

Do Malaysian Islamic Banks Manage Earnings Through Profit Equalisation Reserve?

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Abstract: The Islamic banking system has evolved globally at a rapid rate. The growing significance of the Islamic banking industry requires the development of an effective regulatory framework to provide an enabling environment to support the development of the industry. Malaysian Islamic banks have introduced another new mechanism for distributing profit for *mudharabah* investment. Known as the Profit Equalisation Reserve (PER), the PER was introduced to stabilise the rate of return (RoR) paid to the depositors. This practice is carried out for the purpose of income smoothing. The paper seeks to examine the provisioning behaviour of PER which reflects earnings and capital management of Islamic banks. It first focuses on detecting income smoothing practices, then it seeks to test whether PER is used for capital management purposes. Therefore, a simple conceptual framework of PER and how the reserve should vary over time will be explained. This study used a sample of two full-fledged Islamic banks and thirteen Islamic banking windows and covers the period from 2003 to 2010. The study shows that total capital before provision (TCABP) significantly affects PER and supports the hypothesis of capital management. The findings from this study will benefit the growing Malaysian Islamic finance industry which requires the development of an effective regulatory framework on best practices such as earning and capital management to provide the enabling environment to support the expansion of the industry. In addition, the findings are likely to catalyse innovative improvement towards strengthening the current Rate of Return Framework issued by Bank Negara Malaysia (BNM) and Islamic Financial Services Board (IFSB).

Keywords: Earnings management, capital management, Islamic banks, profit equalisation reserve, regulatory, panel data

JEL classification: G21, G28, G31, G32

1. Introduction

Globally, the Islamic banking system has evolved at a rapid rate. The rapidly growing Islamic banking industry requires the development of an effective regulatory framework to provide the enabling environment to support further development of the industry. Malaysian Islamic banks have introduced another new mechanism, known as Profit Equalisation Reserve (PER), to distribute profits of the *mudharabah* investment. Islamic Financial Service Board (IFSB) (2010) defines PER as the amount appropriated by the institution offering Islamic financial services out of the *mudharabah* income, before allocating the *mudharib's* share.

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This appropriation is necessary in order to maintain a certain level of return on investment for investment account holders (IAH) (depositors) and to increase owner's equity.

The Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI) requires the recognition of the PER and Investment Risk Reserves (IRR) as stated in financial accounting standard (FAS) 11. The purpose of PER is to stabilise and maintain the rate of return (RoR) paid to the depositors, smooth the returns and make it compatible to the market. This allows Islamic Banking Institutions (IBIs) to avoid Displaced Commercial Risk (DCR), that is, a massive withdrawal of funds or bank run. Bank Negara Malaysia (BNM) or the Central Bank of Malaysia has required all the Malaysian Islamic banks to implement the PER mechanism to mitigate the fluctuation of the RoR arising from the flux of income, provisioning and total deposits and to ensure that the RoR of the Islamic banks remain competitive and stable (BNM 2004). The monthly RoR recorded by Islamic banks throughout a year is inconsistent with real banking business because Islamic banking tends to generate a huge profit at the end of the financial year (Shaharuddin 2010). The PER allows the Islamic banks to save up to 15 per cent monthly of the total gross profits in a separate provision before distribution during the month and ensure that maximum accumulation of PER does not exceed 30 per cent of shareholders' fund.

Banks use PER as a reserve against current year incomes resulting in a reduction of reported income when they have reason to believe that the depositors will gain a lower return on their deposits. As such, PER is typically one of the quantitative indicators of earnings deterioration. From the bank's point of view, earnings management is a strategy used by the management to deliberately manipulate the bank's earnings so that the figures match a pre-determined target (Shahimi 2011). This practice is carried out for the purpose of income smoothing. Income smoothing refers to managers' financial reporting decisions and structuring of transactions (Misman and Ahmad 2011). The bank manager's ability to steadily manage the volatility of earnings may create confidence in the market (Ismail and Shaharuddin 2003). The benefit of income smoothing as stated in their study is that it could reduce the volatility of bank profits and possibly lead to the bank reducing its capital. Furthermore, earnings are less affected by the fluctuations in credit losses over the business cycle with income smoothing. This is achieved by taking positive values during a cyclical expansion and negative values during a downturn when the provision compensates for the differences between actual and average credit losses.

Hence, rather than having years of exceptionally good or bad earnings, banks will try to keep the figures relatively stable by adding and removing cash from reserve accounts. Fluctuations in bank profits and capital are attributed to this practice. However, managing the earnings casts doubts over the reliability of figures presented in financial reports. Manipulation of earnings disables investors from predicting banks' future cash flow precisely based on the current financial information. Therefore, understanding the determinants of PER is important in assessing financial stability along with the depositors' confidence (Ismail and Shahimi 2006).

Despite the existence of extensive literature on earnings management and income smoothing practices devoted to the banking industry, only a few researchers have investigated the income smoothing hypothesis in the context of IBIs through PER although they offer a unique environment due to the particular framework within which they operate. Prior studies such as those of Misman and Ahmad (2011), Taktak *et al.* (2010), Zoubi and Al-

Khazali (2007), Ismail and Tan (2002), Ahmed *et al.* (1999) looked into loan loss provision (LLP) as an earnings management and capital management tool. No studies have been done on the testing of earnings management via PER except for a preliminary study by Shahimi (2011), Shahimi and Ismail (2008) and Ismail and Shahimi (2006). Thus, it would be an interesting and important exercise to examine and explore the volatility of the earnings management phenomenon via the practice of income smoothing behaviour, the findings of which may create confidence in the market. The aim of this study is to examine the extent to which income smoothing through PER, IRR and LLP is widespread amongst Malaysian IBIs.

In addition, the introduction of PER and IRR disclosure may alter the way bank managers manage their portfolio and earnings. Thus, it motivate us to examine the provisioning behaviour of PER for Malaysian Islamic banks. Furthermore, this research is in line with the requirement of BNM for the Islamic banking institutions to prepare and adopt the capital adequacy standard. The reason for the implementation is that the adaptation of the new capital adequacy standard considers the risk-weighted assets funded by PER to be deducted from total risk-weighted assets. This may create room for bank managers to use PER almost generously to manage capital and earnings. A transparent disclosure of PER and IRR would reflect the capability of IBIs to manage the level of profit distribution to the *mudharabah* depositors, and mitigate the exposure of DCR. Therefore, a comprehensive theoretical framework of earnings management which incorporates PER, IRR and LLP is very crucial for Islamic banking literature

2. Characteristics of Islamic Banks

2.1 Shari'ah Principles

Islamic banks are governed by *shariah* principles which make their functioning different from conventional banks (Taktak *et al.* 2010). *Shari'ah* prohibits Islamic banks from paying or receiving interest (*riba*) to/from their financial and commercial transactions. The prohibition of interest makes the investment approach adopted by Islamic banks unique since they operate on profit sharing arrangements or *the mudharabah* principle. In a *mudharabah* contract, the depositor assumes the role of capital provider while the bank plays the role of the entrepreneur. The depositors' funds are utilised for financing and investment activities, and the profits generated from these activities are shared between the depositors and the bank, based on the pre-agreed profit sharing ratio (Figure 1). In the event of a loss, it will be borne by the IAH. However, any loss due to misconduct and negligence (operational risk) should be borne by the banks (Archer *et al.* 2010). By investing their funds jointly with their customers, Islamic banks become partners and will have to share the risk with both depositors and entrepreneurs. This requirement of risk sharing makes return on equity of Islamic banks higher than for conventional banks.

Profit and loss sharing principle also gives Islamic banks the ability to absorb shocks on assets' returns. Based on cross-country data, Sundararajan (2005) and Archer *et al.* (2010) reveal considerable smoothing of returns paid to profit sharing investment accounts (PSIA). Such smoothing effect makes Islamic banks' returns less volatile than those of conventional banks. In other words, this principle provides insurance against cyclicality in returns (Hassoune 2002). The fluctuations in income from investment and financing as well as provisioning and total deposits may produce an uncompetitive RoR to depositors.

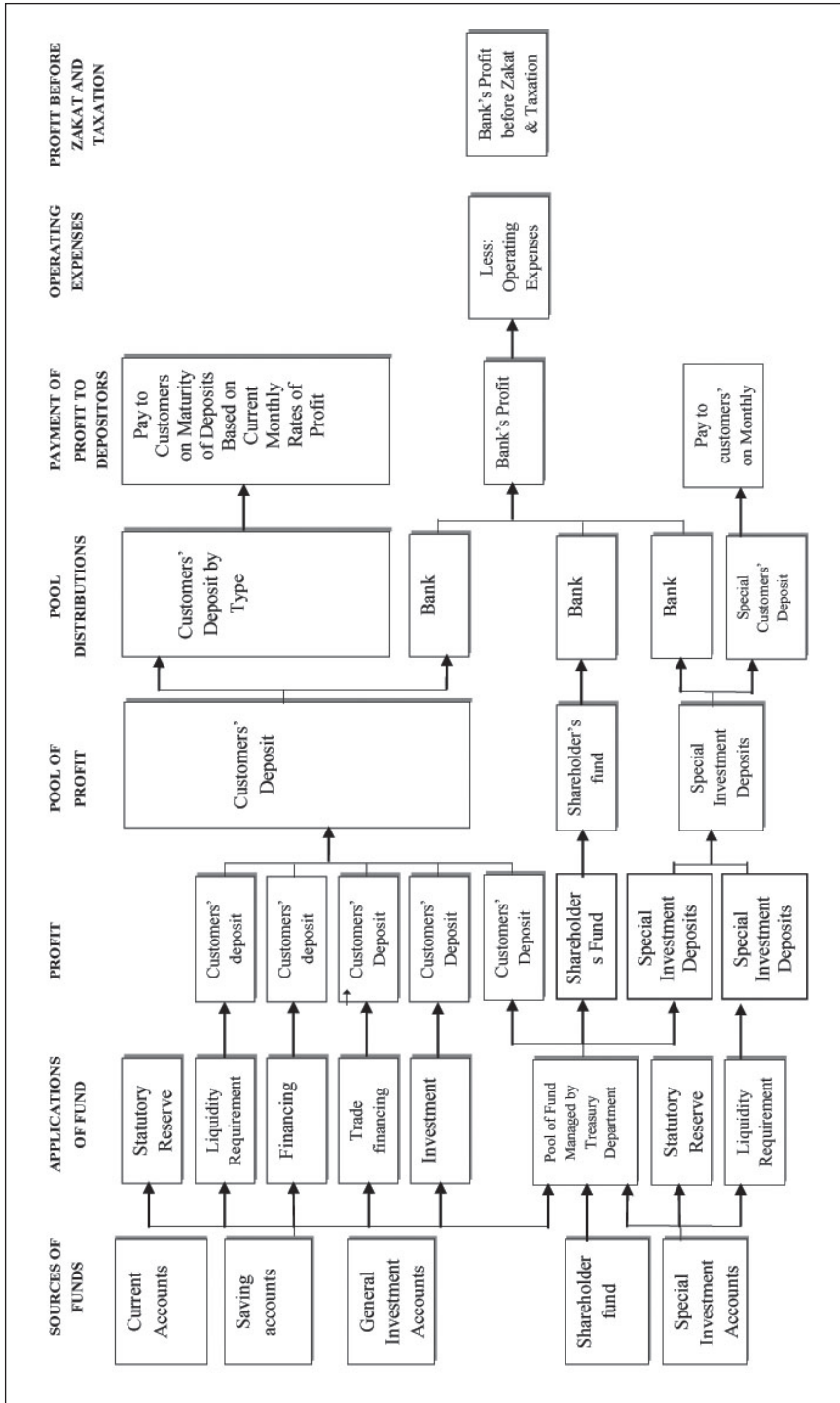


Figure 1. Overview of sources and uses of funds and profit distribution in Islamic banking institutions (IBIs)
 Source: Bank Islam Malaysia Berhad. (1994): 47

2.2 Provisioning Practice, Profit Equalisation Reserve (PER) and Investment Risk Reserve (IRR)

2.2.1 Provisioning Practice

The provisioning policy of Islamic banks and conventional banks vary substantially (Taktak *et al.* 2010; Shahimi 2011; Quttainah *et al.* 2011). Islamic accounting regulators encourage the use of dynamic provisioning. Islamic banks are thus more inclined to set up an allowance for loss provision to absorb any future losses. To avoid bank runs, Islamic banking institutions are also encouraged to use PER and IRR to keep stable returns to reward depositors. These devices may contribute towards more stable financial outcomes in Islamic banks compared to conventional banks. Hence, earnings management or income smoothing is vital for Islamic banks due to the specific characteristics, intra- and inter-competition, and economic situation.

2.2.2 Profit Equalisation Reserve (PER)

The PER is a reserve formed of appropriations from investment profits before these are allocated between shareholders and unrestricted IAH. Hence, the PER has two components: a shareholders' component, which forms part of the shareholders' equity as retained profits, and an unrestricted IAH component, which forms part of the equity of the unrestricted IAH. Appropriations to the PER reduce the amount of profit attributable to IAH on which the bank as *mudarib* is entitled to a share as a fee for investment management. The PER (including the shareholders' component by way of donation) may be used for stabilising the periodic profit payouts to IAH, but not for covering any periodic losses (as the *mudarib* may not cover a loss attributable to the *rabbul mal*). It should be noted that what is stabilised is the profit payouts, not the profits themselves (since the PER is a reserve, not a provision). To that extent, the term PER is misleading (payout stabilisation reserve would be appropriate), and given the lack of transparency which is typically found in the financial reporting of Islamic banks, the question is 'are the financial statements of such banks which present the profit payout as being the profit, actually earned?'

2.2.3 Investment Risk Reserve (IRR)

The IRR is a reserve formed of appropriations from investment profits attributable to unrestricted IAH, that is, after profits are allocated between the bank as *mudarib* (and so, in effect, the shareholders) and the unrestricted IAH. Hence, such appropriations do not reduce the amount of profit attributable to IAH on which the bank as *mudarib* is entitled to a share as a fee for investment management. The IRR may be used to cover losses attributable to IAH funds and thus, in conjunction with the PER, to make a profit payout even in periods when a loss has been incurred. Again, given the typical lack of transparency, it may not be clear that any loss has been incurred.

2.2.4 Capital Regulation

The Basle Committee on Banking Regulation and Supervisory Practices introduced the framework on capital adequacy regulations in 1988. The capital adequacy framework was altered in 1990 and all banks were required to maintain a minimum capital of 8 per cent from risk weighted assets (RWA) of the banks. The change in capital adequacy regulations substantially alters the bank's incentive to manage capital and earnings through LLP (Ahmed

et al. 1999). In particular, total capital consists of Tier I and Tier II. Tier I capital includes sum of book value of equity, common stock plus non-cumulative preferred stock and minority interest in equity accounts of subsidiaries less goodwill and other intangible assets (Misman and Ahmad 2011). Tier I must exceed at least 4 per cent of the risk weighted assets and 3 per cent of total assets, while Tier II amount must not exceed the Tier I amount. In addition, this framework requires at least 50 per cent of the amount of total capital to be supplied by Tier I capital. The amount of Tier II consist of perpetual debt, mandatory convertible debt securities, term subordinate debt and intermediated preferred stock and loan loss reserve (LLR). Since LLR still counts as Tier II, this reserve only counts as part of total capital up to 1.25 per cent of risk weighted assets. A dollar increase in LLP will increase the total capital. Thus, increasing LLP has opposing effects on Tier I and Tier II capital.

3. Literature Review

Though there is extensive literature on earnings management tools and practices, only a few have investigated the income smoothing hypothesis in the context of IBIs. Abdul-Rahman *et al.* (2008) examined the association between religious ethical values and earnings management in Malaysian listed companies. Their study found that the level of earnings management of *Shari'ah* firms associated with religious business norms and accountability processes of *Shari'ah* is significantly lower than their non-*Shari'ah* counterparts. This result strengthens the notion that ethical qualities arising from a commitment to religious ethics play a role in the determination of earnings management along with other agency variables. This study led us to examine earnings management in Islamic banking. The aim is to identify whether Islamic banking institutions manage their earnings although they offer a unique environment due to the particular *Shari'ah* framework within which they operate.

In the case of Islamic banks, studies related to earnings management practices are inadequate and reported results vary. Most studies used the LLP as a tool to test earnings management in Islamic banks. None has been done on the testing of earnings management via PER except for a preliminary study done by Shahimi (2011). Studies on LLP have become one of the main attractions in the field of banking, finance and accounting. LLP has been widely used by bank managers as an instrument to manage risk on earnings and capital in the late 1980s and 1990s to date. Zoubi and Al-Khazali (2007) explain five objectives of using LLP which are (i) income smoothing purpose, (ii) stock pricing or management bonus, (iii) provision of signals on future losses, (iv) signals on earnings, and (v) compliance with legal requirements. Managers deliberately manipulate a bank's information to control the bank's future performance (Misman and Ahmad 2011). Thus, rather than having years of exceptionally good or bad earnings, banks will try to keep the figures relatively stable by adding and removing cash from reserve accounts. Bushman and William (2007) suggest that manager must increase the loan loss reserve in a bad time to mitigate credit crunches. Ismail and Shahrudin (2003) also explain that the strategy of the provisioning technique improves the bank managers' awareness of credit risk based on expected losses beyond the current financial year.

Misman and Ahmad (2011) investigated the treatment of LLP in bank earnings and capital management. Their findings indicate that Islamic and conventional banks in Malaysia use LLP as an important tool in their earnings management and capital management. Quttainah *et al.* (2011) examined whether Islamic banks are less likely to manage their earnings and

how the corporate governance system, especially *Shari'ah* Supervisory Boards (SSBs) impacts the earning management behaviours within Islamic banks. They found that Islamic banks are less likely to conduct earnings management as measured by both earnings loss avoidance and abnormal LLP compared to non-Islamic banks. Then, there is insignificant difference between Islamic banks with and without SSBs in term of earnings. Taktak *et al.*, (2010) using a sample of 66 Islamic banks, carried out a study over the period 2001 to 2006. The aim of this study was to test the use of LLPs to smooth Islamic banks results. Zoubi and Al-Khazali (2007) support the income smoothing hypothesis by using a sample of 55 conventional and 10 Islamic banks for the period 2000 to 2003. They show that managers of both conventional and Islamic banks in the Gulf Cooperation Council (GCC) region smooth their income by using LLPs. Ismail and Tan (2002) also found evidence of earnings management by Malaysian banks using LLP over the period 1997 to 1999. These studies assume there is a positive relationship between LLP and earnings management.

However, some studies found a negative relationship between LLP and earnings management. Ismail and Shaharudin (2003) used nine of Malaysia's largest banks that provide Islamic banking products over the period between 1998 to 2002 and found that Islamic banking managers do not use LLP to smoothen income. Ismail *et al.* (2005) also support their findings. Using data from 1998 to 2001 of ten commercial banks in Malaysia which offer Islamic banking services, they showed that managers did not use LLP to manage earnings and capital. They used security gains and losses to manage their earnings instead of using LLP. Ahmed *et al.* (1999) and Beatty *et al.* (1995) also argue there is no evidence to indicate that banks use LLP to smooth their earnings. Based on prior literature, we thus examine whether Islamic banks manage their earnings through PER, IRR and LLP.

4. Theoretical Framework for Earnings Management in Islamic Banking Institutions

4.1 Concept Framework

In October 2001, BNM conducted a review on the framework of the RoR in order to provide a greater degree of flexibility in the implementation of the framework. Subsequently, the guidelines on the specimen reports and financial statements for licensed Islamic Banks (GP8-i) were issued in August 2003. Both were adopted by the IBIs for annual accounts commencing 2004. Guidelines called Rate of Return Framework for Islamic Banks on the recognition and measurement of profit sharing investment account as a risk absorbent were also issued in 2004. One of the new mechanisms introduced in the framework was the PER with the objective of stabilising the rate of return to depositors and to ensure that the rates of return of deposits of the IBIs remain competitive and stable.

Islamic banks transfer some proportion of profits to increase depositors' returns. The PER is appropriated out of the total gross income (income derived from investment of depositors' funds and others) and is shared by both the depositors and the bank (income attributable to the bank). It consists of the retention of reserves from the profits on assets attributed to both investment account holders and shareholders in the same proportions that apply to the sharing of profits (Sundararajan 2007; Archer & Karim, 2006). In addition, IRR aims specifically to cover, in whole or in part, potential losses on assets (Sundararajan 2008). In practice, these reserves are actively used by Islamic banks to smooth the actual

rate of return paid out over time on investment accounts. Banks make reserve, that is, PER against current year incomes resulting in the reduction of reported income when they have reason to believe that the depositors will gain a lower return on their deposits. As such, PER is typically one of the quantitative indicators of earnings deterioration. For that reason it contributes to fluctuations in bank profits and capital.

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. While there is no universal definition of this provision, the guidelines (framework) states that provisions are determined on the basis of: (a) a certain percentage of the total gross income (including the gross income, net trading income, other income and irregular income, that is, recovery of non-performing financing and write-back of provisions) that needs to be submitted to the regulator on a monthly basis; and (b) maintaining a maximum accumulated PER of up to 30 per cent of shareholder funds. Indeed, publicly available information on these reserves is rather limited (Sundararajan 2005).

However, in practice, PER is set (calculated) in a backward rather than forward-looking approach, that is, reserves can only be made once the gross income is revealed to have actually become impaired. Explicitly, PER reflects actual rather than expected losses which in reality may take some time to reveal. Therefore, PER decisions should be based on the entire future profile of expected losses on financing and investments, that is, forward-looking. Hence, it is interesting to examine if Islamic banks use other tools, particularly PER, as a means to enhance the stability of their returns like their conventional counterparts. Understanding the determinants of PER is therefore important in assessing financial stability along with depositors' confidence. The proposed theoretical framework for earnings management in IBIs is as shown in Figures 2 and 3.

4.2 Hypothesis

In order to investigate the relationship between PER and the earnings management of Malaysian Islamic banks, our study specifies the following hypothesis:

Hypothesis 1

H_1 : Earnings management has a significant effect on PER in relation to Malaysian Islamic banks

Hypothesis 2

H_2 : Capital management has a significant effect on PER in relation to Malaysian Islamic banks

This study employed the Pooled Cross-Section econometric technique for our unbalanced sample. The hypothesis had been tested using the model in equation as stated in the methodology section.

5. Methodology

5.1 Sample Selection

The aim of empirical analysis in this paper is to examine the provisioning behaviour of PER which reflects the earnings management and income smoothing behaviour of Islamic banks. The sample consists of 120 observations of fifteen commercial banks which offer Islamic

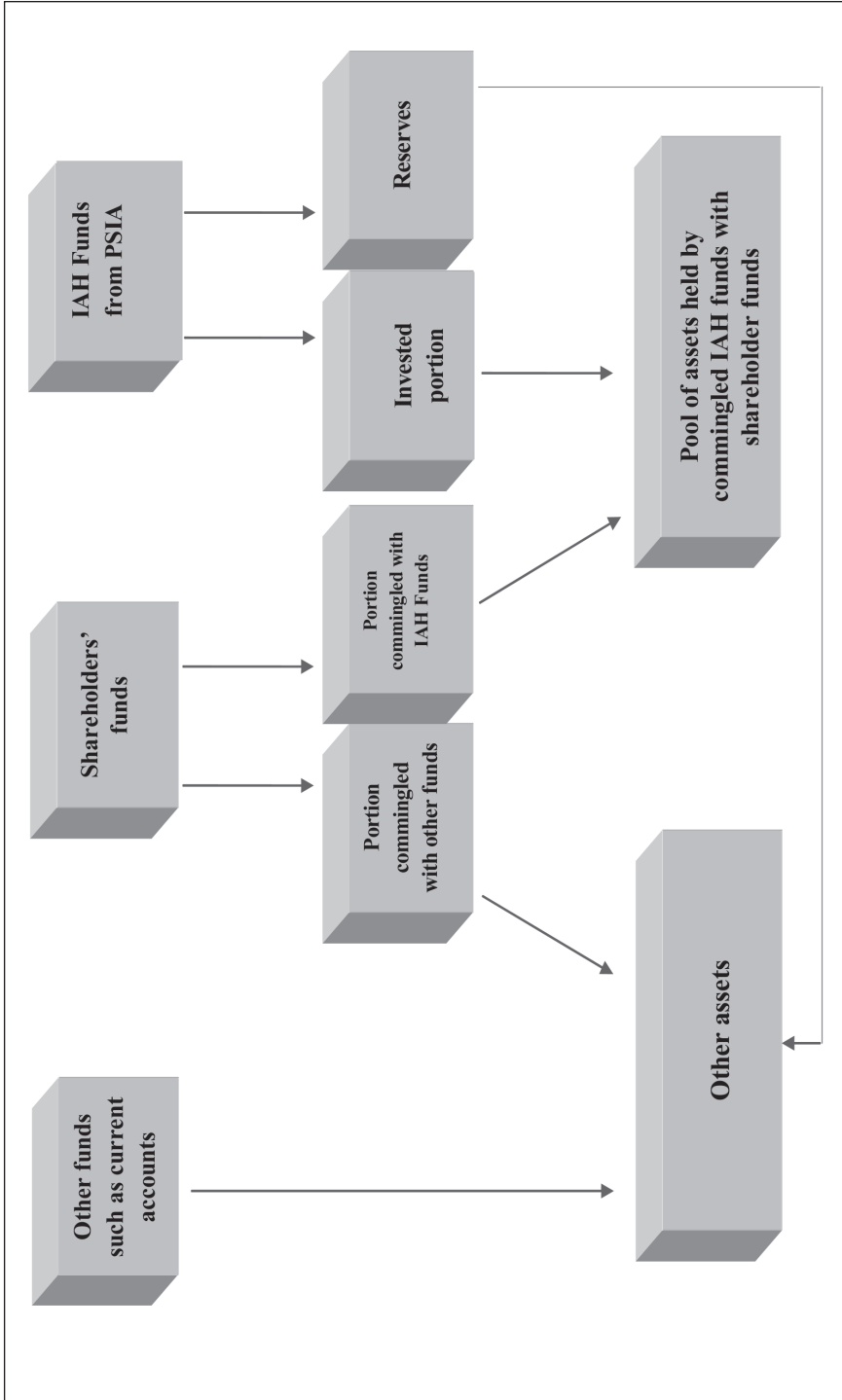


Figure 2. Framework for earnings management in Islamic banking institutions

Source: Archer *et al.* (2010): p. 19

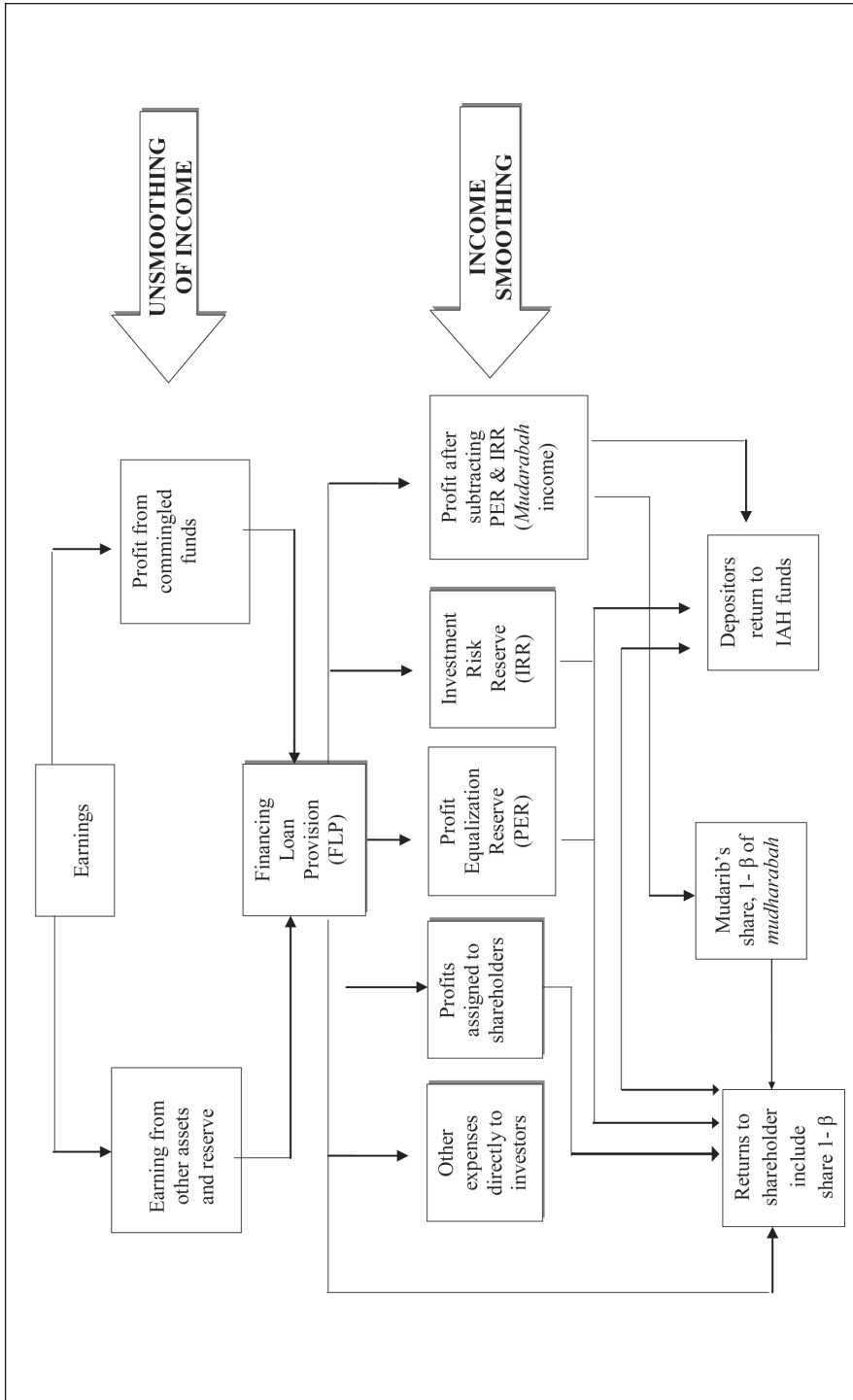


Figure 3. Theoretical framework for earnings management in IBIs
 Source: Archer *et al.* (2010), p. 19

banking products and services (after mergers and acquisition process – M & A), that is, two full-fledged Islamic banks, thirteen Islamic banking windows (nine domestic commercial banks and four foreign commercial banks) for balanced panel data covering the period 2003 to 2010. The data used in the empirical analysis were obtained from the audited and published annual financial statement of individuals banks in Malaysia. Data on macro-economic effect and gross domestic product(GDP) growth were obtained from BNM website.

5.2 Estimation Method

This study is based on panel data or ‘pool’ that has become increasingly popular in economic and financial analysis over the last decades. We utilised pooled Ordinary Least Square (OLS) estimates to identify the relationship between PER and earnings management and capital management and expected the OLS estimates to provide the best results for this study.

5.3 Empirical Model and Research Design

The objective of this study is to estimate income smoothing practice and earnings management through PER, IRR and LLP. Based on prior research by Shahimi (2011), PER is deducted from the total gross income (income derived from investment of depositors’ fund and others) in deriving income attributable to the bank. The choice of LLP reflects bank manager’s capital management and income smoothing behaviour (Ismail and Shaharudin 2003; Taktak *et al.* 2010). From the financial statement of the banks, PER can be derived from the total income (TY) minus the loan loss provision (LLP) and loan loss investment (LLI) as stated in Equation (1):

$$PER = TY - LLP - LLI \quad (1)$$

We assume that total financing (TF) and total investment (TI) are expected to influence the TY as stated in the basic model (Model 1) in Equation 4. These two proxies can be considered as bank specific non-discretionary (ND) components of PER (Shahimi 2011) and as a method for capturing general reserves. Typically, TF also affects the general provisions made for that particular year as banks may need to make additional provisions based on risk exposure and also economic conditions (Ismail and Shaharudin 2003). The study hypothesised that the amount of provisions is directly influenced by the size of the loan portfolio. One interpretation of the coefficient on this variable is that it estimates the proportion of apparently good financing and investment that the bank will lose. The coefficients on both proxies provide anticipated losses averaged across the sample.

Non-performing loans (NPL) or non-performing finance (NPF) (term of loan in Islamic banking usually used as financing) is a variable reflecting the level of source of positive or negative losses in debt-financing. This variable consists of non-accrual loans that are 180 days or more past due on principle of repayment (Ismail and Shaharudin 2003). NPF also measures banks’ credit risks as part of capital management (Misman and Ahmad 2011). Previous studies such as those of Wahlen (1994), Collins *et al.* (1995), Beatty *et al.* (1995), Kim and Kross (1998) and Ahmed *et al.* (1999) have used the NPL as the control variable to study the behaviour of capital management and earnings management by commercial banks. They found a positive relationship between NPL and total loan (TL) with the LLP. In this study, if NPF increases, specific reserves will be increased.

To test for income smoothing practices through PER by Islamic banks, we investigated the variability of the object of smoothing and earnings management by the variables of earning before tax, zakat and provision (EBTZP). We identified the group of banks that practise smoothing by using the coefficient of Beidleman (1973), Ismail and Shaharudin (2003), Taktak *et al.* (2010), Misman and Ahmad (2011). Biedleman (1973) used this coefficient to determine and measure the correlation of net income growth over time to the object of smoothing with time trend. EBTZP is included to examine whether Malaysian Islamic banking managers practise income behaviour (Ismail and Shaharudin 2003). Kim and Kross (1998), Shreives and Dahl (2003) and Misman and Ahmad (2011) found a positive relationship between EBTZP and LLP. They suggest that when earnings are low, banks will reduce the provision to get better EBTZP. This behaviour reflects better on the performance of the bank which is consistent with income smoothing activities.

Ahmed *et al.* (1999) have included the variable of Total Capital Before Provision (TCABP) to test the management of capital. We measured TCABP by using primary or Tier I capital. The TCABP is measured by the ratio of actual regulatory capital before loan loss reserve to the minimum required regulatory capital. The objective is to determine the existence of capital management behaviour as a result of the relationship between loan loss reserves and the calculation of capital requirement ratio. Banks which are weak, have financial problems and low capital, can be identified by using this variable. The managers of banks with low regulatory capital have incentives to increase LLP. Moyer (1990), Collins *et al.* (1995) and Beatty *et al.* (1995) examined the relationship between LLP and capital before the introduction of the new capital regulations, while Taktak *et al.* (2010) and Misman and Ahmad (2011) controlled for the effect of capital adequacy ratio on LLP. Ahmad *et al.* (1999) found that banks with low capital significantly reduced their LLP.

The following regression for Model 1 as stated in Equation (2) is used to examine whether managers of Islamic banks use PER to smooth banks' income. GDP is the variable used to capture the macroeconomics effects.

Model 1: The Basic Estimation

$$PER = f \{ \text{total financing, total investment, credit risk, earnings management, capital management, bank size, and GDP} \} \quad (2)$$

$$PER = \{ TF, TI, NPF, EBTPZ, TCABP, SIZE, GDP \} \quad (3)$$

$$PER_{it} = \beta_0 + \beta_1 TF_{it} + \beta_2 TI_{it} + \beta_3 NPF_{it} + \beta_4 EBTZP_{it} + \beta_5 TCABP_{it} + \beta_6 SIZE_{it} + \beta_7 GDP_{it} + \epsilon_{it} \quad (4)$$

where

PER_{it} = profit equalisation reserve of bank i in year t normalised by total assets;

TF_{it} = ratio of total financing of bank i in year t normalised by total assets;

TI_{it} = ratio of total investment of bank i in year t normalised by total assets;

NPF_{it} = ratio of non-performing financing of bank i in year t normalised by total assets

$EBTZP_{it}$ = ratio of earnings before tax and zakat and provision of bank i in year t normalised by total assets

$TCABP_{it}$ = ratio of total capital before provision of bank i in year t normalised by total assets

$SIZE_{it}$ = logarithm of total assets

GDP_{it} = rate of growth of gross domestic product in year t

ε_{it} = error term

Model 2 indicates an asymmetric pattern of PER during periods of positive and negative earnings. The earnings variable is interacted with the dummy variable that takes the value of one when the earnings are negative and zero otherwise ($EBTZP * D_{EM}$). This study expects a positive sign for the $EBTZP * D_{EM}$ variable. Laeven and Majnoni (2003) found a negative relationship between $EBTZP * D_{EM}$ and LLP. They suggest that banks make a significantly higher provision when they incur losses that generate a positive level of income before taxation and provision. Then, Equation (4) will be rewritten as below:

Model 2: Evidence on Earnings Management

$$PER_{it} = \beta_0 + \beta_1 TF_{it} + \beta_2 TI_{it} + \beta_3 NPF_{it} + \beta_4 EBTZP_{it} + \beta_5 EBTZP_{it} * D_{EM} + \beta_6 TCABP_{it} + \beta_7 SIZE_{it} + \beta_8 GDP_{it} + \varepsilon_{it} \quad (5)$$

To study the behaviour of the existence of capital management for banks with LLR ratio exceeding 1.25 per cent ratio, the variable TCABP is socialised with a dummy variable that takes the value of D_{CM} 1 if the reserve ratio exceeds the rate of 1.25 per cent and zero otherwise. Including the dummy variable is important in order to study the effects on the pattern of capital cycle as indicated by previous studies (Ahmed *et al.* 1999; Leaven and Majnoni, 2003). Laeven and Majnoni (2003) assume that if a bank does not limit the ratio of loan loss reserves, and if the banks undertake patterns of forward-looking provisions, then the characteristics of pro-cyclical capital could be reduced. It can also identify whether the banks take into account proposals put forward by Wahlen (1994) and Musumeci and Sinkey (1989) that the market will have a negative reaction if the amount of reserve allocation is at a high level. This is because, the ratio of high LLR reflects weak asset quality, as opposed to what is proposed by Greenwalt and Sinkey (1988). Then, Equation (4) will be rewritten as below to examine the earnings and capital management behaviour via PER in Islamic banks. The definition and expected sign of these variables are given in Table 1.

Model 3: Evidence on Capital Management

$$PER_{it} = \beta_0 + \beta_1 TF_{it} + \beta_2 TI_{it} + \beta_3 NPF_{it} + \beta_4 EBTZP_{it} + \beta_5 EBTZP_{it} * D_{NEG} + \beta_6 TCABP_{it} + \beta_7 TCABP_{it} * D_{CM} + \beta_8 TRWA_{it} + \beta_9 SIZE_{it} + \beta_{10} GDP_{it} + \varepsilon_{it} \quad (6)$$

6. Results

6.1 Descriptive Statistics

Table 2 reports the descriptive statistics for all variables used in the estimation based on a common sample for 2003 to 2010. The mean and standard deviation ratio of PER is -0.01 per cent and 0.28 per cent respectively. This shows that, banks in the samples provide -0.01 percent of PER to total assets. It also concurs with the findings of Shahimi (2011), Zoubi and Al-Khazali (2007) and Taktak *et al.* (2010), all of whom have a low estimate of loss provision. Total finance and total investment reports have a mean of 52.41 per cent and 21.27 per cent respectively which are close to the level of 71.85 per cent reported by Shahimi (2011) and 53.40 per cent by Taktak *et al.* (2010). The ratio varies between 0 and 100 per cent with a standard deviation of 56.23 per cent and 17.69 per cent. This indicates a large dispersion in the level of financing provided by Islamic banks (Taktak *et al.* 2010). The mean for NPF to total assets in this paper is around 1.98 per cent.

Table 1. Definition of variables

Variables	Definition	Source	Expected Sign
PER	Profit equalisation reserve deducted from income derived from investment of depositors' fund and others, divided by total assets	Income Statement	
TF	Total financing divided by total assets	Notes to the financial statement	Positive (+)
TI	Total investment divided by total assets	Notes to the financial statement	Positive (+)
NPF	Net non-performing finance (or impairment loss) divided by total assets	Notes to the financial statement	Positive (+)
EBTZP	Earnings before tax, zakat and provision divided by total assets	Income statement	Positive (+)
EBTZP*D _{EM}	Unity if earnings are negative and zero otherwise.		Positive (+)
TCABP	Total capital before provision (Tier I) divided by total assets	Notes to the financial statement	Negative (-)
TCABP*D _{LLR}	Unity if loan loss reserve is more than 1.25 per cent and zero otherwise		Positive/ Negative (+/-)
SIZE	Total assets of the bank (logarithm of total assets)	Balance sheet	Positive (+)
GDP	Gross Domestic Product growth rate	Bank Negara Malaysia	Negative (-)

Table 2. Descriptive statistics of independent and dependent variables

Variables	Mean	Median	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Maximum	Minimum
PER	-0.000104	0.000000	0.002818	-0.753649	10.87424	321.3780 (0.000000)	0.010354	-0.013990
TF	0.524128	0.562345	0.204663	-0.283791	2.586851	2.464203 (0.291679)	0.941705	0.010547
TI	0.212767	0.176893	0.162572	1.717398	6.915779	135.6558 (0.000000)	0.946017	0.000000
NPF	0.019854	0.011193	0.024032	2.187517	8.645433	255.0592 (0.000000)	0.128945	0.000000
EBTZP	0.010264	0.010964	0.013512	-3.652970	26.14079	2944.366 (0.000000)	0.036741	-0.087424
TCABP	0.082099	0.071733	0.050795	2.583893	11.30939	478.7597 (0.000000)	0.312821	-0.018563
SIZE	9.734662	9.790388	0.470619	-0.586067	3.399220	7.666363 (0.021641)	10.64500	8.177568
GDP	5.046492	5.794250	2.670688	-1.913470	5.265285	98.88494 (0.000000)	7.200000	-1.700000

The mean, median and standard deviation for EBTZP to total assets is 1.03 per cent, 1.09 per cent and 1.35 per cent. A bank’s capital position before loan loss reserves (TCABP) is measured by the ratio of actual regulatory capital (primary or Tier I capital) before loan loss reserve to the minimum required regulatory capital (Ahmed *et al.* 1999). The mean TCABP is 8.20 per cent. On average, the natural logarithm of total assets is about 9.73 per cent and the standard deviation is 0.47 per cent. GDP growth reports 5.04 per cent on average.

This study estimated the mean, median, skewness, kurtosis and Jarque-Bera to identify the distribution of the sample. The Jarque-Bera is a goodness-of-fit test of whether sample data have the skewness and kurtosis matching a normal distribution. The data in a sample has normal distribution if the value of skewness is close to zero. A positive skewness indicates that observed values of the variables have a long tail to the right, large value or a positive side. The value of Kurtosis is close to three. The Jarque-Bera statistic can be used to test a null hypothesis where each variable is considered to have a normal distribution. The results show that the data do not support the supposition that each variable has a normal distribution. Therefore, the null hypothesis that each variable has a normal distribution is rejected based on a p -value = 0.000000.

6.2 Regression Results

Table 3 exhibits the correlation matrix for the variables in our model. The correlation coefficients among the independent variables are low suggesting the absence of multicollinearity problems. The correlation between PER and all independent variables (TF, TI, NPF, EBTZP, TCABP) are negative except for size of banks (SIZE) and GDP. Taktak *et al.* (2010) found that the correlation between LLPs and loan growth (TL) and non-performing loans (NPLs) are both positive. This sign suggests the practice of dynamic provision by Islamic banks. The negative correlation between PER and NPF suggest that banks managers do not or rarely use dynamic provision. However, banks increase the PER when the TF increases. The negative correlation between PER and EBTZP, and TCABP suggests that, banks with low capital requirement tend to increase the PER to increase the capital requirement. However, banks also increase the PER if the earning is expected to be low. The correlation of PER and EBTZP, and TCABP is negative, suggesting that on average banks do not exercise income smoothing (Taktak *et al.* 2010).

Before turning to the analysis of the results on earnings and capital management, let us look at the analyses of the estimated coefficient for the other variables in the model. The

Table 3. Correlation matrix of independent and dependent variables

	PER	TF	TI	NPF	EBTZP	TCABP	SIZE	GDP
PER	1.000000							
TF	-0.000367	1.000000						
TI	-0.104934	-0.646433	1.000000					
NPF	-0.015499	0.239543	-0.108734	1.000000				
EBTZP	-0.005118	0.222235	-0.118901	-0.149261	1.000000			
TCABP	-0.302482	0.272450	-0.206917	-0.076461	0.415803	1.000000		
SIZE	0.250367	0.340398	-0.419043	0.055470	-0.041123	-0.298550	1.000000	
GDP	0.014291	-0.001121	0.114222	0.164858	-0.002064	0.040085	-0.170515	1.000000

variable of TCABP is significant for all specifications in our regression models. The log of total assets (SIZE), the proxy for size of the banks, has a positive relationship and significant effect on PER. These results support the findings by Zoubi and Al-Khazali (2007) and Taktak *et al.* (2010) that the larger banks have a higher level of business and are expected to have higher reserves than smaller banks. The variable of GDP growth gives a significant result statistically in Model 3. This result shows that business cycles affect the bank's reserve. Taktak *et al.* (2010) argue that business cycles do not affect the bank's LLP based on their study.

6.2.1 Evidence on Earnings Management or Smoothing through PER

From the OLS estimates, the *t*-statistic of independent variables is significant at 1, 5 and 10 per cent. Based on Table 4, we focus on the analysis of the results on income smoothing or earnings management and capital management. If the banks use PER to smooth earnings, then we would expect a positive relation between EBTZP and PER. The coefficient of EBTZP is positive for all specification models but insignificant. Our findings failed to reject the hypothesis of earnings management and PER. It indicates that Islamic banks did not use PER as a tool to manage their earnings. This result also supports earlier results (Laevan and Majnoni 2003; Arpa *et al.* 2001; Ismail and Shaharudin 2003; Ahmed *et al.* 1999; Taktak *et al.* 2010) that banks do not smooth their income over time. Ahmed *et al.* (1999) expected to see a larger positive coefficient on EBTZP and provision in the new regime since the costs of managing earnings in terms of adverse effects on regulatory capital have declined. Zoubi and Al-Khazali (2007) suggest Islamic banks are reluctant to use the LLP to smooth their results. According to Archer and Karim, (2006), smoothing income is considered to be a natural feature of Islamic banks and income smoothing practice may be attributed to the use of alternatives technique such as PER and IRR instead of LLP. It appears that Taktak *et al.* (1999) do not agree with Archer and Karim (2006) because they state that in practice, the main objectives of Islamic bank managers are primarily to stabilise the profit to shareholders rather than to smooth the profits attributed to depositors. They recommend using PER to smooth the profit payout to depositors. This result shows that Malaysian Islamic banks do not smooth their income over time by using PER. Earnings management is not an important determinant of PER in this study.

6.2.2 Evidence on Capital Management

A bank's capital position before LLR (TCABP) is measured by the ratio of actual regulatory capital (primary or Tier I capital) before LLR to the minimum required regulatory capital. To be consistent with the previous studies, we measured TCABP using primary or Tier I capital. The variable of TCABP was significant for all specifications in our regression models. The negative sign of TCABP ratio was consistent and indicates that the lower the capital ratio, the higher the PER. The negative expected sign on TCABP was significant and correlated with the hypothesis that the banks with lower capital have their own incentive to increase or boost their capital through PER. The findings of Taktak *et al.* (2010) and Ahmed *et al.* (1999) also significantly support the negative result on TCABP. Ahmad *et al.* (2010) discuss that both forms of capital benefited from an increase in provision in the old capital or new capital regime related to Tier I and Tier II while Mismam and Ahmad (2011), show that capital management of conventional banks and Islamic banks is very different in relation to

Table 4. Panel regression results (OLS)

Variables	Dependent variable: Profit Equalisation Reserve (PER)		
	Model 1 Without dummy	Model 2 With dummy earnings negative (D_{EM})	Model 3 With dummy earnings negative (D_{EM}) and Dummy reserve > 1.25 (D_{CM})
CONSTANT	-0.005188 (0.006767)	-0.006669 (0.006891)	-0.009875 (0.006868)
TF	-0.001129 (0.001714)	-0.001286 (0.001719)	-0.000472 (0.001714)
TI	-0.003004 (0.002109)	-0.002871 (0.002110)	-0.002154 (0.002085)
NPF	-0.004718 (0.010987)	-0.005837 (0.011022)	-0.008743 (0.010849)
EBTZP	0.027796 (0.020462)	0.013697 (0.024077)	0.039375 (0.025797)
EBTZP* D_{EM}		0.034239 (0.030898)	-0.033184 (0.040942)
TCABP	-0.018879 (0.006120)***	-0.018379 (0.006130)***	-0.028012 (0.007179)***
TCABP* D_{LLR}			0.018017 (0.007378)***
SIZE	0.000747 (0.000659)	0.000882 (0.000669)	0.001145 (0.000664)*
GDP	0.0000800 (0.0000951)	0.000111 (0.0000990)	0.000163 (0.0000992)*
R^2	0.153397	0.162660	0.205716
Adjusted R^2	0.100484	0.102311	0.140729
F-statistic	2.899049	2.695326	3.165494
Prob (F-statistic)	0.008006	0.009514	0.001954
Durbin-Watson stat	2.111666	2.038199	1.991090

Note: Values in parenthesis is standard error. ***, **, and * denote significance level at 1%, 5% and 10 % respectively.

LLP. The proxy for capital management in their study found a negative sign for conventional banks and was positively related to LLP. Collectively, these results provide strong support for the capital management hypothesis.

7. Conclusion and Recommendations

This study aimed to re-examine the extent to which income smoothing and capital management through PER is practised. The results are important in assessing financial stability as well as depositor confidence. No study has been done to examine the provisioning behaviour of PER since its introduction in 2003. Overall, we find evidence that capital management is an

important determinant of PER. Second, earnings management is not an important determinant of PER since the variable of EBTZP is insignificant. By using a panel of fifteen IBIs, our study indicates that TCABP is significant and contrary to the current practice of PER. Further studies need to examine how PER affects capital regulation. A question to study would be, 'does PER cause a lower risk-based capital in the IBIs?'

Our findings indicate that Islamic banks use PER and IRR to stabilise returns. The *Shari'ah* issue highlighted by Shahrudin (2011) is that the practice of having a certain amount of profit as reserve in times of bad business is totally unknown to the classical *mudharabah* contract. Further research is therefore needed to study this provision in the *Shari'ah* in relation to the implementation of PER. We support the recommendation by Taktak *et al.* (2010) that the regulators need to enhance disclosure on the specific reserve used by Islamic financial institutions to avoid financial system distress.

Though there is empirical evidence on PER and IRR provisioning behaviour by Islamic banking institutions, evidence from other financial institutions is rather scarce. Based on our study, in the case of Malaysia, there are other institutions offering Islamic financial products and services, that is, developmental financial institutions like Agro Bank, SME Bank, Bank Simpanan Nasional, as well as cooperative banks such as Bank Rakyat. It will be interesting to investigate the financial practices of these non-commercial banking institutions. Some interesting questions to ask are 'do they have other mechanisms to decide on reserves, such as share or insurance to absorb risk or to stabilise returns?'

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