

The Mudharabah Deposit Rate Behaviour in Relation to the Conventional Deposit Rate

(Gelagat Kadar Deposit Mudharabah Berhubung dengan Kadar Deposit Konvensional)

Radziah Abdul Latiff

(Faculty of Economics and Management, Universiti Kebangsaan Malaysia)

Noreha Halid

(UKM-Graduate School of Business, Universiti Kebangsaan Malaysia)

ABSTRACT

This study examines the relationship between the conventional and mudharabah deposit rates of Malaysian banks in two separate periods – between January 1996 and September 2004, and between October 2004 and June 2011 – which signify the implementation of a framework for calculating the Islamic bank deposit rate and the profit equalization reserve (PER). Employing the autoregressive distributed lagged (ARDL) approach, this study finds the two rates to be cointegrated in the first period similar to previous findings. However, for the second period, there is largely no evidence of a long-term relationship. The significance of this finding is that in the second period, when Islamic banks employ a regulated PER as a displacement risk mitigating mechanism, Islamic banks do not benchmark against conventional rates. They possibly engage in income smoothing for economic efficiency or for signalling purposes. An important policy implication is that PER and any type of reserve to smooth income, that is regulated, may be prescribed as it may have a positive behavioural effect.

ABSTRAK

Kajian ini mengkaji hubungan antara kadar deposit konvensional dan mudharabah untuk bank-bank Malaysia dalam dua tempoh berasingan – antara Januari 1996 dengan September 2004, dan antara Oktober 2004 dengan Jun 2011 – yang menandakan pelaksanaan kerangka kerja bagi pengiraan kadar deposit bank Islam dan rizab persamaan keuntungan (PER). Dengan menggunakan pendekatan autoregresif lat teragih (ARDL), kajian ini mendapati kedua-dua kadar berkointegrasi dalam tempoh pertama seperti penemuan kajian lepas. Walau bagaimanapun dalam tempoh kedua, secara keseluruhan tiada bukti yang menunjukkan wujudnya hubungan jangka panjang. Kepentingan penemuan ini adalah dalam tempoh kedua di mana bank Islam menggunakan PER yang terkawal sebagai mekanisme pengurangan risiko anjakan, bank Islam tidak menggunakan kadar konvensional sebagai tanda aras. Berkemungkinan bank Islam melicinkan pendapatan atas dasar kecekapan ekonomi atau untuk tujuan memberi isyarat. Satu implikasi polisi yang penting adalah PER dan sebarang rizab untuk tujuan pelicinan pendapatan yang terkawal boleh disarankan kerana ia mungkin mempunyai kesan tingkah laku yang positif.

Keywords: Islamic Banks; Mudharabah Deposit Rates; Conventional Deposit Rates; Profit Equalization Reserves; Reserve Accounting; Displacement Risk.

INTRODUCTION

Ideally, Islamic scholars (Askari, Iqbal & Mirakhor 2009; Hanif & Salman 2010; Mirakhor 1996; Omar, Md Noor & MydinMeera 2010; UIHaqu & Mirakhor 1999) are of the opinion that Islamic banks (IBs) should use a reference rate based on a return from the real sector economy. This real sector based rate should be used as a basis for pricing financial products, such as *mudharabah* or investment deposits that are on profit sharing basis. However, to date, there is no consensus concerning the appropriate method to estimate this reference rate although there have been theoretical attempts to develop such a rate.

In practice, both casual observation (See Figure 1) and empirical examination have shown that IB mudharabah rates are closely related to the comparable conventional

deposits rates. Chong and Liu (2009) found that in the Malaysian context, changes in the conventional deposit rates Granger cause changes in Islamic mudharabah rates. They also found evidence of the existence of a long-term relationship between the two rates. This has led to the conclusion that Islamic banking is not as Islamic as it should be. Such a finding does not bode well with what Islamic banking professes to be. Specifically, for investment deposits based on the mudharabah principle, profits are shared in a predetermined ratio between banks and depositors. Losses are borne solely by depositors, unless the losses are due to the negligence of the banks. As such, mudharabah rates should be driven by the profitability of projects to which the deposits are applied. This, however, has been found not to be true. What is largely believed and supported by research is that Islamic

banks tend to provide mudharabah returns comparable to that of conventional deposits due to competitive pressure. There are also indications that bank customers are primarily concerned with the maximization of return and not just adherence to Shariah principles (Haron & Ahmad 2000).

Amidst much criticism surrounding the determination of the mudharabah rates, in 2001, the Central Bank of Malaysia (Bank Negara Malaysia, BNM) issued a framework referred to as the Framework of Rate of Return (FRR) as guidance to calculate the mudharabah rates. The FRR was effective 1 October 2004. The framework provides for a minimum standard in calculating the rate of return, and, as such, provides a common and fair reference point for all IBs to abide by. From BNM's point of view, as a regulator and a monitoring body, a common standard of calculating mudharabah returns facilitates BNM in assessing the performance, efficiency as well as profitability of IBs. From the depositors' point of view, a standardized method of calculation assures them of a fair and equitable division of profit between them (as the capital provider) and the IB (as the agent). Thus, the FRR enhances the transparency of the Islamic banking operation. The FRR also regulates a mechanism by which IBs could smooth profit, termed a profit equalization reserve (PER), in order to provide desirable mudharabah rates. This mechanism allows IBs to create a reserve where, in times of high profit, a portion of the profit is transferred to this reserve. In times of low profit, the PER could be utilized to augment profits distributable to depositors and shareholders. PER is also provided for by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), based in Bahrain, in its Financial Accounting Standard 11. This implies that the regulators, such as BNM, as well as those in other countries condone the behaviour of managing the mudharabah rate of return.

However, PER is widely criticized. One of the main criticisms is that the current depositors are denied or have to forego the profits earned in the period, when a transfer is made from profits to PER (Islamic Financial Services Board (IFSB) 2010; Shaharuddin 2010). From the accounting perspective, PER does not fit into the definition of the elements of a financial statement because it is neither an equity nor a liability. PER is considered inappropriate to be debited into the income statement because it is not an expense (Asian-Oceanian Standard-Setters Group 2010). In 2010, BNM introduced a guideline – Guidelines on Profit Equalization Reserve – that not only addresses those criticisms but also acknowledges other methods to manage mudharabah returns. This guideline became effective as of 1 July 2011. Thus after 1 July, IBs could revert to the methods employed before PER was enforced, such as provide hiba or gifts, or could continue using PER in order to manipulate deposit rates.

The changes in the regulatory requirements related to the mudharabah returns and PER pose a question “Does the relationship between mudharabah deposit rates and

conventional deposits rates differ in those two periods?” The answer perhaps is no, since there is no apparent indication to eliminate earlier motivations to benchmark against conventional deposit rates. Competitive pressure still exists and customers are still profit driven. However, given that PER is borne from profits before distribution to shareholders and depositors, which means the risk is shared between shareholders and depositors, the IBs behaviour in managing mudharabah deposit rates may differ in the two periods. To empirically address this issue, this study examines the relationship between mudharabah deposit rates and conventional deposit rates in the period before PER was regulated (before October 2004) and in the period when PER was regulated (between October 2004 to June 2011).

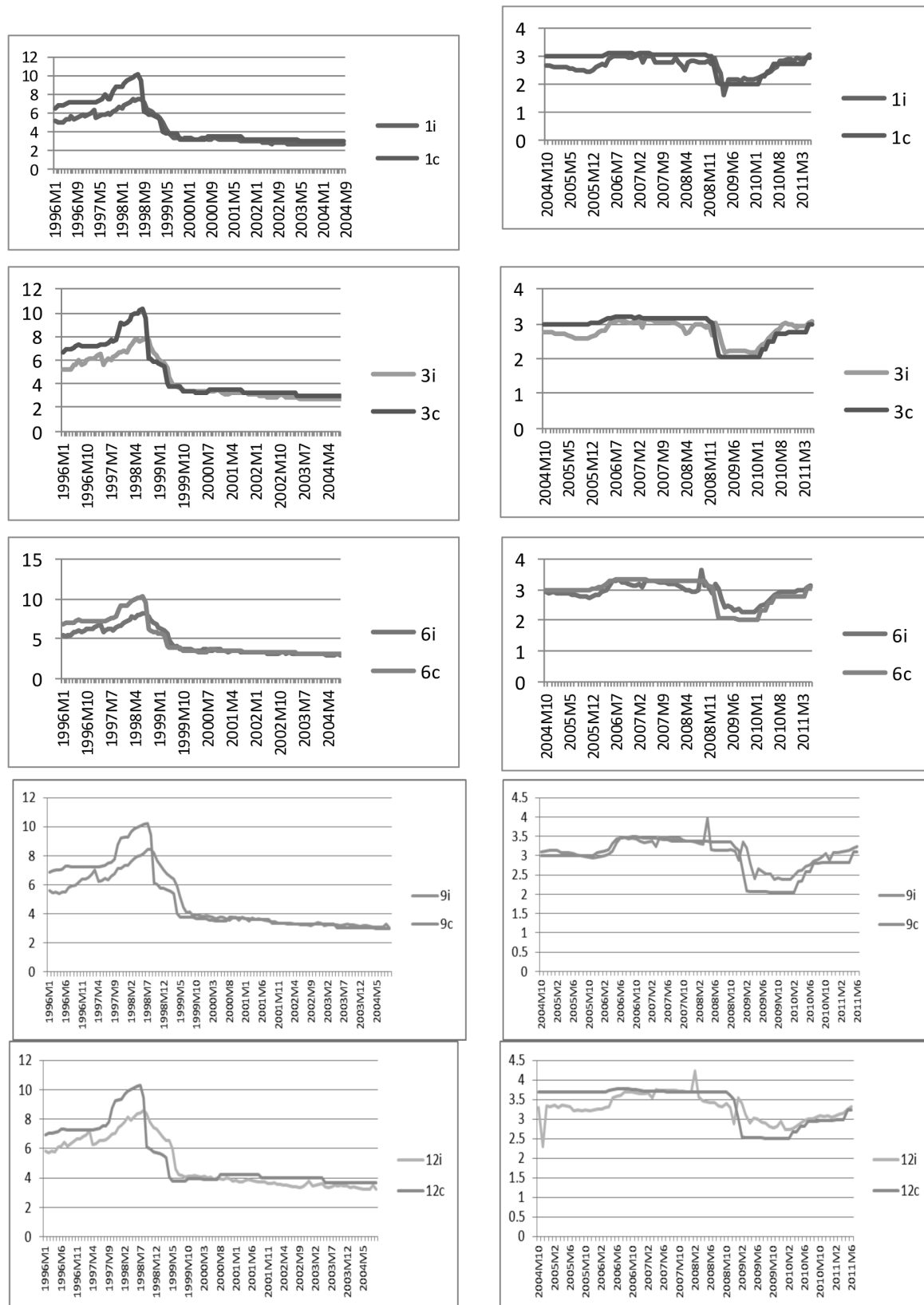
This study reaffirms the results of previous studies in that there was a long-term relationship between conventional and mudharabah deposit rates (Cevik & Charap 2011; Chong & Liu 2009) in the period before BNM enforced the rate of return calculation and PER requirements. However, generally, this study found no evidence of the influence of conventional deposit rates on mudharabah deposit rates for the period when BNM requirements were enforced. The significance of this is that IBs do not appear to closely benchmark to the conventional banks' deposit rates when PER is regulated. Notwithstanding the fact that even with the prescribed rate of return calculation, the requirements are such that IBs have some discretion to set rates. Since PER is shared between banks and depositors, and, as such, the displacement risk is mitigated in a controlled way when PER is regulated. The evidence suggests that IBs engage in income smoothing for reasons other than to benchmark to the conventional deposit rates. Further research is needed to confirm whether the mudharabah deposit rates reflect the actual performance in the period. A far-reaching implication for future research and policy is with regards to maintaining reserves to smooth income in other areas, such as in a fair value accounting environment for banks and even other companies that have substantial financial assets.

The paper proceeds as follows; part 2 reviews the literature related to the development of a *Shariah* (Islamic Law) desirable reference rate, displacement risk faced by IBs and FRR including PER introduced by BNM as a displacement risk mitigating mechanism. Part 3 describes the data and method employed in the study. Part 4 discusses the results, and, finally, part 5 concludes and provides potential areas for future research.

LITERATURE REVIEW

THEORETICAL DEVELOPMENT OF SHARIAH DESIRABLE REFERENCE RATE

All Islamic banks (IBs) in Malaysia and many others elsewhere, pool depositors' funds and mobilize the co-



Notes: i denotes mudharabah rate (example: 1i for mudharabah rate for 1 month maturity) and c denotes conventional rate (example: 1c for conventional rate of 1 month maturity)

FIGURE 1. Plots of conventional and mudharabah deposit rates at 1, 3, 6, 9 and 12 maturity periods

mingled funds for financing, investment in securities and other assets (Ismail & Abdul Latiff 2001), unless the deposits are earmarked for specific purposes, such as in the case of restricted investment accounts. Thus, depositors do not share actual profits from specific investment or projects that utilize their deposits. Rather, profits from the utilization of the co-mingled funds in total are shared between the depositors and banks. This is where, as described earlier, banks may provide a higher share than what should actually be in order to remain competitive and to retain depositors. However, many Islamic scholars are of the opinion that the return to depositors should be based on a real sector return, and many attempts have been made to estimate such real sector return. Such a reference rate could also be employed as a monetary policy tool.

One such attempt is by Askari et al. (2009) who propose a method based on the private equity market. A reference rate is estimated by taking a weighted average of international and local indices. The risk premium is the mean of the indices less the rate of return on deposit or government project. It is proposed that the risk free rate is the rate of growth of the weighted average of international and local indices. This method is expanded from an earlier work (Mirakhor 1996), in which the cost of capital is simply derived from the Tobin's Q measure.

Hanif and Sheikh (2010) recommend the use of an economic growth indicator directly. They propose using the nominal gross domestic product growth rate (NGDPGR) as a benchmark rate. The use of NGDPGR is ideal in that it can be used as a base rate for the banking sector as well as for central banks as their monetary policy tool. Many central banks manage economies that comprise both conventional and Islamic financial systems. NGDPGR is applicable to both financial systems.

Omar et al. (2010) use the arbitrage pricing theory (APT) with multiple factors – industrial production growth, money supply changes, ringgit exchange rate and composite index return – to estimate the real sector rate of return. It is found that the APT derived profit rate is closely aligned with the actual return on assets (ROA) of the respective sector. The authors suggest that the financing rate to be charged is then obtained by using the sector profit rate plus a measure of customer risk, i.e., default risk.

However, none of the above approaches addresses the competitive pressure that IBs face. These approaches assume that bank customers are willing to tolerate low return even with the prospect of gaining a higher return from conventional deposits.

DISPLACEMENT RISK

It is the competitive pressure and the knowledge that IB customers are also profit driven, that many believe compel IBs to provide a return comparable to the conventional deposit return (IFSB 2010). A number of studies have found that, in general, conventional deposit rates influence mudharabah deposit rates. Chong and Liu (2009) found that for the period from 1995 to 2004, the

Malaysian Islamic deposit rate, or the mudharabah rate, is significantly related to the conventional one. In particular, by employing the Engle-Granger error-correction model, they found that "... (a) changes in conventional deposit rates cause changes in Islamic investment rates, but not vice versa, (b) the Islamic investment rates are positively related to conventional deposit rates in the long-term, and (c) when the Islamic investment rates deviate far above (below) the conventional deposit rates, they will adjust downwards (upwards) towards the long-term equilibrium level" (Chong & Liu 2009: 127).

Cevik and Charap (2011) found similar results. They examined the behaviour of one year Malaysian and Turkish conventional and IB deposit rates for the period between January 1997 and August 2010. By employing the Johansen cointegration procedure, they found that a long-term relationship exists between conventional and IB deposit rates. The pairwise and multivariate causality tests prove that changes in conventional bank deposit rates Granger cause changes in IB deposit rates.

These results suggest that IBs may forego at times of low profit the profit of the bank or shareholders to provide a competitive return. This risk, which is unique to IBs, is termed as displacement risk (Archer & Rifaat 2007; Fiennes 2007; Haron & Hin Hock 2007; Sundararajan 2007). There are a number of ways banks could do this, including providing *hiba* or gifts, appropriating profits attributable to shareholders, maintaining an investment risk reserve (IRR) or maintaining a PER (IFSB 2010). The banks bear the cost and risk under the first two methods. IRR is maintained by transferring profits attributable to depositors only, and, hence, could only cover losses from investment in the depositors' funds. IRR is not common in Malaysia. Where PER is maintained, the cost and risk are shared between the bank and depositors.

Prior to October 2004, IBs in Malaysia resorted to any of the methods described above. Some banks did not practice PER at all. After October 2004 almost all IBs maintained PER as prescribed in FRR. The studies described above did not take into account this fact. This study fills this gap in previous research in that the relationship between conventional and mudharabah deposit rates is examined separately in the period before and after PER is prescribed.

FRAMEWORK RATE OF RETURN AND PROFIT EQUALIZATION RESERVE

Framework rate of return (FRR) provides, in detail, the type of income and expenses to be included in calculating the rate of return. In particular, FRR specifies the expenses that need to be shared by the depositors and the bank, and the expenses that are to be solely borne by the bank. For this purpose, the funds or deposits that banks employ are categorized as restricted funds (where the funds are earmarked for specific purposes such as specific investment fund) and unrestricted funds (where the funds are pooled and mobilized together, such as

current and savings account). Thus, income and expenses are reported separately for restricted funds, where they are clearly identified, and unrestricted funds, where all income and expenses arising from such funds are shared between the depositors and the bank. The division of income and expenses between unrestricted depositors and the bank is based on the principle that the deposits are utilized for the provision of financing, investment in securities, inter-bank placement and other business prescribed by BNM as being Shariah compliant.

A key development introduced in FRR is the setting up of profit equalization reserve (PER) in a regulated manner. PER is built from the provisions for total income (which means it is shared between depositors and banks), which enables banks to maintain a competitive return to depositors. When prevailing rates are less competitive, banks could write back an amount from PER into the total gross income. In other words, PER is a legitimate tool to smoothen income. It is generally accepted by Islamic scholars. To address the criticisms mentioned in the earlier section, the guideline requires banks to obtain consent from depositors, to effectively agree to waive their share of profits for PER. Banks are also required to manage PER in a systematic manner. PER is also apportioned between depositors, which is reported as liability, and that of shareholders, which is reported as equity.

DATA AND METHODOLOGY

To examine the relationship between mudharabah and conventional deposit rates, a sample of monthly deposit rates from January 1996 to June 2011 were collected. Because of the changes in the requirements of PER, as described earlier, the sample is divided into two subgroups: January 1996-September 2004 and October 2004-June 2011. In each period, the relationship between the Islamic and conventional deposit rates is tested for each maturity period of 1, 3, 6, 9 and 12 months. The data begins in January 1996 because the rates before that are not readily available. The mandatory PER requirement effectively ended in June 2011. Starting from July 2011, banks are free to choose whichever method they wish to smooth income in order to provide a competitive rate for Islamic deposits. The fixed deposit rates of conventional commercial banks and the mudharabah (investment deposit) rates of Islamic commercial banks are used.

This study employs the ARDL (Autoregressive Distributed Lag) method (Pesaran & Pesaran 1997; Pesaran, Shin & Smith 2001) in view of the small data points. In addition, ARDL is applicable regardless of whether each series is stationary I(0), nonstationary I(1) or mutually cointegrated. There are two steps in the ARDL method of testing long run relationships. The first step is to test whether a long run relationship exists between Islamic deposit rates and its conventional counterparts for each maturity period. The test is represented by the following Equations (1) and (2):

$$\Delta \ln I_{xt} = \alpha_I + \sum_{i=1}^n \beta_{I1} \Delta \ln I_{xt-i} + \sum_{i=1}^n \beta_{I2} \Delta \ln C_{xt-i} + \gamma_{I1} \ln I_{xt-1} + \gamma_{I2} \ln C_{xt-1} + \varepsilon_1 \quad (1)$$

$$\Delta \ln C_{xt} = \alpha_c + \sum_{i=1}^n \beta_{C2} \Delta \ln C_{xt-i} + \sum_{i=1}^n \beta_{C1} \Delta \ln I_{xt-i} + \gamma_{C2} \ln C_{xt-1} + \gamma_{C1} \ln I_{xt-1} + \varepsilon_2 \quad (2)$$

where $\ln I_{xt}$ represents the natural log of the Islamic commercial bank mudharabah rate of return with subscript x denoting maturity periods of 1, 3, 6, 9, and 12 months. Whereas, $\ln C_{xt}$ is the natural log of the conventional commercial bank fixed deposit rate of return with subscript x also denoting maturity periods of 1, 3, 6, 9, and 12 months.

The null hypothesis is that there is no long-term relationship. Thus, $\gamma_{I1} = \gamma_{I2} = 0$ in Equation (1) and $\gamma_{C1} = \gamma_{C2} = 0$ in Equation (2). These hypotheses are tested using F statistics where the F statistics are tested against critical value bounds developed by Pesaran et al. (2001). If the F statistics fall below the lower bound critical value, the null hypotheses cannot be rejected. On the other hand, if the F statistics fall above the upper bound critical value, there is sufficient evidence to prove the existence of a long run relationship. Whereas, F statistics that fall within the upper and lower bound critical values indicate that further testing of the order of integration is necessary.

The next step is to estimate the long run coefficients for those variables whose relationships are proven in the first step. The coefficients are as given in the following ARDL (h, z) models (3) and (4), where h and z indicate the number of the lag for the respective series. The h and z are automatically selected by the Microfit program used in this study.

$$\ln I_{xt} = c_I + \sum_{i=1}^h \beta_{I1} \ln I_{xt-i} + \sum_{i=1}^z \beta_{I2} \ln C_{xt-i} + \varepsilon_1 \quad (3)$$

$$\ln C_{xt} = c_c + \sum_{i=1}^h \beta_{C2} \ln C_{xt-i} + \sum_{i=1}^z \beta_{C1} \ln I_{xt-i} + \varepsilon_2 \quad (4)$$

FINDINGS AND DISCUSSION

Table 1 shows the results of F statistics to test the null hypotheses; in Equation (1), and in Equation (2). For the period from January 1996 to September 2004, there is strong evidence to support the existence of a long run relationship between mudharabah and conventional rates where the conventional rates for all maturity periods are *long run forcing variables* explaining the mudharabah rates at the 1% significant level. On the other hand, for all maturity periods the mudharabah rates do not significantly explain the conventional rates.

We next run ARDL to estimate the long run coefficients, as given in Equations (3) and (4), for the relationships found to be significant in Table 1. The long run coefficients for all maturity periods are positive and highly significant. The values range from 0.76 to 0.92, as shown in Table 2. It is observed that the longer the maturity period, the higher

TABLE 1. Bound-testing procedure results

Cointegration hypothesis	F-statistics	
	Period 1996:M1-2004:M9	Period 2004:M10-2011:M6
F(Islamic1 _t Conventional1 _t)	14.4490*	0.69387
F(Conventional1 _t Islamic1 _t)	1.6025	1.3530
F(Islamic3 _t Conventional3 _t)	11.2393*	1.4413
F(Conventional3 _t Islamic3 _t)	1.2902	.89456
F(Islamic6 _t Conventional6 _t)	20.8500*	2.7803
F(Conventional6 _t Islamic6 _t)	2.2787	1.3217
F(Islamic9 _t Conventional9 _t)	25.7977*	5.3407**
F(Conventional9 _t Islamic9 _t)	1.3994	3.1488
F(Islamic12 _t Conventional12 _t)	14.0302*	1.6403
F(Conventional12 _t Islamic12 _t)	1.020	1.3240

Notes: * Represent significance at 1%, and ** at 5%. The critical values from Pesaran and Pesaran (1997) are 4.042-4.788 (at 10%), 4.934-5.764 (at 5%) and 7.057-7.815 (at 1%). F(Islamic1_t|Conventional1_t) denotes the F statistics for when the mudharabah rate of 1 month maturity, Islamic1_t, is tested as a dependent variable and the conventional deposit of 1 month maturity, Conventional1_t, as the independent variable.

TABLE 2. Estimated autoregressive distributed lag models and long run coefficients, 1996:M1-2004:M9

Regressor	Coefficient	Standard error	T-ratio[prob]
Dependent variable: Islamic1, ARDL(1,0)			
Conventional 1	.75591	.028247	26.7604[.000]
Intercept	.00449	.0014530	3.0955[.003]
Dependent variable: Islamic3, ARDL(1,1)			
Conventional 3	.78148	.026358	29.6486[.000]
Intercept	.00442	.001369	3.2296[.002]
Dependent variable: Islamic6, ARDL(1,0)			
Conventional 6	.79708	.033367	23.8881[.000]
Intercept	.00558	.001741	3.2066[.002]
Dependent variable: Islamic9, ARDL(1,1)			
Conventional 9	.82438	.029208	28.2241[.000]
Intercept	.0057952	.0015251	3.7999[.000]
Dependent variable: Islamic12, ARDL(1,1)			
Conventional 12	.91944	.050250	18.2974[.000]
Intercept	-.3556E-3	-.0027679	.12848[.898]

is the value of the coefficients, which shows the stronger influence of the conventional rates on mudharabah rates.

All short run dynamic coefficients are highly significant and have the correct signs. The estimated error correction models are shown in Table 3. The speed of adjustment of each model is around 20 per cent. This means that 20 per cent of the disequilibrium of the previous month's shock adjusts back to the long run equilibrium in the current month. This suggests only a moderate speed of convergence to equilibrium. Therefore, the mudharabah deposit rates moderately exhibit a mean reverting behaviour. In other words, the rates always adjust to the long run position in relation to conventional deposit rates. This is evidence that the mudharabah rates are pegged or managed towards the conventional counterparts.

We conduct diagnostic tests to determine whether or not the results exhibit serial correlation, misspecification and heteroscedasticity problems. The Lagrange multiplier test that tests for null hypothesis of no correlation indicates that there is no serial correlation for all maturity periods. The test statistics are not significant at the 5 per cent significant level. Similarly, Ramsey's RESET test does not detect a misspecification problem. Again, the test statistics are not significant at the 5 per cent significant level. However, the regression of squared residuals on squared fitted values indicates that the coefficient of ARDL for maturity periods of 1, 3 and 6 are not stable. This is expected as the rates for the shorter maturity periods are more volatile than those for longer-term maturity periods. Our ARDL results for 9 and 12 months are not

found to have a heteroscedasticity problem. The plots of CUSUM and CUSUMSQ (Figure 2) generally agree with the findings of the heteroscedasticity diagnostic test. Overall, we conclude that the estimated coefficients are unbiased although they are not the best linear unbiased estimators (BLUE). Nevertheless, our results concur with those of Chong and Liu (2009) and Cevik and Charap (2011).

Contrary to the results for the period from January 1996 to September 2004, the existence of a long run relationship is not evident for the period October 2004 to June 2011. The F statistics for all maturity periods except for a 9-month maturity period are found to be insignificant. Similarly, when the conventional rates were tested as the dependent, no long run relationship is found for all maturity periods. In other words, no long run relationship (with the exception mentioned) exists between mudharabah and conventional deposit rates during the period when the calculation of rate of returns is prescribed and almost all banks are to maintain PER in a prescribed manner.

A possible explanation is that when the risk is shared between banks (shareholders) and the depositors, although the IBs engage in income smoothing, as is evident from the existence of PER, it is for purposes other than for benchmarking the conventional deposit rates. The returns could be calculated based on performance rather than calculated to catch up with the conventional rates. A parallel could be drawn in the manner in which all

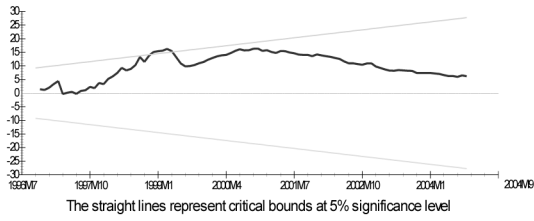
companies, including banks, trade in securities (to either book profit early in the accounting period or to avoid losses albeit paper loss) when fair value accounting is applicable to investment securities. It is reported that Spain requires its banks to provide for more losses during the period when fair valuation records a profit, in order to provide for the periods when higher losses are recorded (The Economist 2008). Another possible explanation is that banks engage in income smoothing for economic reasons and for signalling purposes. Further investigation is needed to provide a more robust explanation. Such investigation is beyond the scope of this study, as it requires bank level information.

Although, as depicted in Figure 1 earlier, a correlation is apparent in each of the maturity period plots, this could be expected, as, on the asset side, the IB portfolios for application of funds are similar to that of conventional bank (Cevik & Charap 2011). The portfolio typically consists of financing (housing mortgage, personal and business financing), investment in securities and placement with other banks. These sources of income are typically fixed or fee based. Since 2010, when the accounting standards regarding fair valuation of investment in securities became applicable, a possible source of volatility in income for all banks, as well as companies, is investment in securities. Again, as in the liability side, IBs tend to shy away from profit and loss sharing arrangements.

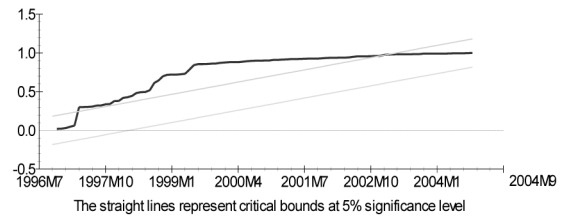
TABLE 3. Estimated autoregressive distributed lag models and short run error correction model, 1996:M1-2004:M9

Regressor	Coefficient	Standard error	T-ratio[prob]
Dependent variable: Δ Islamic1, ARDL(1,0)			
Δ Conventional1	.18022	.017982	10.0224[.000]
Intercept	.00107	.3977E-3	2.6961[.008]
e _c m(-1)	-.23841	-.024750	9.6329[.000]
Dependent variable: Δ Islamic3, ARDL(1,1)			
Δ Conventional3	.065945	.037417	1.7624[.081]
Intercept	.001109	.4005E-3	2.7696[.007]
e _c m(-1)	-.25088	-.027235	9.2117[.000]
Dependent variable: Δ Islamic6, ARDL(1,0)			
Δ Conventional6	.17119	.017092	10.0162[.000]
Intercept	.001198	.4373E-3	2.7405[.007]
e _c m(-1)	-.21478	-.022685	9.4678[.000]
Dependent variable: Δ Islamic9, ARDL(1,1)			
Δ Conventional9	.086830	.036848	2.3565[.020]
Intercept	.001320	.4199E-3	3.1440[.002]
e _c m(-1)	-.22783	-.023559	9.6706[.000]
Dependent variable: Δ Islamic12, ARDL(1,1)			
Δ Conventional12	.033838	.047135	.71789[.475]
Intercept	-.6874E-4	.5314E-3	-.12938[.897]
e _c m(-1)	-.19331	.024637	-7.8462[.000]

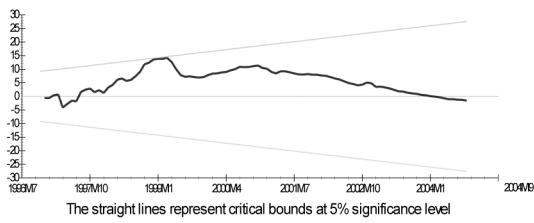
CUSUM for ARDL (1, 0) model of 1 month maturity rates



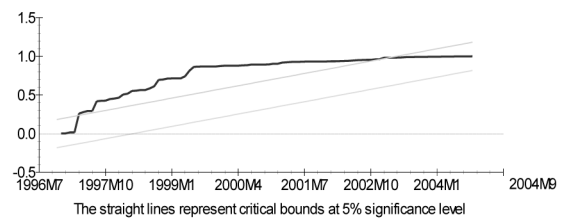
CUSUMSQ for ARDL (1, 0) model of 1 month maturity rates



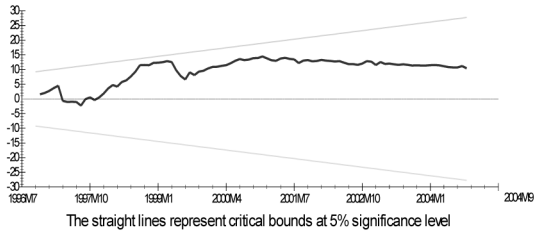
CUSUM for ARDL (1, 1) model of 3 month maturity rates



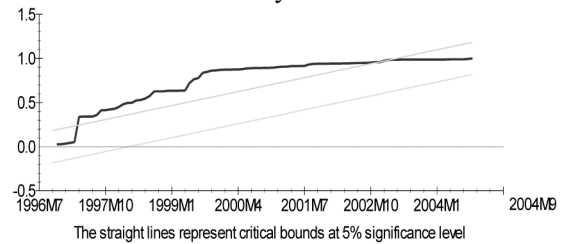
CUSUMSQ for ARDL (1, 1) model of 3 month maturity rates



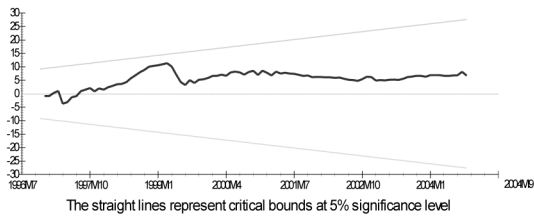
CUSUM for ARDL (1, 0) model of 6 month maturity rates



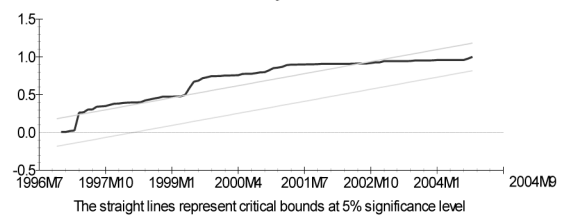
CUSUMSQ for ARDL (1, 0) model of 6 month maturity rates



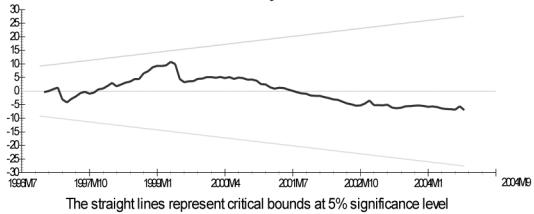
CUSUM for ARDL (1, 1) model of 9 month maturity rates



CUSUMSQ for ARDL (1, 1) model of 9 month maturity rates



CUSUM for ARDL (1, 1) model of 12 month maturity rates



CUSUMSQ for ARDL (1, 1) model of 12 month maturity rates

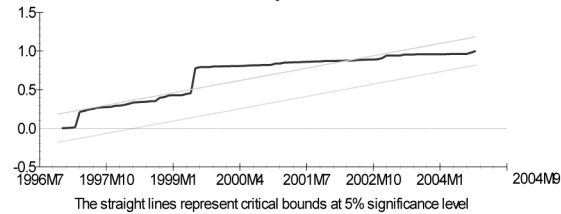


FIGURE 2. Plots of CUSUM (Cumulative sum of recursive residual) and CUSUMSQ (Cumulative sum of squares of recursive residual) for 1, 3, 6, 9 and 12 maturity periods

CONCLUSIONS AND FUTURE RESEARCH

Islamic banks (IBS) have been criticized for not abiding truly to the Shariah profit and loss sharing principle, especially with their depositors. In the absence of any constructive solution that would encourage banks to behave otherwise, regulators are resigned to the fact that the need for shareholders to forgo their profits to provide competitive returns to depositors is compelling. The main issue is how best this is to be done. This study provides evidence that notwithstanding the bad reception and perception of PER, it could have a positive impact in terms of banks not benchmarking against the conventional deposit rates when determining mudharabah deposit rates, if it is maintained in a regulated manner. The findings in this study show that in the period prior to the implementation of PER as prescribed, where IBS employ both displacement risk mitigation and non-mitigating mechanisms, IBS peg the mudharabah deposit rates to the conventional deposit rates. However, there is no evidence of such pegging behaviour in the second period. This could be attributed to the behavioural consequence of risk sharing between banks and depositors when PER is maintained, as, consequently, PER mitigates the displacement risk. Banks could be engaging in income smoothing in economically efficient ways or for the purpose of signalling. Future research using bank level data could robustly determine this. The aggregate data used in this study does not allow such enquiry to be made.

Future research could also determine the various sources of income as contributing to the relationship between conventional and mudharabah deposit rates and how much of the method of determining the rates of return is discretionary or otherwise. An important and new area for future research is the behavioural implication of PER as well as any type of reserve accounting on banks. Because of its risk mitigation element, could reserve accounting and PER curb speculative behaviour? This has a major policy implication not just in financial reporting where reserve accounting is negatively perceived, but also in the area of banking regulation.

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- Radziah Abdul Latiff (Correspondent author)
Faculty of Economics and Management
Universiti Kebangsaan Malaysia
43600, UKM Bangi, Selangor, Malaysia
E-mail: radziah@ukm.my
- Noreha Halid
UKM-Graduate School of Business
Universiti Kebangsaan Malaysia
43600, UKM Bangi, Selangor, Malaysia
E-mail: noreha@ukm.my