

## Signaling view of Loan Loss Provision in Islamic Banks of Malaysia

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**Abstract**— Loan Loss Provision (LLP) has been a major element in the bank profits fluctuations in recent years. Loan loss provision is used as a tool to control credit risk. There has been considerable attention to signaling view of loan loss provision. After the recent global financial crisis in 2008, banks were concerned about the low level of their loan-loss provision. Since results via earning management and capital management are less forward looking, this study intends to examine the signaling aspect of loan loss provision. This paper investigates Islamic banks regulated by Bank Negara Malaysia for the period of 2008-2012, using a panel data approach. The result of this study indicates a significant positive relationship between the loan loss provision and future earning.

**Keywords**— Loan Loss Provision (LLP), Signaling view, earning management and capital management;

### 1. Introduction

Given the guidelines from the Basle Capital Accord on capital, researches have attempted to recognize the effect of loan loss supply as a device for capital and earnings management and as a signaling mechanism. Commercial bank managers use loan loss provisions to deal with exposures to risk arising from lending. When anticipated losses happen due to lending the loan loss provisions are used for estimation. The immediate impact of the increase in the loan loss provision is anticipated to lower the earnings that are reported. Moreover, the loan loss provision increment would also cause the loan loss reserve, which is regarded as a portion of capital adequacy section, to increase. Based on the loan loss provision levels that are recorded for an accounting year, the banks could select the capital and earnings ratio levels that they would want to retain. The framework for capital adequacy for Islamic banks in Malaysia was introduced from the beginning of January 2008. This framework requires these banks to state the total sum of loan loss provisions in their statements of profit and loss.

Bank managers have privileged information when it comes to the risk that is linked to their lending. The managers' judgment is required in relation to the required storage for credit risk and in projecting the annual loan loss provision. Furthermore, the timely provision of loan losses can be an effective tool for bank managers. Thus, the bank managers can set the accounting accruals for financial year-ends. This is the reason why it can be concluded that the sum of the annual loan loss provision can be a good indicator for the users of the financial records to make decisions.

Prior to the global crisis in 2008, the low levels of the banks provision for commercial loan loss were rather worrisome. The determinants of impaired loans and loan loss provision differ among countries and respective banks. The variations of provisions' factors among banks can be in terms of variations in accounting, changes in regulatory procedures, changes in the regulations in particular countries, and the discretionary decisions made by the banks managers themselves.

When the provision for loan loss is utilized as anticipated, banks would be able to identify the loss on a portfolio or a particular loan, if the loss should occur. This implies that the provision for loan loss can be an effective tool for managing credit issues and for early detection while enabling the banks to incorporate the losses and expand their credits. The provisions for loan loss are established in backward looking behavior instead of being futuristic.

In fact, this occurrence is more than just the basis of the microeconomic advantage of the loan loss provision theory.

Banks face a low loan loss reserves to total loans ratio during growth economic cycles; while during times of downturn, the banks have to identify the losses and increase the provisions of the loan loss reserves. Given the recent global economic crisis in 2008, banks are required to be more forward looking

when it comes to the provisions practices as this would provide a higher reserve level and demonstrate the anticipated losses in the remaining life span of a loan. It has been learned from the recent global crisis that even though the loan reserves are sufficient during times of economic growth, it is insufficient during times of recession (Karimiyan et al., 2013).

This study aims to examine the signaling dimension of loan loss provision on future earnings among Malaysian banks. Based on the signaling perspective, the focus is on the future and outcomes of the signaling perspective can forecast the events in the future. These outcomes cannot be found using capital and earning management researches.

The present study attempts to examine the association between the loan loss provision and future earnings among Islamic banks in Malaysia from the year 2008 to 2012.

The study will find out if there is a prominent link between loan loss provision and future earnings besides describing if the loan loss provisions reflect positively or negatively to the shareholders and investors. Many studies examine the signaling view of loan loss provision, and most of them have focused on commercial banks of developed countries. Although, few studies focus on the Islamic banking system, there is lacked of study on the loan-loss provision in the Islamic banks and especially on signaling view of loan loss provision. Islamic financial institutions have experienced a steady growth during the last decade. At the moment, Islamic banks are active in more than 60 countries and their assets are more than \$166 billion, Islamic banks are now playing an increasingly significant role in their respective economies.

The paper will be organized in the following manner. Section 2 will discuss the literature review based on researches on loan loss provision and the management of this provision; Section 3 will elaborate the relevant research methodology and data retrieval; Sections 4 and 5 will explain the findings and draw conclusions, respectively.

## 2. Literature review

There are three classifications of loan loss provision namely loan loss provision for (a) capital management; (b) earnings management; and (c) being a tool for signaling to investors and stockholders by the management.

### 1.1. Loan loss provision and earnings management

The studies by Greenawalt and Sinkey (1988) and Wahlen (1994) demonstrate a positive association between loan loss provision and earnings management of banks. It is suggested that when earnings are high, the loan loss provision are high and vice versa. This finding collaborates with the findings of researches that was conducted among American banks (DeBoskey and Jiang, 2012; Ma, 1988; Collins et al., 1995; Kanagaretnam et al., 2010; Kanagaretnam et al., 2004; Liu et al., 1997b). Similar findings were also reported by researches carried out among non-American banks (Perez et al., 2008; Anandarajan et al., 2003; Anandarajan et al., 2005; Curcio and Hasan, 2008; Dong et al., 2012).

However, according to Ahmed et al. (1999) and Beatty et al. (1995), there was no concurrence with earnings smoothing. Several studies also examined the phenomenon by utilizing other aspects of the financial statements in relation to earning management and loan loss provision. The studies of Collins et al. (1995) and Beatty et al. (1995) investigated if the strategic timing of the earned gains and losses were utilized as mechanism for management of earnings. In general, past researches offer mixed evidences about earning management using loan loss provision but the findings have not been conclusive.

### 1.2. Loan loss provision and capital management

Based on the capital-management hypothesis, loan loss provision is used by bank managers to lower the expected regulatory costs related to the violation of capital requirements. Subsequent to 1989, loan loss reserves were as measured as a portion of the numerator of the ratio in calculating the ratios of capital adequacy. As a result, there was motivation to control capital by utilizing loan loss provisions, in theory. After this period, the loan loss reserve was removed from the ratio of capital adequacy and only used as a portion of total capital up to 1.25% risk of the weighted assets. Therefore, it is assumed that there is no prominent link between loan loss provisions and behavior of capital management.

Researches that investigated the link between loan loss provision and capital management, utilizing data before 1989, surmised that loan loss provisions were

utilized as a mechanism to manage capital. According to Moyer (1990) and Scholes et al. (1990), banks utilized loan loss provision in managing the capital ratios. Collins et al. (1995) on the other hand discovered that write offs are utilized as a tool to manage capital ratios and not loan loss provisions. A study by Beatty et al. (1995) found that loan loss provisions and loan charge-offs are utilized as tools in managing capital. Studies by Kim and Kross (1998a) and Ahmed et al. (1999) that utilized data after 1989, discovered no prominent link between capital management and loan loss provisions.

### 1.3. Loan loss provision as a mechanism for signaling

According to Beaver, et al. (1989), the increase in the provision of loan loss could point to the fact that the banks' management regards their earnings capability to be strong enough to undergo a hit from reduced earnings with additional provisions of loan loss. It was debated that the increase in the provision of loan loss demonstrated good news and was seen as an indicator of a bank's earning capability.

Wahlen (1994) examined the response by investors to sudden increases in loan loss provisions in the banks. It was discovered that banks with a higher unanticipated loan loss provision had a higher abnormal return and it was surmised that investors regarded unanticipated increments of loan loss provisions in a positive light.

In a study by Liu and Ryan (1995), they examined signal by observing the change in loan loss provision on the banks' financial situation. It was pointed out that the increase in loan loss provision was a good sign only for banks known by the market to have loan default issues. Beaver and Engel (1996) demonstrated that discretionary provision of loan loss is positively linked to stock returns of banks. Liu et al. (1997a) highlighted the fact that the good news that was signaled by discretionary provision of loan loss is essential especially for banks with reduced regulatory capital and possible loan default issues.

According to Griffin Griffin and Wallach (1991) and Elliott et al. (1991), stock markets reacted to announcements of additional loan loss provision, positively. A study by Kanagaretnam, et al. (2005) indicated that the management of undervalued banks utilized loan loss provision to indicate that the prospects of the bank's future earnings. A sample of

164 firms from the Taiwanese Stock Exchange was studied Chang et al. (2011) from 1999 to 2004. It was discovered that there was a positive association between discretionary provision of loan loss and earnings before provision of loan loss, one-year future earnings and non-performing loans.

On the other hand, Ahmed et al. (1998) who studied the link between loan loss provision and ratio management, earnings management, and as a signaling tool showed a negative link with stock returns and discretionary loan loss provision. Anandarajan, et al. (2005) utilizing a sample of banks from Australia, conducted a study on capital management, earnings management, and signaling. No prominent usage of loan loss provision was found for signaling future earnings to shareholders.

## 3. Methodology

### 1.4. Econometric approach

We applied linear regression model for Panel data in this study. Panel data has an advantage to be detected and measured the certain effects that may not be observable in pure time-series data (Gujarati,2003). The present study provides the opportunity to test a number of panel data models, including the pooled regression model (PRM), fixed effects model (FEM), and random effects model (REM) and Generalized Least Squares (GLS).

All coefficients in the model of Pooled Regression are constant across time and individuals. Generally, the pooled model is:

$$y_{it} = \beta x_{it} + u_{it} \quad i = 1 \dots N, t = 1 \dots T$$

Model1

In model1:  $u_{it}$  is distributed independently and

identically (i.i.d). Ignoring the specific nature of each cross section is a limitation of the pooled regression and this limitation can be resolved by using a Fixed Effects Model (FEM) , where the specification includes a unit specific component:

$$y_{it} = \alpha + \beta x_{it} + \gamma z_{it} + u_{it} \quad i = 1 \dots N, t = 1 \dots T$$

Model2

Where  $z_i$  is unobserved, and  $x$  and  $z$  are correlated. Nevertheless, a disadvantage of the FEM specifications is that the effects of time invariant and their coefficients fall out and are not identifiable. The Least Squares Dummy Variable (LSDV) methodology is utilized to take into consideration the specific individual components. It means that  $z$  can be translated as an intercept of observation  $i$  by involving a dummy for every cross-section unit. In other words:

$$y_{it} = a_1 + a_2 D_2 \dots a_N D_N + \dots + \beta x_{it} + u_{it}$$

Model3

Using the LSDV method, unobserved time impacts are retrieved by involving time dummies and the variables are homogeneous in all the cross-sections but different across time. The time dummy and cross-section variables can be added if the intercept differs across time and individuals. On the other hand, time invariant determinants can be included by utilizing the Random Effects Model (REM). The model is reconsidered:

$$y_{it} = \alpha + \beta x_{it} + z_{it} + u_{it} \quad i = 1 \dots N, t = 1 \dots T$$

Model4

In Model 4 demonstrates the mean value of the entire cross-sections' intercepts and the error components demonstrates the individual intercept deviations from the mean values. The error components that are individual are assumed not correlated to each other and not auto-correlated over the cross-section units as well. Thus, over time, the random error  $z_i$  is homogeneous but varies across the cross sections. The advantage of the REM model is that the time-invariant determinants are considered in the regression.

The General Least Squares estimation (GLS) is employed as it is found to be necessary. If a panel analytic model shows the presence of autocorrelation, the estimator of panel data is no longer the best linear unbiased estimator (BLUE). This issue cannot be managed by the normal analyses of serial correlation like Breusch-Godfrey, Durbin-Watson, or Box-

Pierce-Ljung alone as the presence of the panel estimation autocorrelation may be from one period to another as well as across every cross section. Moreover, heteroskedasticity can have an effect on the estimation's efficiency. The GLS Estimator can be used to solve these two issues. In contrary to the static models where the entire links are between variables at similar points of time, the GLS is a simple dynamic panel model that explains how the situation develops over a period of time. The GLS estimator is mainly utilized in estimations for auto-correlated residuals and/or heteroskedastic. In this study, the FGLS (Feasible General Least Squares) estimator that is efficient asymptotically is used as it is found to be more practical.

### 1.5. Specification of the model

The effect of loan loss provision behaviour among Islamic banks in Malaysia was measured using the model and the variables adapted from the model found in the study by Kanagaretnam et al. (2005). The model was utilized to examine the loan loss provision based on the changes in non-performing loans, loan loss provision, earning and one year ahead change in earnings, loan charge offs, capital, and beginning loan loss allowance. Below are the models:

$$LLP_{it} = \alpha_0 + \alpha_1 LCO_{it} + \alpha_2 LLA_{it-1} + \alpha_3 CHNPL_{it} + \delta_1 EBTP_{it} \\ + \lambda_1 CHEBTP_{it+1} + \gamma_1 CAP_{it} + \varepsilon_{it}$$

Kanagaretnam et al. (2005) examined if managers in banks utilized their discretion to estimate loan loss provision to relate information regarding their banks' prospects in the future. In this study, in order to measure the impact of loan loss provision behaviour among Islamic banks in Malaysia, the model along with the controlled variables includes the following:

$$LLP = f(LCO, LLA, CHNPL, EBTP, CHEBTP, CAP)$$

Where, **LLP** is loan loss provision;

LCO is the net charge-offs;

LLA is beginning loan loss allowance;

CHNPL is change in non-performing loan;

EBTP is earning before tax and provision;

CHEBTP is the change earning before tax and provision but one year ahead; and CAP is capital.

Capital and earnings before tax and provision are included to control the possible effects on discretionary loan loss provision of incentives linked to capital management and income smoothing. If bank managers use discretionary components of unexpected provisions to smooth earnings, then the expected income smoothing parameter ( $\delta$ ) would be positive. According to the capital management hypothesis, bank managers with a regulatory capital that is low are motivated to increase the loan loss provision since the loan loss reserve is included in the primary capital. This also implies that the coefficient of primary capital ( $\lambda$ ) will be negative.

Net loan charge-offs, beginning loan loss allowance and change in non-performing loans are included in the model to clearly take into account the non-discretionary part of loan loss provision. Net loan charge-offs is constructed in relation to loan loss provision. The changes in non-performing loans will affect loan loss provision in a positive manner while beginning loan loss allowance affects loan loss provision negatively. Beginning allowances that are larger will need a smaller requirement for the period concerned and the opposite is true. These variables are chosen for estimating nondiscretionary loan loss provision base on past studies by Beaver and Engel (1996), Kim and Kross (1998b), and Wahlen (1994).

**The Data and scope** The data used in this study are panel data, extracted from income statements and balance sheets of Islamic banks in Malaysia over 2008-2012 periods from BankScope database. Our sample considers 15 out of 17 Islamic banks that are Islamic banks regulated by Bank Negara Malaysia.

## 4. Empirical Result

### 1.6. Descriptive statistics

Table1 Reports the descriptive statistics of the variables used in the regression analysis.

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
LLP	73.56	40.5	796	-27.6	108.28	4.35	28
NPL	253.29	139.8	1493.6	2	303.17	1.85	6.28
CHN					172.		13.4
PL	8.19	7.4	825.2	-560	71	1.39	5

LLA	240.03	114.7	1208.7	270.25	82	2.02	6.73
LCO	48.5			-	128.		16.3
EBT	3	29.7	553.5	650.4	06	-1.19	2
P	226.	124.	1162.	-	241.		
CHE	37	8	5	40.06	59	1.61	5.38
BTP	38.0			-	105.		15.1
	2	17.8	591.3	281.2	64	2.48	4
	133	902.	4975.		110		
CAP	5.83	9	6	223.5	5.25	1.55	5.28

LLP is loan loss provision, LCO is the net charge-offs, LLA is beginning loan loss allowance, CHNPL is change in non-performing loan, EBTP is earning before tax and provision, CM EBTP is the change earning before tax and provision but one year ahead; and CAP is capital

The value of skewness and kurtosis for the variables included in the descriptive statistics table indicates that the data are of normal distribution or are closer to a significantly normal distribution.

Table 2: linear regression estimation resultfor Loan Loss Provision in Islamic bank of Malaysia (2008-2012)

Models				
Variables	Pooled	Random	Fixed	GLS
Constant	27.23677	27.23677	18.12562	35.3487
	-1.94	(2.22) **	-0.49	-1.67
LCO	-0.13001	-0.13001	-0.18585	-0.05197
	(-1.62)	(-1.85) *	**	(-0.68)
LLA	0.34741	0.34741	0.32627	0.144232
	(5.037)	(5.78)	(3.54)	
	***	***	***	-1.83
CHNPL	0.496067	0.496067	0.46069	0.300337
	(8.63)	(9.91)	(8.00)	(5.95)
	***	***	***	***
EBTP	0.153488	0.153488	0.599982	0.47824
	(2.06) **	(2.36) **	***	(6.54)
CH				***
EBTP	0.059561	0.059561	0.317688	0.195668
	-0.71	-0.81	***	(3.08)
				***
CAP	-0.05377	-0.05377	-0.12392	-0.08388
	(-2.43) **	***	***	(-4.89)
				***
Breusch and Pagan LM Test	0.089			
	(0.00)***			
Hausman Test	29.66			
		(0.00)***		



NOTS: \*\*\*, \*\*, and \* represent significance at 1%, 5%, and 10% levels respectively

Following Kanagaretnam et al. (2005) a single-stage approach is employed in this study. Annual data over the period 2008 to 2012 are used in the estimation. Our basic tests have employed pooled least squares estimation versus random effect (Breusch and Pagan LM test), and random effect versus fixed (FEM) effect method (Hausman Test).

According to the result of the LM test, Pooled regression was rejected at the one-percent level, and it leads to the conclusion that the Random Effect model is more appropriate than the Pooled model. In other words, there is the bank specific effect on the data. The following results observed from the Hausman test shows that the P-value for the test is less than 1%, so the random effects are not appropriate and that the fixed effects' specification should be preferred.

Results of data indicate that there is significant and positive relationship between LLP and CHEBTP and the other three variables namely LLA, EBTP, and CHNPL. In other words, LLP is a good signaling view of change in future earnings. Results show that there is negative and significant relationship between LLP and two variables as can be seen by, LCO and CAP at the 5% and 1% level respectively. In the Fixed Effect model, if one supposes that other variables being the constant one percentage point increase in future earning will lead to 0.31 percentage points in LLP.

Similarly, the results from generalized least squares (GLS) support the positive relationship between LLP and future earnings at the one-percent confidence level. Overall, results for the generalized approach are same as fixed effect model except for LCO variable.

## 5. Summery

This study used panel regression model to test the behavior of loan loss provision in connection with one year ahead changing earning in Islamic banks in Malaysia. The study included of data for Islamic banks over 2008 to 2012 periods. The results from the empirical study under Fixed Effect model reveal that there is statistically significant positive relationship between the loan-loss provision and future earning. According to our finding, it can be concluded that one-percent increases in changing in

earning lead to the increase in the loan loss provision by 0.32 percent if other variables are constant. Overall, the result indicates the loan loss provision is a good indicator for future earning. Additionally, this positive relationship can be considered as good news for users of bank financial statements.

In addition, the results under Fixed Effect model show that the loan loss provision has a significant positive relationship with beginning loan loss allowance, change in non-performing loan, and earning before tax and provision. Moreover, results of data indicate that loan loss provision has significant negative relationship with capital and the net charge-offs. So, one can conclude that both capital management earning management supported in Islamic banks of Malaysia. Results of LM test and Hausman test shows that Fixed Effect model is appropriate to obtain credible results. It means that the bank specific characteristic reflects the variation in Islamic banks of Malaysia.

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