial-sector competition? Or, are they efficient and focused financial institutions that could, if unleashed, eventually dominate the retail financial landscape? A better understanding of these policy questions requires specific knowledge about the performance and the determinants of efficiency and profitability of Islamic banks. Indeed, the performance evaluation of Islamic banks is especially important today because of the globalization effect. The globalization phenomenon has put Islamic banks in fierce competition with traditional banks in well-developed financial markets. Further, some countries have completely transformed their banking system to the Islamic model.

This paper intends to analyze how bank characteristics and the overall financial environment affect the performance of Islamic banks. Specifically, the purpose of the study is to closely examine the relationships between profitability and the banking characteristics, after controlling for economic and financial structure indicators. The intention is to decide which among the potential determinants of performance appear to be important. By so doing, the paper extends the literature in several ways. First, utilizing bank level data, the paper provides summary statistics pertaining to Islamic banks' sizes and profitability. Second, the paper uses regression analysis to determine the underlying determinants of Islamic bank performance[1]. To this end, a comprehensive set of internal characteristics is examined as determinants of bank's net non-interest margin and profitability[2]. These internal characteristics include bank size, leverage, loans, short term funding,

overhead and ownership. Third, while studying the relationship between banks' internal characteristics and performance, the impact of external factors, such as macroeconomic, regulatory and financial market environment are controlled. Among the external factors controlled, indeed foreign ownership, taxes, and the market capitalization were not been included in previous studies of Islamic banks. Moreover, some of the determinants were also interacted with the country's GDP per capita to check whether their effects on bank performance differ with different levels of income. Finally, by studying the connection between Islamic banks' performance and the efficiency indicators, this paper contributes to the research on the relationship between Islamic banks' performance and financial development.

The paper is organized in four sections. Section 2 identifies the data sources, and highlights some important indicators in the sample. In section 3, we formulate the predicted model and discuss the possible links between bank performance and the set of internal and external indicators. Section 4 represents the empirical results, while the conclusions are stated in section 5.

2. The Data

The data used in this study are a cross-country bank-level data, compiled from income statements and balance sheets of14 Islamic banks each year in the 1993-1998 period in eight countries[3]. The main data source is BankScope database compiled by IBCA. In so far as possible, the BankScope database converts the data to common international standards to facilitate comparisons. Other data sources include International Monetary Fund's International Financial Statistics (IFS), and the IFC's Emerging Markets Database. A brief description of how the variables are constructed, together with summary statistics are given in Table 1.

Table 1

Variable Definitions and Sample Means

Symbol	Definition	Sample Mean
	Endogenous Variables (1993-98)	
NIM	Non-Interest Margin: ratio of net non-interest income to total assets	4.87
BTP/TA	Before Tax Profit: ratio of before tax profit to total assets	1.47
ROA	Net Income divided by total assets	5.53
ROE	Ratio of net income to total assets	15.89
	Exogenous Variables (1993-98)	
Bank Characteristic Indicators:		
EQTA	Book value of equity (assets-liabilities) over total assets	10.23
LONTA	Ratio of loans to total assets	54.65
NIEATA	Ratio of none-interest earning assets to total assets	11.38
CSTFTA	Ratio of consumer & short term funds to total assets	70.84
OVRHD	Ratio of overhead to total assets	2.47
LATA	Ratio of Total Liabilities to total assets	89.20
FRGN	Dummy; equal one if a bank has at least 50 percent foreign ownership.	
EQAGDP	Interaction variable = EQTA x GDPPC (defined below)	
LONGDP	Interaction variable = LONTA x GDPPC	
NIEAGDP	Interaction variable = NIEATA x GDPPC	
CSTFGDP	Interaction variable = CSTFTA x GDPPC	
OVRGDP	Interaction variable = OVRHD x GDPPC	
FRGNGDP	Interaction variable = FRGN x GDPPC	
Macroeconomic Indicators:		
GDPPC	Real GDP per capita (in constant US $, 1995)	$7594.87
GDPGR	Annual growth rate of real GDPPC	8.84
INF	Annual Inflation rate	25.52
Taxation Indicators:		
RES	Reserves of the banking system (IFS line 20) over deposits of the banking system (IFS line 24+25)	16.84
RESGDP	Interaction variable = RES x GDPPC	
TAX	Total taxes paid divided by before tax profits for each bank	16.95
TXAGDP	Interaction variable =TAX x GDP	
Financial Structure Indicators:		
BNK	Ratio of total assets of the deposit money banks (IFS line 22a through 22f) divided by DGP	59.26
MCAP	Ratio of stock market capitalization to GDP	17.43
MCPGDPPC	Interaction between stock market capitalization and GDP = MCAP x GDPPC	
MCPBNK	Market capitalization divided by total assets of the deposit of banks	33.64
BNKGDP	Interaction variable = BNK x GDPPC	
MCPBKGDP	Interaction variable = MCPBNK x GDPPC	
ASST	Bank's Total Assets (in constant US $million, 1995)	$838.248m

Table 2 provides helpful insights on averages of non-interest margin and bank profitability for each country in the sample. Because the countries in the sample differ on their levels of development and income distribution, Table 2 also provides averages of some macroeconomic indicators, taxes and stock market capitalization.

Table 2

Macroeconomic and Financial Structure Indicators. Selected Aggregates

Financial Structure averages are calculated for each bank and then averaged over the country's sample period (1993-98). Data are from BankScope. Macroeconomic indicators for each country are averaged over the sample period. The data source is IMF's IFS Yearbook 200.

Country	GDPPC	GDPGR	INF	MCAP	ASST	TAX	RES	NIR	BTP/TA

Country									
Bahrain	$9,956	0.89	0.98	41.39	297	19.68	7	2.57	2.46
Egypt	1,064	9.86	8.66	4.02	1190.3		19.2	1.39	0
Jordan	1,195	2.35	3.96	75.07	875.3	37.78	48.07	3.22	0.77
Kuwait	16,592	-0.6	1.66	23.62	4713.6		1.87	4.15	2
Qatar	14,943	3.24	2.72		444		4.62	2.72	1.22
Sudan	364	10.87	80.29		64	44.28	25.28	11.62	1.65
Turkey	1,567	3.8	85.19	13.16	335.5	7.42	26.53	3.52	7.08
U.A.E.	7,056	-0.25			1459.5		14.76	-0.52	2.99

3- The Model

In this section, we introduce the set of variables that are expected to affect the

performance of Islamic banks. We use capital ratios, leverage, overhead, loan and liquidity ratios, and foreign ownership as proxies for internal measures. Meanwhile macroeconomic indicators, taxation, financial structure, and country dummies are used as external measures. A linear equation, relating the performance measures to a variety of indicators is specified[4]. The subsequent regression analysis starts from estimating the following basic equation:

$$I_{ijt} = \alpha_0 + \alpha_i B_{it} + \beta_j X_{jt} + \gamma_t \qquad M_{ti} + \delta_j C_j + \varepsilon_{ijt} \qquad (1)$$

where, I_{ijt} = is the measure of performance (either non-interest return or before tax profit/total assets) for bank i in country j at time t; B_{it} are bank variables for bank i in country j at time t; X_{jt} are country variables for country j at time t; M_{ti} are stock market variables in country i at time t, and C_j are country dummy variables[5]. α_0 is a constant, and $\alpha_i, \beta_j, \gamma_t$ and δ_j are coefficients, while ε_{ijt} is an error term. Although the primary focus of this paper is the relationship between performance and bank internal variables, the inclusion of macro variables, stock market variables, and the country dummies is meant to control for cyclical factors that might affect bank performance. Several specifications of (1) are estimated.

Bank Characteristics

Four measures of performance are used in this study: the net non-interest margin (NIM), profitability (BTP/TA), returns on assets, ROA, and returns on equity, ROE. Meanwhile, seven bank characteristics are used as internal determinants of performance. These supplemental measures are particularly useful for detailed understanding of the factors underlying a bank's net margin and return on assets. They comprise fund source management (CSTFTA), funds use management (OVRHD and NIEATA), capital and liquidity ratios (EQTA and LOANTA), risk (LATA) and a dummy variable for ownership (FRGN). Each one of these determinants, except the risk variable, was also interacted with GDP to capture the effects of GDP on bank performance. Previous studies of the determinants of bank profitability in the United States found a strong and statistically significant positive relationship between EQTA and

profitability. This supports the view that profitable banks remain well capitalized or the view that well capitalized banks enjoy access to cheaper (less risky) sources of funds with subsequent improvement in profit rates (see Bourke, 1989). A positive relationship between the ratio of bank loans to total assets, LOANTA, and profitability was also found from using international database (Demirguc-Kunt and Huizinga, 1997).

In general, Islamic banking operations are characterized by a high degree of financial risks. In the absence of guaranteed returns on deposits, Islamic banks undertake risky operations in order to be able to generate comparable returns to their customers. We use the ratio of total liabilities to total assets (LATA) as a proxy for risk. The ratio is also an indicator of lower capital or greater leverage. Using LATA adds a greater depth in understanding the risks a bank takes when trying to obtain higher returns. When a bank chooses (assuming this is allowed by its regulators) to take more capital risk, its leverage multiplier and return on equity, *ceteris paribus*, are higher. We expect LATA to be positively correlated with performance measures. On the other hand, in the absence of deposit insurance, high risk-taking will expose the bank to the risk of insolvency. Therefore, the coefficient of LATA may be negative. The ratio of overhead to total assets, OVRHD, is used to provide information on variation in bank costs across the banking system. It reflects employment as well as the total amount of wages and salaries. OVRHD is expected to impact performance negatively because efficient banks are expected to operate at lower costs. Lastly, the binary variable representing foreign ownership, FRGN is expected to affect profitability positively, indicating that foreign banks benefit from tax breaks and other preferential treatments.

To isolate the effects of bank characteristics on performance, it is necessary to control for other factors that have been proposed in the literature as possible determinants of profitability. External to the bank, four sets of control variables are expected to impact performance: the macroeconomic environment, the financial market structure, the regulation indicators, and country (dummy) variables. The current environment and a bank's specific market will obviously affect its mixture of assets and liabilities. However, introducing these indicators in order to see how they interact with each other, as well as how they affect bank performance, often proves helpful. Three macro indicators are used: GDPPC, GDPGR, and INF. The GDP per capita variable, GDPPC, is expected to have an effect on numerous factors related to the supply and demand for loans and deposits. It is hypothesized in this paper that GDPPC affects performance measures positively. This is so because most of the countries in the sample are characterized as low or middle income countries. In countries with low incomes, banks operate less competitively, resulting in larger profit margins. The growth variable, GDPGR, is expected to have positive impact on performance. The association between economic growth and the financial sector performance is well documented in the literature (see Demirguc-Kunt and Maksimovic, 1996). We used the required reserves of the banking system (RES), the tax rate (TAX), and their interactions with GDP; that is, RESGDP and TXAGDP respectively as proxies for financial regulation. Required reserves do not generate any income to the bank, and are therefore, considered implicit taxes levied by the government for monetary policy reasons. Both implicit and explicit taxes are expected to impact profits negatively[6].

The size of the banking system (BNK), comprising the ratio of total assets of the deposit money bank to GDP, is used to measure the importance of bank financing in the economy. It also measures the size of the economy that is monetized. MCAP and BNK are also interacted with GDP and with each other. MCAP is used BNK. MCAP and BNK may also reflect the complementarity or substitutability between bank and stock market financing. Both variables are expected to impact performance positively. Finally, the total assets (ASST, is used to control for cost differences related to bank size and for the greater ability of larger banks to diversify. The first factor may lead to positive effects if there are significant economies of scale and the second to negative effects if increased diversification leads to lower risks and lower returns.

4. Empirical Results

This section presents and analyzes the regression results. The data from the sample of 14 Islamic banks are pooled for all six years (1993-98) and used to replicate and extend earlier research. Different specifications of equation (1) were estimated. As stated above, in addition to bank-level variables, the

explanatory variables used include control variables like financial structure variables, taxation variables, and macroeconomic indicators. The estimation technique used is panel data methods and the White (1980) procedure is used to ensure that the coefficients are heteroskedastic[7].

The results in Table 3 relate to regressing BTP/TA on the set of performance and control measures[8]. Column 1 estimates the relation between profitability and bank characteristics and the taxation variables. The data reveals that both EQTA and LOANTA have strong positive and statistically significant relationships with profitability, confirming previous findings. Intuitively, higher leverage and higher loans to assets ratios predict higher future profits. However, when these variables were interacted with GDP, the signs of the association changes to inverse relationship but remained statistically significant. Short-term and consumer funding, CSTF, has the predicted negative association with PRM, although statistically insignificant. However, when interacted with GDP, its impact on profit became positive. Other meaningful determinants of profitability include NIETA, OVRGDP, FRGNGDP, and LATA. The strong positive association between the risk indicator, LATA, and BTP/TA should be emphasized. A part from revealing the importance of leverage in the practice of Islamic banks, it indicates that Islamic banks have incentives to undertake more risks. Column 1 also shows the negative impact of taxes on profitability of Islamic banks. As expected, Islamic banks pass the higher taxes over to their customers and shareholders in terms of fewer profits.

Column 2 of Table 3 shows the result of regressing BTP/TA on bank level variables. After controlling for the macroeconomic environment, the only bank characteristics impacting PRM are the ownership variable and its interaction with GDP. The impacts of EQTA and LOANTA are now statistically insignificant. Regression 2 also reveals the strong positive impacts of GDPPC and INF on profitability. The financial structure variables were introduced in column 3. Although the market capitalization variable, MCAP, has an inverse but statistically insignificant relationship with BTP/TA, the result shows a strong positive association between BTP/TA and BNK, BNKGDP and MCPBNK. Column 4, which combines all the determinants, shows slight changes in the coefficients. The much higher R^2 in columns 3 and 4 suggest that profit is much more stable and predictable than in the previous two regressions.

		Table 3		
Determinants of Islamic Banks' Performance and Profitability				
	Dependent Variable: BTP/TA			
Variable	1	2	3	4
EQTA	4.129	1.204	7.454	0.532
	(2.619*)	0.836	(1.676***)	(2.476**)
EQAGDP	-2.15E-04	2.06E-04	2.27E-03	-4.93E-03
	(1.663***)	0.015	(5.789*)	(2.305***)
LOAN	2.30E-02	0.019	0.014	
	(1.467***)	1.27	(3.898*)	
LOANGDP	-1.46E-03	-4.07E-04	1.10E-05	-1.22E-03
	(2.305**)	(1.622***)	0.056	(3.000**)
CSTF	-0.036	0.016	0.016	0.029
	1.112	0.454	(2.798**)	0.732
CSTFGDP	1.14E-03	-1.62E-03	-4.23E-04	
	(1.606***)	(1.846**)	1.028	
NIE	-0.032	0.563	-0.065	-0.156
	(1.436***)	0.204	(3.378*)	(2.717**)
NIEGDP	-7.60E-04	-1.18E-03	7.18E-04	
	0.675	0.586	1.23	
OVRHD	0.072	0.077	0.029	
	0.596	0.763	0.283	
OVRGDP	8.45E-03	-3.17E-03	5.95E-03	
	(2.325**)	1.133	(2.351**)	
FRGN	-0.266	1.291	6.492	
	0.299	(1.757**)	(18.528*)	
FRGNGDP	5.11E+02	-5.30E-04	-1.48E-03	
	(1.662***)	(1.350***)	(14.364*)	
LATA	4.242	1.136	7.328	
	(2.688*)	0.789	(1.652***)	
GDPPC		1.82E-01		
		(2.081**)		

Table 3 Continued				
GDPGR		3.47E-03		9.53E-03
		0.457		0.963
INF		0.027		0.121
		(3.217*)		(5.045*)
RES	-0.053			
	-1.297			
RESGDP	-1.25E-03			4.04E-03
	0.627			(7.581*)
TAX	-0.018			0.041
	0.952			(2.046***)
TXAGDP	-7.07E+02			9.65E-06
	(2.960*)			0.038
ASST			-1.22E-04	1.31E-03
			0.947	0.369
MCAP			-7.40E-01	0.198
			0.768	(3.119**)
MCAPGD			6.95E-04	-1.10E-02
			1.112	(4.415*)
BNK			0.021	0.05
			(2.332**)	0.812
BNKGDP			1.08E-04	
			0.301	
MCPBNK			0.01	-0.115
			(1.860**)	(4.141*)
MCPBKG				6.47E-03
				(4.745*)
C	-416.611	-116.669	-736.734	-12.83
	2.636	.0.809	1.659	3.428
N	46	66	29	20
Adj RSQ	0.6	0.41	0.98	0.99
*Significant at the 1 percent level				
**Significant at the 5 per cent level				
*** Significant at the 10 per cent level				
t-Statistics in parentheses.				

5. Conclusion

The preceding empirical analysis allows us to shed some light on the relationship between banking characteristics and performance measures in Islamic banks. First, the Islamic banks profitability measures respond positively to the increases in capital and loan ratios. This result is intuitive and consistent with previous studies. It indicates that adequate capital ratios and loan portfolios play an empirical role in explaining the performance of Islamic banks. Second, the results also indicate the importance of customer and short-term funding, non-interest earning assets, and overhead in promoting banks' profits. Third, the results suggest that the tax factors are much more important in the determination of bank performance. The inverse and statistically significant effects of taxes indicate that financial repression is distorting the performance of Islamic banks. The negative effect of the reserve tax indicates the opportunity cost of holding reserves. In fact, since deposits in Islamic banks are treated as shares and accordingly their nominal values are not guaranteed, holding reserves hurt Islamic banks in two ways. One, reserves do not yield any return to the banks and, two, holding reserves requirement reduces the amount of funds available for investment. From a policy perspective, one can argue from the results that Islamic banks should be exempted from the reserve requirement, in particular, because they are not entitled to discount loans or last resort borrowing from their central banks. Finally, it should be acknowledged that the scope of this paper is limited as several Islamic banks are not included and several interesting questions are not answered. Also, because of the size of our sample and many missing observations, our results should be interpreted cautiously. As has been the case of many recent studies, the results are not very robust and may be sensitive to the type of measure of performance used.

Orleans, Louisiana, January 4-7, 2001. An earlier version was presented at ERF Annual meeting, Amman, Jordan, October 26-26, 2000. The author would like to participants at both meetings for their valuable comments. The usual caveat applies.

Endnotes:

[1] Since both shareholders and depositors in Islamic banks are the residual claimants to the bank's profits, bank profitability is the designated measure of bank performance.

[2] The literature divides bank profitability determinants to internal and external measures (Bourke, 1989, Molyneux and Thronton, 1992).

[3] The names of the banks, their years of establishment, and countries of origin are given in the Appendix.

[4] No specification test is used here to support using the linear function. However, the linear functional form is widely used in the literature and produces good results(see Short, 1979, and Bourke, 1989).

[5] Three dummy variables, HI, MI, and LI, indicating high income, middle income and low income are used.

[6] Theoretically, Islamic banks' deposits are not supposed to be subject to reserve requirement. Therefore, the direction of effect of RES on profitability is unclear.

[7] The use of panel data has a number of advantages. First, it provides an increased number of data points and generates additional degrees of freedom. Second, incorporating information relating to both cross-section and time-series variables can substantially diminish the problems that arise from omitted variables.

[8] Note that the coefficients for the dummy variables turned to be statistically insignificant, hence are not listed.

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