Capital and Earnings Management:

Evidence from Alternative Banking Business Models

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Abstract

This paper examines whether institutional characteristics distinguishing Islamic from conventional banks lead to distinctive capital and earnings management behavior through the use of loan loss provisions. In our sample countries, the two banking sectors operate under different regulatory frameworks: conventional banks currently apply the "incurred" loan loss model until 2018 whereas Islamic banks mandatorily adopt an "expected" loan loss model. Our results provide significant evidence of capital and earnings management practices via loan loss provisions in conventional banks. This finding is more prominent for large and loss-generating banks. By contrast, Islamic banks tend not to use loan loss provisions in either capital or earnings management, irrespective of the bank's size, earnings profile, or the structure of their loan loss model. This difference may be attributed to the constrained business model of Islamic banking, strict governance, and ethical orientation.

Keywords: IFRS, Regulatory Capital management, Earnings management, Expected loan losses, Incurred loan losses.

JEL Classification: C23, G01, G21, G28, L50, M4

Abbreviations: LLP: Loan loss provisions; I-LLM: Incurred loan loss model; E-LLM: Expected loan loss model.

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1. Introduction

A well-established stream of literature has identified the use of loan loss provisions (LLP) by bank managers in capital and earnings management[4]. Their motivation is: to avoid regulatory capital adequacy charges that are incurred in falling below the minimum capital adequacy requirements; to increase earnings-based compensation; and to prevent debt covenant violations (see e.g. Moyer, 1990; Wahlen, 1994; Ahmed et al., 1999; Anandarajan et al., 2007; Leventis et al., 2011). The discretionary use of capital and earnings management practices is an obvious focus for standard setters, but little emphasis has been given to study the comparative use of LLP to manage capital and earnings across Islamic and conventional banks.

Capital and earnings management can be achieved through the exercise of discretion in the magnitude or timing of the recognition of certain loan losses and in the levels reported for LLP (Ahmed et al., 1999). Where banks might deliberately engage in capital and earnings management practices via LLP, this may compromise the quality of financial reporting and generate excessive agency costs (see Jensen & Meckling, 1976; Beaver & Engle, 1996; Anandarajan et al., 2007).

The primary motivation of this study is to compare capital and earnings management practices of conventional and Islamic banks located in the same countries but operating under different regulatory requirements. Our investigation informs regulators and investors as it responds to calls for research to establish the relevance of bank type on LLP decisions and the possible opportunistic behaviour of bank managers (Fonseca & Gonza´lez, 2008; Bushman & Williams, 2012; Elnahass et al., 2014; Belal et al., 2015; Abdelsalam et al., 2016).

[4] In line with Healy & Wahlen (1999) and Ahmed et al. (1999), we define capital and earnings management as the use of management's judgment in financial reporting and in structuring transactions where the objective is to manipulate regulatory capital adequacy ratios reported in line with Basel II requirement and/or overstate/understate reported earnings in order to mislead stakeholders or to influence contractual outcomes.

The profit-loss sharing business model of Islamic banks requires contractual arrangements between a bank and its investment account holders (IAHs), i.e., depositors. This tends to constrain Islamic banks' ability to manage capital and earnings through LLP. Moreover, agency costs are relatively higher in Islamic banks, because IAHs are not directly involved in financial and business decisions (i.e., they have no representation on the board of directors) and so must monitor their investments through published financial information. This gives rise to the possibility of managerial opportunism (Abdel Karim & Archer, 2002; Safieddine, 2009). In attempting to protect their investments, the motivation of IAHs is to try to influence regulators to monitor and develop additional governance mechanisms in Islamic banks in order to raise the quality of financial reporting.

Unlike the single governance-layer in conventional banks (i.e., board of directors and audit committees), Islamic banks are subject to an extra governance mechanism of the Shariah supervisory boards[5] (see Belal et al., 2015). Furthermore, the ethos of Islamic banking emphasizes ethical behavior and moral accountability, which would be expected to place limits upon managerial opportunism through the use of LLP. From those unique institutional bank characteristics and the constrained business model of Islamic banks, our premise is that capital and earnings management using LLP is less likely in Islamic banking than conventional banking. That premise is supported by the conventional banking literature which shows that a strong institutional environment may restrain the use of accounting discretion and aggressive earnings management (Dyreng et al., 2012; McGuire et al., 2012; Kanagaretnam et al., 2015).

With growing concerns over the discretionary use of LLP, added consideration is given to the structure of loan loss models. After the financial crisis of 2007, the "incurred" loan loss model (I-LLM), as defined by IAS 39 *Financial Instruments: Recognition and Measurement*,

[5] The Shariah supervisory board operates as an internal audit unit or internal control mechanism to certify that a bank's operations are free from any element prohibited by the Islamic principles (Safieddine, 2009).

was perceived to have exacerbated the upheaval by the pro-cyclical[6] lending that is associated with low levels of LLP (see Fillat & Montoriol-Garriga, 2010; Wezel et al., 2012). In response, the International Accounting Standards Board (IASB) proposed a change from the "incurred" to the "expected" loan loss model (E-LLM) under IFRS 9 *Financial Instruments*[7].

For conventional banks, the implementation of the E-LLM was deferred until 2018. However, for Islamic banks, LLP has matched the requirements of the E-LLM since at least 2010 (see Zoubi & Al-Khazali, 2007; Taktak et al., 2010). For Islamic banks in Bahrain, Jordan, and Qatar, the E-LLM is now mandatory (see ACCA & KPMG, 2010; Sarea & Hanefah, 2013; AAOIFI, 2015). This offers an attractive setting to further examine capital and earnings management via the use of LLP as reported by Islamic and conventional banks that are located in the same countries but currently apply different regulatory frameworks (i.e., E-LLM versus I-LLM).

For the period 2007-2013, we use panel data for Bahrain, Qatar, and Jordan, comprising 441 bank-year observations (63 banks). Those three countries have a homogenous culture, similar macroeconomic features, and a dual banking system in which there is a relatively high concentration of Islamic banks (Ernst & Young, 2015b). Our findings indicate that during the whole sample period, banks tend to use LLP to manage Tier 1 capital ratio and to smooth earnings. However, the two bank types show significantly different capital and earnings management behavior. We find no evidence that Islamic banks manage capital or earnings through LLP. This is regardless of bank size and profitability position. For conventional banks,

[6] Pro-cyclicality implies that banks expand their loan portfolio in a boom without raising their total capital. During a cyclical downturn, capital accumulation may be insufficient for LLP to cover credit losses. Banks are then forced to reduce lending, thereby intensifying pro-cyclical effects (see Jokipii & Milne, 2008).

[7] The I-LLM is a *backward-looking model* in that the creation of LLP is triggered by past events with no provision for the accumulation during booms of resources necessary to meet subsequent/sudden credit shocks. The E-LLM is a *forward-looking model* by which banks tend to build LLP in line with estimates of long-term expected loan losses; the aim is to reduce banks' exposure to increased credit risk and sudden economic shocks experienced under the *backward-looking model* (see Ernst & Young, 2014).

we find significant evidence of capital and earnings management practices via LLP. This tendency is more obvious when reporting financial losses than profits. We also note that regulatory capital management via LLP is more prevalent for large conventional banks while the use of LLP to manage earnings is evident irrespective of bank size. Finally, where the E-LLM model for Islamic banks mitigates lending pro-cyclicality, for conventional banks the I-LLM model accentuates pro-cyclicality in lending.

This paper contributes to the literature comparing Islamic and conventional banks in a number of ways. It is the first attempt to examine how distinctive financial reporting standards and loan loss models could lead to differentiated earnings and capital management behavior. We extend previous work on the implications of discretionary acts on financial reporting quality by Islamic and conventional banking (Safieddine, 2009; Elnahass et al., 2014; Abdelsalam et al., 2016). Second, our findings highlight the influence of adopting a constrained banking business model, characterized by risk-sharing and additional governance mechanisms, on the opportunistic use of LLP (see Leventis & Dimitropoulos, 2012; McGuire et al., 2012; Dyreng et al., 2012; Cieslewicz, 2014). In this regard, we further contribute to understanding the relevance of bank institutional characteristics on earnings management and financial reporting practices. Finally, by studying a subsample of Islamic banks that is ahead of conventional banks in applying the E-LLM, this study extends the findings of Bushman & Williams (2012) in documenting the opaqueness of this *forward-looking model* and its possible use in accounting discretion.

Examining the use of LLP in capital and earnings management across the two banking sectors raises issues that are relevant to investors, auditors, and regulators who seek enhanced quality of reported financial information. Our empirical assessments of the application of the proposed model in Islamic banks could assist the IASB in resolving arguments around the subjectivity of E-LLM. Findings in this study inform future banking studies examining capital

and earnings management to explicitly reflect on both the alternative banking systems as well as the nature of the loan loss models applied.

The next section presents a general background. Section 3 explains the rationale of our capital and earnings management hypotheses. Section 4 outlines the data. Section 5 discusses the methodology. Section 6 presents the descriptive and empirical results. Section 7 summarizes and concludes.

2. Background

2.1 Islamic Banking Business Model

The core feature of Islamic banking is its profit-loss sharing paradigm[8]. That partnership arrangement implies that contractual structures are backed by real economic transactions linked to tangible assets. Although other financial products may resemble leasing contracts used in conventional banking, the latter do include elements of risk-sharing (Olson & Zoubi, 2008; Beck et al., 2013).

In trading by the profit-loss sharing principle, Islamic banks are generally viewed as more financially stable than conventional banks (see Abedifar et al., 2013; Beck et al., 2013). The risk-sharing model involves a limited use of hedging instruments (see Ali et al., 2011). In addition, Shariah-compliant funding restricts borrowing from international money markets. From those considerations, Islamic banks are expected to apply a credit-risk management strategy that features higher loan loss reserves, higher regulatory capital ratios, and lower asset utilization relative to conventional banks.

Despite being viewed as a constrained banking model, the profit-loss sharing model allows greater discretion in the administration of investment accounts and financial reporting (see

[8] Because Islamic banks are prohibited from charging *usury* or interest, depositors are considered as investment account holders (IAHs) who engage with the bank through equity-based investment contracts (e.g., cost-plus mark-up and lease contracts). Based on these types of contracts, the losses are borne by the IAHs while the profits are shared between the bank and IAHs on a mutually agreed percentages (Belal et al., 2015).

Mills & Presley, 1999) where, in the absence of direct monitoring, tighter scrutiny of financial reporting is to be expected from IAHs. That enhanced monitoring implies that adverse selection and moral hazard are less likely (see Beck et al., 2013). Moreover, in being driven by religious business orientation, agency costs associated with trading in Islamic banks and opportunistic behavior by managers are expected to be lower. Indeed, there is evidence that banks with a strong ethical commitment demonstrate a higher quality of financial reporting and less involvement in earnings management (see Hilary & Hu, 2009; Choi & Pae, 2011; Kanagaretnam et al., 2015). Furthermore, the "double-layer" of governance achieved by a Shariah supervisory board offers an additional monitoring mechanism (see Safieddine, 2009; Abdelsalam et al., 2016). In short, the stronger the firm institutional environment, the less prevalent are opportunistic and/or fraudulent practices (see Dyreng et al., 2012; McGuire et al., 2012).

2.2 Regulatory Framework

Islamic banks in most countries follow the IFRS treatment of loan losses. However, despite various attempts to unify global financial reporting practices between Islamic and conventional banks, many regulatory differences remain in the type of the loan loss model that is adopted by the two banking systems.

In following IAS 39 and as currently adopted by conventional banks, the I-LLM has been subject to a number of revisions (see Ernst & Young, 2015a)[9]. With this model, LLP requires a loss impairment event to occur *before* the financial reporting date. In citing this practice as a main cause of the 2007 financial crisis, critics have successfully argued for a *forward-looking* loan loss model (see Fillat & Montoriol-Garriga, 2010; Wezel et al., 2012). With the E-LLM,

[9] The definition of "incurred losses" requires evidence of the impairment of a financial asset or a group of financial assets where the impact upon future cash flows can be reliably estimated (see Ernst & Young, 2015a). Each loan is individually valued to determine whether a loss event has taken place, where the assessment is made at the end of each reporting period.

banks must assess their loan portfolios on the basis of a forecast of cash flows for the ensuing year (see Federation of European Accountants, 2010; Wezel et al., 2012)[10]. The idea is to build loan loss reserves during a period of economic growth in order to absorb losses in an economic downturn. However, the E-LLM is criticized for: (i) reliance on management judgement to estimate future cash flows (see Wezel et al., 2012; Ernst & Young, 2014); (ii) being less transparent, so permitting the concealment of a deteriorating loan portfolio (see Federation of European Accountants, 2010); and, (iii) the use of discretion in smoothing earnings, which may further detract from transparency and increase risk-taking (see Bushman & Williams, 2012).

Islamic banks operating under the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI)[11] in Bahrain, Jordan, and Qatar mandatorily apply the E-LLM (Zoubi & Al-Khazali, 2007; Taktak et al., 2010; AAOIFI, 2015). Where conventional banks in the same countries adopt the I-LLM under IFRS, this offers a unique regulatory setting for our study.

3. Hypotheses Development

Earlier studies that test for capital (and earnings) management through LLP either fail to test for the effect of bank type or they do not distinguish between the structures of the loan loss models (see Beatty et al., 1995; Ahmed et al., 1999; Anandarajan et al., 2007; Kanagaretnam et al., 2015; Leventis et al., 2011). These aspects are important in identifying motives and underlying opportunities for differential capital (and earnings) management via

[10] The adoption of E-LLM implies that banks will have to create large LLP that will vary in line with their changing assessments of credit and default risks. Additional forecasting becomes necessary for the whole portfolio of financial assets, measured at amortized cost. During the period of transition to the implementation of the E-LLM, profits will be reduced for the first implementation year (see Ernst & Young, 2014). The transition period will involve more complex auditing processes and verification procedures (e.g., accuracy, valuations, completeness, and occurrence assertions) for expected credit losses. The main distinction between the E-LLM and I-LLM lies with the timing rather than the level of loan losses. Where the I-LLM shows relatively higher net income in the period immediately following the acquisition of an asset, the E-LLM shows relatively lower net income in the early period of an asset's life.

[11] The AAOIFI is a standard-setting body for Islamic financial institutions in the areas of accounting, auditing, ethics, and governance. AAOIFI is supported by nearly 200 members from 40 countries, including central banks. AAOIFI has issued a total of 88 standards comprising 26 accountability standards, 5 auditing standards, 7 governance standards, 2 ethics standards, and 48 Shariah standards (see AAOIFI, 2015).

LLP among the two banking sectors.

3.1 Capital management hypothesis

Motivations for capital management via LLP can be attributed to the incentive to improve or to maintain capital adequacy in order avoid official capital charges if a bank's regulatory capital ratio falls below the minimum regulatory requirements. Prior studies in conventional banking, which examine how banks use LLP to manage regulatory capital, provide conflicting evidence. Moyer (1990) and Scholes et al. (1990) find that banks discretionarily use LLP when capital levels are close to violating minimum capital requirements. However, Collins et al. (1995) find no evidence of capital management behavior via LLP. Beatty et al. (1995) show that loan charge-offs and LLP are both used in capital management. With U.S. data, Kim & Kross (1998) and Ahmed et al. (1999) show that regulatory capital management is an important determinant of LLP. Lobo & Yang (2001) find that managers discretionarily manipulate LLP downward to meet regulatory capital requirements. In studies of banks in other industrialized countries, Anandarajan et al. (2007) find evidence that capital management through LLP exists in Australian banks. Pérez et al. (2008) find no such evidence for Spanish banks. For Islamic banking, the prior literature that specifically tests the capital management hypothesis is meagre.

With both bank types facing capital adequacy penalties, there is a general incentive to engage with LLP, which suggests a positive association between LLP and the capital adequacy ratio (see Ahmed et al., 1999; Anandarajan et al., 2007; Leventis et al., 2011). However, considering operations through a constrained business model, in the presence of an additional governance mechanism, and with an ethical business orientation, we predict that the use of LLP by Islamic banks to manage regulatory capital is less dominant and/or more difficult when compared to conventional banks. Hence, our first hypothesis is stated as:

H_{01}: There is a less significant positive association between the use of LLP and the capital adequacy ratio in Islamic banks relative to conventional banks.

3.2 Earnings management hypothesis

According to agency theory, bank managers can enhance firm performance and achieve managerial rewards through using LLP in income smoothing. Another strong motive for the use of LLP for earnings management is that less volatile earnings are fundamental predictors of stable share prices (Anandarajan et al., 2007). Consistent with Greenawalt & Sinkey (1988) and Beaver et al. (1989), banks managers can contribute additional LLP to loan loss reserves in expansionary periods and smooth out earnings in recessionary periods in order to reduce volatility to reported earnings. Similar behavior is found in global conventional banking studies (Wahlen, 1994; Collins et al., 1995; Ahmed et al., 1999; Kanagaretnam et al., 2003; Fonseca and Gonza´lez, 2008; Pérez et al., 2008; Leventis et al., 2011).

The Islamic banking literature presents mixed evidence. Ismail & Be Lay (2002) find that Malaysian Islamic banks use LLP to manage earnings, for the period 1997-1999. Within the GCC region, Zoubi & Al-khazali (2007) show that both bank types use LLP to smooth earnings, for the period 2000-2003. Using cross-country evidence, Taktak et al. (2010) find no evidence that Islamic banks use LLP to manage earnings, for 2001-2006. For a sample of Middle East and North Africa banks, Abdelsalam et al. (2016) find no evidence of earnings management by Islamic banks, for the period 2008-2013.

In general terms, if earnings management is an important determinant of LLP, a significant positive association is to be expected between LLP and earnings (before taxes and LLP). Nevertheless and in line with H_{01}, we suggest that Islamic banks have fewer opportunities to smooth earnings via LLP even though they are subject to the less transparent E-LLM. Hence, our second hypothesis is stated as:

H_{02}: There is a less significant positive association between the use of LLP and earnings (before tax and LLP) in Islamic banks relative to conventional banks.

4. Data

We use an unbalanced panel dataset for listed and unlisted banks operating in Bahrain, Jordan, and Qatar, for the period 2007-2013. Consolidated financial data (in U.S. dollars) are collected from *Thomson One Reuters*, *Bankscope*, and *Zawya* databases. Although the concentration of Islamic banks is relatively high in our sample, conventional banks are larger by asset size. The sample countries features a homogenous cultural and macroeconomic environment (see Ernst & Young, 2015b). Banks located elsewhere are permitted to follow different reporting practices for LLP (i.e., either IFRS or AAOIFI). Hence, they fail to meet our test criterion for the mandatory application of E-LLM.

The relevance of the sample period is that the *Capital Adequacy Standard* that covers Basel II requirements became effective for mandatory implementation by Islamic banks in 2007 (see IFSB, 2005; Ariss & Sarieddine, 2007). This period also allows an examination of whether bankers deviate from accounting standards and regulatory capital requirements during a period of financial distress (see Hoffmann & Pennings, 2013).

Following Beck et al. (2013), our sample selection criteria require at least two bank-year observations for each bank within one country. Islamic windows are excluded from our sample on the grounds that supervisory issues and capital adequacy requirements for those windows are different (IFSB, 2005). Our final sample, therefore, consists of 441 bank-year observations (63 banks) including 238 bank-year observations of conventional banks (34 banks) and 203

bank-year observations of Islamic banks (29 banks) [12]. Table 1 shows the distributions of banks; the highest concentration of Islamic banks is in Bahrain, while conventional banks have the highest presence in Jordan.

[Insert Table 1 here]

5. Methodology

We test the capital (and earnings) management for Islamic and conventional bank using the regression specification outlined in Greenawalt & Sinkey (1988) and Ahmed et al. (1999). In our application, we examine the impact of bank characteristics and loan-loss regulatory frameworks on capital (H_{01}) and earnings (H_{02}) management. With the baseline model outlined by Eq. (1)[13], we use fixed-effects estimations for the full sample and for the Islamic and conventional bank sub-samples:

$$LLP_{i,t} = \beta_0 + B_1\, TIER\, 1_{i,t-1} + B_2\, EBTLLP_{i,t} + \beta_3 \Delta NPL_{i,t} + \beta_4\, \Delta LOANS_{i,t} + \beta_5 LISTING_{i,t} + \beta_6 LEV_{i,t} + \beta_7 CRISIS_t + \beta_8 GDP_{j,t} + \beta_9 IB_i + \beta_{10} \sum_{t=2007}^{2013} T_t + \beta_{11} v_i + \varepsilon_{it} \quad (1)$$

Where

LLP is the ratio of loan loss provisions to total assets.

[12] For the treatment of the outliers, we winsorized each variable at the 5th and 95th. As a robustness check, we also considered 1st-99th winsorization for all observations. Although the main findings are consistent, we observe slightly worse goodness-of-fit statistics.

[13] The Hausman test reported the presence of systematic differences between the fixed and random effects (chi square = 26.78). Results are robust when employing the Generalized Method of Moments (GMM) for the full study sample. However, using fixed-effects allows more bank-year observations and control for heterogeneity across banks (Laeven & Majnoni, 2003; Fonseca & Gonza´lez, 2008). Diagnostic tests performed for all estimated models finds no evidence of multicollinearity. We used the Variance Inflation Factor (VIF) to detect multicollinearity among our independent variables. We also utilized the Durbin-Wu-Hausman test to examine whether our model suffers from endogeneity problem. The White-general test is conducted to test for heteroscedasticity in error variances. VIF reports a mean of 1.65 which is well below the 10. This suggests that our model is not subject to a multicollinearity problem. Under the Durbin-Wu-Hausman test, the F-statistic reports a p-value of (0.954), which indicates that our estimation procedures mitigate endogeneity. The White test shows a Chi-square p-value of (0.891), which implies that heteroscedasticity is marginal at the 10% level.

TIER 1_{t-1} ratio is the ratio of the total bank Tier 1 capital to risk weighted assets. This represents core capital. It is an equity-like direct measure of a bank's capacity to establish LLP. Tier 1 capital is the sum of equity book value, qualifying non-cumulative perpetual preferred stock, and minority interests in equity accounts of subsidiaries, less goodwill and other intangible assets[14]. While the ratio reflects regulatory adjustments to equity, it is also a measure of financial health[15]. As suggested by Ahmed et al. (1999), we use a lagged value for the Tier 1 ratio to indicate the availability of a capital cushion to increase LLP. Banks first signal their solvency through core capital in a prior reporting period before discretionarily increasing LLP in a subsequent period[16] (Bushman & Williams, 2012).

EBTLLP (Earnings before taxes and LLP) is a measure of a bank's capacity to use its assets to generate earnings in advance of its contractual obligations and LLP (Leventis et al., 2011). If income smoothing is an important determinant of LLP, we should observe a positive relation between LLP and EBTLLP (Anandarajan et al., 2007).

ΔNPL is the change in non-performing loans and ΔLOANs is the change in total loans. We follow prior studies by including ΔNPL and ΔLOANs to control for the non-discretionary component of LLP (see Moyer, 1990; Ahmed et al., 1999; Jacques, 2010). More specifically, ΔNPL is a proxy for default risk, whereas ΔLOANs controls for changes in a bank's lending profile. We expect both variables to have positive coefficients. An increase in the quality of a

[14] Under Basel II, Islamic and conventional banks must maintain a minimum ratio of 4% of Tier 1 capital and 8% of total capital (IFSB, 2005).

[15] We argue that the use of the total capital ratio could lead to spurious inferences from the net tax effect of increasing Tier 1 and Tier 2 ratios. Before the amendment of the Basel Accord (1988), the regulatory capital ratio was expected to be negatively related to LLP; i.e., banks with low regulatory capital requirements had incentives to raise LLP (see Ahmed et al., 1999). These incentives were related to tax savings. Under Basel II, LLP must be included as a component of Tier 2 capital, eliminating loan loss reserves from Tier I capital. Moreover, examination of the associations between the total capital ratio and LLP is expected to be influenced by different national tax regimes across different bank types. In Bahrain, Islamic banks are tax exempt while in Qatar and Jordan, tax treatment depends on the legal form of the transactions. Islamic banks also have to pay a wealth tax (Zakat) (PwC, 2012).

[16] With a low level of LLP and a high level of Tier 1 capital reported in a preceding period, managers might have incentives to inflate current LLP in order to (i) avoid falling below the minimum capital adequacy requirement; (ii) reduce the volatility of bank capital adequacy; and (iii) reduce the possibility of having to draw from core capital if actual loan losses exceed expected losses.

loan portfolio and the outstanding total loan levels should increase the relative magnitude and timeliness of LLP (see Greenawalt & Sinkey, 1988; Fonseca & Gonza´lez, 2008).

LISTING is an indicator variable, taking a value of 1 for listed banks and 0 for unlisted banks. Controlling for listing aims to capture the positive association between a firm's listing status and accounting manipulations (Beatty & Harris, 1999; Fonseca & Gonza´lez, 2008). Listed banks tend to report higher Tier 1 ratios and higher earnings to support their financial outlook in stock market trading (Anandarajan et al., 2007; Leventis et al., 2011).

LEV is the leverage ratio (total debt to total common equity). This ratio captures the degree to which a bank's potential capital saving is affected by understating risks (see Kiema & Jokivuolle, 2014). Leverage levels are expected to be positive, but relatively lower for Islamic banks given the absence of interest payments, non-trading in prohibited activities, and the inability to raise funds by indirect market operations.

Both the GDP and CRISIS variables capture the effect of macroeconomic conditions on LLP. GDP is the annual growth rate of national income. By controlling for GDP, we identify the effect of pro-cyclicality in LLP. With rapid GDP growth, we expect borrowing to increase and that banks will need to increase LLPs to cater for additional risk. A negative coefficient on GDP implies that banks expand their loan portfolios in periods of rapid growth without making commensurate provision through LLP, so inducing pro-cyclical effects (see Fonseca & González, 2008; Leventis et al., 2011).

As an indicator variable for the crisis period, CRISIS takes the value 1 for years 2007-2009 and 0 elsewhere. In a recession, we expect a negative association between LLP and CRISIS given the adverse implications of poor economic conditions on the level of LLP (see Cohen et al., 2014).

IB is a bank type dummy variable (taking the value 1 for Islamic banks, and 0 for conventional banks).

To control for heteroscedasticity and endogeneity, all time series variables are normalized using total bank assets at the beginning of year t ($TA_{i,t-1}$). Standard errors of estimated coefficients are corrected for heteroscedasticity (see Easton, 2003; Barth & Kallapur, 1996). Our panel estimation controls only for unobserved time effects (T_t) and unobserved heterogeneity across banks (v_i) without imposing restrictive conditions on the correlation between the regressors and the error term[17].

To test H_{01} and H_{02} across the full sample, we extend our baseline model to include conditional interactions between bank type and capital (and earnings) management measures. This is specified in Eq. (2) as:

$$LLP_{i,t} = \beta_0 + B_1\, IB * TIER\, 1_{i,t-1} + B_2\, IB * EBTLLP_{i,t} + B_3\, CB * TIER\, 1_{i,t-1} + B_4\, CB * EBTLLP_{i,t} + \beta_5 \Delta NPL_{i,t} + \beta_6\, \Delta LOANS_{i,t} + \beta_7 LISTING_{i,t} + \beta_8 LEV_{i,t} + \beta_9 CRISIS_t + \beta_{10} GDP_{j,t} + \beta_{11} IB_i + \beta_{12} \sum_{t=2007}^{2013} T_t + \beta_{13} v_i + \varepsilon_{it} \quad (2)$$

The interaction variables IB*TIER 1_{t-1} and CB*TIER 1_{t-1} examine the capital management hypothesis (H_{01}) by classifying banks as either Islamic (IB) or conventional (CB) whereas IB*EBTLLP and CB* EBTLLP test for differential earnings management. We predict the coefficients of Islamic banks (β_1 and β_2) to be positive but lower in magnitude and significance than those for conventional banks (β_3 and β_4).

6. Results

[17] In an attempt to provide cross-country evidence demonstrating the variations in the loan loss provisioning across banks, we do not control for country-specific effects.

6.1 Descriptive statistics and correlation analyses

Table 2 panels A, B, and C report the descriptive statistics for the full sample and the Islamic and conventional subsamples. We also report the two-sample T-test to examine for the significance of the subsamples means.

For the full sample, we report averages of 22.16% for TIER1_{t-1} and 16.92% for EBTLLP. With the TIER1_{t-1} exceeding the threshold of 4%, this indicates that our sample banks are well capitalized and can be classified as income-generating banks. The regulatory capital ratio for both bank types is right-skewed, which is consistent with the Basel II requirement for banks to keep a capital buffer above the minimum required. According to Berger et al. (2008), Basel II procedures deliver discretionary benefits to "well-capitalized" banks that hold Tier 1 capital ratio of at least 4% of risk weighted assets. Although these primary results suggest that our banks are well-capitalized in period $t-1$, they might remain motivated to continue preserving their adequate capital positions through the use of LLP in subsequent periods, where the aim is to prevent capital violation charges (Leventis et al., 2011).

The t-test statistics show that Islamic banks have significantly higher levels of LLP and TIER 1_{t-1}. This suggest that they are more capitalized than conventional banks, which is consistent with the findings of Beck et al. (2013). The significantly lower EBTLLP for Islamic banks highlights their avoidance of more risky investments, their reliance upon fee-based contracts, and their relatively higher administrative costs (see Abedifar et al., 2013). Indicators for default risk (ΔNPL) and loan growth (ΔLOANS)—which are significantly lower for Islamic banks—accord with other studies (Beck et al., 2013). In addition, Islamic banks are significantly less leveraged and smaller in size than conventional banks.

[Insert Table 2 here]

Table 3 presents the Pearson Pair-Wise correlations for the full sample (Panel A), Islamic banks (Panel B), and conventional banks (Panel C). For the sub-samples, conventional banks

show significant positive correlations between LLP and both TIER 1_{t-1} and EBTLLP, with no significant evidence for Islamic banks. For both Islamic and conventional banks, positive correlations between LLP and ΔNPL (and ΔLOANS) suggest that an increase in LLP is associated with high default risk and high credit growth. Correlations between LLP and other control variables are in line with prior literature. All correlations among independent variables are within accepted limits and raise no concerns with respect to multicollinearity.

[Insert Table 3 here]

6.2 Empirical results

Table 4 reports the results for the baseline model in Eq. 1. In the full sample, a significant positive coefficient on Tier 1_{t-1} suggests that banks tend to have a high Tier 1 ratio in period $t-1$ and that they are likely to increase their LLP in period t. We also find significant evidence of income smoothing, with a significant positive association between LLP and EBTLLP. These findings are in line with Kim & Kross (1998) and Anandarajan et al. (2007). For Islamic banks, both TIER 1_{t-1} and EBTLLP are insignificantly associated with LLP, indicating the absence of capital (and earnings) management via LLP. For conventional banks, the discretionary use of LLP to manage regulatory capital and earnings is supported by positive and highly significant coefficients on TIER 1_{t-1} and EBTLLP.

For the full sample and each of the subsamples, the coefficient for ΔNPL is positive and significant; i.e., LLP is associated with a decline in the performance of the loan portfolio. The greater magnitude and significance of the coefficient on ΔNPL indicate that this effect is more pronounced for conventional banks. These results indicate lower default risk in Islamic banks (Abedifar et al., 2013). Only conventional banks show a significant and positive association between ΔLOANS and LLP, suggesting a growth in their loan portfolios. The significant

positive coefficient on LISTING shows that listed banks report higher levels of LLP, possibly to mitigate credit risk and to avoid any negative impact to their stock prices. Leverage (LEV) has no impact upon reported LLP.

For conventional banks, we find a negative and significant association between CRISIS and LLP, suggesting a substantial reduction in the level of LLP during the crisis years. This suggests that during the financial crisis, conventional banks appear to reduce the levels of their LLP, subsequently amplifying pro-cyclicality and reflecting the greater instability of conventional banks (see Hasan & Dridi, 2011; Leventis et al., 2011; Beck et al., 2013). The significant negative coefficient on GDP for conventional banks further indicates pro-cyclical lending. These macroeconomic effects are less apparent for Islamic banks, which might be attributed to their application of a counter-cyclical model: the E-LLM (see Bushman & Williams, 2012).

For the bank type indicator variable (IB) in the full sample, we find a positive and significant relationship with LLP. This suggests a higher level of LLP for Islamic banks so giving support to the underlying prudence of the Islamic business model (Beck et al., 2013).

[Insert Table 4 here]

In Table 5, we estimate Eq. 2, which extends the baseline model in Eq. 1, in two ways. For the full sample, we run conditional interactions between bank type and the capital (and earnings) management measures, (CB, IB*TIER 1_{t-1}) and (CB, IB*EBTLLP). We also estimate the same model specification for a subsample which excludes large banks. With a greater propensity to engage in risk-taking activities, larger banks are more likely to adopt discretionary practices via LLP to minimize their capital violation penalties, to meet personal compensation/earnings targets, and/or to meet credit ratings/deposit insurance (see Leventis et

al., 2011; Leventis & Dimitropoulos, 2012). Following Berger et al. (2013), we exclude banks with assets exceeding $100 billion[18].

For the full sample, the insignificant coefficients on both the IB*TIER 1_{t-1} and IB*EBTLLP interaction variables confirm the absence of capital and earnings management in Islamic banks. For conventional banks, both CB*TIER 1_{t-1} and CB*EBTLLP are significant and positively associated with LLP. Findings on the associations between LLP and control variables are unchanged.

For the sub-sample that excludes large banks, we find that Islamic banks still show no significant change with respect to earnings and capital management. However, for conventional banks, the coefficient on CB*TIER 1_{t-1} is no longer significant whereas that on CB*EBTLP is significant and positive. These results suggest that the discretionary use of LLP in capital management within conventional banks is more prevalent in large banks but that bank size has no influence on their earnings management behavior. These findings are consistent with prior evidence that large banks have greater incentives to maintain a strong regulatory capital adequacy position, given their close monitoring by investors and regulators (Beatty et al., 2002; Kanagaretnam et al., 2015).

To examine whether there is a significant difference between capital (and earnings) management practices in both bank types, we compare the coefficients on Islamic and conventional banks interaction variables. The reported F-test indicates that the coefficients on (IB*Tier1 = CB*Tier1) and (IB*EBTLLP = CB*EBTLLP) are statistically different. This indicates a rejection of the null of no significant difference between capital and earnings management practices which supports the results reported for H_{01} and H_{02}.

[Insert Table 5 here]

[18] Large banks represents about 9% of our sample. This tests is based on dropping 41 bank-year observations for both Islamic (27 observations) and conventional (14 observations) banks.

Overall, the absence of capital and earning management through LLP in Islamic banks can be explained on several grounds. First, the business model of Islamic banks promotes greater prudence and risk-averse attitude (see Beck et al., 2013). Second, with the inability to raise funds via direct market operations, Islamic banks operate on lower utilization levels of their assets, which is likely to promote higher capital buffers. Third is the effects of the ethical business orientation, monitoring by IAHs, and additional governance by the Shariah supervisory boards.

From the above findings we argue that despite the motives and incentives to smooth earnings via LLP under the E-LLM framework, Islamic banks tend not to do so. This may reflect the impact of strong governance mechanisms and moral accountability in limiting accounting discretion (see Hilary & Hu, 2009; McGuire et al., 2012; Dyreng et al., 2012; Kanagaretnam et al., 2015).

6.3 Sensitivity Analyses

We extend the base-line (Eq. 1) to allow for a dummy that captures banks' failures to meet earnings targets ($LOSS_{it}$). Based on the EBTLLP, the $LOSS_{it}$ is an indicator variable which takes the value 1 for loss-generating banks and 0 otherwise. We interact $LOSS_{it}$ with both TIER 1_{t-1} and each bank classification dummy (i.e., IB for Islamic banks and CB for conventional banks). Our extended model is specified as:

$$LLP_{i,t} = \beta_0 + B_1 LOSS * IB * TIER\ 1_{i,t-1} + B_2\ LOSS * CB * TIER\ 1_{i,t-1} + \beta_3 LOSS_{i,t} + \beta_4 \Delta NPL_{i,t} + \beta_5\ \Delta LOANS_{i,t} + \beta_6 LISTING_{i,t} + \beta_7 LEV_{i,t} + \beta_8 CRISIS_t + \beta_9 GDP_{j,t} + \beta_{10}\ IB_i + \beta_{11} \sum_{t=2007}^{2013} T_t + \beta_{12} v_i + \varepsilon_{it} \qquad (3)$$

We expect that banks reporting negative earnings are more likely to increase LLP to avoid falling below the minimum capital adequacy requirement. For each bank type, and in line with

our hypotheses, lower significance and magnitude are predicted for the coefficient on LOSS*IB*TIER 1_{t-1} than that on LOSS*CB*TIER 1_{t-1}.

In Table 6, results for the full sample show that the coefficient on LOSS*IB*TIER 1_{t-1} is positive but insignificant. Islamic banks show consistent evidence of not managing regulatory capital through LLP even when they are reporting losses. For conventional banks, results show a highly significant and positive coefficient on LOSS*CB*TIER 1_{t-1} suggesting that loss-generating conventional banks are more likely to engage in regulatory capital management via LLP. This finding is in line with Kanagaretnam et al. (2003), who show that poorly performing conventional banks are more likely to discretionarily use LLP to manage regulatory capital. The F-test for the two bank subsamples indicates statistically different capital management behavior via LLP.

[Insert Table 6 here]

7. Conclusion

In this study we empirically assess the impact of different banking business models on capital and earnings management practices. We explicitly examine the discretionary use of loan loss provisions for capital and earnings management. Our unique setting for testing capital and earnings management is where conventional and Islamic banks co-exist in the same countries but are subject to different regulatory frameworks to account for loan losses.

We find evidence for the influence of bank type on capital and earnings management. Significant differences do exist in the capital and earnings management behavior between Islamic banks and conventional banks. Islamic banks tend not to engage in either capital or income smoothing through LLP, even under the wide latitude of discretion permitted through the expected loan loss model. These results hold regardless of the bank size and profitability position.

For conventional banks, we find significant evidence for the use of loan loss provisions to manage both regulatory capital and earnings. Capital management is more evident for large conventional banks. Discretionary acts via loan loss provisions are more pronounced for conventional banks with poor earnings performance. We provide evidence that, unlike the expected loan loss model, the incurred loan loss model accentuates pro-cyclicality in lending.

Findings in this study suggest that the opportunistic use of loan loss provisions is sensitive to the constraints imposed by the business model and the system of governance employed in banks. The expected loan loss model is soon to be universally adopted via IFRS 9. This will present an opportunity to examine the impact upon the earnings management practices of conventional banks.

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Table 1- Sample Distributions by Country and Bank Type

Country	Islamic Banks	Conventional Banks	Full Sample	Composition Islamic Banks	Composition Conventional Banks
Bahrain	154	91	245	67%	38%
Jordan	21	105	126	9%	44%
Qatar	28	42	70	12%	18%
Observations	230	238	441	52%	54%
Banks	29	34	63	-	-

Notes: The table shows the number of the Islamic banks and the conventional banks available in *Bankscope, Thomson One Reuters*, and *Zawya* for each of the three countries during the sample coverage period of 2007 to 2013. Composition (%) is the number of banks included in the sample as a percentage of the total number of banks year observations.

Table 2 - Descriptive Statistics

PANEL A: FULL SAMPLE						**Two-Sample t-Test (two-tailed)**
VARIABLES	**Mean**	**Median**	**Std.**	**Min**	**Max**	
LLP	0.054	0.038	0.060	-0.031	0.569	6.358***
TIER 1_{t-1}	22.169	19.400	11.398	6.490	20.700	7.434***
EBTLLP	16.924	17.481	19.227	-24.427	64.112	-8.683***
ΔNPL	0.063	0.052	0.045	-0.322	0.945	-3.264**
ΔLOANS	0.157	0.204	0.504	-0.569	0.935	-2.118*
LISTING	0.540	1	0.499	0	1	-6.521***
LEV	5.151	5.231	4.673	0.536	9.729	-5.894***
GDP	11.389	12.097	10.423	-10.784	30.929	-
TA_{t-1}	6,178.342	5,191.531	7,952,.810	133.600	32,306.710	-5.440***

PANEL B: ISLAMIC BANKS SUBSAMPLE					
LLP	0.063	0.057	0.087	-0.031	0.269
TIER 1_{t-1}	18.367	16.620	19.945	9.071	20.700
EBTLLP	14.186	13.162	16.939	-23.000	60.562
ΔNPL	0.060	0.063	0.053	-0.045	0.945
ΔLOANS	0.351	0.361	0.209	-0.569	0.716
LISTING	0.379	0	0.486	0	1
LEV	3.766	3.031	2.942	0.536	9.729
GDP	10.569	11.097	10.598	-10.784	30.929
TA_{t-1}	3,206.268	1,408.900	4,569.434	133.600	21,251.100

PANEL C: CONVENTIONAL BANKS SUBSAMPLE					
LLP	0.049	0.032	0.059	-0.004	0.569
TIER 1_{t-1}	17.498	16.665	17.051	6.490	19.780
EBTLLP	18.405	19.697	15.149	-24.427	64.112
ΔNPL	0.082	0.046	0.048	-0.332	0.899
ΔLOANS	0.367	0.438	0.597	-0.431	0.935
LISTING	0.676	1	0.469	0	1
LEV	6.308	6.282	5.743	3.625	9.726
GDP	12.090	11.937	11.024	-10.784	30.929
TA_{t-1}	8,513.542	6,947.084	10,704.100	254.000	32,306.710

Notes: The table reports the descriptive statistics for the variables considered in our analyses. The sample period is 2007 to 2013. Panel A: results for the full sample including CBs and IBs with 441bank-year observations. Panel B: results for IBs sub-sample comprising 203 bank-year observations. Panel C: results for the sub-sample of CBs representing 238 bank-year observations. We report on the paired sample mean test (T-test) for Islamic and conventional banks sub-samples. *, **, and *** denote significance at 10%, 5%, and 1%, respectively.

Table 3 - Pearson Pair-Wise Correlation Matrix for the Years 2007-2013

PANEL A: Full Sample

Variables	**LLP**	**Tier $1_{,t-1}$**	**EBTLLP**	**ΔNPL**	**ΔLOANS**	**LEV**	**GDP**
LLP	1						
TIER 1_{t-1}	0.025***	1					
EBTLLP	0.385***	-0.077	1				
ΔNPL	0.013	0.019	0.023**	1			
ΔLOANS	0.057**	-0.180*	0.157	0.291**	1		
LEV	0.017	-0.511***	-0.292	0.071	0.135	1	
GDP	-0.031***	-0.102	0.244**	-0.175	0.079	0.033	1

PANEL B: Islamic Banks Subsample							
Variables	LLP	Tier $1_{,t-1}$	EBTLLP	ΔNPL	ΔLOANS	LEV	GDP
LLP	1						
TIER 1_{t-1}	0.033	1					
EBTLLP	0.296	-0.053	1				
ΔNPL	0.285***	0.027**	0.071**	1			
ΔLOANS	0.110**	-0.135	0.151	0.615	1		
LEV	0.147	-0.378	0.195	0.323**	0.100	1	
GDP	-0.025	-0.352	0.147	0.122	0.055	0.048	1

PANEL C: Conventional Banks Subsample							
Variables	LLP	Tier $1_{,t-1}$	EBTLLP	ΔNPL	ΔLOANS	LEV	GDP
LLP	1						
TIER 1_{t-1}	0.047***	1					
EBTLLP	0.248***	-0.072	1				
ΔNPL	0.049**	0.013	0.044**	1			
ΔLOANS	0.020**	-0.380	0.280	0.055**	1		
LEV	0.029	-0.522***	0.135**	0.048	0.124	1	
GDP	-0.053***	-0.102	0.138**	-0.152	0.045	0.070	1

Notes: The table reports for the full sample pairwise correlation coefficients for bank specific (LLP, ΔNPL, ΔLOANs, LEV), macroeconomic (GDP), capital management (TIER 1_{t-1}) and income smoothing (EBT) variables included in our estimation. Panel A: presents the results for the full sample including conventional and Islamic with 441 bank-year observations. Panel B: results for Islamic sub-sample comprising 203 bank-year observations. Panel C: results for the sub- of conventional banks representing 238 bank-year observations. ** and *** denote significance at the 5% and 1%, respectively.

Table 4 - Regression Analysis of Capital and Earnings Management: Full sample and Bank Types Subsamples

Variables	Predicted sign	Full Sample	Islamic Banks	Conventional Banks
TIER 1_{t-1}	+	0.023***	0.010	0.014***
		(0.000)	(0.112)	(0.000)
EBTLLP	+	0.027***	0.015	0.022**
		(0.000)	(0.101)	(0.018)
ΔNPL	+	0.041**	0.024**	0.029***
		(0.035)	(0.048)	(0.000)
ΔLOANS	+	0.018**	-0.031	0.017**
		(0.022)	(0.881)	(0.046)
LISTING	+	0.031**	0.021**	0.025***
		(0.005)	(0.011)	(0.002)
LEV	+	0.017	0.018	0.039
		(0.663)	(0.081)	(0.383)
CRISIS	-	-0.021**	0.024	-0.045**
		(0.036)	(0.396)	(0.041)
GDP	-	-0.049**	-0.035	-0.030**
		(0.021)	(0.098)	(0.038)
IB	?	0.011**		
		(0.007)		
Hausman Test	26.78			
	(0.000)			

Year Fixed effects		YES	YES	YES
Bank specific effects		YES	YES	YES
Adjusted $\mathbf{R^2}$		0.381	0.351	0.378
Bank-Year Observations		441	203	238

Notes: The table reports Fixed-Effects estimations for testing the capital and earnings management hypotheses for the full sample as well as within the Islamic and conventional banks sub-samples. Our base line estimation model is specified as:

$$LLP_{i,t} = \beta_0 + B_1\, TIER\, 1_{i,t-1} + B_2\ EBTLLP_{i,t} + \beta_3 \Delta NPL_{i,t} + \beta_4\, \Delta LOANS_{i,t} + \beta_5 LISTING_{i,t} + \beta_6 LEV_{i,t} + \beta_7 CRISIS_t + \beta_8 GDP_{j,t} + \beta_9 IB_i + \beta_{10} \sum_{t=2007}^{2013} T_t + \beta_{11} v_i + \varepsilon_{it}$$

Standard errors are adjusted for heteroscedasticity. P-values are between parentheses. ** and *** denote significance at the 5% and 1% levels, respectively.

Table 5 - Regression Analysis of Capital and Earnings Management with Conditional Interactions: Full Sample and when Excluding Large Banks

Variables	Predicted sign	Full sample	Excluding Large Banks
IB*TIER 1_{t-1}	+	0.011	0.016
		(0.078)	(0.611)
IB*EBTLLP	+	0.026	0.019
		(0.061)	(0.784)
CB*TIER 1_{t-1}	+	0.019***	0.014
		(0.000)	(0.098)
CB*EBTLLP	+	0.034***	0.026***
		(0.001)	(0.001)
ΔNPL	+	0.021**	0.020**
		(0.013)	(0.006)
ΔLOANS	+	0.040***	-0.035
		(0.000)	(0.352)
LISTING	+	0.022***	0.012***
		(0.000)	(0.000)
LEV	+	-0.025	-0.040
		(0.426)	(0.261)
CRISIS	-	-0.053**	-0.050**
		(0.008)	(0.006)
GDP	-	-0.023**	-0.030**
		(0.005)	(0.007)

IB	?	0.024**	0.023**
		(0.004)	(0.008)
IB*TIER 1_{t-1}= CB*TIER 1_{t-1}, (F-Test)		33.75	43.21
		(0.000)	(0.000)
IB*EBTLLP = CB*EBTLLP, (F-Test)		8.94	20.64
		(0.004)	(0.000)
Year Fixed effects		YES	YES
Bank specific effects		YES	YES
Adjusted $\mathbf{R^2}$		0.492	0.463
Bank-Year Observations		441	400

Notes: The table reports Fixed-Effects estimations for testing the capital and earnings management hypotheses for the full sample and after dropping large banks (holding of total assets exceeding $100 billion). Our specified model is defined as:

$$LLP_{i,t} = \beta_0 + B_1\, IB * TIER\, 1_{i,t-1} + B_2\, IB * EBTLLP_{i,t} + \beta_3\, CB * TIER\, 1_{i,t-1} + B_4\, CB * EBTLLP_{i,t} + \beta_5 \Delta NPL_{i,t} + \beta_6\, \Delta LOANS_{i,t} + \beta_7 LISTING_{i,t} + \beta_8 LEV_{i,t} + \beta_9 CRISIS_t + \beta_{10} GDP_{j,t} + \beta_{11}\, IB_i + \beta_{12} \sum_{t=2007}^{2013} T_t + \beta_{13} v_i + \varepsilon_{it}$$

Standard errors of estimated coefficients are adjusted for heteroscedasticity. P-values are between parentheses. ** and *** denote significance at the 5% and 1% levels, respectively.

Table 6 - Regression Analysis of Capital and Earnings Management Identifying the Effects for Loss-Generating Banks		
Variables	**Predicted Sign**	**Full Sample**
LOSS*IB*TIER 1_{t-1}	?	0.015
		(0.625)
LOSS*CB*TIER 1_{t-1}	?	0.015***
		(0.003)
LOSS	-	-0.023**
		(0.003)
ΔNPL	+	0.012**
		(0.048)
ΔLOANS	+	0.023**
		(0.041)
LISTING	+	0.025***
		(0.000)
LEV	+	-0.031
		(0.083)
CRISIS	-	-0.017**
		(0.027)
GDP	-	-0.029***
		(0.003)
IB	?	0.018**
		(0.000)

LOSS*IB*TIER 1_{t-1} = **LOSS*CB*TIER 1_{t-1}, (F-Test)**		45.96
		(0.000)
Year Fixed effects		YES
Bank specific effects		YES
Adjusted $\mathbf{R^2}$		0.320
Bank-Year Observations		441

Notes: The table reports Fixed-Effects estimations for testing the capital management hypothesis for the full sample to test for the loss-generating banks. LOSS is a dummy indicator equal 1 for loss-generating banks and 0 for profit-generating banks. Our specified model is defined as:

$$LLP_{i,t} = \beta_0 + B_1 LOSS * IB * TIER\ 1_{i,t-1} + B_2\ LOSS * CB * TIER\ 1_{i,t-1} + \beta_3 LOSS_{i,t} + \beta_4 \Delta NPL_{i,t} + \beta_5\ \Delta LOANS_{i,t} + \beta_6 LISTING_{i,t} + \beta_7 LEV_{i,t} + \beta_8 CRISIS_t + \beta_9 GDP_{j,t} + \beta_{10}\ IB_i + \beta_{11} \sum_{t=2007}^{2013} T_t + \beta_{12} v_i + \varepsilon_{it}$$

Standard errors of estimated coefficients are corrected for heteroscedasticity. P-values are between parentheses. ** and *** denote significance at the 5% and 1% levels, respectively.

Appendix

Variable Definitions and Descriptions

Variable	Notation	Description
Loan Loss Provisions	$LLP_{i,t}$	Loan loss provisions at year t. The variable is normalized by total assets at the beginning of year t ($TA_{i,t-1}$).
One-period Lagged Tier 1 Ratio	$TIER\ 1_{t-1}$	Ratio of Tier 1 capital to risk weighted assets for the year $t-1$.
Earnings Before Taxes and LLP	$EBTLLP_{i,t}$	Earnings before taxes and loan loss provisions at year t. The variable is normalized by total assets at the beginning of year t ($TA_{i,t-1}$).
Change in Non-performing Loans	ΔNPL_{it}	Change in non-performing loans estimated as the difference between year t and year $t-1$. The variable is normalized by total assets at the beginning of year t ($TA_{i,t-1}$).
Change in total loans	$\Delta LOANS_{it}$	Change in total loans at year t estimated as the difference of the bank's total loans between year t and $t-1$. The variable is normalized by total assets at the beginning of year t ($TA_{i,t-1}$).
Listing Status	$LISTING_{it}$	Dummy variable for the listing status of bank i at time t, equal 1 if the bank is listed; 0 otherwise.
Leverage Ratio	LEV_{it}	Leverage ratio equal to total debt to total common equity for bank i at time t.

Financial Crisis	$CRISIS_t$	Time dummy equal 1 for the sample period of 2007-2009 and 0 otherwise.
GDP Growth Rate	GDP_{ij}	The country-prevailing GDP growth rate at time t.
Bank Type Dummy	IB_i	Dummy variable equal 1 for IBs; 0 for CBs.
One-period Lagged Total Assets	$TA_{i,t-1}$	Total assets for bank i at time t-1
LOSS	$LOSS_{i,t}$	Dummy variable testing for loss-generating banks equals 1 if banks i at time t is generating losses and 0 for a profit-generating bank at time t.

Notes: definitions and notations for test variables in the empirical models examined in this study.