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## Profit distribution management by Islamic banks: An empirical investigation

Sayd Farook<sup>a,1</sup>, M. Kabir Hassan<sup>b,\*</sup>, Gregory Clinch<sup>c,2</sup><sup>a</sup> Global Head of Islamic Capital Markets, Thomson Reuters, 10th Floor, West Tower, Bahrain Financial Harbour, PO Box 1030, Bahrain<sup>b</sup> Department of Economics and Finance, University of New Orleans, New Orleans, LA 70148, USA<sup>c</sup> Department of Accounting and Business Information Systems, Business and Economics Building, 'The Spot', 198 Berkeley Street, (Building 110), University of Melbourne, 3010 Victoria, Australia

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## ABSTRACT

The objective of this paper is to ascertain whether Islamic banks do in fact manage profit distributions and if so, what factors are associated with the extent of profit distribution management. The results suggest that most Islamic banks manage profit distributions, with the extent of profit distribution directly related to religiosity, financial development, asset composition, and existence of discretionary reserves, while it is inversely related to market familiarity with Islamic banking, market concentration, depositor funding reliance and the age of the Islamic bank.

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## 1. Introduction

Islamic banks have the implicit flexibility to manage their depositor profit distributions *ex post* as a result of being able to vary the management fee attributable to the shareholders. To that extent, Sundararajan (2005) finds that Islamic banks do in fact manage profit distributions towards interest rates for his limited sample of 14 banks. He derives his sample from 8 countries (not specified) over the years 2002 and 2003.<sup>3</sup> His assertion that Islamic banks manage profit distributions relies on the strong significant correlation between market deposit interest rates and the distributions to depositors for the Islamic banks in his sample. This is in contrast to

the insignificant correlation between asset returns and depositor distribution rates for the Islamic banks in his sample.

While Islamic banks have an explicit contractual obligation to share profits with depositors, Sundararajan's (2005) results essentially imply that Islamic banks may face competition costs which require an implicit contractual condition between the depositors and the bank to provide distributions similar to market based deposit interest rates. This study extends Sundararajan's study by first expanding the sample size, and second, considering factors that might be related to profit distribution management.

Besides being attractive economic questions by themselves, the questions of whether and why Islamic banks manage their profit distributions are interesting since the extent of profit distribution management may have a bearing on the risk outlook of the bank itself. To the extent that the bank engages in profit distribution management, it is arguably taking on more equity risk and thereby shielding investment depositors from the risk associated with the asset portfolio of the bank. This would implicitly require bank management to be more cautious about the risk profile of their investments and ensure that the shareholders' equity is not threatened. Alternatively, if the bank is not engaging in profit distribution management, the bank is passing on equity risk to the investment depositors. Being able to pass on equity risk to the

\* Corresponding author. Tel.: +1 504 280 6163; fax: +1 504 280 6397.

E-mail addresses: [sayd.farook@thomsonreuters.com](mailto:sayd.farook@thomsonreuters.com) (S. Farook), [mhassan@uno.edu](mailto:mhassan@uno.edu) (M.K. Hassan), [clinchg@um.edu.au](mailto:clinchg@um.edu.au) (G. Clinch).

<sup>1</sup> Tel.: +973 1750 2033.

<sup>2</sup> Tel.: +61 3 834 46446; fax: +61 3 934 92397.

<sup>3</sup> Sundararajan's sample of Islamic banks is widely dispersed from a number of countries (8 in total) and there is nothing in the results to suggest that this effect is limited to regulatory regimes in specific countries. However, it is acknowledged that the sample may have limited generalisability due to the limited number of observations (18 in total). This study seeks to remedy that limitation.

investment depositors, the bank may have heightened incentives to engage in riskier investments and thereby increase moral hazard, under the implicit assumption that investment account holders will absorb some of the losses (Cihak & Hesse, 2010).<sup>4</sup>

This setting provides the principal motivation to investigate whether Islamic banks manage their profit distributions in an enlarged sample of Islamic banks and what factors are associated with the extent to which they manage their profit distributions towards market based interest rates or away from asset returns. The extent to which they manage profit distributions to depositors will also have implications on the Islamic bank's financial stability and financial reporting incentives.

This paper analyses two issues related to profit management by Islamic banks. First, the paper provides systematic evidence of the phenomenon of profit distribution management as anecdotally evidenced by Sundararajan (2005) using a full sample of Islamic banks. This objective is addressed in the results section by comparing depositor profit distributions with a range of other measures such as market deposit rates and asset return rates for each individual bank, country wise and for the aggregate sample of banks. The second objective is to ascertain the factors that are associated with variation in the extent to which depositor profit distributions are managed towards market based depositor interest rates and away from fundamental return on assets. This objective is addressed by conducting several regression analyses on an original empirical model developed in this study.

The evidence gathered in this study suggests that most Islamic banks manage profit distributions, with Islamic banks in Brunei, Malaysia and the United Arab Emirates demonstrating consistently lower average profit distribution management (based on Asset Spreads). In contrast, Islamic banks in Bahrain, Indonesia, Pakistan and Saudi Arabia have consistently higher average profit distribution management (based on Asset Spreads).

With the exception of banks from Bahrain, Kuwait, Turkey and Yemen, there is no evidence to suggest all Islamic banks in a specific country systematically and consistently manage profit distributions towards deposit rates and away from asset rates. No common underlying factor between these countries can potentially be found to ascertain why Islamic banks systematically manage profit distributions. The results suggest that Islamic banks do manage profit distributions and such discretionary activity is directly related to religiosity, financial development, asset composition, existence of discretionary reserves, while it is inversely related to market familiarity with Islamic banking, market concentration, depositor funding reliance and the age of the Islamic bank.

The paper is divided into five sections. Following introduction, Section 2 develops the theory to explain the factors associated with the variation in profit sharing, while the subsequent section develops the specific hypotheses to be tested. Section 3 discusses the research design and Section 4 provides a description and analysis of the results, while Section 5 concludes this chapter.

## 2. Literature and hypothesis development

Islamic banks have developed two reserves called profit equalisation reserve (PER) and investment risk reserves (IRR) to be able to pay the investment account holders (IAH) a steady rate of return and keep their capital intact. The PER is created by deductions from income earned on investments prior to profit allocation between the bank and its IAH. The IRR is built up by appropriations from the share of profit allocated to the IAH after deduction of the bank's

shareholders. The use of these reserves (PER and IRR) has similarities with the use of conventional revenue reserves to smooth dividend payouts to shareholders. Whereas in case of conventional reserves that belong to shareholders and are reflected in their share value, the IAH has no right to vote for or against the use of these reserves decided by the bank board of directors (Archer & Karim, 2006; Archer, Karim, & Sundararajan, 2010; Sundararajan, 2007, 2008). The calculation and use of PER and IRR are decided by Islamic banks based on their own discretion and there are no specific supervisory disclosure requirements regarding this. Indeed, the publicly available information on these reserves is rather limited (Sundararajan, 2005). Literature on income smoothing practices are limited, and results are mixed at best.

Using firm-level data over the period 2001–2006, Taktak, Zouari, and Boudriga (2010) examine income smoothing practices in Islamic banks and test the use of Loan Loss Provisions (LLP) to stabilise net income. Their results show that, unlike conventional banks, Islamic banks do not use LLPs to smooth their income. Rather they use IRR and PER to maintain stable income.

Using a sample of Islamic and conventional banks for the period of 2000–2003 in Gulf Cooperation Council (GCC) countries, Zoubi and Al-Khazali (2007) find support for income smoothing hypothesis. They find that banks in GCC use LLPs to smooth their income. In case of Malaysian banks, Ismail and Be Lay (2002) also find evidence of earnings management using LLP over the period 1997–1999. Similar results were also found by Shahimi, Ismail, and Ahmad (2006), based on a sample of 15 Malaysian Islamic banks over the period 1996–2003. However, later Ismail, Shaharudin, and Samudhram (2005), using again Malaysian Islamic banking data from 1998 to 2001, show that bank managers do not LLP to smooth their earnings, but they use security gains/losses to smooth their earnings.

A large proportion of the target market of Islamic banks is likely to be sensitive to market based price measures such as interest rates, particularly if these banks operate in competitive contractual environments with other Islamic and conventional banks and deposit taking institutions. As a result, Islamic banks may be pressured in varying degrees to provide distributions similar to other institutions or risk losing their depositor base.<sup>5</sup> The extent to which Islamic banks actually manage distributions to their depositors towards market based interest benchmarks will not only be associated with the pressures on the bank through its contractual environment, termed demand side factors, but also by the bank's own characteristics which define its interactions with this contractual environmental, termed supply side factors. This is because the Islamic bank is likely to position itself in the market based on its comparative advantage and this positioning will be reflected in its product or service attributes.

### 2.1. Demand side analysis of profit distribution management of Islamic banks

Given the potential markets for Islamic banks, there are essentially two broad inter-related factors which will have implications for the extent to which Islamic banks are pressured to manage profit distributions to depositors. These are the characteristics of the Muslim population and the characteristics of competition in the market for interest bearing deposits.

<sup>4</sup> This is under the assumption that banks do not have other risk management constraints imposed by regulators such as capital adequacy based asset risk weights.

<sup>5</sup> In the Islamic banking literature, this risk has been termed *displaced commercial risk*. It essentially refers to the risk that investors will withdraw their funds in droves, thereby subjecting the bank to insolvency, if the returns paid demonstrate a trend contrary to the investors' expectations of instruments/deposits of a similar nature.

### 2.1.1. Islamic religious commitment in a market

Based on the assumption that Islamic banks' principal customers are Muslims, the extent of aggregate religious commitment in a particular country will influence the behaviour of the bank. If a higher proportion of consumers fall into the category of *Shari'ah loyalists (strictly religious observant)* or the *Floating segment (combination of religion and market forces)* as a result of their religious commitment, it is likely that they will be more concerned about Islamic legitimacy rather than meeting interest rate benchmarks (price insensitive). As a result, the pressure on Islamic banks to meet such benchmarks will also be relatively lower. Hence, there will be an inverse association between the extent of Islamic religious commitment in a country and the extent to which Islamic banks manage depositor profit distributions towards interest rates.

**H<sub>1</sub>.** *Ceteris Paribus*, there is a negative relationship between the extent of profit distribution management towards interest rates by a particular Islamic bank and the level of Islamic religious commitment in the country of operation.

### 2.1.2. Familiarity with Islamic bank operating structure

The floating segment of the market is potentially concerned about religious prohibitions on usury/interest, but is nevertheless price and feature sensitive. This segment's customers may switch between banks based on price or religious legitimacy, depending on which end of the market spectrum they belong to. However, for both ends of the floating segment market, their decision will be tempered by their familiarity or understanding of their contractual relationship with Islamic banks and consequently their price based switching incentives may be reduced or heightened. If depositors are aware that Islamic banks are in principle supposed to provide profit based distributions, they will have less incentive to immediately switch in years where the profit distributions do not meet other interest based benchmarks, in the hope that they will also receive better distributions in years of better performance of the underlying assets. This is likely to result in less pressure on the Islamic bank to manage distributions towards interest rates. The intuition for this proposition is derived from views of Islamic bankers who cite the lack of awareness among customers as the reason why there is a dearth of product variety (implying a lack of investment products with varying risk/return profiles) (Fida, 2006). They were of the opinion that this would change as customers get a better understanding of the operations of Islamic banking through repeated interaction with Islamic banks and promotion of Islamic banking as an industry. Accordingly, an inverse relationship is predicted between the extent of the market's familiarity with Islamic banking and the level of profit distribution management.

**H<sub>2</sub>.** *Ceteris paribus*, there is a negative relationship between the extent of profit distribution management towards interest rates by a particular Islamic bank and the level of market familiarity with Islamic banking in a particular country.

### 2.1.3. Financial market development and investment/deposit product positioning

Financially developed markets are characterised by the presence of numerous value added informational and financial intermediaries which assist in reducing uncertainty associated with risky assets and increasing investor confidence (Ndikumana, 2005). This infrastructure of intermediaries assists individuals and institutions by providing information about and access to a wide variety of asset classes that produce comparably greater returns than plain vanilla deposit based products, while diversifying unsystematic risk. To the extent that uncertainty is reduced, investors feel less need to worry when investing and therefore are encouraged to invest more rather than save (Lehmann, 1997). In the

absence of such informational and financial intermediaries who assist investors to assess and mitigate risks, investors are apprehensive to place their funds in risky investments. Rather, they are more willing to place their funds in capital protected plain vanilla deposits, which offer a strong certainty of low returns regardless of market risk. This is bolstered by an implicit deposit guarantee by most governments in underdeveloped financial systems. Even if individuals or institutions wanted to invest, the transaction costs required to diversify the individual investor's risk exposure in underdeveloped markets is likely to outweigh the benefits of such diversification.

As a result, poorly developed financial markets will impose a stronger pressure on Islamic banks to provide stable market based interest distributions with implicit, if not explicit capital protection. In contrast, well developed financial markets will provide an environment conducive for Islamic banks to promote an array of deposit/investment products with varying risk/return profiles that match the underlying asset returns of the bank rather than just plain vanilla deposit products.

Accordingly, it is predicted that there is an inverse relationship between the level of financial market development and the extent to which Islamic banks manage their depositors' profit distributions towards interest rates.

**H<sub>3</sub>.** *Ceteris paribus*, there is a negative relationship between the extent of profit distribution management by a particular Islamic bank and the level of financial market development in a particular country.

### 2.1.4. Competition in the market for deposits

The large majority of countries where Islamic banks operate are characterised by a dual banking system where both conventional and Islamic banks co-exist. These banks compete with each other for deposit shares. As mentioned earlier, Islamic banks have a definitive comparative advantage when considering the *Shari'ah Loyalist* segment of the market. However, the other two markets, the *Conventional Loyalists (those who park their deposits in interest-bearing accounts)* and *Floating* segments, are sensitive to price and features to varying degrees. For these market segments, Islamic banks would face competition with other Islamic banks and even conventional banks, particularly if they are competing on solely price terms.

Consequently, Islamic banks will be pressured to match the interest rates provided by such banks in a bid to gain market share. However, the extent to which this pressure is applied and the extent to which Islamic banks yield to this pressure by managing profit distributions will be dependent on the level of concentration within the market, with Islamic banks retaining a significant share of a concentrated market having less need to manage distributions to depositors. Hence, an inverse relationship is predicted between the level of bank concentration in a particular country and the level of profit distribution management by Islamic banks.

**H<sub>4</sub>.** *Ceteris paribus*, there is a negative relationship between the extent of profit distribution management by a particular Islamic bank and the level of concentration in a particular country's banking market.

### 2.1.5. Economic environment

The cyclical fluctuations of the country's economy will affect the financial performance of Islamic banks in that country. Specifically, poor economic conditions such as a recession might lead to increases in the unemployment rate and decreases in business growth. Both businesses and individuals may therefore be unable to service their credit obligations to Islamic banks. These potential defaults will certainly cause direct write-downs or increases

in provisions. As a result, the portfolio of assets funded by the IAH (investment account holder) may perform poorly and any profit from performing credit will be offset by losses caused by write-downs and provisioning. Consequently, Islamic banks will have to offset such losses to maintain competitive returns to IAH by sacrificing their own profits and perhaps even the shareholders' capital and reserves. Hence, an inverse relationship is predicted between economic conditions as measured by GDP growth and the level of profit distribution management by Islamic banks.

**H<sub>5</sub>.** *Ceteris paribus*, there is a negative relationship between the extent of profit distribution management towards interest rates by a particular Islamic bank and the GDP growth of the country in which the respective Islamic bank operates.

## 2.2. Supply side analysis of Islamic bank characteristics and their association with profit distribution management

The following sections attempt to describe the implications of bank characteristics on profit distribution management. In particular, the bank's exposure to loan assets, the aggregate depositors' influence on the bank, and the existence of reserves are examined.

### 2.2.1. Asset composition (LA/TA ratio)

The asset composition of an Islamic bank, specifically its exposure to fixed rate financing, may affect the extent to which the bank manages profit distributions to depositors. Due to the prohibition of interest in Islamic law, Islamic banks are restricted in the type of instruments they can utilise to mobilise deposits. Since all banks have incentives to reduce their overall risk, Islamic banks over-invest in low risk debt-like instruments instead of the other alternative which is high risk profit sharing instruments. To that extent, some Islamic banks have up to 90% of their asset portfolio concentrated in fixed rate debt instruments.

Generally, the only types of debt or debt like instruments they are allowed to use are lease structures, cost plus profit mark-up based financing or deferred sale financing. A key characteristic of these instruments (with the exception of lease financing) is that the rate of profit (interest rate) is determined at the inception of the contract. Since many of these instruments have contract periods anywhere between 3 months to 8 years, Islamic banks are locked into that rate of interest for the period of the contract, regardless of whether market interest rates are changing. In the event of an adverse interest rate change, Islamic banks face a fund gap between asset returns which are fixed at inception and liabilities (depositors' funds) which are sensitive in varying degrees to changes in market interest rates (Rosly, 1999). This fixed rate exposure is termed profit rate risk (the Islamic equivalent to interest rate risk).

If Islamic banks share their profits and losses fully with depositors, there is no profit rate risk *per se*. However, if depositors have expectations to receive a particular rate of return based on competitive rates, then Islamic banks have to smooth profits to their depositors, resulting in an equivalent effect as interest rate risk. Conventional banks usually deal with over-exposures to mismatches with derivatives such as interest rate swaps or by moving those assets off balance sheet. Islamic banks cannot avail themselves of the various conventional derivative instruments available in the market to mitigate profit rate risk such as profit/interest rate swaps, as a result of Islamic legal restrictions. Islamic law prohibits speculative activities and transactions which do not involve the transfer of tangible assets, as opposed to financial assets or risk. Hence, artificial derivatives and debt sale are largely disallowed in the Islamic finance space. Until recently, there have been no widely available Islamic alternatives to such instruments and therefore Islamic banks were at a relative disadvantage to conventional banks

which, assuming that such hedging derivatives are available in the market, are able to manage their exposures appropriately. In addition, Islamic banks are not allowed to sell the resulting debt based assets and move them off-balance sheet to reduce their exposure to the fixed rate assets.

Hence, the extent of fixed rate loan assets will determine the extent to which the Islamic bank is exposed to returns mismatch in the event of market wide interest rate changes. Consequently, the extent of fixed rate loan assets will also determine the extent to which Islamic banks have to manage profit distributions to depositors, with a higher exposure demanding a larger magnitude of profit distribution management, *vice versa*. Hence, it is predicted that there is a direct relationship between the level of loan assets as a percentage of total assets and the extent of profit distribution management.

**H<sub>6</sub>.** *Ceteris paribus*, there is a positive relationship between the extent of profit distribution management towards interest rates by a particular Islamic bank and the proportion of Islamic loan assets as a percentage of total assets.

### 2.2.2. Influence of depositors on bank decision making

Since Islamic banks extract a significant management fee from the gross profit distributions to their depositors, they are reliant in varying degrees on depositors to generate earnings. Since *Conventional Loyalists* and the *Floating* market segments are interest rate sensitive, individual Islamic banks will feel pressured to manage their distributions to their depositors if their reliance on depositor funding for revenue is substantial, all other things being equal.

On the other hand, Islamic banks with a relatively smaller depositor base compared to shareholders funds will not be so inclined to manage profit distributions as the risk of collapsing as a result of large scale depositor withdrawal (bank runs) is not as high. These banks are less likely to engage in profit distribution management to satisfy the demands of the depositors. They are more likely to provide distributions that are consistent with their asset returns. This is because shareholders are not fully reliant on depositors' funds for their own profits. Hence, the degree of reliance on depositors' funds will be associated with the extent to which depositors profit distributions are managed.

**H<sub>7</sub>.** *Ceteris paribus*, there is a positive relationship between the extent of depositor profit distribution management towards interest rates and the extent of reliance on the depositors' funding.

### 2.2.3. Existence of reserves and ease in providing interest like distributions

While shareholders may have stronger resistance to volatility of cash flows due to diversification and 'insider information', they are still inclined to reduce such volatility as a result of the costs it imposes on the valuation of their assets. This is particularly so if they are institutional shareholders who are accountable to their unit holders for fluctuations in their investments. The same reasoning applies to bank regulators and managers who have strong incentives to ensure that shareholders earnings are not volatile. For managers, their reputation in the labour market is at stake if they are seen to be responsible for volatile performance. For regulators, the systemic stability of the banking system is at risk if banks have higher earnings volatility (DeYoung & Roland, 2001).

As a result, numerous Islamic banks have initiated a 'reserve' mechanism to manage distributions to their depositors without subjecting the banks' earnings to higher volatility. Essentially, any surplus revenues from depositors' funds, over and above acceptable benchmark distributions for depositors, are 'stored' for future utilisation in the event that future revenues do not satisfy the depositors' range of acceptable distributions. The reserves can of

two types, as recognised by the AAOIFI. The profit equalisation reserve can be established to smooth distributions to depositors, whereas the investment risk reserve can be established to protect depositors from risk of principal loss. Both of them are accounted for as part of the depositor's equity, although such amounts may not be distributed to depositors.

These reserve mechanisms essentially shield shareholders in varying degrees from fluctuations in shareholder earnings which are associated with profit distribution management. Consequently, this shield will encourage more active risk taking by banks, knowing that their depositors profit distributions are protected in varying degrees from fluctuations in revenues and cash flows. Even without increasing the risk profile of their asset portfolios, it is probable that banks would be more comfortable in managing distributions to depositors if they had a 'reserve'. Hence, it is predicted that the existence of reserves are positively associated with the extent of profit distribution management by Islamic banks.

**H<sub>8</sub>.** *Ceteris paribus*, there is a positive relationship between the extent of depositor profit distribution management towards interest rates and the existence of discretionary reserves.

#### 2.2.4. New banks attempting to instill confidence

Due to the significant start-up costs associated with initialising operations, it is rare for new businesses to make profits in the preliminary years of their operations. In the case of banks, it may be exacerbated because they may not be able to fully utilise the capital deposited by investors. In this situation, banks may have low aggregate revenues relative to their capital base (depositors and shareholders). Since Islamic bank depositors share their profits with the shareholders and bear all losses, this would imply that depositors would have to share in the low returns in the first few years, at least in theory. This in fact may be contrary to the interests of the Islamic bank, as it may lead the investment depositors to withdraw their deposits and place them in banks that provide better returns. To mitigate this risk, Islamic banks will manage distributions to depositors to instill confidence in them, even though it may result in immediate losses for the bank. Therefore, it is predicted that there is a negative relationship between the relative age of an Islamic bank and the extent of profit distribution management.

**H<sub>9</sub>.** *Ceteris paribus*, there is a negative relationship between the extent of profit distribution management towards interest rates and the age of the particular Islamic bank.

### 3. Research design

#### 3.1. Sample and data

The initial dataset is comprised of an unbalanced panel of approximately 50 Islamic banks with a minimum of 5 years and a maximum of 7 years per bank ranging from the period of 1993 to 2005. All bank specific data, including revenues, profits, depositors' profit distributions and other financial variables have been sourced from Bankscope's database which contains the actual annual reports and pro-forma financial information for all listed and unlisted banks in the world. Key financial statement information for the statistical tests is hand collected from the Bankscope collection of annual reports. The pro-forma data has not been utilised as it does not factor the difference in financial accounting for Islamic banks and hence does not contain many of the categories required for the empirical tests.

Macro-economic information, specifically GDP Growth Rates, lending, deposit, and currency exchange rates, has been sourced from the Economist Intelligence Unit's database. Data for the

country variable: financial market development has been sourced from the International Monetary Fund's International Financial Statistics database. The alternative variables for financial development are derived from Beck, Demirgüç-Kunt, and Levine's (2007) database available online at the World Bank website. The number of years of Islamic bank operation is compiled from a collection of books, websites and journal articles, while the size of the Islamic banking industry is calculated by summing up the assets of all individual Islamic banks and Islamic bank windows in each country for each year. The size of the banking industry of each country is also compiled in a similar fashion, summing up the size of each bank. The religious affiliation of a population is compiled from the CIA World Factbook (2007). Where applicable, the data is adjusted for inflation and as such expressed in January US dollars utilising the Economist Intelligence Unit's (EIU) currency exchange rates for each respective year.

The full final dataset gives a range of approximately 194–207 observations for approximately 37 banks in 17 countries. The sample is representative to the extent that it covers every Islamic bank that publishes annual reports and for which data is available publicly. The sample includes all the Islamic banks with available data from the following countries: Algeria, Bahrain, Bangladesh, Brunei, Egypt, Indonesia, Jordan, Kuwait, Malaysia, Pakistan, Qatar, Saudi Arabia, Senegal, Tunisia, Turkey, United Arab Emirates and Yemen. A number of the banks have missing data and therefore all years of such banks could not be incorporated in the statistical tests.

#### 3.2. Empirical model

Multiple Ordinary Least Square (OLS) regressions are utilised to ascertain the factors affecting profit distribution management towards interest rates. The dependent variable: profit distribution management (DEP-PDM) and the number of approaches taken to measure it are explained in detail after the model is introduced.

The profit distribution management model employs approximately 194 bank-year observations to run the following regression equation:

$$\begin{aligned} \text{DEP-PDM}_{i,t} = & \pi_1 \text{MUSLIM-POP}_{k,t} + \pi_2 \text{FAMILIAR}_{k,t} + \pi_3 \text{FD}_{k,t} \\ & + \pi_4 \text{CONC}_{k,t} + \pi_5 \text{GDPGR}_{k,t} + \pi_6 \text{LA/TA}_{i,t} \\ & + \pi_7 \text{DEPOSIT}_{i,t} + \pi_8 \text{RESERV}_{i,t} + \pi_9 \text{BANK-AGE} \\ & + \pi_{10} \text{COUNTRY}_k + \pi_{11} T_t + \nu_i + \varepsilon_{i,t} \end{aligned} \quad (1)$$

where

*Dependent variable*

DEP-PDM<sub>k</sub> Extent of depositor profit distribution management for Islamic bank *i*. We explain this variable below.

*Independent variables*

MUSLIM-POP<sub>k</sub> Proportion of Muslim population as a percentage of total population in country *k*. This variable is utilised to test H<sub>1</sub> which examines the effect of Islamic religious commitment on profit distribution management by Islamic banks.

FAMILIAR<sub>k</sub> Market familiarity with Islamic bank contractual structure proxied by the average number of years Islamic banking has been in operation in a respective country at country *k* OR the percentage of Islamic bank assets as a proportion of total banking assets in country *k* at year *t*; This variable is utilised to test H<sub>2</sub> which examines the effect of market familiarity with Islamic banking (particularly the floating segment) on profit distribution management.

FD<sub>k</sub> Financial development index of country *k*; This variable is utilised to test H<sub>3</sub>

CONC<sub>k</sub> *Herfindahl* concentration index of the banking market in country *k* at year *t*; this variable is utilised to test H<sub>4</sub> which posits the relationship between the extent of concentration in the banking system and the level of profit distribution management.

GDPGR <sub>k</sub>	GDP Growth Rate of the country <i>k</i> in which the Islamic bank operates. This variable is utilised to test H <sub>5</sub> , which relates the extent of profit distribution management to the economic condition of the country.
LA/TA <sub>i</sub>	Ratio of Islamic loan assets to total assets for bank <i>i</i> at year <i>t</i> . This variable is utilised to test H <sub>6</sub> , which relates the extent of profit distribution management to the Islamic bank's exposure to Islamic loan assets.
DEPOSIT <sub>i</sub>	Reliance on depositor's funds proxied by depositors funds' as a percentage of total assets for bank <i>i</i> at year <i>t</i> . This variable is utilised to test H <sub>7</sub> , which relates the extent of profit distribution management to the extent of reliance on depositors for shareholder profits.
RESERV <sub>i</sub>	Dummy variable that equals 1 for banks that have discretionary reserves and 0 otherwise for bank <i>i</i> at year <i>t</i> . This variable is utilised to test the implications of H <sub>8</sub> , which posits that the existence of discretionary reserves impacts upon the extent of profit distribution management.
BANK-AGE <sub>i,t</sub>	Number of years of the respective Islamic bank operation. This variable is utilised to test H <sub>9</sub> , which posits that banks early in their life will attempt to manage profit distributions towards interest rates to instil confidence in their investors.

*Control variables*

$\sum_{k=1}^{17} \text{Country}_k$	Country dummy
$\sum_{t=1998}^{2005} T_t$	Year dummy (only for bank year specific tests)
$v_i$	Bank specific coefficient
$\varepsilon_{i,t}$	Error term

The tests attempting to ascertain the factors associated with depositors' profit distribution management are original. Hence, the quality of the results may suffer from misspecification of the variables. A summary of the variables utilised is given in Table 1.

*Depositors profit distribution management (DEP-PDM)* – This variable aims to capture the extent to which a bank manages its profit distribution towards interest rates and away from fundamental asset returns. A number of approaches are taken to measure the bank-year specific variable.

The first bank-year specific measure of depositors profit distribution management utilised is the absolute spread between the return on assets (ROA) (after considering all expenses but excluding depositors profits) and the return on investment account holder's (ROIAH) (Asset Spread). The Asset Spread is potentially the closest indicator of the profit distribution management measure, since it considers all revenues and expenses and provides the spread between total asset return on the bank's asset and services portfolio and the distributions paid to depositors.

The second measure of profit distribution management is the absolute inverse of the spread between average competitive deposit rates for all banks for a particular year for a particular country and the average rate of distributed profits by a particular Islamic bank in that particular year (Deposit Spread). This allows for the determination of the magnitude of profit distribution management towards the average deposit rate of the respective host country, with a larger inverse value indicating greater profit distribution management. The inverse spread is utilised to ensure consistency and relationship between the results for this measure and the other measures of profit distribution management discussed.

The third approach measures the absolute spread between the average return on equity and the average rate of depositors profits distributed (equity spread), on the presumption that a high absolute spread indicates profit distribution management. The rate of depositors' profit distributed is calculated by dividing the

profits distributed by the total depositors' base (excluding current accounts which are not entitled to profits).

A common limitation of these measures is the effect of aggregation of the depositors' profit rates. Because financial statement figures aggregate the total amount paid to depositors (numerator) and also aggregate the total depositor base (denominator), there is no viable method by which the exact depositor profit distribution rate for each investment account can be deciphered. For instance, the numerator of the measure is potentially the sum of profit distributions from a number of accounts. A 6 month savings account may have a different rate of profit applied to a 5 year investment account. Further, the depositor base may be composed of differing proportions of each account. When such information is aggregated, the true rate of return on each deposit account type cannot be deciphered and only an aggregate rate can be deduced. This potentially implies that the measure does not capture the true distribution rate paid to depositors with accuracy.

To compensate for the limitations of each measure and the common limitation discussed, a combined measure of profit distribution management is also constructed. This measure multiplies the Asset Spread and the inverse of the Deposit Spread. The Deposit Spread is transformed into an absolute number. A high combined result implies a high degree of profit distribution management; where as a low combined result implies limited or no profit distribution management. This produces a variable that increases with the extent of profit distribution management. However, this measure relies on the quality of the two underlying measures and is therefore reflective of the accuracy of those measures.

## 4. Empirical results

### 4.1. Descriptive statistics

The first objective of this study is to provide systematic evidence of the phenomenon of profit distribution management as anecdotally evidenced by Sundararajan (2005) using a larger sample of Islamic banks. Sundararajan's (2005) results only demonstrate the correlation between net return on assets, return on equity, market deposit rates with returns to investment depositors through a series of simple scatterplots. His regression results do not provide a clear indication of the significance of each variable and hence cannot be relied upon for empirical verification. As a result, they cannot be used for comparative analysis of the results. Table 2 (Panels A–C) provide the descriptive statistics for the major dependent variables utilised in this study, for the aggregate sample, by country and by bank respectively. Table 2 (Panel A) reports standard descriptive statistics for depositor profit distribution management (DEP-PDM) and its variations. As is evident, the maximum Asset Spread recorded is 11.9% with a mean and standard deviation of 1.8% and 2.1%, respectively. For Deposit Spread, the mean is 89.697 and the standard deviation is 92.665. The equity spread maximum is 55% and the mean and standard deviation are similar at 11.4 and 11.2% respectively. The spreads reported seem to be reasonable since the Asset Spreads are quite small whereas the equity spreads are significant. This indicates that the banks provide higher returns to equity holders in compensation for the exposure to higher risk. The maximum asset and equity spreads reported may be driven by the hyper inflation in countries such as Turkey, where inflation drove up interest rates to extreme highs. Since the deposit rate is reported in inverse, its reasonableness is not immediately assessable.

Table 2 (Panel B) reports the country wise descriptive analysis for the two main variations of DEP-PDM, Asset Spread and Deposit

**Table 1**  
Variable definitions.

Variable	Definition	References	Predict sign	Variable unique/critical to the present study
<b>Dependent variable</b>				
DEP-PDM	1. Absolute spread between ROA (excluding depositors returns) and average return on investment account holders funds (ROIAH) (Asset Spread) 2. Absolute inverse of the spread between national average deposit rates and average depositors profit distribution (Deposit Spread) 3. Absolute spread between average depositors profit distribution rate and return on equity (Equity Spread) 4. Asset Spread $\times$ 1/Deposit Spread (Combined Spread)	Original		
<b>Independent variables</b>				
MUSLIM-POP	Level of religious commitment in a country proxied by proportion of total population that is Muslim	Farook, Hassan, and Lanis (2011)	–	Tests whether religious commitment reduces the extent of profit distribution management
FAMILIAR	Market familiarity with Islamic banks proxied by number of years first Islamic banking operation in country of particular bank OR ratio of Islamic assets (full fledged Islamic banks only) to total bank assets	Original	–	Tests whether familiarity of Islamic banking reduces the extent of profit distribution management
FD	Rescaled 0–10 index of the aggregate sum of (1) ratio of broad money to GDP, (2) ratio of the assets of deposit money banks to assets of central bank and deposit money banks, (3) reserve ratio, (4) ratio of credit to the private sector by deposit money banks to GDP.	Creane, Goyal, Mobarak, & Sab (2006)	–	Tests whether financial development decreases the level of profit distribution management
CONC	Banking market concentration proxied by <i>Herfindahl</i> concentration index measured by sum of the squares of the market shares of each individual bank	Tirole (1990)	–	Tests whether competition in the banking market increases profit distribution management
GDPGR	Growth of real per capita gross domestic product (GDP)	Cihak and Hesse (2010), Fonseca and Gonzalez (2005)	–	Cross-country variable to assess the economic pro-cyclical impacts on profit distribution management
LA/TA	Ratio of Islamic loan assets (short and long term) to total assets of each bank	Original	–	Tests whether the bank's exposure to Islamic loan assets increases the extent of profit distribution management, on the basis that fixed rate loan assets lead to higher returns mismatch
DEPOSIT	Ratio of depositors funding to total assets (depositors funding is defined by Profit Sharing depositors, unrestricted depositors funds, savings and investment accounts)	Original	+	Tests whether the reliance on depositors funding affects the extent of profit distribution management, on the basis that increased reliance will make the bank yield to profit expectations of depositors
RESERV	Dummy variable that equals 1 for banks that have discretionary reserves (profit equalisation reserve or investment risk reserve) and 0 otherwise	Original	+	Tests whether the existence of reserves affects the decision to manage profit distributions, on the assumption that it provides easier access to discretionary manipulation
BANK-AGE	Number of years of bank operation or Dummy variable that equals 1 for banks that have been established 4 years prior to year $t$ and 0 otherwise	Original	–	Tests whether Islamic banks early in their life are more susceptible to profit distribution management
COUNTRY	Country dummy with each country being assigned an ordinal value	Control	N/A	Control
TIME	Year dummy with each year having an ordinal value	Control	N/A	Control
$\nu$	Bank specific co-efficient to control for other unidentified bank specific effects	Control	N/A	Control

Spread. Tunisia has the highest average Asset Spread at 10.59% with an equally high Deposit Spread of 422.29. Kuwait has the higher average Deposit Spread of 483.81. Malaysia has the lowest Asset Spread, suggesting that the two Islamic banks in Malaysia provide economic returns, rather than managed returns. However, the average Deposit Spread is very high, conflicting with the average Asset Spread, which is much lower. Nevertheless, it is evident that this may be attributable to 1 or 2 years, since the median is lower at 120.44. Similar results are recorded for the United Arab Emirates (UAE), which have very low Asset Spreads, indicating low profit

distribution management. Yemen, Turkey and Pakistan all record a combination of low asset and Deposit Spread.

Panel C reports additional statistics on DEP-PDM and its underlying fundamentals. Column 1 of Panel 3 reports whether the individual countries' mean Asset Spreads are significantly different from the mean Asset Spread for the aggregate sample. The observations from each country are included in the aggregate mean calculation. Bahrain and Tunisia have Asset Spreads which are significantly different from the sample mean at the 1% confidence level, while Bangladesh, Indonesia and Yemen have Asset Spreads

**Table 2**

Descriptive statistics. Panel A: displays the descriptive statistics for the four variations of the dependent variable: depositor profit distribution management (DEP-PDM) with observations ranging from 243 to 247. Extreme outliers are excluded from the results. Panel B: shows the descriptive statistics by country for the two major variations of the dependent variable: depositor profit distribution management (DEP-PDM) Asset Spread and Deposit Spread. Panel C: provides certain specific country wise analysis of the main dependent variables DEP-PDM Asset Spread and Deposit Spread. Test (1) displays the significance (or otherwise) of difference in means between each country's mean Asset Spread and the mean Asset Spread for the aggregate sample. Test (2) displays the Pearson and Spearman correlation statistics between Asset Spread and Deposit Spread. Test (3) and (4) displays the correlation statistics between the underlying constructs of DEP-PDM, which are ROIAH and ROA for Asset Spread and ROIAH and Deposit Rates for Deposit Spread. Panel D: provides the bank wise descriptive statistics (mean and median) for the dependent variable DEP-PDM (Combined Spread and Asset Spread). Panel E: The following table displays the descriptive statistics for the main independent variables utilised in this study.

Variables	N	Min	Max	Mean	S.D.	Skewness	S.E. kurtosis	Kurtosis	S.E. kurtosis								
<i>Panel A: Descriptive analysis for dependent variable (DEP-PDM) variations</i>																	
DEP-PDM 1 (Asset Spread)	248	0.000	0.119	0.018	0.021	2.208	0.155	5.401	0.308								
DEP-PDM 2 (Deposit Spread)	239	1.431	468.904	89.697	92.665	1.737	0.157	2.972	0.314								
DEP-PDM 3 (Equity Spread)	246	0	0.558	0.114	0.112	1.516	0.155	2.366	0.309								
DEP-PDM 4 (Comb. Spread)	247	0.002	19.950	1.403	2.673	4.379	0.155	22.395	0.309								
Country	Asset Spread						Deposit Spread										
	N	Mean	Median	S.D.	Min	Max	N	Mean	Median	S.D.	Min	Max					
<i>Panel B: Country wise descriptive analysis for DEP-PDM</i>																	
Algeria	6	3.02%	2.94%	1.03%	1.95%	4.23%	6	115.61	85.15	113.87	12.00	338.93					
Bahrain	39	3.84%	1.98%	4.81%	0.12%	25.07%	38	65.52	39.23	61.67	5.03	234.57					
Bangladesh	41	1.46%	0.90%	1.68%	0.07%	7.76%	41	110.16	84.37	88.01	12.79	397.31					
Brunei	4	0.69%	0.67%	0.17%	0.51%	0.92%	4	112.64	104.93	74.58	46.24	194.47					
Egypt	16	1.65%	0.96%	2.54%	0.01%	10.26%	16	83.12	36.69	120.74	10.17	492.15					
Indonesia	14	3.40%	1.19%	6.13%	0.03%	23.06%	13	59.98	18.09	77.43	4.84	286.40					
Jordan	13	1.05%	0.91%	0.73%	0.40%	3.07%	13	95.52	63.80	110.05	21.04	428.08					
Kuwait	8	1.53%	1.46%	0.17%	1.42%	1.92%	8	483.81	266.67	725.80	64.78	2240.15					
Malaysia	16	0.57%	0.20%	0.96%	0.03%	3.83%	16	353.98	120.44	897.84	28.25	3700.39					
Pakistan	10	2.35%	1.86%	1.46%	1.10%	5.71%	10	33.28	23.12	23.35	18.32	90.58					
Qatar	15	1.83%	1.07%	2.01%	0.03%	6.34%	15	138.88	92.08	111.17	15.15	405.90					
Saudi Arabia	11	2.58%	2.79%	1.82%	0.06%	6.05%	11	148.85	68.97	182.77	14.87	645.48					
Senegal	4	1.71%	1.64%	1.43%	0.04%	3.53%	4	187.93	194.95	133.79	38.99	322.83					
Tunisia	11	10.59%	0.35%	13.70%	0.01%	29.67%	7	422.29	349.68	312.22	23.19	852.82					
Turkey	15	1.83%	1.66%	1.34%	0.08%	5.41%	15	4.25	2.85	3.63	1.43	11.76					
UAE	20	0.87%	0.69%	0.73%	0.08%	2.87%	21	381.11	98.75	949.74	24.39	4226.54					
Yemen	11	1.82%	1.42%	1.39%	0.69%	5.48%	11	15.79	15.38	5.40	7.94	29.22					
Total	254	0.024	0.011	0.043	0.000	0.297	249	148.75	64.78	403.42	1.43	4226.54					
Country	N	(1)				(2)				(3)				(4)			
		Asset Spread sig diff. from mean				Correlation Asset Spread–Deposit Spread				Correlation ROIAH–ROA				Correlation ROIAH–Deposit Rates			
		Levene's test				Pearson	Sig	Spearman	Sig	Pearson	Sig	Spearman	Sig	Pearson	Sig	Spearman	Sig
<i>Panel C: Country wise descriptive analysis for DEP-PDM<sup>a</sup></i>																	
Algeria	6	0.378	***	0.680	***	0.829	***	0.592	***	0.257	***	–0.082	***	–0.029	***		
Bahrain	39	0.001	***	–0.675	***	–0.824	***	0.869	***	0.880	***	0.152	***	0.221	***		
Bangladesh	41	0.056	**	–0.173	***	–0.079	***	0.552	***	0.650	***	0.401	**	0.289	*		
Brunei	4	0.205		–0.128		0.200		0.993	***	0.933	***	0.050	***	0.000			
Egypt	16	0.682		–0.234		–0.359		0.970	***	0.947	***	0.453	***	0.333			
Indonesia	14	0.018	**	–0.362		–0.313		–0.592	**	0.165	**	0.556	**	0.385			
Jordan	13	0.070	*	–0.326		–0.495	*	0.590	**	0.610	**	0.790	***	0.835		***	
Kuwait	8	0.074	*	0.912	***	0.524		0.979	***	0.810	**	0.963	***	0.976		***	
Malaysia	16	0.068	*	–0.115		–0.374		0.687	***	0.921	***	0.878	***	0.955		***	
Pakistan	10	0.369		–0.077		–0.006		0.590	*	0.745	**	0.371	***	0.468			
Qatar	15	0.753		0.316		0.111		0.368	**	0.547	**	0.952	**	0.958		***	
Saudi Arabia	11	0.607		–0.352		–0.382		0.622	*	0.587	*	0.588	*	0.523			
Senegal	4	0.507		–0.904	*	–1.000	***	0.770	***	0.200	***	N/A	N/A	N/A		N/A	
Tunisia	11	0.000	***	–0.570		–0.429		0.905	***	0.927	***	0.853	***	0.892		***	
Turkey	15	0.201	**	0.711	***	0.486	*	0.879	***	0.818	***	0.173	***	0.214		***	
UAE	20	0.033	**	–0.119		0.281		0.846	***	0.800	***	0.703	***	0.701		***	
Yemen	11	0.248		0.831	***	0.664	**	0.211	***	0.355	***	–0.090	***	–0.075		***	
Total	254			–0.135	**	–0.397	***	0.541	***	0.772	***	0.254	***	0.633		***	
Bank name	Country	Count	Combined Spread		Asset Spread												
			Mean	Median	Mean	Median											
<i>Panel D: Bank wise descriptive analysis for DEP-PDM</i>																	
Banque Al Baraka d'Algerie	Algeria	10	4.2	2.6	3.02%	2.94%											
Al Baraka Islamic Bank BSC Bahrain	Bahrain	14	0.8	0.6	2.44%	1.69%											
Bahrain Islamic Bank B.S.C.	Bahrain	13	0.7	0.4	0.54%	0.37%											
Kuwait Finance House Bahrain	Bahrain	4	1.4	0.8	13.12%	11.88%											
Shamil Bank of Bahrain EC	Bahrain	13	0.8	0.5	6.57%	7.37%											
Al-Arafah Islamic Bank	Bangladesh	9	1.1	0.8	0.77%	0.78%											
Islami Bank Bangladesh	Bangladesh	14	0.6	0.4	0.85%	0.90%											



**Table 2**  
(Continued)

Bank name	Country	Count	Combined Spread		Asset Spread	
			Mean	Median	Mean	Median
Oriental Bank Ltd	Bangladesh	8	3.0	1.3	2.60%	3.47%
Shahjalal Bank	Bangladesh	5	1.4	1.2	2.88%	1.75%
Social Investment BankLtd	Bangladesh	10	1.5	0.8	1.46%	0.94%
Islamic Bank of Brunei bhd.	Brunei	8	0.4	0.4	0.71%	0.71%
Islamic Development Bank of Brunei Bhd.	Brunei	5	1.2	1.2	0.67%	0.67%
Egyptian Saudi Finance Bank	Egypt	13	1.2	1.1	2.14%	0.63%
Faisal Islamic Bank of Egypt	Egypt	14	0.3	0.4	1.43%	1.06%
PT Bank Muamalat Indonesia	Indonesia	10	0.4	0.2	4.30%	1.13%
Bank Syariah Mandiri	Indonesia	6	0.7	0.6	1.76%	1.88%
Islamic International Arab Bank	Jordan	8	0.9	0.9	1.28%	1.04%
Jordan Islamic Bank for Fin and Inv	Jordan	14	0.6	0.3	0.78%	0.86%
Kuwait Finance House	Kuwait	13	3.5	3.6	1.53%	1.46%
Bank Muamalat Malaysia Berhad	Malaysia	7	0.3	0.3	0.45%	0.19%
Bank Islam Malaysia Berhad	Malaysia	11	1.5	0.3	0.65%	0.22%
Faysal Bank Ltd	Pakistan	6	0.8	0.4	2.19%	2.01%
Meezan Bank Limited	Pakistan	6	0.7	0.3	2.51%	1.60%
Qatar International Islamic Bank	Qatar	14	0.8	0.5	1.27%	0.77%
Qatar Islamic Bank SAQ	Qatar	11	3.3	1.5	2.46%	2.13%
Al Rajhi Bank	Saudi Arabia	6	1.8	1.6	3.55%	3.18%
Bank Al-Jazira	Saudi Arabia	6	4.0	0.9	1.42%	0.92%
Banque Islamique du Sénégal	Senegal	9	1.9	1.7	1.71%	1.64%
Beit Ettamouil Saoudi Tounsi – B.E.S.T.	Tunisia	12	1.0	1.0	4.52%	0.32%
Kuwait Turkish Participation Bank Inc	Turkey	9	0.1	0.0	2.31%	1.88%
Asya Katilim Bankasi AS	Turkey	8	0.1	0.0	1.29%	1.22%
Abu Dhabi Islamic Bank	UAE	8	2.4	0.4	0.51%	0.47%
Dubai Islamic Bank plc	UAE	13	0.8	0.6	0.99%	0.91%
Emirates Islamic Bank PJSC	UAE	3	1.4	1.4	0.53%	0.53%
Sharjah Islamic Bank	UAE	4	2.9	2.6	1.62%	1.36%
Islamic Bank of Yemen for Fin & Inv	Yemen	8	0.6	0.4	2.94%	2.43%
Tadhamon International Islamic Bank	Yemen	10	0.2	0.2	1.18%	1.01%

  

Independent variables	N	Minimum	Maximum	Mean	S.D.
<i>Panel E: Descriptive analysis for independent variables</i>					
MUSLIM POP	348	0.604	1	0.889	0.104
FAMILIAR	348	1	30	16.658	6.317
CONC	294	0.047	0.593	0.196	0.131
FD	330	1.600	10.378	4.368	1.803
GDPGR	341	-13.1	34	5.160	3.573
LA/TA	232	0.057	0.893	0.549	0.192
DEPOSIT	281	0.013	0.936	0.646	0.194
BANK AGE	342	0	30	12.325	7.781

\* Significant at the 0.10 level.

\*\* Significant at the 0.05 level.

\*\*\* Significant at the 0.01 level.

<sup>a</sup> Levene's test for equality of variances compares the Asset Spread Mean for specific countries to the aggregate sample Asset Spread Mean.

which are significantly different from the sample mean at the 5% level.

In Column 2 of Panel C the correlation between the Asset Spread and the Deposit Spread is compared. If banks are managing returns to investment depositors, a significantly positive correlation would be found between Asset Spread and Deposit Spread. Contrary to such intuition, Bahrain has a significantly negative correlation between Asset Spread and Deposit Spread, which lends a view that banks manage away from deposit returns, while simultaneously managing towards asset returns, contrary to the basic premise of this study. The aggregate sample results are similar with a significantly negative correlation between Asset Spread and Deposit Spread. However, Bahrain, Kuwait, Turkey and Yemen all demonstrate a positive significant correlation between Asset Spreads and Deposit Spreads indicating profit distribution management away from fundamental asset returns towards deposit rates.

To further assess the robustness of the DEP-PDM measures, the correlation between return on investment account holders funds (ROIAH) and total return on assets (ROA) along with correlation between the ROIAH and deposit rates are calculated. These

results would verify the conclusions of Sundararajan (2005), whose results demonstrate that the Islamic banks return on investment account holders funds generally have stronger correlation with market deposit rates than with return on assets. The ROIAH and ROA provide the fundamental observations required to calculate Asset Spread, while the ROIAH and Deposit Rates provide the fundamental observations required to calculate Deposit Spread. While most countries display a strong correlation between ROIAH and ROA, it is the correlation between ROIAH and Deposit Rates which determines whether the banks are systematically managing profit distributions. This is particularly true when countries with high correlation have weaker ROA-ROIAH correlations. Islamic Banks in Jordan, Kuwait, Malaysia and Qatar demonstrate stronger ROIAH-Deposit Rates correlations relative to ROA-ROIAH correlations, indicating that there some evidence to suggest that banks from particular countries are systematically managing profit distributions. These results also clarify Sundararajan's finding that Islamic banks investment deposit returns demonstrate a strong correlation with market deposit rates than with return on assets. While his results extend across his full sample, the results reported here only apply to certain countries. In contrast to his finding utilising 14 banks

in 8 countries, the overall correlations tend to suggest that Islamic banks have a stronger correlation with return on assets than with market deposit rates.

Panel D provides the DEP-PDM Asset Spread and Combined Spread for each bank in the sample. Panel E displays the descriptive statistics for the independent variables. The average Muslim population (MUSLIM-POP) in the sample countries is approximately 88.9%, with a minimum of 60.4%. There are countries that have had Islamic banks for up to 30 years, with a mean of approximately 16.6 years, as indicated by the variable FAMILIAR (ISYR). Another variation of the FAMILIAR measurement demonstrates that Islamic Financial Assets in the host countries range from less than 1% to approximately 75%. The variation in the Islamic loan to assets ratio as a percentage of total assets ranges from 5.7% to 89% (mean: 54%). The average depositor funding for all observations are 65% with a minimum of 13% and a maximum of 93%.

#### 4.2. Regression analysis

The second objective of this study is to ascertain the factors that are associated with variation in the extent to which depositor profit distributions are managed away from asset returns and towards market deposit rates.

Table 3 provides the regression statistics utilising four variations of the dependent variable: DEP-PDM, excluding extreme outliers. Missing values for each variable were excluded pair-wise, thereby maximising the sample size. A total of 206 observations were available for the tests. All the tests were checked for significant collinearity by reviewing both the variance inflation factor for each variable and the eigenvalues.

The Asset Spread tests are considered to be the most robust model, since it has the least potential to suffer from estimation or measurement error. The other measures: Deposit Spread, equity spread and Combined Spread are likely to suffer from measurement/estimation error as a result of their underlying constructs. Further, the Asset Spread measures the variations in accounting numbers (the difference between rate of return on assets and depositor profit distribution) whereas Deposit Spread relies on market deposit rate averages, which is likely to see substantial noise within a year. The equity spread on the other hand utilises return on equity, which is considered to be much more volatile, as evidenced in the descriptive results. Hence, the analysis is principally focused on the DEP-PDM Asset Spread results.

The adjusted *R*-square for the regression models range from 0.250 in the Asset Spread model to 0.085 in the Combined Spread model. The strength of the Asset Spread measure as found in these models was the main criterion for selecting this as the key proxy variable in later tests.

$H_1$  predicts that there is a negative relationship between DEP-PDM and MUSLIM-POP, based on the intuition that higher religiosity should result in less price sensitivity. Islamic banks in relatively Muslim dominated populations (a proxy for religiosity) should be less concerned with price movements and therefore the need to manage profit distributions to depositors will be less. Contrary to this hypothesis, the variable MUSLIM-POP has a highly significantly positive relationship with DEP-PDM. This essentially indicates that Islamic banks that operate in relatively more religious environments have a greater propensity to manage depositor profits than those that operate in less religious environments. There could be two potential explanations for this. First, the proxy for religiosity is likely to be mis-specified. Religiosity in a particularly country may not necessarily be linked to the percentage of Muslims. Therefore, this variable may be proxying for an omitted correlated variable not considered in this study. However, in the absence of any objective cross-country variable that measures religiosity, this

is the closest available indicator. Second, there may be a valid rationale for a positive relationship that is contrary to the relationship predicted in this study. Islamic banks in predominantly Muslim countries may have to compete with other Islamic banks as a result of greater Islamic financial services penetration and therefore have greater need to manage profit distributions.

As predicted, there is a negative association between FAMILIAR and DEP-PDM (Asset Spread). According to  $H_2$ , there is an inverse relationship between the number of years of Islamic banking operation in the host country and the extent of profit distribution management. This is based on the intuition that Islamic bank managers will have less need to manage profit distributions as Islamic bank customers gain more understanding and familiarity with Islamic bank operations. The results concur with such a prediction at the 5% confidence level.

The third hypothesis ( $H_3$ ) relates the propensity to manage profit distributions to the extent of financial development. It is predicted that increased financial development will lead to a decreased need to manage profit distributions, since Islamic banks will be able to play a more diversified role within the financial system and therefore not need to manage profit distributions towards deposit rates of return. Contrary to this prediction, the coefficient for financial development is significantly positive at the 5% level. However, the magnitude of the relationship is very small at approximately 0.1%. This result could potentially be attributed to the specification issues related to the dependent variable. In particular, it could be argued that banks in relatively more developed financial systems derive a larger proportion of their income from conventional financing, such as investment banking, fees and commissions and trading. The bulk of this income is generally not shared with investor depositors since Islamic banks usually invest the depositors' funds into the low risk pool of financing assets. As a result, banks in financially developed economies are more likely to have a significant spread between total asset returns (which includes all these forms of non-shared income) and distributions paid to depositors. Hence, the variable DEP-PDM (Asset Spread) will be more accentuated for the banks in these financially developed economies.

The fourth hypothesis ( $H_4$ ) predicts that the propensity to manage profit distributions will be inversely related to the level of concentration in a particular country's banking market, on the basis that concentrated markets provide more leeway for Islamic banks to distribute performance based returns. Consistent with this prediction, a significant negative relationship is found between level of concentration (CONC) and profit distribution management (DEP-PDM).

The fifth hypothesis ( $H_5$ ) predicts that the propensity to manage profit distributions will be inversely related to the economic growth of a country, since Islamic banks will be under more pressure to manage profits in recessionary years as a result of greater write-downs of asset portfolios and higher loan loss provisioning. No significant result is found between DEP-PDM and GDPGR.<sup>6</sup>

The sixth hypothesis ( $H_6$ ) predicts that the proportion of Islamic loan assets as a percentage of total assets will be directly related to the extent of profit distribution by the Islamic bank, with the loan/assets ratio representing the exposure to profit rate risk. Consistent with this prediction, the variable LA/TA is positively related to profit distribution management (DEP-PDM) at a confidence level of 5%.

<sup>6</sup> In separate sensitivity tests where the outliers were retained, a significantly negative relationship is found between DEP-PDM and GDPGR, consistent with the prediction.

**Table 3**  
Main regression results. The regression results for the determinants of DEP-PDM. The tests exclude extreme outliers and missing values pair-wise. Table 2 provides the variable definitions. The coefficients are based on the following equation:  $DEP-PDM_{i,t} = \pi_1 MUSLIM-POP_{k,t} + \pi_2 FAMILIAR_{k,t} + \pi_3 FD_{k,t} + \pi_4 CONC_{k,t} + \pi_5 GDPGR_{k,t} + \pi_6 LA/TA_{i,t} + \pi_7 DEPOSIT_{i,t} + \pi_8 RESERV_{i,t} + \pi_9 BANK-AGE + \pi_{10} COUNTRY_k + \pi_{11} T_t + v_i + \varepsilon_{i,t}$ .

Independent variables	Predict sign	Dependent variable variations											
		Asset Spread			Deposit Spread			Equity Spread			Combined Spread		
		Coef.	t-Stat	p-Value	Coef.	t-Stat	p-Value	Coef.	t-Stat	p-Value	Coef.	t-Stat	p-Value
MUSLIM-POP	–	0.105	3.923	0.000***	–416.409	–3.426	0.001***	–0.483	–3.175	0.002***	–9.352	–2.469	0.014**
FAMILIAR	–	–0.001	–1.995	0.047**	3.668	2.712	0.007***	0.001	0.441	0.660	0.080	1.909	0.058*
FD	–	0.004	3.328	0.001***	–7.606	–1.307	0.193	–0.027	–3.733	0.000***	–0.262	–1.447	0.150
CONC	–	–0.030	–2.361	0.019**	41.242	0.721	0.472	0.003	0.047	0.963	0.414	0.232	0.817
GDPGR	–	0.000	–0.306	0.760	1.025	0.601	0.549	0.004	1.978	0.049	0.022	0.423	0.673
LA/TA	+	0.016	2.040	0.043**	–89.038	–2.565	0.011**	0.082	1.888	0.060*	1.850	1.711	0.089*
DEPOSIT	+	–0.030	–3.420	0.001***	–18.693	–0.467	0.641	–0.039	–0.787	0.432	–4.235	–3.397	0.001***
RESERV	+	0.011	3.420	0.001***	–73.741	–4.955	0.000***	–0.074	–3.965	0.000***	–1.202	–2.592	0.010**
BANK-AGE	–	–0.001	–2.935	0.004***	3.221	3.229	0.001***	0.001	0.924	0.356	0.034	1.084	0.280
COUNTRY		0.001	0.820	0.413	4.381	1.069	0.286	0.003	0.613	0.540	0.098	0.771	0.442
T		0.000	–0.605	0.546***	1.424	0.703	0.483	0.003	1.169	0.244	0.085	1.343	0.181
v		–0.001	–2.192	0.030**	–1.229	–0.777	0.438	–0.001	–0.726	0.469	–0.034	–0.697	0.486
Constant		0.485	0.549	0.584	–2391.007	–0.593	0.554	–5.302	–1.051	0.294	–158.735	–1.264	0.208
Observations			206			206			206			206	
R-Squared			0.293			0.246			0.213			0.138	
Adjusted R-square			0.250			0.198			0.164			0.085	
S.E.			0.018			0.057			0.102			2.558	
F value			6.744			5.167			4.351			2.585	
Sig. F (p-value)			0.000			0.000			0.000			0.003	

Missing values are excluded pair-wise.

\* Significant at the 0.10 level.

\*\* Significant at the 0.05 level.

\*\*\* Significant at the 0.01 level.

**Table 4**  
Alternative independent variable definitions (dependent variable: DEP-PDM Asset Spread).

Estimate no.		(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)			
Alternative definitions		ORIGINAL		FAMILIAR		FD		FD		FD		CONC		LA/TA		LA/TA			
Independent variables	Predict sign	Coef. (t-stat)	Sig	Coef. (t-stat)	Sig	Coef. (t-stat)	Sig	Coef. (t-stat)	Sig	Coef. (t-stat)	Sig	Coef. (t-stat)	Sig	Coef. (t-stat)	Sig	Coef. (t-stat)	Sig		
MUSLIM-POP	–	0.105 (3.923)	***	0.099 (3.747)	***	0.038 (2.199)	**	0.035 (2.014)	**	0.041 (2.329)	**	0.086 (3.234)	***	0.114 (4.492)	***	0.111 (4.387)	***	0.113 (4.466)	***
FAMILIAR	–	–0.000 (–1.995)	**	0.017 (1.447)		0.000 (–1.146)		0.000 (–0.917)		0.000 (–1.212)		–0.001 (–3.318)	***	–0.001 (–2.109)	**	–0.001 (–2.086)	**	–0.001 (–2.112)	**
FD	–	0.004 (3.328)	***	0.003 (2.423)	**	0.005 (1.117)		–0.004 (–0.441)		–0.003 (–1.338)		0.004 (2.898)	***	0.005 (3.721)	***	0.005 (3.606)	***	0.005 (3.716)	***
CONC	–	–0.03 (–2.361)	**	–0.033 (–2.413)	**	–0.009 (–0.834)		–0.010 (–0.832)		–0.013 (–1.121)		–0.038 (–2.286)	**	–0.034 (–2.791)	***	–0.033 (–2.726)	***	–0.034 (–2.771)	***
GDPGR	–	0.000 (–0.306)		0.000 (–0.627)		0.000 (–0.382)		0.000 (–0.508)		0.000 (–0.515)		0.000 (–0.203)		0.000 (–0.148)		0.000 (–0.128)		0.000 (–0.178)	
LA/TA	+	0.016 (2.040)	**	0.015 (1.894)	*	0.019 (2.458)	**	0.017 (2.167)	**	0.018 (2.258)	**	0.015 (1.971)	*	–0.003 (–0.732)		0.003 (0.348)		0.001 (0.549)	
DEPOSIT	+	–0.030 (–3.420)	***	–0.030 (–3.364)	***	–0.037 (–4.175)	**	–0.038 (–4.259)	***	–0.038 (–4.327)	***	–0.038 (–4.204)	***	–0.024 (–2.929)	***	–0.026 (–3.080)	***	–0.026 (–3.175)	***
RESERV	+	0.011 (3.420)	***	0.010 (3.192)	***	0.007 (2.200)	**	0.007 (2.328)	**	0.008 (2.476)	**	0.011 (3.160)	***	0.010 (3.243)	***	0.010 (3.196)	***	0.010 (3.270)	***
BANK-AGE	+	–0.001 (–2.935)	***	–0.001 (–3.694)	***	–0.000 (–2.161)	**	0.000 (–1.935)	*	0.000 (–2.158)	**	0.003 (0.886)		–0.001 (–2.741)	***	–0.001 (–2.958)	***	–0.001 (–2.975)	***
COUNTRY		0.001 (0.820)		0.001 (1.226)		–0.001 (–0.816)		0.000 (–0.200)		0.000 (–0.037)		0.000 (0.490)		0.001 (1.071)		0.001 (1.085)		0.001 (1.061)	
T		0.000 (–0.605)	***	–0.001 (–1.518)		0.000 (0.403)		0.000 (0.197)		0.000 (0.455)		0.000 (–0.024)		–0.001 (–1.389)		0.000 (–1.137)		–0.001 (–1.240)	
v		–0.001 (–2.192)	**	–0.001 (–2.429)	**	0.000 (–0.288)		0.000 (–0.872)		0.000 (–1.189)		–0.001 (–1.892)	*	–0.001 (–2.361)	**	–0.001 (–2.366)	**	–0.001 (–2.377)	**
Constant		0.485 (0.549)		1.331 (1.473)		–0.346 (–0.386)		–0.154 (–0.174)		–0.390 (–0.434)		–0.009 (–0.010)		1.083 (1.328)		0.917 (1.076)		0.959 (1.178)	
Observations				206		207		207		207		207		207		229		230	
R-squared				0.287		0.258		0.254		0.260		0.269		0.280		0.279		0.279	

Missing values are excluded pair-wise.

\* Significant at the 0.10 level.

\*\* Significant at the 0.05 level.

\*\*\* Significant at the 0.01 level.

**Table 5**  
Regression analysis: split sample tests (dependent variable: DEP-PDM Asset Spread).

Estimate no. <i>Sample split</i>	Independent variables	Predict sign	ORIGINAL ABS VALUE		(1) POSITIVE		(2) NEGATIVE		(3) RAW VALUE	
			Coef. (t-stat)	Sig	Coef. (t-stat)	Sig	Coef. (t-stat)	Sig	Coef. (t-stat)	Sig
	MUSLIM-POP	–	0.105 (3.923)	***	0.157 (3.195)	***	0.084 (2.175)	*	0.019 (0.508)	
	FAMILIAR	–	–0.001 (–1.995)	**	–0.001 (–1.425)		0.000 (–0.081)		0.000 (0.275)	
	FD	–	0.004 (3.328)	***	0.007 (2.784)	***	0.004 (1.938)	*	0.001 (0.727)	
	CONC	–	–0.030 (–2.361)	**	–0.058 (–2.443)	**	–0.037 (–1.768)	*	–0.008 (–0.437)	
	GDPGR	–	0.000 (–0.306)		0.000 (0.343)		0.000 (0.039)		0.001 (1.134)	
	LA/TA	+	0.016 (2.040)	**	0.018 (1.277)		0.001 (0.090)		0.023 (2.121)	**
	DEPOSIT	+	–0.030 (–3.420)	***	–0.049 (–2.791)	***	–0.033 (–2.202)	**	0.025 (2.037)	**
	RESERV	+	0.011 (3.420)	***	0.024 (3.978)	***	0.002 (0.505)		–0.001 (–0.285)	
	BANK-AGE	–	–0.001 (–2.935)	***	–0.001 (–2.077)	**	–0.001 (–2.197)	**	0.000 (0.829)	
	COUNTRY		0.001 (0.820)		0.003 (1.914)	*	–0.001 (–0.474)		0.005 (3.951)	***
	T		0.000 (–0.605)	***	–0.002 (–1.641)		–0.001 (–0.771)		–0.001 (–0.822)	
	$\nu$		–0.001 (–2.192)	**	–0.002 (–2.830)	***	0.000 (–0.181)		–0.002 (–3.457)	***
	Constant		0.485 (0.549)		2.994 (1.593)		1.274 (0.757)		0.954 (0.769)	
	Observations		206		75		121		207	
	R-squared		0.293		0.426		0.287		0.187	

Missing values are excluded pair-wise.

\* Significant at the 0.10 level.

\*\* Significant at the 0.05 level.

\*\*\* Significant at the 0.01 level.

The seventh hypothesis ( $H_7$ ) predicts that there is a positive relationship between the extent of profit distribution management and depositors' funds as a percentage of total assets (DEPOSIT), which represents the extent of reliance on depositors' funds. Contrary to this hypothesis, a significant negative relationship (1% confidence level) exists between DEPOSIT and DEP-PDM. One explanation for this could be that Islamic banks are subject to greater scrutiny over their accounts as they get larger or adopt a larger depositor base. This inhibits the Islamic bank managers' ability to manage profit distributions without being explicitly detected.

Consistent with the eighth hypothesis ( $H_8$ ), a significant positive relationship (1% confidence level) exists between the magnitude of profit distribution management and the existence of discretionary reserves. This confirms the intuition that the ability to manage profit distributions is increased with the creation of dedicated discretionary reserves to that effect.

Also, consistent with the ninth hypothesis ( $H_9$ ), a significant negative relationship is found between the magnitude of profit distribution management and the operational years of a bank. This confirms the intuition that banks in their earlier years are more inclined to manage profit distributions as a result of lower operating revenues and sub-optimal financing in those years.

In summary, some significant results were found to support the hypotheses when utilising Asset Spread as the dependent variable. However, the effects of financial market development (FD) and reliance on depositor funding (DEPOSIT) on profit distribution management (DEP-PDM) Asset Spread were contrary to the predictions made. The same tests were carried out with alternative definitions of the dependent variable, including the Deposit

Spread, equity spread and Combined Spread. However, owing to poor specification of the underlying constructs as discussed earlier, such tests yield inconclusive and insignificant results. Hence, the evidence provides some support for a number of the hypotheses, but only when one proxy for profit distribution management is employed: Asset Spread.

#### 4.3. Sensitivity analyses

Further tests are conducted utilising alternative definitions of the independent variables, where available (Table 4). In test 1, the definition of the variable FAMILIAR is changed to include Islamic assets as a percentage of total assets in the local economy. It yields a positive, but insignificant coefficient. Alternative definitions of financial development (FD) are also considered in tests 2–4, including stock market capitalisation (SMKC), total value of stocks traded (SMTV) and stock market turnover ratio (SMTO) respectively. These measures yield inconclusive results, contrary to the original financial development measure. An alternative measurement of market concentration (CONC) is also utilised in test 5. Instead of the original year specific market concentration values, an average market concentration value is taken over the 4 years (2002–2005). The negative relationship between concentration and profit distribution management still holds. Alternative definitions of LA/TA are utilised in tests 6–8. The first LA/TA test replaces Islamic loan assets with the Bankscope definition of loan assets. This is considered to be a weaker representation of loan assets, since Bankscope does not consider the specific types of debt financing that are characteristic of Islamic banks. The tests yield no significant relationship. The underlying rationale of the variable LA/TA is that banks with more loan assets will tend to have greater returns

mismatches when market deposit rates change. The variable Islamic loan assets to total assets is replaced by interest revenue/total revenue and net interest income/total income in test 7 and 8. The tests do not yield any significant coefficients, but retain their direction.

Tests are also conducted on split samples and the raw value of DEP-PDM Asset Spread (Table 5). The original test considers the absolute value of the Asset Spread, since the objective of the study is to measure the determinants of variation in spread, and not necessarily positive and negative variations. Hence, the positive and negative spreads might provide differing relationships between Asset Spread and its proposed determinants. The first test (test 1) considers only the positive DEP-PDM Asset Spreads and yields a relatively higher R-squared of 0.426 (original test: 0.293). The results remain largely similar, with the variables FAMILIAR and LA/TA dropping in significance but retaining their directional relationship with Asset Spread. The second test (test 2) considers only negative Asset Spreads and yields an R-squared of 0.287. Most of the variables drop in significance and the variables FAMILIAR, LA/TA, RESERV lose complete significance. This demonstrates that the model has more predictive power for positive Asset Spread (where the return on assets is higher than the profit distribution rates) compared to negative Asset Spread. The final test (test 3) considers the raw Asset Spread as the dependent variable. This model loses the majority of significant relationships with the exception of LA/TA and DEPOSIT, which retains their significance. The directional relation between the variable DEPOSIT and DEP-PDM Asset Spread changes to positive as predicted in the model. However, these results are likely to have resulted from noise generated in the calculation of the raw dependent variable.

Table 4 employs alternative definitions of some of the main independent variables. A detailed explanation of the variations in each test (numbered 1–8) are given below, while Table 2 provides the variable definitions for the original study. The dependent variable in all the tests are DEP-PDM (Asset Spread).

The coefficients are based on the following equation:

$$\begin{aligned} \text{DEP-PDM}_{i,t} = & \pi_1 \text{MUSLIM-POP}_{k,t} + \pi_2 \text{FAMILIAR}_{k,t} + \pi_3 \text{FD}_{k,t} \\ & + \pi_4 \text{CONC}_{k,t} + \pi_5 \text{GDPGR}_{k,t} + \pi_6 \text{LA/TA}_{i,t} \\ & + \pi_7 \text{DEPOSIT}_{i,t} + \pi_8 \text{RESERV}_{i,t} + \pi_9 \text{BANK-AGE} \\ & + \pi_{10} \text{COUNTRY}_k + \pi_{11} T_t + \nu_i + \varepsilon_{i,t} \end{aligned}$$

Independent variable definitions		
Test no.	Alternative variable	Definition
1	FAMILIAR	Number of years of Islamic banking operation in the country in which the Islamic bank is headquartered.
2	FD	Stock market capitalisation of the main stock market in which the Islamic bank is located (Ito 2007)
3	FD	Total value of stocks traded (Ito 2007)
4	FD	Stock market turnover (Ito 2007)
5	CONC	Average <i>Herfindahl</i> concentration index for the years 2002–2005 for the country in which the Islamic bank is headquartered.
6	LA/TA	Bankscope definition of loan assets/total assets
7	LA/TA	Interest revenue over total revenue
8	LA/TA	Interest Income over total income

Table 5 provides the results of split samples with the dependent variable Asset Spread (total average return on assets – average return to IAH) being split into positive and negative values and provided in its raw form. The first column indicates the absolute

Asset Spread, the second column (test 1) provides the positive Asset Spreads, the third column (test 2) the negative Asset Spreads and the fourth column (test 3) both the raw positive and negative Asset Spread. The dependent variable in all the tests are DEP-PDM (Asset Spread).

The coefficients are based on the following equation:

$$\begin{aligned} \text{DEP-PDM}_{i,t} = & \pi_1 \text{MUSLIM-POP}_{k,t} + \pi_2 \text{FAMILIAR}_{k,t} + \pi_3 \text{FD}_{k,t} \\ & + \pi_4 \text{CONC}_{k,t} + \pi_5 \text{GDPGR}_{k,t} + \pi_6 \text{LA/TA}_{i,t} \\ & + \pi_7 \text{DEPOSIT}_{i,t} + \pi_8 \text{RESERV}_{i,t} + \pi_9 \text{BANK-AGE} \\ & + \pi_{10} \text{COUNTRY}_k + \pi_{11} T_t + \nu_i + \varepsilon_{i,t} \end{aligned}$$

### 5. Conclusion

This study was an attempt to understand the phenomenon of profit distribution management, a discretionary activity conducted by Islamic banks which has no direct parallels for conventional banks. As a result of the profit sharing relationship with their investment depositors, Islamic banks are able to manage the extent of profits shared with their depositors based on market circumstances. The evidence gathered in this study suggests that Islamic banks may potentially be managing profit distributions. If the Asset Spread measures are considered to be the most robust, Islamic banks in Brunei, Malaysia and the United Arab Emirates demonstrating consistently lower average profit distribution management (based on Asset Spreads). In contrast, Islamic banks in Bahrain, Indonesia, Pakistan and Saudi Arabia have consistently higher average profit distribution management (based on Asset Spreads). However, if the correlation between the Asset Spread and Deposit Spread are considered, then Islamic banks in Bahrain, Kuwait, Turkey and Yemen can be considered to systematically and consistently manage profit distributions towards deposit rates and away from asset rates. There is no consistent evidence for the other countries to suggest that the Islamic banks there manage profit distributions.

The most significant factors associated with profit distribution management (DEP-PDM Asset Spread) were religiosity (MUSLIM-POP), financial development (FD), market concentration (CONC), depositor reliance (DEPOSIT), and age of the Islamic bank (AGE). There is also limited support for the familiarity (FAMILIAR), asset composition (LA/TA) and discretionary reserves (RESERV) factors. While all of these factors had a definite and significant relationship with profit distribution management, the religiosity, financial development and depositor reliance factors had directional relationships that were contrary to the predictions made.

These results have potential policy implications for regulators of Islamic banks and financial institutions, who may want to develop an indigenous Islamic financial system, independent of the influence of benchmark deposit rates. Since the extent of profit distribution management is directly related to the existence of discretionary reserves, the allowance given by regulators to establish such reserves might be counter-productive and may actually induce such profit distribution management activities where it did not exist before. However, such conclusions have to be tempered by the fact that the results do not indicate causality *per se*, and therefore reserves may have been an outcome of increased profit distribution management and not the other way around. The fact that depositor profit distribution management is inversely associated with market familiarity and depositor funding reliance suggests that regulators should encourage the dissemination of Islamic finance knowledge to the wider public and increase the

investment depositor funding base of Islamic banks, to ensure lower levels of profit distribution management.

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