

The Impact of 1998 and 2008 Financial Crises on Profitability of Islamic Banks

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The paper investigates the profitability of 78 Islamic banks in 25 countries for the period of 1992-2009. The Fixed Effect Model (FEM) used to analyse profitability shows that profit efficiency is positive and statistically significant with operating expenses against asset, equity, high income countries and non-performing loans against total loans. Interestingly, the empirical results show that more profitable banks are those that have higher operating expenses against asset, more equity against asset and concentrated at high income countries demonstrating close relationship between monetary factors in determining Islamic banks profitability. The findings for 1998 Asian Financial Crisis and 2008 Global Financial Crisis are negative and imply that Islamic banks' profitability has not been impacted during Asian and Global Financial crises.

I. INTRODUCTION

Islamic banks today exist in all parts of the world, and are looked upon as a viable alternative system which has many things to offer. While it was initially developed to fulfill the needs of Muslims, Islamic banking has now gained universal acceptance. Islamic banking is recognised as one of the fastest growing areas in banking and finance. Since the opening of the first Islamic bank in Egypt in 1963, Islamic banking has grown rapidly all over the world. The number of Islamic financial institutions worldwide has risen to over 300 today in more than 75 countries concentrated mainly in the Middle East and Southeast Asia (with Bahrain and Malaysia the biggest hubs), but are also appearing in Europe and the United States. The Islamic banking total assets worldwide are estimated to have exceed \$250 billion and are growing at an estimated pace of 15 per cent a year. Zaher and

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Hassan (2001) suggested that Islamic banks are set to control some 40-50 per cent of Muslim savings by 2009/10.

The Islamic resurgence in the late 1960s and 1970s, further intensified by the 1975 oil price boom, which introduced a huge amount of capital inflows to Islamic countries, has initiated the call for a financial system that allows Muslim to transact in a system that is in line with their religious beliefs. Muslims throughout the world has only conventional financial system to fulfill their financial needs before the re-emergence of the Islamic financial system as an alternative and comply with Islamic principles (Sufian and Noor 2008).

Islamic financial products are aimed primarily to the investors who want to comply with the Islamic laws (*Syaria*) that govern Muslim's daily life. The *Syaria* law forbids giving or receiving *riba*¹ because earning profit from an exchange of money against money is considered immoral and mandate that all financial transactions to be based on real economic activity; and prohibit investment in sectors such as tobacco, alcohol, gambling, and armaments. Despite that, Islamic financial institutions are providing an increasingly broad range of financial services, such as fund mobilisation, asset allocation, payment and exchange settlement services, and risk transformation and mitigation. Despite the growing interest and the rapid growth of the Islamic banking and finance industry, analysis of Islamic banking at a cross-country level is still at its infancy. This could partly be due to the unavailability of data, as most of the Islamic financial institutions, particularly in the Asian region, are not publicly traded.

The aim of this paper is to fill a demanding gap in the literature by providing the latest empirical evidence on the profit performance of Islamic banks in the World during the period 1992 to 2009. The profit efficiency estimate of each Islamic bank is computed by using the least square method of Fixed Effects Model (FEM) to control for bank-specific effects. This paper also seeks to provide clear empirical evidence on the impact of various explanatory variables on the World Islamic banking profitability performance sector that touch several interesting issues, primarily 1998 Asian Financial Crisis and 2008 Global Financial Crisis. To

¹ *Riba* the English translation of which is *usury* is prohibited in Islam and is acknowledged by all Muslims. The prohibition of *riba* is clearly mentioned in the Quran, the Islam's holy book and the traditions of Prophet Muhammad (*sunnah*). The Quran states: "Believers! Do not consume *riba*, doubling and redoubling..." (3.130); "God has made buying and selling lawful and *riba* unlawful..." (2:274).

list a few, the impact of total assets, deposit, inflation and country income level towards Islamic banks profit efficiency.

Since the countries of coverage are span across 25 countries, we will also study the profitability result based on the Islamic bank country of origin. The countries are diversified in terms of the economic activity; we divided the classification by using 2003 Gross National Income (GNI) published by World Bank. According to 2003 GNI per capita, calculated using the *World Bank Atlas method*², the income groups are: low income, \$765 or less; middle income, \$766–\$9,385; and high income, \$9,386 or more.

Based on 2003 GNI report, some high income countries may also be developing countries. Our samples in the paper will include this particular country and study the differences of country background into the profitability of Islamic Banks. The Gulf Cooperation Council (GCC), for example, are classified as developing high-income countries. This paper unfolds as follows. Section II provides an overview of the related studies in the literature, followed by a section that outlines the method used and choice of input and output variables for the efficiency model. Section IV reports the empirical findings. Section V concludes and offers avenues for future research.

II. REVIEW OF THE LITERATURE

While there have been extensive literatures examining the profit efficiency features of the contemporary banking sector, particularly the U.S. and European banking markets, the work on Islamic banking is still in its infancy. Typically, studies on Islamic bank efficiency have focused on theoretical issues and the empirical work has relied mainly on the analysis of descriptive statistics rather than rigorous statistical estimation (El-Gamal and Inanoglu 2004). However, this is gradually changing as a number of recent studies have sought to apply various frontier techniques to estimate the efficiency of Islamic banks. Hassan (2005) examined the relative cost, profit, X-efficiency, and productivity of the world Islamic Banking industry. The results also show that all five efficiency measures are highly correlated with ROA and ROE, suggesting that these efficiency measures can be used concurrently with the conventional accounting ratios in determining Islamic banks' performance.

²Atlas conversion factor, calculating gross national income (GNI—formerly referred to as GNP) and GNI per capita in U.S. dollars for certain operational purpose's, the World Bank uses the Atlas conversion factor. The purpose of the Atlas conversion factor is to reduce the impact of exchange rate fluctuations in the cross-country comparison of national incomes.

The empirical studies on the performance of banking sectors have focused on the Returns On Assets (ROA), Returns On Equity (ROE), and net interest margins. It has traditionally explored the impact of bank-specific factors such as risk, market power, size and capitalisation on bank performance. More recently, research has focused on the impact of macroeconomic factors on bank performance.

To date, empirical researches have focused mainly on a specific country mainly the US banking system (Angbazo 1997, DeYoung and Rice 2004, Bhuyan and Williams 2006) and the banking systems in the western and developed countries such as New Zealand (Ho and Tripe 2002), Australia (Williams 2003), UK (Kosmidou et al. 2008) and Greece (Pasiouras and Kosmidou 2007). On the other hand, fewer studies have looked at bank performance in developing economies. Guru, Staunton and Balashanmugam (2002) examine the determinants of bank profitability in Malaysia. They employ a sample of 17 commercial banks during the 1986–1995 periods. The profitability determinants were divided into two main categories, namely the internal determinants (liquidity, capital adequacy and expenses management) and the external determinants (ownership, firm size and economic conditions). The findings revealed that efficient expenses management was one of the most significant in explaining high bank profitability. Among the macro indicators, high interest ratio was associated with low bank profitability and inflation was found to have a positive effect on bank performance.

Heffernan and Fu (2008) examine the performance of different types of Chinese banks during the period 1999–2006. The results suggest that economic value added and the net interest margin do better than the more conventional measures of profitability, namely Return On Average Assets (ROAA) and Return On Average Equity (ROAE). Some macroeconomic variables and financial ratios are significant with the expected signs. Though the type of bank is influential, bank size is not. Neither the percentage of foreign ownership nor bank listings has a discernable effect.

Ben Naceur and Goaied (2008) examine the impact of bank characteristics, financial structure and macroeconomic conditions on Tunisian banks' net-interest margin and profitability during the period of 1980–2000. They suggest that banks that hold a relatively high amount of capital and higher overhead expenses tend to exhibit higher net-interest margin and profitability levels, while size is negatively related to bank profitability. During the period under study, they find that stock market development has positive impact on banks' profitability. The empirical findings suggest that private banks are relatively more profitable than their state-

owned counterparts. The results suggest that macroeconomic conditions have no significant impact on Tunisian banks' profitability.

Ben Naceur and Omran (2008) examine the influence of bank regulations, concentration, financial and institutional development on Middle East and North Africa (MENA) countries commercial banks' margin and profitability during the period 1989–2005. They find that bank-specific characteristics, in particular bank capitalisation and credit risk, have positive and significant impact on banks' net interest margin, cost efficiency and profitability. On the other hand, macroeconomic and financial development indicators have no significant impact on bank performance. More recently, Sufian and Habibullah (2009) examine the determinants of the profitability of the Chinese banking sector during the post-reform period of 2000–2005. The empirical findings suggest that all the determinant variables have statistically significant impact on China banks profitability. However, the impacts are not uniform across bank types. They find that liquidity, credit risk and capitalization have positive impacts on the State-Owned Commercial Banks (SOCBs) profitability, while the impact of cost is negative. Similar to their SOCB counterparts, they find that Joint Stock Commercial Banks (JSCBs) with higher credit risk tend to be more profitable, whereas higher cost results in a lower JSCB profitability level. During the period under study, the empirical findings suggest that size and cost results in a lower city commercial banks (CITY) profitability, whereas the more diversified and relatively better capitalised CITY tend to exhibit higher profitability levels. The impact of economic growth is positive, while growth in money supply is negatively related to the SOCB and CITY profitability levels.

More recently Sufian (2010) suggest that overall economic freedom and business freedom exerts positive impacts on the profitability of the Malaysian banking sector. The positive sign of the coefficient indicates that higher (lower) freedom on the activities that banks can undertake increases (reduces) banks' profitability, which is consistent with the view that less regulatory control allows banks to engage in various activities enabling banks to exploit economies of scale and scope and generate income from non-traditional sources. Furthermore, higher freedom on entrepreneurs to start businesses is conducive to job creation and consequently increases banks' profitability. He also find that freedom from corruption has a significant positive impact on Malaysian banks' profitability.

III. METHODOLOGY

To test the relationship between bank profitability and the bank-specific and macroeconomic determinants described earlier, we estimate a linear regression model in the following form:

$$y_{it} = b_0it + b_{ijt} X_{ijt} + b_{ejt} X_{ejt} + \varepsilon_{it} \quad (1)$$

where i refers to an individual bank; t refers to year; y_{it} refers to the ROE and is the observation of a bank i in a particular year t ; X_i represents the internal factors (determinants) of a bank; X_e represents the external factors (determinants) of a bank; ε_{it} is a normally distributed variable disturbance term. We apply the Ordinary Least Square (OLS) method, while the standard errors are calculated by using White's (1980) transformation to control for cross-section heteroskedasticity. As a robustness checks, the empirical setting is also performed by using the least square method of Fixed Effects Model (FEM) to control for bank-specific effects. The opportunity to use a fixed effects rather than a random effects model has been tested with the Hausman test. Extending equation (1) to reflect the numbers of explanatory variables as described in Table 1, the baseline model is formulated as follows:

$$\begin{aligned} \varphi_{it} = & \alpha + \beta_1 OE/TA + \beta_2 EQUITY/TA + \beta_3 LNNTA \\ & + \beta_4 LOANS/TA + \beta_5 LNDEPO + \beta_6 NPL/TL \\ & + \beta_7 LNGDP + \beta_8 INFLATION + \beta_9 MARKET + \\ & \beta_{10} \Sigma DUMMY (AFC, GFC, MENA, ASIA, LOW, MEDIUM, HIGH) + \varepsilon_j \end{aligned}$$

The dependent variable is ROE;

ROE is proxy measure of bank's profitability calculated as net income after tax divided by total shareholders' equity;

OE/TA is a measure of bank operating expenses against total asset;

EQUITY/ TA is a measure of bank leverage intensity measured by banks' total shareholders' equity divided by total assets;

LNNTA is the size of the bank's total asset measured as the natural logarithm of total bank assets;

LOANS/TA is a measure of bank's loans intensity calculated as the ratio of total loans to bank total assets;

LNDEPO is a measure of bank's market share calculated as a natural logarithm of total bank deposits;

NPL/TL is a measure of banks risk calculated as non performing loans divided by total loans;

LNGDP is country gross domestic product of the country's measured as the natural logarithm of gross domestic product;

INFLATION is country inflation rates;

MARKET is overall stock market capitalization size of the country's bank operated;

DUMMY is a dummy variables which takes a value of 1 for AFC, 0 otherwise; same apply for GFC, MENA, ASIA, LOW, MEDIUM, and HIGH where each variable takes a value of 1, 0 otherwise.

III.1 Performance Measure

In the literature, bank profitability, typically measured by the ROA and the ROE, is usually expressed as a function of internal and external determinants. Internal determinants are factors that are mainly influenced by a bank's management decisions and policy objectives. Such profitability determinants are the level of liquidity, provisioning policy, capital adequacy, expenses management and bank size. On the other hand, the external determinants, both industry and macroeconomic related, are variables that reflect the economic and legal environments where the financial institution operates. Following Pasiouras and Kosmidou (2007), Ben Naceur and Goaid (2008), Kosmidou (2008), and Sufian and Habibullah (2009), among others, the dependent variable used in this study is ROA while our study adopted ROE as our dependent variables. ROE reflects how effectively a bank management utilising its shareholders funds in providing returns. Since ROA tends to be lower for financial intermediaries, most banks utilise financial leverage heavily to increase ROE to competitive levels.

III.2 Definition and the Choice of Variables

Due to entry and exit factor, the efficiency frontier is constructed by using an unbalanced sample of Islamic banks operating in the World during the period 1992-2009 (see Appendix 1). We collected our bank-specific variables from the financial statements of a sample of World Islamic banks operating over the period 1992–2009 available in the Bankscope database by IBCA and sourced from individual Islamic bank's annual balance sheet and income statements. The BankScope database converts the data to common international standards to facilitate comparisons and all financial information is reported both in local currency and in US dollar. We also convert local currency that not US dollar into US dollar for data sourced directly

from the Islamic banks. We are able to collect several internal and external determinants as listed in Table I that stated internal as bank characteristic and external as economic condition.

III.3 Internal Determinants

The bank characteristic variables included in the regressions are Total Loans divided by Total Assets (LOANS/TA), Log of Total Assets (LNTA), Non Performing Loans divided by Total Loans (NPL/TL), Log of Total Deposit (LNDEPO), Operating Expenses divided by Total Assets (OE/TA) and book value of stockholders' equity as a fraction of total assets (EQUITY/ TOTAL ASSET).

Liquidity risk, arising from the possible inability of banks to accommodate decreases in liabilities or to fund increases on the assets' side of the balance sheet, is considered an important determinant of bank profitability. The loans market, especially credit to households and firms, is risky and has a greater expected return than other bank assets, such as government securities. Thus, one would expect a positive relationship between liquidity (LOANS/TA) and profitability (Bourke 1989). It could be the case, however, that the fewer the funds tied up in liquid investments, the higher we might expect the profitability to be (Eichengreen and Gibson 2001). The LNTA variable is included in the regression as a proxy of size to capture the possible cost advantages associated with size (economies of scale). This variable controls for cost differences and product and risk diversification according to the size of the bank. The first factor could lead to a positive relationship between size and bank profitability if there are significant economies of scale (Akhavain, Berger and Humphrey 1997, Bourke 1989, Molyneux and Thornton 1992, Bikker and Hu 2002, Goddard, Molyneux and Wilson 2004), whereas the second to a negative one, if increased diversification leads to lower credit risk and thus lower returns.

Other researchers, however, conclude that marginal cost savings can be achieved by increasing the size of the banking firm, especially as markets develop (Berger et al. 1995, Boyd and Runkle 1993). In essence, LNTA may lead to positive effects on bank profitability if there are significant economies of scale. On the other hand, if increased diversification leads to higher risks, the variable may exhibit negative effects.

The ratio of Operating Expenses to Total Assets (OE/TA) is used to provide information on the variations of bank operating costs. The variable represents total amount of wages and salaries, as well as the costs of running branch office facilities. For the most part, the literature argues that reduced expenses improve the efficiency and hence raise the profitability of a financial institution, implying a negative

relationship between operating expenses ratio and profitability (Bourke 1989). However, Molyneux and Thornton (1992) observed a positive relationship, suggesting that high profits earned by banks may be appropriated in the form of higher payroll expenditures paid to more productive human capital. In any case, it should be appealing to identify the dominant effect in a developing banking environment like Malaysia. EQUITY/TA is included in the regressions to examine the relationship between profitability and bank capitalisation. Even though leverage (capitalisation) has been demonstrated to be important in explaining the performance of financial institutions, its impact on bank profitability is ambiguous. As lower capital ratios suggest a relatively risky position, one might expect a negative coefficient on this variable (Berger 1995). However, it could be the case that higher levels of equity would decrease the cost of capital, leading to a positive impact on bank profitability (Molyneux 1993). Moreover, an increase in capital may raise expected earnings by reducing the expected costs of financial distress, including bankruptcy (Berger 1995).

III.4 External Determinants

The economic condition variables included in the regressions are Total Loans divided by Total Assets (LOANS/TA), Log of Total Assets (LN_{TA}), Non Performing Loans divided by Total Loans (NPL/TL), Log of Total Deposit (LN_{DEPO}), Operating Expenses divided by Total Assets (OE/TA) and book value of stockholders' equity as a fraction of total assets (EQUITY/ TOTAL ASSET).

Bank profitability is sensitive to macroeconomic conditions despite the trend in the industry towards greater geographic diversification and larger use of financial engineering techniques to manage risk associated with business cycle forecasting. Higher economic growth generally encourages bank to lend more and permits them to charge higher margins, as well as improving the quality of their assets. Neely and Wheelock (1997) use per-capita income and suggest that this variable exerts a strong positive effect on bank earnings. Demircuc-Kunt and Huizinga (2001) and Bikker and Hu (2002) identify possible cyclical movements in bank profitability, i.e. the extent to which bank profits are correlated with the business cycle. Their findings suggest that such correlation exists, although the variables used were not direct measures of the business cycle. To measure the relationship between economic and market conditions and bank profitability, Natural Log of Gross Domestic Product (LN_{GDP}) and INFL (the inflation rate) are used. Bank performance is expected to be sensitive to macroeconomic control variables. The impact of macroeconomic variables on bank performance has recently been highlighted in the literature. We use the log of GDP as a control for cyclical output

effects, which we expect to have a positive influence on bank profitability. As GDP growth slows down, in particular during recessions, credit quality tends to deteriorate and default rate increases, thus reducing bank profitability. We also account for macroeconomic risk by controlling for the rate of inflation (INFL). The extent to which inflation affects bank profitability depends on whether future movements in inflation are fully anticipated, which in turn depends on the ability of banks to accurately forecast its future movements. An inflation rate that is fully anticipated raises profits as banks can appropriately adjust interest rates to increase revenues, while an unanticipated change could raise costs due to imperfect interest rate adjustment (Perry 1992). Earlier studies by among others Bourke (1989), Molyneux and Thornton (1992), Demircuc-Kunt and Huizinga (1999) have found a positive relationship between inflation and bank performance.

To examine the impact of market capitalisation on bank profitability, an overall index, MARKET has been added to the variables list. We introduce 2 variables AFC and GFC to identify the impact of 1998 Asian Financial Crisis and 2008 Global Financial Crisis towards Islamic banks profitability. It has been entered in regression models 2, 4 and 6 and 3, 5 and 7 respectively. To further examine the Islamic banks origin impact on bank profitability, we introduce region index, namely MENA and ASIA, to represent banks origin from Middle East and North Africa (MENA) and Asian countries (ASIA) is entered in regression models 4 and 5 and 6 and 7 respectively. Finally, to test impact of country income level towards Islamic bank profitability, we introduce LOW, MEDIUM and HIGH as variables and been entered in regression models 8, 9 and 10 respectively.

IV. RESULTS

In this section, we will discuss the performance profitability of the World Islamic banking sectors, measured by the Fixed Effect Model (FEM). The regression results focusing on the relationship between bank profitability and the explanatory variables are presented in Table 1.

IV.1 The Islamic Banks' Profitability Performance

Based on literature, bank profitability is typically measured by return on equity (ROE) and/ or return on asset (ROA) and usually expressed as a function of internal and external determinants.

Internal determinants are factors that are mainly influenced by a bank's management decisions and policy objectives. Such profitability determinants are the level of liquidity, provisioning policy, capital adequacy, expenses management, and

bank size. On the other hand, the external determinants, both industry and macroeconomic related, are variables that reflect the economic and legal environments where the financial institution operates (Sufian and Habibullah 2009).

We will select ROE as dependent variable based on several reasons. Of all the fundamental ratios that measure profitability, one of the most important is return on equity. It is a basic test of how effectively a company's management uses investors' money. By measuring how much earnings a company can generate from assets, ROE offers a gauge of profit-generating efficiency. Firms that do a good job of milking profit from their operations typically have a competitive advantage, a feature that normally translates into superior returns for investors. The other factor as to why ROE has been selected is due to DuPont analysis³ that breaks down ROE into three distinct elements. This analysis will enable details analysis to understand the source of superior (or inferior) return by comparison with companies in similar industries (or between industries). DuPont analysis tells us that ROE is affected by three things: Operating efficiency, which is measured by profit margin; Asset use efficiency, which is measured by total asset turnover; and Financial leverage, which is measured by the equity multiplier.

The regression results focusing on the relationship between bank profitability and the explanatory variables are presented in Table 1. The model performs reasonably well with most variables remaining stable across the various regressions tested. The explanatory power of the models is reasonably high, while the *F*-statistics for all models is significant at the 1% level for model 1 to model 5 and 5% level for model 6 to model 10. The adjusted *R*² is 18% for model 1 to 5 and 8% for model 6 to 10, this is more lower compared to Kosmidou et al. (2008) at 92% and Sufian (2010) at 75%.

The ratio of Operating Expenses to Total Assets (OE/TA) is used to provide information on the bank operating costs against asset have. The variable represents total amount of overhead expenses, wages and salaries, as well as the costs of running branch office facilities inclusive utilities, stationary, etc. against bank assets. For the most part, the literature argues that reduced expenses improve the efficiency and hence raise the profitability of a financial institution, implying a negative relationship between operating expenses ratio and profitability (Bourke

³ A method of performance measurement that was started by the DuPont Corporation in the 1920s. With this method, assets are measured at their gross book value rather than at net book value in order to produce a higher return on equity (ROE). It is also known as "DuPont identity."

1989). The result exhibits positive relationship with bank profitability at all 10 models with 5 models is statistically significant at the 1% level. The result justification that talent is attracted to benefit and financial returns offered by organisation in working environment is also applicable in Islamic bankings on justifying strong positive relationship between bank profitability with OE/TA ratio. This is consistent with Molyneux and Thornton (1992) who observed a positive relationship, suggesting that high profits earned by banks may be appropriated in the form of higher payroll expenditures paid to more productive human capital.

Referring to the impact of capitalisation, it is observed from Table 1 that EQUITY/TA exhibits positive relationship with profitability and is statistically significant at 1% level. But when we control for GNI country income, the result is still positive but not significant. This is consistent with previous studies (Isik and Hassan 2003, Staikouras and Wood 2003, Sufian and Habibullah 2009) providing support to the argument that well capitalised banks face lower costs of going bankrupt, thus lowers their funding cost, or that they have lower needs for external funding resulting in higher profitability. Nevertheless, strong capital structure is essential for banks in emerging economies since it provides additional strength to withstand financial crises and increased safety for depositors during unstable macroeconomic conditions.

The LNTA variable is included in the regression models as a proxy of size to capture the possible cost advantages associated with size (economies of scale). This variable controls for cost differences and product and risk diversification according to the size of the bank. The findings indicate that LNTA, as a proxy of bank's size, shows positive sign, suggesting larger banks tend to be more profitable. Concerning the liquidity results, LOANS/TA has a negative relationship with profit efficiency levels. There may be decreasing returns to scale through the allocation of fixed costs (e.g. research or risk management) over a higher volume of services or from efficiency gains from a specialised workforce, while LNDEPO reveals positive relationship with profit efficiency. Although it is not statistically significant at the considered levels, it is perceived that the more deposit the bank's receive, higher will be loan disbursement that is positively correlated with bank revenue translating into higher profits.

For credit risk result, the impact of credit risk (NPL/TL) has a negative relationship with bank profitability, this generally suggesting that banks with higher credit risk exhibit lower profitability levels. The results imply that World Islamic banks should focus more on credit risk management, which has been proven to be problematic in the recent past. Sufian and Habibullah (2009) also find similar result

and stated that serious banking problems have arisen from the failure of financial institutions to recognise impaired assets and create reserves for writing off these assets. An immense help towards smoothing these anomalies would be provided by improving the transparency of the banking sector, which in turn will assist banks to evaluate credit risk more effectively and avoid problems associated with hazardous exposure.

The results about the impact of macroeconomic conditions of Malaysian banks' profitability are mixed. The empirical findings suggest that LNGDP has a positive relationship with bank profitability when we run for model 1 to model 5. But once we remove inflation from model 6 to model 10 because of multicollinearity problem, it becomes negative relationship. On the other hand, INFLATION exhibits positive sign for model 1 to model 5, for model 6 to model 10 the inflation variable has been dropped from the regression due to multicollinearity problem with GNI variables (LOW, MEDIUM AND HIGH). While market capitalisation represents by MARKET exhibits positive relationship for all 10 models.

As a robustness check, a binary dummy variable AFC, which takes a value of 1 for the year 1998 where Asian Financial Crisis happened, and 0 otherwise is included in models 2, 4 and 6 regressions. The regression result in Table 1 stated negative relationships between AFC and bank profitability for all 3 models. The same procedure repeated for GFC where value of 1 for the year 2008 represented Global Financial Crisis happened, and 0 otherwise is included in models 3, 5 and 7 regressions. The GFC result is consistent with AFC that has negative relationship with bank profitability for all 3 models.

Since the coverage of studied is from the whole world, we extend dummy variables for identifying impact on regions where Islamic banks concentrated the most, which takes a value of 1 for banks from the Middle East and North Africa (MENA) region, and 0 otherwise is included in models 4 and 5 of the regression. The results are presented Table 1, which stated negative relationship between MENA and profitability. Then we test the same method for bank originated from Asian, value of 1 for banks from the Asian (ASIA) region and 0 otherwise is included in model 6 and 7 of the regression. The result exhibits negative relationship with profitability and is statistically significant at 10% level. The result

is interesting since Asian Islamic banks are less profitable than MENA Islamic banks.

Finally we test the impact of country income classification where the Islamic banks operated with profitability. The three GNI country incomes classify as LOW, MEDIUM and HIGH in the regression models 8, 9 and 10 of Table 1. Each model starts with LOW will take value of 1 for Islamic banks originated from World Bank GNI classification as low income country and 0 otherwise. The same procedure applies for MEDIUM and HIGH income countries. Model 8 represents regression with LOW income countries and the result in Table 1 stated positive relationship with profitability. On the other hand, MEDIUM income countries in model 9 have a negative relationship and significant at 1% level. The result implies that Islamic banks originated from MEDIUM income countries have negative relationship with profitability. This contradicts with basic understanding that when people have money, banking sector will benefit from it via higher deposits, more subscribers in financial product, etc. It may be the result of consumers in middle income countries not engaging with banking product and facility that contribute to these negative relationships with bank profitability. Based on Table 1, result for HIGH income countries found positive relationship and statistically significant at 10% level. This is interesting since MEDIUM and HIGH income countries have different results finding between one and another. The result supports, Pareto rules of 80/20 where 20 per cent population will contribute 80 per cent of profitability; most of HIGH income countries in the study are relatively smaller in population. We may stated that profitability of HIGH income countries is correlated with understanding that people or organisation will engage more with banking product that can lead towards profitability of the Islamic banks.

The results above seem to suggest that most of the bank trait variables continued to remain robust in the directions and significance level. Favourable economic conditions during the period of study may have fuelled higher demand for Islamic banking products and services, reduced default loan probabilities, and thus resulting in profitability.

TABLE 1
RESULTS OF FIXED EFFECT MODEL ANALYSIS

Explanatory Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Constant	84.8615 (0.9848)	85.5781 (0.9384)	52.7100 (0.7300)	87.4972 (0.9547)	53.8590 (0.6983)	11.0604 (0.8386)	14.2929 (0.9002)	-16.5800* (-1.7775)	0.6952 (0.1758)	0.4958 (0.0725)
<i>Bank Characteristic</i>										
OE/TA	0.0215*** (12.0256)	0.0215*** (12.0080)	0.0213*** (11.2493)	0.0214*** (12.0600)	0.0213*** (11.2295)	0.0039 (0.3106)	0.0047 (0.3977)	0.0040 (0.3175)	0.0040 (0.3222)	0.0039 (0.3108)
EQUITY/TA	0.0043*** (9.5045)	0.0043*** (9.4336)	0.0042*** (10.2054)	0.0043*** (9.4711)	0.0042*** (10.1294)	0.0006 (0.3044)	0.0008 (0.4201)	0.0006 (0.2932)	0.0006 (0.2976)	0.0006 (0.3133)
LNTA	0.0590 (0.0283)	0.0609 (0.0291)	0.0601 (0.0281)	0.0269 (0.0127)	0.0632 (0.0294)	1.7845 (1.3176)	2.1160* (1.6595)	1.7694 (1.3910)	1.9190 (1.5416)	1.7726 (1.3730)
LOANS/TA	-0.0001 (-1.5693)	-0.0001*** (1.5501)	-0.0001 (1.5965)	-0.0001 (-1.5526)	-0.0001 (-1.5765)	8.62 (0.1865)	-1.3200 (-0.0282)	1.56 (0.3440)	1.53 (0.3367)	4.74 (0.1024)
LNDEPO	0.8883 (0.7843)	0.8871 (0.7783)	0.8855 (0.7962)	0.8981 (0.7794)	0.8836 (0.7892)	1.3346 (1.3925)	1.2356 (1.3834)	1.4172 (1.4882)	1.369 (1.4607)	1.3162 (1.3962)
NPL/TL	-21.765 (0.9839)	-21.8186 (0.9688)	-13.1689 (0.7342)	-22.266 (0.9824)	-13.2456 (-0.7243)	-0.7666 (-0.4524)	-1.3702 (-0.6356)	2.8651*** (2.8571)	1.6113*** (4.0435)	-2.5617 (-0.9632)
<i>Economic Condition</i>										
LNGDP	0.1353 (0.9252)	0.1353 (0.9225)	0.1336 (0.9141)	0.1354 (0.9191)	0.1336 (0.9144)	-0.0015 (-0.2843)	-0.0019 (-0.3876)	-0.0015 (-0.2816)	-0.0015 (-0.2849)	-0.0015 (0.2888)
INFLATION	0.0158 (0.1194)	0.0150 (-0.1114)	0.0580 (0.5703)	0.0129 (0.0954)	0.0566 (0.5500)					

(Contd. Table 1)

Explanatory Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
MARKET	7.6300 (1.0447)	7.6300 (-1.0404)	4.2600 (0.8086)	7.6400 (1.0380)	4.2500 (0.8065)	7.63 (1.3056)	5.0100 (1.0158)	7.4600 (1.2843)	7.5700 (1.2950)	7.7200 (1.3190)
AFC		-0.7593 (-0.1249)		-2.0690 (-0.9884)		1.2848 (0.6498)				
GFC			-6.0962 (-0.8582)		-6.1052 (-0.8539)		-5.7177 (-0.9556)			
MENA				-0.8454 (-0.1394)	-1.2683 (-0.2121)					
ASIA						-17.0356* (-1.7037)	-15.858* (-1.8179)			
LOW								13.6031 (0.9900)		
MEDIUM									-29.559*** (-6.3576)	
HIGH										33.2213* (1.7371)
R ²	0.4278	0.4277	0.4286	0.4279	0.4287	0.3015	0.3029	0.3010	0.3025	0.3018
Adj. R ²	0.1911	0.1861	0.1873	0.1811	0.1823	0.0794	0.0812	0.0823	0.0842	0.0833
Durbin-Watson stat	2.9042	2.9042	2.8703	2.9030	2.8704	1.8729	1.8617	1.8877	1.8848	1.8703
F-statistics	1.8075***	1.7699***	1.7763***	1.7341***	1.7397***	1.3573**	1.3664**	1.3761**	1.3859**	1.3813**
No. of Observations	230.00	230.00	230.00	230.00	230.00	345.00	345.00	345.00	345.00	345.00

Note: Values in parentheses are t-statistics. ***, **, and * indicate significance at 1, 5, and 10% level respectively.

V. CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

By using an unbalanced bank level panel data, the present study attempts to examine World Islamic Banks performance profitability during the period 1992-2009. We find that the larger, more diversified, and better capitalized banks are relatively more profitable. The empirical findings seem to support the expense preference theory, which could be explained by the more highly qualified and professional management that requires higher remuneration packages. On the other hand, we find that higher credit risk has negative impact on bank profitability.

In this paper, we examine the profitability performance of the World Islamic banks that consist of 25 countries namely Bahrain, Bangladesh, Brunei, Egypt, Gambia, Indonesia, Iran, Iraq, Jordan, Kuwait, Malaysia, Mauritania, Pakistan, Palestine, Saudi Arabia, Singapore, Syria, Thailand, Turkey, United Arab Emirates, Qatar, Yemen, South Africa, Sudan and Yemen during the period of 1992-2009 with 78 Islamic banks involved. The profitability performance of individual banks is evaluated using Fixed Income Model (FEM) against a set of bank specific variables.

The Fixed Effect Model (FEM) result that has been used for analysing profitability proposed that profit efficiency is positively and significantly associated with operating expenses against asset, equity, HIGH income countries and non performing loans against total loans specifically for models 8 and 9 that positively significant at 1 per cent level. The empirical results show that more profitable banks are those that have higher operating expenses against asset, more equity against asset and concentrated at high income countries. The results also suggest that favourable economic conditions exhibit positive relationship with profit efficiency. The impact of 1998 and 2008 financial crises have been examined in the study. The finding for both crises is negative and non significant. It implies that world Islamic banks' profitability does not impacted during Asian and Global Financial crises.

Due to its limitations, the paper could be extended in a variety of ways. Firstly, the scope of this study could be further extended to investigate other variables such as taxation and regulation indicators. Secondly, it is suggested that further analysis into the investigation of the Islamic banking sector efficiency to consider risk exposure factors. Finally, investigation of changes in productivity over time as a result of technical change or technological progress or regress by employing the Malmquist Total Factor Productivity Index could yet be another extension to the paper.

Despite these limitations, the findings of this study are expected to contribute significantly to the existing knowledge on the operating performance of the World Islamic banking industry. Nevertheless, the study has also provided further insight

to bank specific management as well as the policymakers with regard to attaining optimal utilisation of capacities, improvement in managerial expertise etc. This may also facilitate directions for sustainable competitiveness of World Islamic banking operations in the future.

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APPENDIX 1

Sl. No.	Financial Institutions	Country of Origin	Classification of countries
1	ABC Islamic Bank	Bahrain	High income country
2	Al Amin Bank		
3	Al Baraka Islamic Bank		
4	Arab Banking Corporation		
5	Arcapita Bank B.S.C.		
6	Arab Islamic Bank		
7	Bahrain Islamic Bank		
8	Gulf Finance House		
9	Al Salam Bank		
10	Shamil Bank		
11	Taib Bank		
12	Ithmaar Bank		
13	Al Arafah Islami Bank	Bangladesh	Low income country
14	Shah Jalal Islami Bank		
15	ICB Islamic Bank Limited		
16	Islamic Bank Bangladesh		
17	Islamic Development Bank of Brunei Bhd		
18	Bank Islam Brunei Darussalam Berhad	Brunei	High income country
19	Faisal Islamic Bank		
20	Arab Gambian Islamic Bank	Egypt	Lower middle income
21	Bank Muamalat Indonesia	Gambia	Low income country
22	Bank Mellat	Indonesia	Lower middle income
23	Bank Refah	Iran	Lower middle income
24	Al Bilad Islamic Bank		
25	Jordan Islamic Bank		
26	Arab Islamic Bank	Iraq	Lower middle income
27	Islamic International Arab Bank	Jordan	Lower middle income
28	Jordan Dubai Islamic Bank		
29	Kuwait Finance House		
30	Affin Islamic Bank Berhad		
31	Alliance Islamic Bank	Kuwait	High income country
32	Bank Islam Malaysia Berhad	Malaysia	Upper middle income
33	Bank Islam Malaysia (L) Berhad		
34	Bank Muamalat Malaysia Berhad		
35	CIMB Islamic Bank Berhad		
36	EONCAP Islamic Bank Berhad		
37	Kuwait Finance House Malaysia		
38	Hong Leong Islamic Bank		
39	Maybank Islamic Berhad		
40	RHB Islamic Bank Bhd		
41	BAMIS-Banque Al Wava Mauritanienne Islamique	Mauritania	Low income country

(Contd. Appendix Table 1)

Sl. No.	Financial Institutions	Country of Origin	Classification of countries
42	AlBaraka Islamic Bank B.S.C.	Pakistan	Low income country
43	Meezan Bank		
44	Standard Chartered Modharaba		
45	Bank Islami Pakistan		
46	Dawood Islamic Bank		
47	Dubai Islamic Bank		
48	Emirates Global Islamic Bank		
49	Arab Islamic Bank	Palestine	Low income country
50	Al Rajhi Banking	Saudi Arabia	Upper middle income
51	Bank AlJazira		
52	EG Saudi Finance Bank		
53	The Islamic Bank of Asia	Singapore	High income country
54	Syria International Islamic Bank	Syria	Lower middle income
55	Islamic Bank of Thailand	Thailand	Lower middle income
56	Al Baraka Turk	Turkey	Lower middle income
57	Kuwait Finance House		
58	Ihlas Finan		
59	Abu Dhabi Islamic Bank	UAE	High income country
60	Dubai Islamic Bank		
61	Mashreq Bank		
62	Emirates Islamic Bank		
63	Sharjah Islamic Bank		
64	Noor Islamic Bank		
65	European Islamic Investment Bank Plc	United Kingdom	High income country
66	Islamic Bank of Britain PLC		
67	Qatar Islamic Bank	Qatar	High income country
68	Qatar International Islamic Bank		
69	Islamic Bank of Yemen	Yemen	Low income country
70	Tadhamon International Islamic Bank		
71	Saba Islamic Bank		
72	Al Baraka South Africa	South Africa	Lower middle income
73	Al Baraka Sudan	Sudan	Low income country
74	Al Shamal Islamic Bank		
75	Faisal Islamic Bank		
76	Islamic Co-operative Development Bank		
77	Sudanese Islamic Bank		
78	Tadamon Islamic Bank		
	Total Countries	25	
	Total Banks	78	

Income Groups

Low Income (55) - (Income Per Capita: \$765 or less); Middle Income (52) - (Income Per Capita: \$766–9,385); High Income (40) - (Income Per Capita: \$9,386 or more).

Economies are classified by GNI per capita in 2003, calculated using the World Bank Atlas method. The groups are low income, \$765 or less; lower middle income, \$766–3,035; upper middle income, \$3,036–9,385; and high income, \$9,386 or more.