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Consequences of Earnings Management for Islamic Banks: Evidence from Worldwide, the GCC, and the ASEAN Region

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Abstract

This study aims to empirically investigate the impact of earnings management (EM) on the performance, stability, and managerial incentives of Islamic banks (IBs). Secondary data was obtained from 75 largest IBs (in terms of their total assets) worldwide from 2009 to 2020. The panel data estimation method was used to carry out the empirical analysis. Regression models were used for estimation on the worldwide sample, along with the samples from the GCC and ASEAN regions, respectively. The results showed the significant negative impact of EM on the internal performance (ROE/ROA) of IBs, both worldwide and in the GCC region. On the contrary, the findings indicated that EM does not exert a significant influence on the internal performance metrics of IBs within the ASEAN region. Additionally, no notable effects of EM on external performance, specifically in terms of stock returns, as well as on managerial incentives, were identified across all three sample sizes under investigation. Conversely, a significant negative relationship between EM and stability, as measured by the Z-score, was observed for all. This research is a pioneering empirical investigation into the effects of EM on the performance, stability, and risk-taking behavior of IBs, thereby providing a more nuanced understanding of its implications within the Islamic banking sector.

Keywords: banking, conventional banks (CBs), earnings management (EM), Islamic banks (IBs), management incentives, performance, stability

JEL Codes: G21, G34, G32, G33, K42

Introduction

Earnings management (EM) is one of the major aspects of corporate governance (CG), financial management, and accounting literature. Business entities are normally formed to earn profits. Earnings comprise the

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net income or the bottom-line results of the income statement (Setiawati et al., 2023). Earning figures are very important to business entities because these figures define their financial destiny (Aqabna et al., 2023). The profitability, strength, and stability of commercial organizations are often evaluated through their earning figures. These figures signal the performance of the organizations to different stakeholders in the capital and money markets. Moreover, investors and creditors predict the future performance of any organization through these signals. Therefore, their future investment decisions depend upon the earnings of the organization.

Earnings are not only important for investors but also remain very important for the management. This is because in most organizations managerial compensation plans are determined by these figures (Abdeljawad et al., 2023). The management manipulates earning figures for several reasons, such as private monetary gain, personal reputation, or reduction of tax expenses. This manipulation of accounting figures is called earnings management or EM in accounting, financial management, and CG literature. The importance of EM is paramount. Therefore, it has remained the focus of researchers and academic literature for the last three decades (Brennan, 2021).

EM is the manipulation of financial statements by insiders (management) against the interests of outsiders (shareholders and other stakeholders) within the rules and regulations of accounting standards, such as the International Financial Reporting Standards (IFRS) and Generally Accepted Accounting Principles (GAAP) (Cimini, 2015). The management alters the financial reports of the organization during the process of EM to mislead the shareholders regarding their basic performance (Mojoodiniay & Tasaddi, 2023). Generally, EM is used to hide the actual and accurate financial position of the organization through fabricated financial statements. According to the situation and to achieve different goals, the management reduces or enhances the earnings by using different accounting techniques (Ahmad et al., 2023). The different goals include showing good performance, job security, and the personal benefits related with the figures of good performance (El Sood, 2012; Goulart, 2008).

Since EM is considered as misrepresentation of an organization's financial position and deceiving of the stakeholders, any involvement in this practice raises a big question regarding the quality of the financial reporting system (FRS). The global financial crisis (GFC) 2007-08 was the result of

fabricated and manipulated accounting figures, which caused the default of big financial institutions worldwide, while others faced huge losses. Therefore, the importance of fair and quality FRS regained attention after the crisis (Debnath, 2017). However, EM can still be detected in the practice of financial institutions.

Financial institutions can be broadly categorized into two main types, namely conventional financial institutions (CFIs) and Islamic financial institutions (IFIs). CFIs operate according to the traditional financial principles, focusing on profit maximization and market-based practices. While, IFIs operate in accordance with the *Shariah* principles, which aim to promote economic justice, social responsibility, and spiritual well-being. Hence, the F RS of the IFIs differs significantly from that of their conventional counterparts. CFIs need to follow International Financial Reporting Standards (IFRS) or International Accounting Standards (IAS). In addition to these standards, IFIs need to follow the divine laws of the *Shariah.*

Conventional finance considers EM an illegal act which is performed legally. Whereas, there is no room for EM in the divine law of the *Shariah*, which prohibits misrepresentation, deception, and unethical behavior of the partners in business activities. The inculcation of financial engineering acts in financial statements is not justifiable from *Quran* and *Sunnah* (Nurianah, 2019). Therefore, it is expected from the management of the IFIs that they must present accurate and quality financial statements while adhering to the divine law, which is the base of the Islamic financial system. Unfortunately, EM has been detected in the financial statements of IFIs as well. Some studies even found that IFIs are involved more in EM practices as compared to their conventional counterparts (Zainuldin & Lue, 2020).

Prior literature about the EM of Islamic banks (IBs) focused mostly on evaluating its frequency along with the different mechanisms that impact EM practices. For example, Quttainah et al. (2013) compared the level of EM in IBs with their conventional counterparts. Fitri and Siswantoro (2022) evaluated the impact of CG mechanisms on EM in IBs. Syarif et al. (2021) investigated the factors which affect EM in Indonesian IBs. These studies are important as they provide the empirical evidences that confirm the existence of EM in the financial statements of IBs. It is a significant and serious concern because EM is prohibited by the *Shariah*. Theoretically, it is performed to show the better performance of banks or the private gain of

the management. However, the impacts of EM in IBs have not been evaluated yet which may provide an empirical answer as to why it is performed. In this regard, empirical studies are needed to investigate why the management of IBs indulge in the unethical act of EM, either it is for the better performance of the banks or for their private gain.

This study adds to the existing literature by evaluating the impacts of EM of IBs, worldwide. Although EM is practiced by IBs, but being *Shariah*-compliant institutes, it is assumed that the EM of IBs is not opportunistic, which is *haram* and against Islamic business ethics. Hence, the major objectives of this study are to evaluate the impact of EM on internal and external performance variables, management incentives, and stability of IBs. Return on Equity/Return on Assets (ROE/ROA) are used as internal performance variables, while stock returns comprise the external performance variable. In addition, the impact of EM on stability (Z-Score) and managerial incentives is also calculated. Consistent with prior studies, the discretionary loan loss provisions (DLLPs) are used to proxy EM (Alhadab & Al-Own, 2017; Kanagaretnam et al., 2010). Each regression model is run on three sample sizes, that is, worldwide, the GCC region, and the ASEAN region. The empirical results confirm that EM of IBs negatively impacts the internal performance variables worldwide and in the GCC region, while the ASEAN region remains unaffected. Furthermore, there is no significant impact of EM on the external performance variable worldwide, as well as in the two regions. Simultaneously, there is a significant negative impact of EM on stability worldwide and in both the regions. Whereas, no significant impact of EM on management appears anywhere.

Literature Review

The manipulation of financial statements, which shows the fabricated financial position of an organization, is earnings management (EM). There is no specific definition of EM available in the literature; indeed, several authors have defined EM according to the specific context. According to Kliestik et al. (2020), EM is an effective accounting tool to obtain specific goals through the manipulation of accruals. It is also labeled as creative accounting because it is the process through which the specific rules of accounting are used to distort financial reports in order to obtain specific goals (Bachtijeva, 2021). EM is a common practice in the banking industry; the management of the banks manipulates their financial statements to

achieve the desired outcomes. The complicated operations of banks and their wide range of financial products lead to information asymmetry and opacity in financial statements. Therefore, banking institutions are more susceptible to EM as compared to non-financial institutions (Grougiou et al., 2014).

EM in banks can be explained by the agency theory presented by Jensen and Meckling (1976). According to this theory, bank managers may engage in EM practices to increase their personal gains, rather than acting solely in the interest of other stakeholders. This situation can be attributed to agency conflict, where the interests of managers may not be aligned with the interests of other stakeholders, such as the depositors, shareholders, and investors. In contrast, signal theory suggests that EM is an effective tool of management to signal the market about the banks' stability and financial performance (Verrecchia, 1983). The agency and signal theories have been studied widely and their arguments are supported by a significant number of empirical evidences. According to Kumari and Pattanayak (2017), EM practices are conducted by the management of organizations to satisfy the expectations of shareholders and analysts regarding the financial reports of the organizations. Hence, EM is performed to fulfill the predetermined forecasts of the stakeholders and analysts (Ding et al., 2018).

EM and bank performance are interrelated. For example, Proença et al. (2023) found that EM negatively affected the efficiency of 70 Eurozone banks. They used discretionary loan loss provisions (DLLPs) to proxy EM. Similarly, Ab-Hamid et al. (2018) found that an increase in EM practices reduced the efficiency of banks in 5 ASEAN countries. Ujah et al. (2017) found the negative impact of EM on the performance of banks in various emerging economies, such as Brazil, China, India, Mexico, Nigeria, Russia, and South Africa. Riahi (2020) reported the negative association between the stability of banks and EM in 6 GCC countries from 2000 to 2014 with significant differences between Islamic and conventional banks. Since the structure and regulations of conventional and Islamic banks are different due to *Shariah*-compliance by the latter, therefore, the concept of EM also differs between these banks. EM is considered a legal act in CBs because it is performed under the rules of GAAP and IFRS (Buanaputra, 2021). Due to the fact that it carries the manipulation of financial statements and propagates the fabricated position of the bank for any reason, EM is considered as unethical behavior of the management. This is because it is

against the Islamic norms and business ethics of transparency, truthfulness, and fairness.

Generally, it is expected from the management of IBs that they must be immune from EM practices because of their religious responsibilities. Some empirical literature supports this argument. Lassoued et al. (2018) reported that IBs employ fewer EM practices as compared to CBs in the MENA region. Using the generalized method of moments (GMM) and random effects, Salem et al. (2021) also reported that the extent of EM is lower in IBs as compared to their conventional counterparts in the above region. Similarly, Azam and Majeed (2020) found that DLLPs are used for EM by both the conventional and Islamic banking sectors of Pakistan. Using the sample size of 5 commercial and 5 Islamic banks from 2010 to 2019, they found that CBs were more involved in using DLLPs as compared to IBs. They concluded that due to the ethical standards of Islam, the intensity of EM is lower in IBs as compared to CBs.

Another strand of literature shows a different picture. Hatane et al. (2018) compared the EM practices of 40 conventional and 11 Islamic banks in Indonesia from 2011 to 2017. They concluded that both types of banks used DLLPs for the purpose of EM. They further reported that IBs were more involved in EM as compared to CBs. Similar observations were reported by Zainuldin and Lui (2020). They hypothesized that due to the ethical standards of Islam, IBs would be less involved than CBs in EM. Using the sample size of 53 Islamic and 111 conventional banks from 2006 to 2011, they found that IBs employed higher EM practices as compared to CBs by using their DLLPs. On the other hand, Alam et al. (2020) reported that there was no difference between the EM practices of Islamic and conventional banks.

Both strands of literature are based upon the detection and extent of EM in IBs, while the real impacts of EM on the performance of IBs are yet to be determined. Being *Shariah*-compliant institutes, it is assumed that the EM of IBs is non-opportunistic. Based on *Shariah*-compliance and Islamic business ethics, the following hypotheses are constructed:

H_1. EM of IBs positively impacts their internal performance (ROE/ROA).

H_2. EM of IBs positively impacts their external performance (stock returns).

H_3. There is no association between EM and managerial incentives in IBs.

H_4. EM of IBs positively impacts their stability (Z-Score).

Methodology and Data

Data and Sample

The sample size includes 75 largest IBs, worldwide. This sample size covers almost 50% of the global IFIs in terms of their total assets. The total assets of the sample size comprised 0.8966 trillion US dollars. While, the total assets of IFIs globally were 1.84 trillion US dollars by the end of 2020 (Puri-Mirza, 2023). The list of the top 100 banks in terms of total assets was obtained from theasianbanker.com.[1] The details of the sample size are given below in Appendix A.

The current study also evaluates the sample size of GCC and ASEAN regions separately due to their importance. The GCC region is dominated by the world's largest IBs (Khediri et al. 2021). This region held the largest shares (48.36%) of the global Islamic banking assets at the end of 2019 (Islamic Financial Service Board [IFSB], 2020). The total number of IBs in the GCC region is reportedly 20 (Braima, 2021). On the other hand, the asianbankers.com showed a list of 23 IBs operating in the region. Therefore, 23 IBs are included in this study which presumably comprise the whole Islamic banking sector of the GCC region. Braima (2021) argued that the data of all IBs operating in the GCC region is homogenous. Therefore, the region is included as one region and panel data is used for the entire region. Furthermore, 23 IBs of the ASEAN region are included as another panel to cross-check another region. This region is also very important because it reportedly held the second largest (24.9%) global Islamic finance assets at the end of 2020 (Islamic Development Bank Institute [ISDBI], 2021). Thus, the regression models are run on a worldwide sample, GCC region, and ASEAN region, separately.

Data from these banks was collected for the period 2009-2020. The timeframe of this study is also very important. The global financial crisis (GFC) occurred in 2008 and the issue of EM regained attention after the collapse and huge losses suffered by financial institutions during the crisis. This crisis made the regulators and stakeholders more vigilant about the

[1] https://www.theasianbanker.com/ab500/2018-2019/largest-islamic-banks-2020

opportunistic behavior of the insiders. Their vigilance increases the chances of reducing EM by discouraging the opportunistic behavior of the managers. This study pertains to the post-GFC (2008) period. The data on macroeconomic variables, such as GDP and inflation, were obtained from the website of the World Bank. Panel data is used to estimate the appropriate regression models. Furthermore, to evaluate the appropriation of regression models, Breusch-Pagan and Hausman tests are used to select OLS, fixed effect, or random effect models.

Empirical Models

This section consists of two subsections. Section 3.2.1 explains the first stage which is the estimation of discretionary loan loss provisions (DLLPs) from the total loan loss provisions (LLPs). Section 3.2.2 explains the second stage of the study which examines the impact of DLLPs on performance, stability, and managerial incentives.

Estimation of Discretionary Loan Loss Provisions (DLLPs)

The detection of EM is a tricky task and needs a series of estimations and calculations. Numerous studies on EM have used income smoothness, timeline, discretionary accruals, and investor responsiveness as proxies (Dechow et al., 2010). However, for the banking sector, DLLPs are one of the common measures that are proxied for EM (Alhadab & Al-Own, 2017; EL Sood, 2012). Following the same strand of literature, DLLPs are used in this study to proxy EM. Since DLLPs are not available in the financial statements of IBs, they are estimated from LLPs. These are the combination of DLLPs and non-discretionary loan loss provisions (NDLLPs).

According to Montgomery (1998), the discretionary part of LLPs is exploited by the banks for EM. Othman and Mercni (2014) also reported that DLLPs are used by IBs for EM in the Middle East. Therefore, based on prior evidence, they are used as the major independent variable of this study. Following the prior literature, two-stage approach is used to separate the discretionary part of provisions from total loan loss provisions. In the first stage, NDLLPs are estimated using the following equation:

$$LLP_{it} = \alpha + \beta_1 NPL_{t-1} + \beta_2 \Delta NPL_{it} + \beta_3 \Delta Loan_{it} + \epsilon_{it} \quad (1)$$

where LLPs comprise total loan loss provisions at the end of the year, deflated by total financing and loans.

The financing structures of CBs and IBs are different. Since IBs do not issue loans, therefore, total financing and loans comprise various forms of Islamic financing, such as *Mudarabaha, Musharakah, Ijarah,* and *Qarz e Hasan*. In the above equation, NPL_{t-1} comprise non-performing loans (Islamic finance) at the beginning of the year deflated by total loans at the beginning of the year, ΔNPL_{it} is the change in non-performing loans (Islamic finances) at the end of the year deflated by the beginning loans of the year, and $\Delta Loan_{it}$ is the change in total loans (Islamic finance) deflated by the beginning loans of the year.

Using the above equation, the estimated value of NDLLPs of each bank is obtained. This is the non-discretionary estimated part of the total LLPs that cannot be controlled by the management. The residual of equation (1) is used for the estimation of NDLLPs. The estimated equation becomes equation (2) as follows:

$$\widehat{NDLLP_{it}} = \hat{\alpha} + \widehat{\beta_1} NPL_{t-1} + \widehat{\beta_2} \Delta NPL_{it} + \widehat{\beta_3} \Delta Loan_{it} \quad (2)$$

where $\widehat{NDLLP_{it}}$= estimated non-discretionary loan loss provisions at the end of the year, $\widehat{NPL_{t-1}}$ is estimated non-performing loans at the beginning of the year, $\Delta\widehat{NPL_{it}}$ is the estimated change in non-performing loans at the end of the year, $\Delta\widehat{Loan_{it}}$is the estimated change in total loans at the end of the year, deflated by the beginning loans of the year.

The last step of the first stage is to isolate the estimated value of DLLPs from the total LLPs in equation (3), which is the main independent variable of this study:

$$\widehat{DLLP_{it}} = LLP_{it} - \widehat{NDLLP_{it}} \quad (3)$$

where

$\widehat{DLLP_{it}}$ comprise the estimated discretionary loan loss provisions at the end of the year, LLP_{it} comprise loan loss provisions at the end of the year, and $\widehat{NDLLP_{it}}$ (residual of Eq 1) estimate non-discretionary loan loss provisions at the end of the year.

From the above equation, the estimated value of DLLPs is obtained which is the discretionary part of the total LLPs and controlled by the management. This estimation is used further as proxy of EM, consistent with prior studies.

Impact of DLLPs on Performance, Managerial Incentives, Stability

To evaluate the impact of EM on internal (ROE/ROA) and external (stock returns) performances, managerial incentives, and stability, the following models are used:

$$Dependent\ Variable = \alpha + \beta_1 \widehat{DLLP}_{it} + \beta_2 CI_{it} + \beta_3 DA_{it} + \beta_4 TA_{it} + \beta_5 BOD_{it} + \beta_6 SSB_{it} + \beta_7 GDP_t + \beta_8 Inf_t + \epsilon_{it} \quad (4\text{-}8)$$

where

Dependent variables are ROE_{it}, ROA_{it}, SR_{it}, $MgtInc_{it}$, $Zscore_{it}$.

The variables are defined in Table 1 below.

Table 1
Variables

Variable	Definition
ROE_{it}	Return on equity of bank i at time t.
ROA_{it}	Return on assets of bank i at time t .
SR_{it}	Stock returns of bank i at time t
$Mgtinc_{it}$	Log of total monetary incentives taken by the board of the directors in US dollars at bank i at time t.
$ZScore_{it}$	Log of Z-score of bank i at year t. The Z-score is calculated as $Zscore_{it} = \frac{ROA_{it} + \left(\frac{Eq_{it}}{TA_{it}}\right)}{\sigma(ROA)}$, where Eq is owner's equity and TA is total assets.
$\widehat{DLLP}_{it}$	Estimated discretionary loan loss provisions of bank i at year t. Estimated from the residual of total loan loss provisions.
CI_{it}	Cost to income ratio of bank i at year t. Theoretically, increased cost reduces the profitability of banks. Al-Sharkas and Al-Sharkas (2022) recently reported that CI ratio negatively impacts bank profitability.
DA_{it}	Deposits to total assets ratio of bank i at year t. Theoretically, deposits act as blood for the survival of banks. Haddawee and Flayyih (2020) reported significant and positive impact of deposits on banks profitability.
TA_{it}	Log of total assets of bank i at year t. Bank size has been found to matter for performance and stability, while varying

Variable	Definition
	studies reporting both positive and negative impact on performance and stability (Kosmidou et al., 2006; Redmond et al., 2007).
BOD_{it}	Size of the board of directors of bank i at year t. Size of BOD is a major corporate governance variable which impacts the performance and stability of banks (Adams & Mehran, 2005; Bennedsen et al., 2004).
SSB_{it}	Size of *Shariah* board of bank i at year t. SSB can work as a guard of *Shariah* principals, therefore, it can not only eliminate EM from IBs (Hamdi & Zarai, 2014; Mersni & Otman, 2016). However, it can positively impact performance (Quttainah et al., 2013).
GDP_t	GDP growth rate at year t. Theoretically, GDP growth rate positively impacts bank performance because this is economic growth of an economy (Sufian & Habibullah, 2009).
Inf_t	Inflation rate (CPI) of at year t. Some recent studies found the negative impact of inflation on bank performance (Sufian & Chong, 2008), while others postulated that inflation positively impacts bank performance (Kosmidau et al., 2005; Tan & Floros, 2012).

Each regression model is run for the worldwide sample size, GCC region, and ASEAN region, separately. To evaluate the appropriate regression models, Breusch-Pagan test and Hausman tests are used.

Results

This section provides empirical results of descriptive statistics, correlation matrix, and regression models. The estimation results of stage one is presented in Table 1, followed by descriptive statistics in Table 2, and correlation matrix in Table 3. Lastly, the regression results of stage two are presented in separate subsections in tables 4, 5, 6, 7, and 8.

Table 2

Descriptive Statistics

Variable	*N*	Mean	St. Dev	Minimum	Median	Maximum	Skewness
ROA	689	1.0012	1.2649	-12.4148	0.9555	10.2080	-0.98
ROE	688	9.332	8.575	-44.149	9.646	36.223	-1.18

Variable	*N*	Mean	St. Dev	Minimum	Median	Maximum	Skewness
SR	423	0.0127	0.1247	-0.9289	0.0058	0.5328	-0.54
MgtInc	564	5.8726	0.5581	4.0573	5.8837	7.2214	-0.49
Z-Score	660	1.3805	0.3606	0.2659	1.4131	2.3562	-0.38
DLLP	693	0.05475	0.0378	-0.1409	0.0440	0.3260	3.00
CI	659	0.5808	0.3104	0.0510	0.5294	4.0917	5.03
DA	663	0.7496	0.18728	0.0269	0.8155	0.9473	-2.31
TA	663	9.6591	0.7014	6.7960	9.6973	11.1725	-0.49
BOD	692	9.315	3.354	5.000	9.000	21.000	1.75
SSB	692	4.4697	2.0831	2.0000	4.000	12.000	1.99
GDP	692	3.543	3.448	-11.457	4.450	19.592	-0.64
Inf	693	3.686	3.656	-4.863	3.031	29.507	1.80

The standard deviation of Return on Equity (ROE) is 8.57, which is relatively high as compared to Return on Asset (ROA). This is because the owners' equity is lower than the total assets of the banks. The minimum value of ROE is -44.14 and the maximum value is 36.23, however, its skewness is around -1. Similarly, the skewness of CI ratio is 5.03, which is highest in the variables but its standard deviation is under 0. From the results of descriptive statistics, it is evident that almost all the dependent and independent variables behaved normally. The next step is to calculate the correlation between dependent and independent variables. Table 3 presents the Pearson correlation results among the variables.

Correlation analysis was used in previous empirical studies to check multicollinearity among variables. Multicollinearity may threaten the regression analysis at a threshold of 0.8 or 0.9 (Gujarati, 2003). In the current results, only the coefficient values of ROE and ROA significantly approximate 0.8, but these are dependent variables and not used in one model. The coefficient values of the rest of the variables are less than 0.8, therefore, it is concluded that there is no multicollinearity problem in the current models. The correlation among these variables suggests that there is a significant relationship between dependent and independent variables. Thus, it is possible to run stage 2 regression models.

Table 3
Correlation Results

	ROA	ROE	SR	MgtInc	Z-Score	DLLP	CI	DA	TA	BOD	SSB	GDP
ROE	0.80***[*]											
SR	0.11**	0.20***										
MgtInc	0.19***	0.08**	0.04									
Z-Score	0.16***	0.07*	0.01	0.12**								
DLLP	-0.25***	-0.24***	-0.02	-0.26***	-0.24***							
CI	-0.55***	-0.49***	-0.07***	-0.09**	-0.17***	0.18***						
DA	0.02	0.10**	0.05	0.07*	-0.14**	0.05	-0.13***					
TA	0.17***	0.21***	-0.02	0.39***	0.08	-0.28***	-0.4***	0.09**				
BOD	0.02	0.07*	0.03	-0.22***	-0.01**	0.05	-0.10***	-0.10**	-0.01			
SSB	-0.06	0.12**	0.00	-0.46***	-0.08**	0.18***	-0.13**	0.13**	-0.01	0.59***		
GDP	0.14***	0.18***	0.04	-0.10***	-0.01	0.03***	-0.06	0.10**	-0.04	0.13***	0.24***	
Inf	-0.03	0.15***	0.05	-0.17***	-0.26***	0.17***	0.08**	0.07*	-0.28***	0.24***	0.23***	0.20***

Performance (ROE/ROA/Stock Returns)

Return on Equity (ROE)

The result of the Breusch-Pagan test for Model 4 suggests that OLS regression is not appropriate for the worldwide sample size, as well as for the GCC and ASEAN regions. The Hausman test suggests that the random effect model is also not appropriate for all the three sample sizes. Therefore, fixed effect model is used for to evaluate the impact of EM on ROE in each case. The regression results of this model are presented in Table 4

Table 4
Regression Results for ROE

	Worldwide (Fixed Effect)		GCC Region (Fixed Effect)		ASEAN Region (Fixed Effect)	
Variable	Coeff.	*t*-Stats	Coeff.	*t*-Stats	Coeff.	*t*-Stats
C	24.33	0.78	-170.1**	-3.28	71.42*	1.90
DLLP	-48.07***	-5.33	-103.3***	-3.85	28.33	1.03
CI	-12.92***	-8.56	-9.96**	-3.03	-9.53***	-4.62
DA	7.54**	2.49	5.49	1.30	14.58**	2.50
TA	5.43***	3.75	16.84***	4.53	3.34	1.32
BOD	0.21	0.08	1.26	0.39	-13.92***	-3.40
SSB	-14.76**	-2.45	-1.43	-0.31	-2.40	-3.64
GDP	0.33***	4.88	0.72***	4.82	0.43***	3.47
INF	0.12	1.23	0.27	0.98	-0.36	-1.24
Adjusted R^2	64%		65%		71%	
F-statistic	15.4***		14.8***		17.9***	

The adjusted *R*-square values for worldwide, the GCC region, and the ASEAN region are 64%, 65%, and 71%, respectively. While, the *F*-statistic values are 15.4, 14.8, and 17.9, respectively. These values are highly significant. It shows the explanatory powers of the independent variables on the dependent variable.

Contrary to expectations, DLLPs negatively impact the ROE of IBs worldwide and in the GCC region. These results are consistent with Alhadab and Al-own (2017). They also reported the negative impact of DLLPs on ROE in 70 European CBs. This indicates that managerial discretion reduces the ROE of IBs. The reduction of ROE due to managerial discretion is against the Islamic principles of justice and fairness, since

shareholders have the right to earn fair return on their investments. This financial engineering act disregards the legitimate interest of the shareholders. However, no significant impact of DLLPs is apparent in the ASEAN region. The reason might be the more strengthened CG structure in this region.

The cost to income ratio negatively impacts ROE in all three sample sizes, which confirms the theory that increased cost reduces the profitability of the banks. The deposit to asset ratio positively impacts ROE worldwide and in the ASEAN region, which supports the arguments that deposits act as blood for banks' performance. However, no significant impact is observed in the GCC region. Similarly, no significant impact of the size of BOD is observed on ROE worldwide and in the GCC region, while the size of BOD negatively impacts ROE in the ASEAN region. The reason might be the large size of BOD in this region, as compared to the GCC region. Similarly, the size of SSB negatively impacts ROE worldwide. While, no significant impact of SSB becomes apparent in the GCC and ASEAN regions. As far as the external performance variables are concerned, GDP positively impacts the ROE of all three sample sizes. This indicates that ROE increases as the countries' GDP increases. While, no significant impact of inflation is observed on ROE across all three sample sizes, which indicates that management has successfully buffered the banks against the inflationary environment.

Return on Assets (ROA)

To evaluate the impact of EM on ROA of IBs, model 5 is used. The result of the Breusch-Pagan test suggests that OLS regression is not appropriate for all three sample sizes. While, the Hausman test suggests that random effect is only appropriate for the GCC region. Therefore, the study uses the random effect model for the GCC region and the fixed effect model for worldwide and the ASEAN region. The result of regression analysis for the impact of EM on the ROA of IBs is presented below in Table 5.

Table 5

Regression Results of ROA

Variable	Worldwide (Fixed Effect)		GCC Region (Random Effect)		ASEAN Region (Fixed Effect)	
	Coeff.	*t*-Stats	Coeff.	*t*-Stats	Coeff.	*t*-Stats
C	3.17	0.86	-9.53	-3.49	94.05	3.00

Variable	Worldwide (Fixed Effect)		GCC Region (Random Effect)		ASEAN Region (Fixed Effect)	
	Coeff.	*t*-Stats	Coeff.	*t*-Stats	Coeff.	*t*-Stats
DLLP	-5.72***	-4.96	-13.76***	-4.83	-8.72	-0.38
CI	-1.68***	-8.72	-1.41***	-7.65	-5.11**	-2.98
DA	0.62	1.61	0.51	1.24	2.98	0.61
TA	0.14	0.77	1.06***	4.52	0.89	0.42
BOD	0.01	0.04	0.02	0.36	-13.43***	-3.94
SSB	-0.66	-1.27	0.11	0.95	-3.50	-0.28
GDP	0.05***	5.54	0.11***	6.47	0.20*	1.96
Adjusted R^2	73%		68%		82%	
F-statistic	23.28***		58.08***		32.92***	

Model 5 shows adjusted *R*-Square values of 73%, 68%, and 82% for worldwide, the GCC region, and the ASEAN region respectively, with *F*-Statistic values of 23.9, 58.076, and 32.917, respectively. These values are highly significant.

DLLPs show a negative and significant impact on ROA worldwide and in the GCC region. These results are consistent with Alhadab and Al-own (2017). Again these results are against expectations, since managerial discretion in the shape of EM reduces ROA in IBs, which is against the Islamic principles of justice and fairness. However, similar to the previous results, the ROA of IBs in the ASEAN region is immune to the impact of DLLPs.

Cost to income negatively impacts the ROA of IBs in all the three sample sizes, which is consistent with the findings of Al-Sharkas and Al-Sharkas (2022). Similarly, consistent with the findings of Abdelmoneim and Yasser (2023), GDP growth rate positively impacts ROA in all the three sample sizes, which supports the theory that a good economic environment can lead to increased profit for banks. Total assets positively impact ROA only in the GCC region. Consistent with the findings of Fanta (2013), the size of BOD in the ASEAN region negatively impacts the ROA of IBs. This supports the argument that the large size of BOD negatively impacts bank performance.

Stock Returns

To investigate the impact of EM on stock returns of IBs, regression model 6 is used. The results of the Breusch-Pagan test suggests that OLS

regression is appropriate for the GCC region, while the Hausman test suggests that random effect is appropriate for worldwide and the ASEAN region. The regression results are presented below in Table 6.

Table 6

Regression (Stock Returns)

	Worldwide (Random Effect)		GCC Region (OLS Regression)		ASEAN Region (Random Effect)	
Variable	Coeff.	*t*-Stats.	Coeff.	*t*-Stats.	Coeff.	*t*-Stats.
C	0.0124	0.069	0.0002	0.453	0.124	0.220
DLLP	-0.094	-0.278	0.2037	0.467	-0.643	-1.441
CI	-0.039	-1.042	-0.007	-0.282	-0.042	-0.358
DA	0.008	0.169	0.0339	0.625	-0.127	-0.387
TA	0.001	0.064	-0.0008	-0.081	0.010	0.241
BOD	0.001	0.280	-0.0004	-0.048	-0.008	-0.674
SSB	-0.001	-0.123	-0.007	-0.546	0.0004	0.0178
GDP	-0.003	-1.106	0.002	0.580	-0.027**	-2.547
INF	0.003	0.924	0.005	0.816	0.036*	1.7161
Adjusted R^2	1%		2%		1%	
F-Statistic	0.44		2.403		1.304	

Note. *** $p \leq 0.01$. ** $p \leq 0.05$. * $p \leq 0.10$.

Model 6 shows very low adjusted *R*-square values of 1%, 2%, and 1% for worldwide, the GCC region, and the ASEAN region respectively, with insignificant *F*-Statistic values of 0.44, 2.403, and 1.301, respectively.

This model shows an insignificant impact of DLLPs on stock returns worldwide, as well as in the GCC and ASEAN regions. This indicates that the EM of IBs has no association with their stock returns. Moreover, it also indicates that signal theory is not followed by the managers of these banks or their signals to the market are not captured by the investors.

Similarly, bank-specific variables also show no association with stock returns. Cost to income, deposit to total assets, and total assets have no impact on stock returns of IBs. Moreover, CG variables, size of BOD, and size of SSB also have no impact on the stock returns of these banks. Further, external economic variables including GDP and inflation show no impact on stock returns; only GDP shows a negative and significant impact on stock returns in the ASEAN region. Since the adjusted R-square value is too low of the model, the impact remains negligible.

Management Incentives

To evaluate the appropriation of Model 7, Breusch-Pagan test is applied to worldwide, GCC region, and ASEAN region. The results suggest that the OLS regression model is not appropriate for all three sample sizes. The Hausman test suggests that the random effect model is appropriate for worldwide and the ASEAN region, while the fixed effect model is appropriate only for the GCC region. The results of regression analysis are given in Table 4.7.

Table 7

Regression Results for Management Incentives

Variable	Worldwide (Random Effect)		GCC Region (Fixed Effect)		ASEAN Region (Random Effect)	
	Coeff.	*t*-Stats	Coeff.	*t*-Stats	Coeff.	*t*-Stats
C	2.089***	4.333	-0.742	-0.609	2.899**	2.740
DLLP	-0.961***	-2.615	-3.396***	-4.081	-0.674	-0.738
CI	0.084	1.593	0.027	0.286	0.074	0.637
DA	0.088	0.816	0.061	0.514	-0.175	-0.46
TA	0.433***	9.513	0.697***	5.908	0.334**	3.241
BOD	0.007	0.375	.2483	1.436	0.091	2.188
SSB	-0.114***	-3.762	-2.459	-0.547	-0.176**	-2.525
GDP	0.001	0.416	0.008*	1.843	0.003	0.408
INF	0.0002	0.057	-0.012	-1.523	-0.001	-0.081
Adjusted R^2	14%			82%		5%
F-stats	15.6***			31.3***		2.03***

Note. *** $p \leq 0.01$. ** $p \leq 0.05$. * $p \leq 0.10$.

Model 7 shows adjusted *R*-square values of 14%, 82%, and 5% for worldwide, the GCC region, and the ASEAN region respectively, with highly significant *F*-Statistic values of 15.6, 31.3, and 2.03, respectively.

DLLPs negatively impact the managerial incentives worldwide and in the GCC region significantly, while in the ASEAN region this impact is also negative but not significant. This shows that the managers of the IBs do not use EM practices to increase their cash emoluments. This also supports the argument that EM of IBs is not opportunistic in terms of cash benefits by the managers in all the three sample sizes.

Total assets positively impact managerial incentives, which indicates that the bigger the size of the bank the more the incentives. On the contrary,

the size of SSB negatively impacts the management incentives of the banks. The rest of the variables, such as cost to income, deposits to assets, size of BOD, GDP, and inflation show no significant association with management incentives.

Stability

Model 8 is used to evaluate the impact of EM on the stability of these banks. The result of the Breusch-Pagan test suggests that OLS regression is not appropriate for all the three sample sizes. The Hausman test suggests that random effect model is only appropriate for the ASEAN region, while the fixed effect model is appropriate for worldwide and the GCC region. The results are given in Table 8.

Table 8

Regression Results for Stability

Variable	Worldwide (Fixed Effect)		GCC Region (Fixed Effect)		ASEAN Region (Random Effect)	
	Coeff.	*t*-Stats	Coeff.	*t*-Stats	Coeff.	*t*-Stats
C	3.304***	6.614	2.049**	2.974	1.536***	3.495
DLLP	-0.580***	-3.720	-1.431***	-4.010	-0.755*	-1.864
CI	-0.062**	-2.384	-0.066	-1.512	-0.078**	-2.140
DA	-0.132**	-2.523	-0.033	-0.591	-0.178*	-1.716
TA	-0.204***	-8.129	-0.097**	-1.969	-0.0353	-0.866
BOD	0.034	0.773	0.047	1.092	0.054**	2.0877
SSB	-0.022	-0.313	-0.146	-0.298	0.024	0.6471
GDP	0.001	0.488	0.008***	4.304	0.003	1.1779
INF	-0.002	-1.011	-0.007*	-1.912	-0.021***	-3.9820
Adjusted R^2	93%		95%		12%	
F-stats	125.09***		146.07***		4.454***	

Note. *** $p \leq 0.01$. ** $p \leq 0.05$. * $p \leq 0.10$.

Model 7 shows the adjusted *R*-square values of 93%, 95%, and 12% for worldwide, the GCC region, and the ASEAN region respectively, with highly significant *F*-Statistic values of 125.09, 146.07, and 4.45, respectively.

DLLPs negatively impact the stability of IBs, overall. The results are consistent with a recent study conducted by Riahi (2020) in GCC countries. The above study also reported different-level negative impacts of DLLPs on conventional and Islamic banks in 6 GCC countries. This indicates that

managerial discretion regarding LLPs reduces the stability of IBs and enhances their chance of default.

Cost to income ratio, deposits to total assets ratio, and total assets also impact the stability of these banks negatively. However, no impacts of the size of BOD, the size of SSB, GDP, and inflation are observed worldwide and in the GCC region. The IBs of the ASEAN region show slightly different results, where BOD positively impacts their stability while inflation negatively impacts it.

Conclusion

This study investigated the impact of EM on internal and external performance, management incentives, and stability of IBs worldwide, in the GCC region, and the ASEAN region, separately. The results of regression models on internal performance variables show the significant negative impact of DLL Ps on the ROE and ROA of IBs worldwide and in the GCC region. However, no significant relationship between DLLP and the ROE and ROA of IBs is observed in the ASEAN region. The results of empirical analysis indicate that EM is not used for the better internal performance of IBs. Besides better performance, it negatively impacts the internal profitability measures which are against Islamic norms. The negative impact of DLLPs indicate that the discretion of the management reduces the profitability of shareholders.

Furthermore, DLLPs show no impact on stock returns on all three sample sizes. The results suggest that the EM of IBs is not informational for the stock market. This is because their signals in the shape of financial reporting to the stock market have no impact on the performance of their stocks. From the empirical results, it is also concluded that the signaling theory is not followed by IBs, overall. Moreover, the signaling theory is not in practice in the GCC and ASEAN regions, separately.

Another important finding of the current study is the negative impact of DLLPs on management incentives worldwide and in the GCC region. In the ASEAN region, DLLPs show no significant impact on management incentives. This indicates that their discretionary powers are not used for their cash emoluments. Hence, empirical evidence suggests that EM of these banks is not opportunistic in terms of getting cash emoluments.

Besides, EM impacts the internal yearly performance negatively; it is observed from the empirical results that it also impacts the stability of IBs

negatively. The Z-score is a long-term reliable assessment variable for stability and risk which is negatively impacted by DLLPs. The use of managerial discretion significantly reduces the value of the Z-score in IBs. This increases the chances of default because lower Z-score indicates higher chances of default and insolvency. It also indicates that their discretionary provision which is, in fact, EM, has the risk of destabilizing these banks in the long-run. This trend is alarming not only for the long-run stability of these banks but is also prohibited by the *Shariah*.

Implications

This study has various practical implications because it provides insights into the financial statements of IBs. The governments and central banks need to control the excessive use of DLLPs because they negatively impact the performance and stability of IBs. For *Shariah* boards, the findings are very important because these boards guard the implementation of *Shariah* principles in these banks, while the existence of EM stands in violation of the *Shariah* principles. It is also important to educate the management of IBs about the use of their discretion regarding loan provisions and its negative impacts. Lastly, and more importantly, the results of this study educate the shareholders and investors about their investments and earnings.

Limitations and Future Directions

This study is limited to pure IBs only, while banks with conventional operations and other financial institutions, such as *Takaful* and leasing companies, are not included. For future studies, examining the impact of EM on non-cash emoluments of managers, such as share bonuses, and on their job security can be beneficial. It is also important to check the impact of current EM on the future performance of IBs.

Conflict of Interest

The authors of the manuscript have no financial or non-financial conflict of interest in the subject matter or materials discussed in this manuscript.

Data Availability Statement

The data associated with this study will be provided by the corresponding author upon request.

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Appendix A

Sample Size

Name	Country	Total Assets $ Million	Name	Country	Total Assets $ Million
Albarka Banking Group	Bahrain	26104	Bank Islam Malaysia	Malaysia	16011
Alsalam Bank Bahrain	Bahrain	5819	AmBank Islamic	Malaysia	10793
Kuwait Finance House (Bahrain)	Bahrain	4440	Hong Leong Islamic Bank	Malaysia	9149
Bahrain Islamic Bank	Bahrain	3415	Bank Muamalat Malaysia	Malaysia	5702
ABC Islamic	Bahrain	2309	HSBC Amanah Malaysia	Malaysia	4618
Islami Bank Bangladesh	Bangladesh	13658	OCBC Amin	Malaysia	3936
First Security Islami Bank	Bangladesh	5424	Alliance Islamic Bank	Malaysia	3422
Export Import Bank of Bangladesh	Bangladesh	5261	Kuwait Finance House Malaysia	Malaysia	2029
Al-Arafah Islami bank	Bangladesh	4651	Standard Chartard Sadiq	Malaysia	1661
Social Islami Bank	Bangladesh	4068	Jaiz Bank	Nigeria	482
Shah Jalal Islamic Bank	Bangladesh	3,236	Bank Nizwa	Oman	2755
Bank Islam Brunei Darussalam	Brunei	7941	Meezan Bank	Pakistan	7521
Al Baraka Bank Egypt	Egypt	4559	Dubai Islamic Bank Pakistan	Pakistan	1746
Abu Dhabi Islamic Bank Egypt	Egypt	4042	Bank Islami Pakistan	Pakistan	1706
Bank BTPN Syariah	Indonesia	1057	Albarka Bank Pakistan	Pakistan	120
Bank Panin Dubai Syariah	Indonesia	734	MCB Islamic Bank	Pakistan	716
Bank NTB Syariah	Indonesia	708	Arab Islamic Bank	Palestine	1469
Bank Mega Syariah	Indonesia	597	Palestine Islamic Bank	Palestine	1291
Bank BCA Syariah	Indonesia	590	Qatar Islamic Bank	Qatar	45540
Bank Jabar Benten Syariah	Indonesia	509	Masraf Al Rayan	Qatar	30032
Bank Syariah Bukopan	Indonesia	380	Dukhan Bank	Qatar	20717
Bank Victoria Syariah	Indonesia	146	Qatar International Islamic Bank	Qatar	16289
Bank Aceh Syariah	Indonesia	1672	Qatar First Bank	Qatar	699
Jordan Islamic Bank	Jordan	6414	Al Rajhi Bank	Saudi Arabia	111338
Safwa Islamic Bank	Jordan	2377	Alinma Bank	Saudi Arabia	37904
Islamic International Arab Bank	Jordan	3295	Bank Aljazira	Saudi Arabia	24489
Gulf African Bank	Kenya	319	Bank Al Bilad	Saudi Arabia	23677
First Community Bank	Kenya	175	AlBarka Bank	South Africa	460
Boubyan Bank	Kuwait	19894	Amana Bank	Sri Lanka	506
Ahli United Bank Kuwait	Kuwait	14363	Kuveyt Turk Katilim Bankasi	Turkey	20119
Warba Bank	Kuwait	11019	Turkiye Finans Katilim Bankasi	Turkey	9928
Kuwait International Bank	Kuwait	8910	Albaraka Turk Katilim Bankasi	Turkey	8689
MayBank Islamic	Malaysia	57951	Ziraat Katilim Bankasi	Turkey	6727
CIMB Islamic Bank	Malaysia	26068	Dubai Islamic Bank	UAE	80261
Bank Rakyat	Malaysia	25561	Abu Dhabi Islamic Bank	UAE	33874
RHB Islamic Bank	Malaysia	18238	Emirates Islamic Bank	UAE	17478
Public Islamic Bank	Malaysia	16089	Sharjah Islamic Bank	UAE	14340
			Ajman Bank	UAE	6413
Total Assets in Million $ at the end of 2020					896600

Appendix B

The result of the Breusch-Pagan test is highly significant which indicates that OLS regression model 1 is not appropriate for worldwide sample size, therefore, we run the Hausman test to choose between a random effect or fixed effect model. The results of the Hausman test suggest that the random effect model is appropriate for overall 75 Islamic banks (Worldwide). Similarly based on the results of these tests fixed effect model is appropriate for the sample size of 23 Islamic banks of the GCC region and 23 Islamic banks of the ASEAN region separately. The regression results of these first-stage models are presented in Appendix B Table 1.

Table 1

Regression Results Model1

Variable	Worldwide (Random Effect)		GCC Region (Fixed Effect)		ASEAN Region (Fixed Effect)	
	Coeff.	*t*-Stat.	Coeff.	*t*-Stat.	Coeff.	*t*-Stat.
C	0.025***	4.267	0.023***	9.6729	0.018***	13.227
NPL_{t-1}	0.557***	20.079	0.482***	11.098	0.682***	17.157
NPL	0.487***	13.823	0.302***	5.4884	0.799***	17.897
LOAN	0.013***	3.4053	0.007	1.4670	0.002	0.3858
Adjusted R^2	41%		70%		97%	
F-Statistics	161.3***		22.46***		304.6***	

The results of model 1 are consistent with prior studies and show a positive and significant impact of beginning non-performing loans, change in non-performing loans and change in total loans for a worldwide sample size. This indicates that the loan loss provisions are increased by these banks with the increase of their beginning non-performing loans, change in non-performing loans and total loans. The adjusted *R* squared of model 1 is 41% with a highly significant *F*-Statistic value of 161.3 for the worldwide sample size. The GCC region also shows that the amount of beginning non-performing loans and change in non-performing loans positively impact the loan loss provisions. The adjusted *R* square of this region is 70% with a highly significant *F*-Value of 22.36. A similar story is also shown by the sample size of the ASEAN region with an adjusted R Squared of 97% and a highly significant *F*-value of 304.6, these results indicate that all these three models are fit for further estimation.

Consistent with prior studies the residuals of these models are further used as an estimation of NDLLP as shown in models 2 and 3. Finally, these estimations are subtracted from the total LLP to estimate the DLLP, which is the main independent variable of EM for further estimation.