Income smoothing through loan loss provisions in Asia–Pacific commercial banks: the role of managerial ability

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Abstract

Purpose – This research aims to answer the question of to what extent managerial ability (MA) impacts the level of employing income smoothing (IS) through loan loss provision (LLP) and how this influences the banks' financial performance.

Design/methodology/approach – The research confirms LLPs used to smooth income through the relationship between LLPs and pre-provisioning income in Asia–Pacific banks from 2012 to 2021. Then, it explores the role of managerial ability in IS behavior by using a two-stage procedure: estimating the profit efficiency by employing a four-error stochastic frontier analysis (SFA) and generating MA by calculating residuals from regressing profit efficiency on bank-specific factors. Next, it explores the relationship between IS, managerial ability and banks' performance.

Findings – There is IS through LLP among Asia–Pacific banks, and high-ability managers generally have no special taste in utilizing IS. However, these situations could be modified by contexts such as bank types, profitability levels, credit risk or economic conditions. Besides, talented managers are expected to propose a positive impact on performance in case they use discretionary LLP as a tool of IS.

Originality/value – This study is among the first to discover IS behavior and its association with MA and performance in the banking industry and Asia–Pacific region. Furthermore, a four-error SFA can solve the problems of inability and improve the measurement framework of managerial ability measurement. The research also enhances the understanding of upper echelon theory.

Keywords Earnings management, Income smoothing, Loans loss provision, Managerial ability, Performance, Asian–Pacific banks

Paper type Research paper

1. Introduction

Bank managers tend to utilize discretion in estimating particular elements of net income to decrease reported income when it is estimated to be high and increase it when it is predicted to be low. As a result, income becomes less fluctuated, and such behaviors are commonly regarded as

income smoothing (IS). IS by banks is also of significant interest to academic researchers and regulators due to its exacerbation of information asymmetry between corporate insiders and external stakeholders (including creditors, shareholders and regulators), potentially leading to increased social costs (Elyasiani *et al.*, 2017). A variety of research on the impact factor of IS in banks, such as competition and concentration (Shala *et al.*, 2024), provision reversals recognition (Aggelopoulos *et al.*, 2023), institutional ownership (Elyasiani *et al.*, 2017), and more, this research aims to enhance the knowledge of this by exploring the role of managerial ability (MA) on IS.

The work of Dechow *et al.* (1996) is the prior in discussing the impact of characteristics of firms' managers and directors on earnings management. For example, firms with a chief executive officer who simultaneously serves as the firm's founder or chairman of the board are more likely to lead to earnings manipulation behavior. As a result, this causes an increase in costs when this behavior is public. MA is defined as the top management team's capability to utilize input resources to create output values for both firms and stakeholders. In other words, MA is crucial in the management and outcomes of organizations (Anggraini and Sholihin, 2023; Demerjian *et al.*, 2013). From our review, there is some research focusing on managerial perspectives (such as characteristics, leadership and ability) and earnings management relationships (Qi *et al.*, 2018; Kumar and Goswami, 2024; Putra and Setiawan, 2024; Liao *et al.*, 2023), but no works discussing the role of MA in earnings management, income smoothing or LLP, especially in the banking industry. Therefore, this research discovers the relationship between MA, banks' income smoothing behavior through LLP and banks' performance. It aims to answer the question of to what extent the MA impacts the level of employing income smoothing and tools of LLP and how this influences the banks' performance.

The contribution of this research is fourfold. First, this research enhances the knowledge of the banking industry in the Asia–Pacific area. Because of the rising role of this geographic area in global economic development and contributing to the literature of IS and management in the banking industry, this study employs Asia–Pacific banking as a sample. Second, the chosen four-error stochastic frontier analysis (SFA) approach can solve the problems of inability to accommodate noise in the measurement of inputs, outputs and price variables, and it also addresses random bank effects and disentangles persistent inefficiency from time-varying inefficiency, in contrast to most previous studies, which do not distinguish these. Moreover, the four-error SFA model outperforms models without bank-fixed effects and permanent inefficiency in bank efficiency analyses (Andreou *et al.*, 2016). Altogether, this model specification allows us to improve the measurement framework (Demerjian *et al.*, 2012). Third, this study is among the first to discover the moderating role of managerial ability on IS behavior in the banking industry. The findings foster banks' investors to manipulate banks' earnings management, which is associated with risk-taking behavior. Finally, hinging on the return-risk framework, this study also uncovers the impacts of discretionary LLPs on firm performance, which supports management practice in directing such IS behavior.

The remainder of this paper is organized as follows: Section 2 reviews relevant literature and develops hypotheses; Section 3 is about methodology; Section 4 presents empirical results; Section 5 draws implications; and the last section concludes the paper.

2. Related literature and hypotheses

2.1 Overview of the banking industry in Asia–Pacific region

According to reports released by the Regional Economic Outlook for Asia and the Pacific and the International Monetary Fund (IMF), rich production factors, huge market size with one-third of the world's population, diverse resources and strong economic complementarity are the motivation for the growth of the Asia–Pacific region. This region contributes about two-thirds of global growth, nearly half of global trade and investment flows and plays a vital player in cross-border economic activities (IMF, 2024). Among these, the banking industry has a pivotal role in various ways, like financial inclusion, economic stability, technological advancement and support for small and medium-sized enterprises (World Bank, 2019; Gupta

and Kashiramka, 2024). Despite this contribution, the banking industry in Asia–Pacific still has weaknesses such as significantly varied regulation among regions, high levels of nonperforming loans (NPLs) or technical disparities, which can impact this industry's performance and efficiency (IMF, 2021).

Vo et al. (2022) explored a significantly positive association between earnings management using LLP and bank risk-taking behavior in Asia–Pacific banks. Besides, Rusmin et al. (2024) explore how Asia–Pacific bank managers manipulate performance indicators by employing earnings management; this raises the risk and stability concern in the long-term view. These results are the source for discovering the managerial aspects, such as the role of the MA. Hinging on the return-risk framework, our current work enhances the study on Asia–Pacific banks and supports management practice in directing such earnings management behavior.

2.2 Loan loss provisions and income smoothing/earnings management

LLP normally has two subcategories: (1) nondiscretionary LLPs and (2) discretionary LLPs (DLLPs). While the former is based on the physiological changes in default risk and discipline of bank risk-taking, the latter depends on incentives of bank managers in earning management, capital management and signaling (Curcio and Hasan, 2015). There are two approaches to detecting the availability of discretionary LLP among banks or not (Bushman and Williams, 2012). After controlling for the determinants of nondiscretionary LLP, the first approach assumes that the higher the sensitivity of current provisions to current period earnings realizations (measured by the coefficient from a regression of LLP on contemporaneous earnings), the greater the probability of artificially discretionary IS behavior. Instead, the second one regresses the current LLP on future outcome variables such as the next year's change in nonperforming loans; this is expected to isolate the forward-looking information.

Although there are differences among country-to-country determinants such as investor protection, disclosure, regulation, supervision, financial structure and financial development (Fonseca and Gonzalez, 2008), LLP is one of the primary tools for IS (Dantas et al., 2023). In addition to the role of IS and capital management hypotheses, discretion over LLP is an efficient tool because it could impact the level of enterprise tax and political costs (Balla and Rose, 2011). Parallel to the opposite viewpoints on the necessity of LLP in IS (Abu-Serdaneh, 2018) or the changes to banks' operating environments imposed by the regulatory authorities (Lim and Yong, 2017), banks across the world have their responses to the application of LLP. For instance, while the US Securities and Exchange Commission believes that DLLP could mislead the investor and agrees to prohibit using cookie-jar reserves for IS, US banks flexibly employ LLP for different purposes depending on the economic certainty and private banks in this country are found to conduct more IS through LLP rather than listed ones in uncertain times (Danisman et al., 2021). Evidence of smoothing income via LLP has also been confirmed in Japan, China and European banks (Aggelopoulos et al., 2023; Chen et al., 2021; Kwak et al., 2009). In contrast, Abu-Serdaneh (2018) found no evidence that Jordan-listed banks have LLPs to smooth income. Gómez-Ortega et al. (2023) documented that after the Bank of Spain made an effort to impair accounting standards in 2012, there was less IS behavior among banks in this country.

In short, there is no unique conclusion in the evidence of LLP and IS among the samples of countries or broader markets. The current research aims to enrich this research field with a sample of Asia–Pacific banks; therefore, it is meaningful to explore the smoothing behavior here, playing as the foundation for other purposes of this research. We hypothesize the following:

H1. There is income smoothing behavior through loan loss provision in the Asia–Pacific banking industry.

2.3 Managerial ability, income smoothing and loan loss provision

Corresponding to various incentives and techniques, IS or earnings management by employing LLP, in general, are complex strategies, and it is difficult to conclude the efficiencies or

consequences of these behaviors. However, these are assumed to be correlated with the manager's foresight, MA or corporate governance. According to upper echelons theory (UET), executives' backgrounds, characteristics and experiences are the functions for their interpretation of strategic situations and rational decision-making; as a consequence, these functions play an integral part in firm performance and outcomes (Hambrick and Mason, 1984). Hsieh *et al.* (2018) examined the incentive-incentive- and entrenchment-enhancing effects of earnings manipulations among the top managers of 4,791 Taiwanese listed firms from 2006 to 2010. The empirical results document that the top managers with more knowledge and longer average tenure would limit the managers' incentives to discretionary accrual-based earnings management because these people are more aware of litigation costs and focus on performance and reputation. Generally, this study applies and enhances UET by arguing how managerial ability interacts with banks' income-smoothing strategies, and we have the following alternative hypotheses:

> *H2.* Managerial ability undermines the IS behavior through loan loss provision in the banking industry.

2.4 Managerial ability, income smoothing and firm performance
MA is considered a cognitive characteristic of managers and a valuable human capital for both firms and stakeholders and has received huge attention since the work of Demerjian *et al.* (2012). According to this author, MA is the capacity of management to efficiently transform firm resources into revenue, profit or other firm value relatives. Demerjian *et al.* (2020) explore that high- and low-ability managers are more likely than low-ability managers to implement earnings management or IS strategies in general business. In the banking industry setting, MA also proves its role in strategies such as prudential regulation (Curi and Lozano-Vivas, 2020), liquidity creation and risk-taking (Andreou *et al.*, 2016; Abdesslem *et al.*, 2022), etc. Anggraini and Sholihin (2023) made a systematic literature review on MA and found the consistency between the UET and MA in observing the managerial aspects and firm performance. On the same side of research on the relationship between management characteristics and firm performance based on UET, there are studies on the indirect and direct association between MA and performance, such as Banerjee and Deb (2023) and Banker *et al.* (2023). In general, despite the inconsistent relationship between earnings management and firm performance, MA is a channel that positively reinforces this relationship. Based on these discussions, we hypothesize as follows:

> *H3.* Managerial ability reinforces the relationship between IS and banks' performance.

3. Methodology
3.1 Research model
To obtain the research objectives, the current work has the following three baseline models:
  Model (1):

$$LLP_{i,t-1} = \alpha_{01} + \alpha_{11} Income_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it} \tag{1}$$

In this study, we assume that LLP is a function of changes in nonperforming loans and of the amount of previously created loan loss reserves. If NPL levels and loan loss reserves are controlled in the same model, the remaining parts of LLP would reflect the IS behaviors. The independent variable "Income" is pre-provisioning income scaled by total assets; this measure captures managerial discretion related to LLP (Skała, 2021).
  Model (2):

$$LLP_{it} = \alpha_{02} + \alpha_{12} Income_{it} + \alpha_{22} MA_{it} + \alpha_{32} Income_{it} \times MA_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it} \tag{2}$$

In which, controls are bank size, bank capital, credit risks, loan growth, loan loss reserve and macroeconomic factors. Following Skała (2021), we use the first order of bank capital, loan growth and loan loss reserve to reduce endogeneity problems. In both models, fixed effects for years (μ_t) and individual banks (μ_i) are employed.

And Model (3)

$$P_{it} = \beta_0 + \beta_1 DLLP_{it} + \beta_2 MA_{it} + \beta_3 MA_{it} \times DLLP_{it} + X_{it} + \eta_i + \eta_t + \eta_{it} \qquad (3)$$

When P_{it} presents performance measures. By employing the trade-off framework, we evaluate bank performance by examining the returns and risks involved. Bank risks are assessed through solvency risks, represented by Z-scores [1] ($Z_{i,t}$) and credit risks, indicated by the nonperforming loan ratio ($NPL_{i,t}$), which is the proportion of non-performing loans to total loans. Meanwhile, banks' returns are characterized by returns on equity ($ROE_{i,t}$) and returns on assets ($ROA_{i,t}$), reflecting the profits generated from overall operations (He *et al.*, 2020). $X_{i,t}$ presents a set of control variables. Following the literature on bank performance, we controlled the effects of bank size, capital adequacy (i.e. the Basel capital adequacy ratio), market competition (i.e. Herfindahl–Hirschman index) and macroeconomic conditions (i.e. GDP per capita and inflation). To address the influence of bank-specific unobserved factors, we incorporate bank-fixed effects η_i and time-fixed effects η_t. To address heteroskedasticity, we use White (1980) estimators.

3.2 Data and variables

The research employs a list of countries that are categorized in Asia–Pacific by the S&P Capital IQ database, including Amernia, Azerbaijan, Australia, Cambodia, Malaysia, Taiwan, Pakistan, China, Thailand, Sri Lanka, Hong Kong, New Zealand, Laos, the Philippines, Kazakhstan, Georgia, Nepal, the Republic of Korea, Indonesia and Mongolia. The final unbalanced panel includes 87 national commercial banks, 297 private commercial banks and 11 state commercial banks over the period 2012–2021 (2,225 bank-year observations) across 22 Asian-Pacific countries. Data on the GDP growth rate, inflation rate and global financial crises are collected from the WorldBank and Harvard Business School [2].

Table 1 reports descriptive statistics. The observed proportion of LLPs has an average value of 1.30% with minimum and maximum values of −15.73 and 18.70%, respectively [3]. The average value of pre-provisioning income over total assets (income) is 3.80%, with minimum and maximum values of 0.30% and 41.70%.

Table 1. Summary statistics (baseline models)

	Obs	Mean	Standard deviation	Minimum	Maximum
LLP	2,225	0.013	0.016	−0.157	0.187
Income	2,225	0.038	0.023	0.003	0.417
MA	2,225	0.000	0.076	−0.770	0.204
MA_{t-1}	1737	0.002	0.068	−0.588	0.204
Size	2,225	8.763	1.660	4.620	14.810
NPL	2,225	0.122	3.717	0.000	174.903
Equity	2,225	0.106	0.057	0.018	0.750
LLR	2,225	0.038	0.036	0.000	0.518
LGR	2,225	0.137	0.223	−0.707	5.093
GDP	2,225	0.049	0.030	−0.095	0.105
INF	2,225	0.023	0.018	−0.014	0.145

Source(s): Authors' own elaboration

Table 2 tabulates the correlation coefficient matrix of all independent variables. The range of correlation coefficients for all variables is from -0.51 to 0.50, which falls within $[-0.7; 0.7]$. Therefore, collinearity concerns were not significant in our study.

Table Appendix 1 summarizes the variables used in this study.

3.3 Analytical procedures
Figure 1 summarizes the three analytical stages. The details are as follows:

(1) Stage 1: Model (1) confirming LLPs are used to smooth income through the relationship between LLPs and pre-provisioning income.

Stage 1 with Model (1) aims to detect whether Asia–Pacific commercial banks smooth their earnings through loan loss provision levels. Following the work of Skała (2021), a bank is considered to smooth income if there is a positive relationship between pre-provisioning profits and the loan loss provision level; therefore, the coefficient of interest α_{11} is expected to be significantly positive.

(2) Stage 2: Model (2)_Exploring the moderating role of managerial ability in banks' IS.

In case α_{11} in Model (1) is significantly positive, the research continues to Stage 2. Before doing this, two complementary actions are proposed. The first one is to control the effects of nondiscretionary parts of LLPs. Theoretically, NPL presents the loan quality and credit risks; meanwhile, LLR describes the reserve accumulated from earlier periods to deal with loans that are not serviced regularly (Skała, 2021). Both nonperforming loans and loan loss reserves are scaled by total loans, and we use their first-order lag to reduce endogeneity. Therefore, the presence of these two variables in the same model ensures that LLP reflects the discretionary parts beyond the credit risks. Moreover, we consider loan growth for two reasons: (1) differences in loan growth likely influence loan loss provisions (LLPs) and IS, as banks adjust provisions in anticipation of credit expansion and future losses (Cummings and Durrani, 2016) and (2) loan growth serves as a key channel for transmitting shocks between subsidiaries and foreign shareholders (De Haas and Van Lelyveld, 2014), incentivizing banks to engage in IS.

The second step entails quantifying the latent MA scores at the bank level using a two-stage procedure. Following this framework, the efficiency of banks should be first estimated. This research uses SFA for bank efficiency due to its advantages over Data Envelopment Analysis (DEA) (handles noise, better for Asia–Pacific small banks where DEA assumptions fail) and OLS (explicitly models inefficiency, incorporates environmental variables). The four-error SFA is adopted to include random/fixed effects, aligning with recent studies (He *et al.*, 2020).

The next step is to generate MA by calculating residuals from regressing efficiency on bank-specific factors. While Demerjian *et al.* (2012) utilize revenue efficiency to assess managerial ability, we align with the approaches of He *et al.* (2020) by focusing on profit efficiency, because profitability is likely the primary motivation for bank owners and bank managers. The validity tests of MA measurement are in line with Andreou *et al.* (2016), therefore providing anecdotal first evidence for the validity of our managerial measures. Finally, to explore the role of MA in banks' income-smoothing behavior, we estimate Model (2). Coefficient α_{22} in Model (2) is positive if a more able managerial team encourages banks to smooth income through LLP channels. In contrast, if competent managers are reluctant to carry out IS through LLP, α_{22} receives a negative value.

(3) Stage 3: Model (3)_Exploring the relationship among IS, managerial ability and banks' performance.
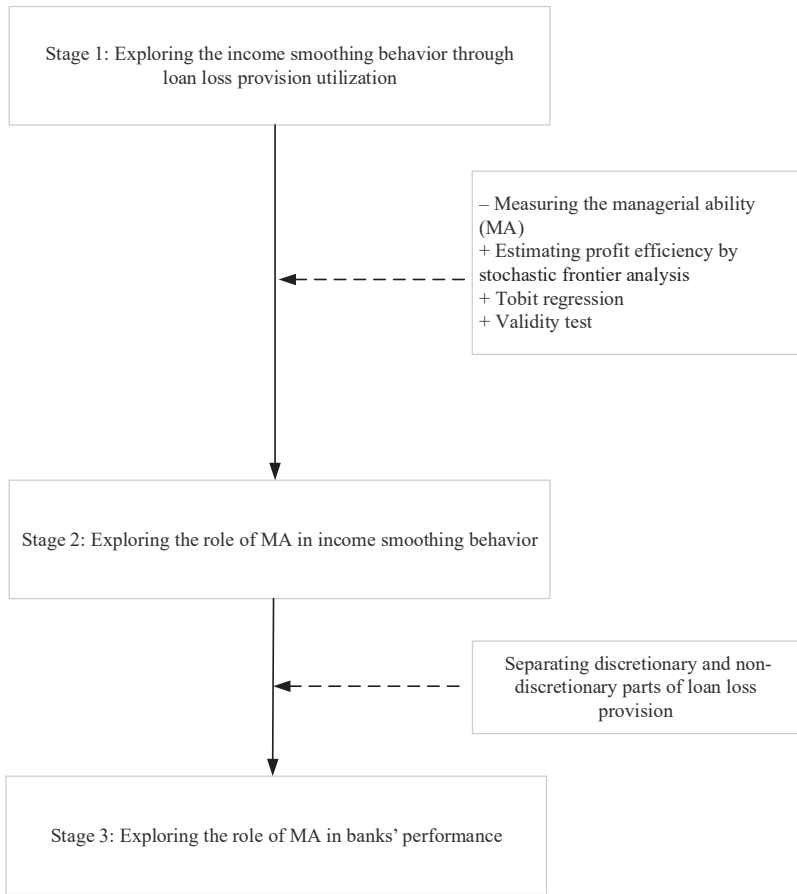
One important part of this stage is to separate $DLLP_{it}$ from LLPs to be used as earnings management measures. Following the prior studies (Beatty *et al.*, 2002; Fan *et al.*, 2019), DLLP is estimated through two steps. The first is to estimate the following basic model:

Table 2. Pearson correlation coefficients (baseline models)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Income	1.000									
(2) MA	0.062***	1.000								
(3) MA$_{t-1}$	0.056**	0.486***	1.000							
(4) Size	−0.513***	0.000	0.056*	1.000						
(5) NPL	−0.002	−0.001	−0.012	−0.026	1.000					
(6) Equity	0.500***	0.071***	0.041*	−0.424***	−0.016	1.000				
(7) LLR	0.253***	0.036*	0.080***	−0.256***	0.009	0.165***	1.000			
(8) LGR	0.328***	0.060***	0.157***	−0.008	−0.003	0.309***	0.005	1.000		
(9) GDP	−0.049**	0.000	0.109***	0.138***	0.012	−0.102***	0.001	0.146***	1.000	
(10) INF	0.252***	0.000	0.017	−0.269***	−0.006	0.044**	0.198***	−0.072***	−0.121***	1.000

Note(s): Standard errors are clustered at the bank level. ***$p < 0.01$, **$p < 0.05$ and *$p < 0.1$
Source(s): Authors' own elaboration

Figure 1. Research flow. **Source(s):** Authors' own elaboration

$$LLP_{it} = \lambda_1 Size_{it} + \lambda_2 \Delta Loans_{it} + \lambda_3 Loans\ Charge - offs_{it} + \lambda_4 Allowance_{i,t-1}$$
$$+ \lambda_5 \Delta Non - performing\ Loans_{i,t-2} + \lambda_6 \Delta Non - performing\ Loanss_{i,t-1}$$
$$+ \lambda_7 \Delta Non - performing\ Loans_{it} + \lambda_8 \Delta Non - performing\ Loans_{i,t+1} + \sigma_{it} \quad (3.1)$$

Where $Size_{it}$ is the natural logarithm of total assets; $\Delta Loans_{it}$ represents the difference in total loans between periods $t-1$ and t; Loans Charge-offs$_{it}$ is net charge-offs; Allowance $_{i,t-1}$ is loan loss allowance in $t-1$ and ΔNonperforming Loans$_{,t-2}$; ΔNonperforming Loans$_{i,t-1}$; ΔNonperforming Loans$_{it}$ and ΔNonperforming Loans$_{,t+1}$ denote the changes in nonperforming loans between periods $t-3$ and $t-2$, periods $t-2$ and $t-1$, periods $t-1$ and t and periods t and $t+1$, respectively. All variables, except $Size_{it}$, are scaled by the book value of the total loans of each bank.

The second is to calculate DLLPs. The absolute values of the error terms σ_{it} present the discretionary LLP, whose higher values link to higher-earning management. Motivated by Cornett *et al.* (2009) and Fan *et al.* (2019), we standardize DLLP as

$$DLLP_{it} = \frac{|\sigma_{it}| \times Loans_{it}}{Total\,Assets_{it}} \qquad (3.2)$$

4. Results

4.1 Loan loss provision, income smoothing behavior and managerial ability

The estimations of Models (1) and (2) are presented in Table 3 and provide interesting results. Column 1 presents the results of Model (1), showing a positive correlation between pre-provisioning income and LLP at a 1% level. These results support Hypothesis 1. The results have economic significance because one standard deviation of pre-provisioning income over assets increases loan loss provisions over assets by 38%. Hence, it suggests that IS, through adjusting LLP, exists in Asia–Pacific banks during the research period. Model (2) estimates the possible differences in IS concerning managers' competency. Columns 2 and 3 prove that MA does not directly matter but moderates the positive relationship between pre-provisioning income and loan loss provisions. Specifically, the interaction term between pre-provisioning income and MA (and also its lags) becomes significantly negative at a 1% level, suggesting that IS through LLP adjustments is not very welcomed by more able managers. In terms of economic significance, a one-standard-deviation variation in the interaction terms between managerial ability measures and pre-provisioning income (and its lag) is associated with a 0.163 (and 0.157) decrease in LLP (and its lags).

The signs of control variables are reasonable. NPLs (in Model 3) are positively correlated with LLP, meaning that decreases in loan portfolio quality (or higher credit risks) force banks to create more LLP as reserves. Consistent with Skała (2021), it finds that banks create more LLPs when pre-existing LLRs are high. Also, it demonstrates the usual procyclicality of LLP versus economic growth, which is visible through the negative and positive coefficients for GDP growth and inflation rates, respectively. A plausible explanation for this is that during economic downturns, banks intend to create higher LLPs to cover increased credit risks.

Table 3. Baseline results

	(1)	(2)	(3)
Income	0.217***	0.257***	0.362***
MA		−0.002	
MA × Income		−0.643***	
MA_{t-1}			0.002
MA_{t-1} × Income			−0.660***
Size	0.001	−0.006***	−0.003
NPL	−0.000	0.000	0.012**
Equity	−0.007	−0.008	−0.023
LLR	−0.054***	−0.042***	−0.046**
LGR	0.000	0.002	−0.001
GDP	−0.149***	−0.154***	−0.143***
INF	0.101***	0.102***	0.122***
Intercept	0.005	0.057***	0.023
Bank-fixed effects	Yes	Yes	Yes
Fixed-year effects	Yes	Yes	Yes
Observations	2,225	2,225	1,737
R-squared	0.080	0.099	0.112

Note(s): This table presents the estimates of the baseline models

$LLP_{i,t-1} = \alpha_{01} + \alpha_{11} Income_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it}$ (1)

$LLP_{i,t-1} = \alpha_{02} + \alpha_{12} Income_{it} + \alpha_{22} MA_{it} + \alpha_{32} Income_{it} \times MA_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it}$ (2)

Standard errors are clustered at the bank level. ***$p < 0.01$, **$p < 0.05$ and *$p < 0.1$

Source(s): Authors' own elaboration

4.2 Additional analysis

This section further understands how the utilization of DLLP for IS in banks occurs under different contexts, such as bank type and ownership, performance, country economic conditions and financial crises.

Table 4 exhibits significant positive coefficients (at a 1% significance level) of income in columns (4), (7), (10) and (13), meaning that except for state banks, others like private, national, foreign and domestic banks employ LLPs to smooth income variations. This finding is slightly divergent from Skala (2021), who discovered that, in Central Europe, although both banks owned by foreign banks and governments have higher LLPs than their peers, only foreign banks use this high LLP to smooth income deviations. In terms of economic significance, a one-standard-deviation increase in income results in a 0.71, 0.31, 1.14 and 0.24 increase in LLP_{t-1} for national, private, foreign and domestic banks, respectively. Turning to the moderating role of managerial ability, Table 4 presents significantly negative coefficients (at 1 and 5% significance levels) of interaction terms between pre-provisioning income and managerial ability in national commercial banks, private commercial banks and foreign and domestic bank groups. This indicates that in most cases, bank managers are likely to limit the use of DLLPs, except for state banks. This could be explained by the fact that the managers' discretion in earnings reporting decisions may be limited by policy objectives, rigid regulations, or interference from superiors, overshadowing the influence of the MA. In terms of economic significance, a one-standard-deviation increase in the interaction terms results in a 0.10, 0.16, 0.05 and 0.20 decrease in LLP_{t-1} for national, private, foreign and domestic banks, respectively.

According to Table 5, IS behaviors exist in both high- and low-profitability banks, which is in line with Skala (2021). In terms of economic significance, a one-standard-deviation increase in income results in a 0.79 increase in LLP_{t-1} for low-profit banks, while it leads to a 0.72 increase for high-profit banks. However, we found that interaction terms between pre-provisioning income and MA are only significantly negative (at a 1% significance level) in Columns (5) and (6). In low-profit banks, higher MA directly reduces smoothing behavior; however, MA does not affect the correlation between pre-provisioning income and LLP; in other words, MA does not improve or limit the IS behavior in the low-profit banks. In high-profit banks, high-ability managers in these banks tend to employ pre-provisioning income as a tool of income smoothing (positive direct coefficient); however, MA limits the IS behavior when pre-provisioning income increases. In terms of economic significance, a one-standard-deviation increase in the interaction terms results in a 0.57 decrease in LLP_{t-1} for high-profit banks. This situation is the same for banks with high-credit risk. Interestingly, a one-standard-deviation increase in income leads to a remarkable 0.48 increase in LLP_{t-1} for low-credit risk banks, whereas it astonishingly results in a 1.10 increase for high-credit-risk banks. Meanwhile, a one-standard-deviation increase in the interaction terms results in a 0.35 decrease in LLP_{t-1} for high-credit-risk banks.

Table 6 investigates how banks' income smoothing behavior relates to MA under varying macroeconomic conditions. Generally, banks tend to smooth income more when current income is higher, although this link disappears under strong national governance. The most robust finding across diverse macroeconomic settings is that higher MA consistently weakens IS. The results strongly support UET by demonstrating that MA significantly influences IS decisions, but its effect, particularly the response to the macroeconomic environment. In terms of economic significance, a one-standard-deviation increase in income leads to a 0.66 increase in LLP_{t-1} for banks in high GDP growth markets and for those in low GDP growth markets, it leads to a 0.58 increase. Similarly, it results in a 0.78 increase in LLP_{t-1} for banks in high GDP growth stability, while only a 0.29 increase is observed in low GDP growth stability markets. Conversely, for banks in low country governance quality markets, a one-standard-deviation increase in income results in a 0.37 increase in LLP_{t-1}, whereas it leads to a 0.10 decrease for banks in high country governance quality markets. Regarding the interaction terms between managerial ability and pre-provisioning income, a one-standard-deviation increase results in a

Table 4. LLP, IS, and MA in banks against bank type and ownership

Panel A: Ownership

	State commercial banks			National commercial banks			Private commercial banks		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Income	0.424	1.047**	1.162**	0.702***	0.805***	0.906***	0.154***	0.176***	0.238***
MA		−0.065			−0.046**			0.006	
MA × Income		0.588			−0.678			−0.543***	
MA_{t-1}			0.078			0.005			0.010
MA_{t-1} × Income			−3.166			−2.445***			−0.466**

Panel B: Bank type

	Foreign banks			Domestic banks					
	(10)	(11)	(12)	(13)	(14)	(15)			
Income	0.400***	0.413***	0.521***	0.211***	0.258***	0.274***			
MA		−0.015**			0.019				
MA × Income		−0.131			−1.226***				
MA_{t-1}			0.012		−0.011				
MA_{t-1} × Income			−0.609***		−0.200				
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note(s): This table presents the estimates of the baseline models in four sub-samples: bank type and ownership

$$LLP_{i,t-1} = \alpha_{01} + \alpha_{11}Income_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it} \qquad (1)$$

$$LLP_{i,t-1} = \alpha_{02} + \alpha_{12}Income_{it} + \alpha_{22}MA_{it} + \alpha_{32}Income_{it} \times MA_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it} \quad (2)$$

Standard errors are clustered at the bank level. ***$p < 0.01$, **$p < 0.05$ and *$p < 0.1$

Source(s): Authors' own elaboration

Table 5. LLP, IS, and MA in banks against bank performance

Panel A: Profitability

| | Low-profit banks | | | High-profit banks | | |
	(1)	(2)	(3)	(4)	(5)	(6)
Income	0.759***	0.791***	0.818***	0.313***	0.332***	0.466***
MA		−0.037***			0.069***	
MA × Income		0.477			−1.630***	
MA_{t-1}			−0.019			0.056***
MA_{t-1} × Income			0.148			−1.595***

Panel B: Credit risks and loan quality

| | Low-NPL banks | | | High-NPL banks | | |
	(1)	(2)	(3)	(4)	(5)	(6)
Income	0.208***	0.218***	0.280***	0.763***	0.712**	0.517
MA		−0.005			0.058	
MA × Income		−0.081			−1.500	
MA_{t-1}			−0.006			0.447**
MA_{t-1} × Income			0.019			−4.279*
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Bank-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-year effects	Yes	Yes	Yes	Yes	Yes	Yes

Note(s): This table presents the estimates of the baseline models in four sub-samples: profitability and credit risks

$$LLP_{i,t-1} = \alpha_{01} + \alpha_{11}Income_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it} \qquad (1)$$
$$LLP_{i,t-1} = \alpha_{02} + \alpha_{12}Income_{it} + \alpha_{22}MA_{it} + \alpha_{32}Income_{it} \times MA_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it} \quad (2)$$

Standard errors are clustered at the bank level. ***$p < 0.01$, **$p < 0.05$ and *$p < 0.1$

Source(s): Authors' own elaboration

0.12 decrease in LLP_{t-1} for banks in high GDP growth markets than a 0.07 decrease in low GDP growth markets. This trend continues with a 0.33 decrease in high GDP growth stability markets and a 0.17 decrease in low GDP growth stability markets. Additionally, a one-standard-deviation increase in the interaction terms results in a 0.16 decrease in LLP_{t-1} for banks in high country governance quality markets, while it leads to a 0.08 decrease for those in low country governance quality markets.

Consistent with the baseline estimation, it is found that banks use the LLP policy to smooth their income stream in both crisis and non-crisis periods (Table 7); this finding is in line with Skala (2021). In non-crisis times, higher MA limits IS behavior. However, during crisis periods, this dynamic reverses dramatically: while higher current MA is associated with less IS behavior (negative MA coefficient), it significantly amplifies income-driven smoothing (positive and significant MA × Income interaction). These results further highlight the context-dependent nature of MA, aligning with EUT. In terms of economic significance, a one-standard-deviation increase in income results in a 0.74 increase in LLP_{t-1} for banks during the crisis periods and 0.39 for non-crisis periods. During crisis periods, a one-standard-deviation increase in the interaction terms results in a decrease of 0.28 in LLP_{t-1} for banks, while in non-crisis periods, it leads to an increase of 0.23.

Generally, besides confirming the existence of IS using LLPs in sub-sample estimations, Hypothesis 2 is partially supported when we found that negative moderating effects of MA on IS behaviors are more pronounced for banks that have the following features: being private commercial banks; being profitable and having higher credit risk; operating in favorable economic conditions or under low country governance quality and being in the context of non-crisis.

Table 6. LLP, IS and MA in banks against various macroeconomic conditions

Panel A: GDP growth rate

	Low GDP growth rate			High GDP growth rate		
	(1)	(2)	(3)	(4)	(5)	(6)
Income	0.243***	0.258***	0.361***	0.448***	0.496***	0.774***
MA		0.001			−0.012	
MA × Income		−0.609**			−0.207	
MA$_{t-1}$			0.019			0.006
MA$_{t-1}$ × Income			−0.755**			−0.886***

Panel B: Stability of GDP growth

	Low GDP growth stability			High GDP growth stability		
	(1)	(2)	(3)	(4)	(5)	(6)
Income	0.155**	0.173**	0.228**	0.578***	0.612***	0.866***
MA		0.004			−0.025***	
MA × Income		−0.623**			0.212	
MA$_{t-1}$			0.028			0.022***
MA$_{t-1}$ × Income			−0.798*			−1.566***

Panel C: Governance effectiveness

	High WGI			Low WGI		
	(1)	(2)	(3)	(4)	(5)	(6)
Income	−0.062	−0.050	−0.158	0.224***	0.264***	0.435***
MA		0.009			−0.024*	
MA × Income		−0.591**			−0.327	
MA$_{t-1}$			0.021*			−0.020
MA$_{t-1}$ × Income			−0.782**			−0.343
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Fixed year effects	Yes	Yes	Yes	Yes	Yes	Yes

Note(s): This table presents the estimates of the baseline models in three sub-samples: GDP growth rate, stability of GDP growth and governance effectiveness

$$LLP_{i,t-1} = \alpha_{01} + \alpha_{11}Income_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it} \qquad (1)$$
$$LLP_{i,t-1} = \alpha_{02} + \alpha_{12}Income_{it} + \alpha_{22}MA_{it} + \alpha_{32}Income_{it} \times MA_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it} \quad (2)$$

Standard errors are clustered at the bank level. ***$p < 0.01$, **$p < 0.05$ and *$p < 0.1$
Source(s): Authors' own elaboration

4.3 Robustness check

Table 8 provides evidence of research reliability through several types of robustness checks. First, we test whether our sample selection introduces any significant bias in the main results (He et al., 2020). Second, since existing studies use similar but not identical sets of control variables, we sequentially exclude NPLs and loan growth to examine whether this affects our findings (Bouvatier et al., 2014; Danisman et al., 2021). Third, we test the validity of variable measurement by using alternative measures. The research follows Bui et al. (2018) and replaces MA with its persistence to account for business performance consistency. Finally, although our baseline panel model considers using first-order lags to minimize endogeneity, we acknowledge the possibility that manager institute income smoothing to match their interests. The possibility of reverse causality means that achieving financial stability by smoothing income is a reason a bank manager is considered competent. There are three approaches for reverse causality tests. The first approach is the dynamic panel model using two-stage generalized method of moments (GMM) estimators (Leszczensky and Wolbring, 2022). The second approach is to compare the

Table 7. LLP, IS, and MA in crisis and non-crisis periods

	Non-crisis period			Crisis period		
	(1)	(2)	(3)	(4)	(5)	(6)
Income	0.208***	0.244***	0.371***	0.545***	0.580***	0.750***
MA		−0.002			−0.053***	
MA × Income		−0.857***			1.258**	
MA_{t-1}			0.033**			−0.033
MA_{t-1} × Income			−1.522***			0.451
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Bank-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-year effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,506	1,506	1,103	719	719	634
R-squared	0.120	0.152	0.202	0.390	0.410	0.472

Note(s): This table presents the estimates of the baseline models in two sub-samples: crisis and non-crisis periods

$$LLP_{i,t-1} = \alpha_{01} + \alpha_{11}Income_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it} \qquad (1)$$
$$LLP_{i,t-1} = \alpha_{02} + \alpha_{12}Income_{it} + \alpha_{22}MA_{it} + \alpha_{32}Income_{it} \times MA_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it} \quad (2)$$

Standard errors are clustered at the bank level. ***$p < 0.01$, **$p < 0.05$ and *$p < 0.1$
Source(s): Authors' own elaboration

means of MA between banks with high and low financial stability by separating the sample based on the median of σROA. If financial stability is a factor in judging managerial ability, then the differences between groups means should not be significant. The third approach is to regress MA on DLLPs and control variables. If the levels of discretionary LLPs do not define managers' competency, the corresponding coefficient should be insignificant.

4.4 IS behavior, managerial ability and banks' performance
Columns 1 and 2 in Table 9, MA, exhibit positive moderating impacts on the relationship between discretionary LLP and accounting profits. However, no direct correlations emerge between discretionary LLP, managerial proficiency and profitability. This suggests that proficient managers are inclined to employ LLP as a mechanism for IS, thereby mitigating income volatility, yet this practice does not necessarily correspond with enhanced profitability. Regarding risk aspects, the analysis reveals that the incidence of nonperforming loans escalates with discretionary LLP, while it diminishes with managerial competency, as depicted in Column 3. This finding underscores that the utilization of LLP to manage income fluctuations compromises lending quality, consequently augmenting credit risks. Furthermore, the engagement of adept professionals can ameliorate these adverse effects. Nevertheless, notwithstanding the discerned mitigation of the linkage between solvency risks and discretionary provisions by managerial acumen, no direct effects are discerned in Column 4. Generally, Hypothesis 3 is partially supported.

5. Discussion and implication
5.1 Theoretical implications
The study consolidates UET in the context of the banking industry, showing that managerial ability is a crucial factor in explaining the income smoothing behavior across banks. However, it extends the understanding of UET by emphasizing the importance of interaction context and managerial discretion. Because of these factors, MA is not the only determinant of income-smoothing behavior, and its effect is also inconsistent. For example, MA has no impact in the context of state commercial banks. Or a special context such as a crisis could change the priorities, pressures and possibly goals, leading to changes in the role of MA in earnings management. According to UET, managers interpret situations through the lens of their

Table 8. Robustness tests

Panel A: Sample selection

	At least 6 years			Balanced panel		
	(1)	(2)	(3)	(4)	(5)	(6)
Income	0.265***	0.291***	0.365***	0.278***	0.304***	0.348***
MA		−0.005			0.017	
MA × Income		−0.610***			−0.900**	
MA_{t-1}			0.004			0.053**
MA_{t-1} × Income			−0.717***			−1.435***

Panel B: Control sets

	Exclude nonperforming loans			Exclude loan growth			Add lagged LLP		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Income	0.217***	0.257***	0.357***	0.218***	0.267***	0.359***	0.336***	0.348***	0.337***
MA		−0.002			−0.003			−0.010	
MA × Income		−0.642***			−0.617***			−0.346*	
MA_{t-1}			0.002			0.002			0.002
MA_{t-1} × Income			−0.668***			−0.665***			−0.471**
LLP_{t-1}							0.267***	0.253***	0.252***

Panel C: Alternative measures

	Loan loss provisions scaled by total loans			MA persistence (least 5 years)	
	(1)	(2)	(3)	(4)	(5)
Income	0.361***	0.369***	0.362***	0.308***	0.433***
MA		−0.007		0.004**	
MA × Income		−0.547***		−0.150***	
MA_{t-1}			0.002		0.005**
MA_{t-1} × Income			−0.660***		−0.171***

(*continued*)

Table 8. Continued

Panel D: Reverse causality tests

Part I. GMM estimators

	LLPs	LLPs
Income	1.411**	0.758*
MA		0.163
MA $\times$ Income		−3.237*

Part II. Mean comparison

	σ_{ROA} High (1)	Low (2)	Diff. (p-value)
MA	0.002	−0.002	−0.004

Part III. Panel regression

	MA	MA_{t-1}						
DLLPs	0.011	0.208						
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note(s): This table presents the robustness tests of the baseline results

$LLP_{i,t-1} = \alpha_{01} + \alpha_{11}Income_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it}$ \quad (1)

$LLP_{i,t-1} = \alpha_{02} + \alpha_{12}Income_{it} + \alpha_{22}MA_{it} + \alpha_{32}Income_{it} \times MA_{it} + Controls + \mu_i + \mu_t + \varepsilon_{it}$ \quad (2)

Standard errors are clustered at the bank level. ***$p < 0.01$, **$p < 0.05$ and *$p < 0.1$

Source(s): Authors' own elaboration

Table 9. IS and overall performance

	ROE (1)	ROA (2)	NPL (3)	Z (4)
DLLP	−0.033	−0.004	1.375***	−0.015
MA	0.000	0.000	−0.106*	0.011
MA × DLLP	0.405***	0.031*	1.314	−0.617**
Size	0.001***	0.000*	−0.048***	−0.006
CAR	0.001	0.000	−0.010	0.128**
GDP	0.005*	0.000*	−0.137*	0.026
INF	−0.000	−0.000	−0.020	0.002
Intercept	−0.007**	−0.001	0.146***	122.524***
Bank-fixed effects	Yes	Yes	Yes	Yes
Fixed-year effects	Yes	Yes	Yes	Yes
Observations	1,513	1,513	1,513	1,509
R-squared	0.352	0.302	0.178	0.222

Note(s): This table presents the estimates of the additional models
$P_{it} = \beta_0 + \beta_1 DLLP_{it} + \beta_2 MA_{it} + \beta_3 MA_{it} \times DLLP_{it} + X_{it} + \eta_i + \eta_{it}$
Standard errors are reported in the parentheses. ***$p < 0.01$, **$p < 0.05$ and *$p < 0.1$
Source(s): Authors' own elaboration

characteristics, while crises may create different pressures and cognitive frames; therefore, high-ability managers can more clearly perceive the need and opportunity to smooth the income when resources are available during a crisis.

5.2 Managerial/practical implication

The empirical result partially confirms the belief that talented managers would limit income-smoothing behaviors, leading to higher transparency of financial statements. However, it also suggests that evaluating managerial ability should not only consider firm performance and quality of financial statements but also the context in which banks are operating, such as the profit of banks, economic development and stability level, crisis or non-crisis period. For example, the empirical result shows the flexibility of high-ability managers in using LLP as income smoothing; they may avoid using LLP as an earnings management tool in the non-crisis context. Conversely, they may employ IS under a given crisis context to attract financial reports and performance to prove company stability and to persuade investors. This result is on the same page as the work of Macey (1998) and San Martín Reyna (2018). This implies that besides the credibility or competency of managers in person, the investors or the person who utilizes financial reports for making decisions should consider the other conditions. Furthermore, competent managers employ income smoothing as a part of their strategy rather than an opportunistic behavior. Banks should improve management skills through targeted training, better hiring practices and leadership development. These changes can clarify financial reporting and reduce risky behaviors like IS. Bank managers should also be aware of the long-term reputation risks that come with IS, especially in profitable banks that face high credit risks. By focusing on clear and ethical financial practices, banks can gain the trust of investors and regulators, which helps them stay strong in the long run. These results are meaningful to investors whose decisions would be impacted by the quality of financial information. Recognizing the possibility of IS behavior and its association with the capacity of banks' managers and the surrounding conditions are necessary for investment-making decisions. Finally, not only Asia–Pacific but also the banks, firms, investors and other stakeholders from other countries and regions could learn from the current research results, especially ones from the regions with shared economic platforms. For instance, investors in Latin American countries (Mexico, Chile and Peru), which are the host countries of various Asia–Pacific banks, should pay attention to issues relating to IS and MA before making investment decisions in these banks. Because Latin American countries are also members of the

Asia–Pacific Economic Cooperation, the policy implications for Asia–Pacific banks extracted from this research could be learned by Latin American countries aiming at maintaining financial stability, as follows:

5.3 Policy implications

Empirical results suggest that policy and regulation makers need to recognize that the motivation for IS behavior in banks may vary beyond managerial ability. It may depend on banks' types, profitability, credit risk and other macrofactors such as national GDP and economic stability. Therefore, banks are required to provide more detailed information about their credit risks and profits to promote transparency. These implications are also meaningful to government regulatory agencies of host countries, such as Latin American countries, which are the destination in the internationalization process of Asia–Pacific banks. Information transparency is a primary condition for managing risks because of earnings management behavior, especially in unstable or crisis periods.

5.4 Limitations and future research directions

There are several limitations and recommendations for ongoing research. First, the measurement of MA in our study does not adequately define the hierarchical levels of managers within banking systems. Then, future research should investigate which specific categories of managers, such as chief executive officers, chief financial officers or chief risk officers, are responsible for driving the effects of IS behaviors and compare the impacts driven by these levels. Second, future studies further explore whether IS behaviors in the pre-crisis period influence banks during subsequent crisis periods. Additionally, the comparative effects of IS behaviors across specific types of financial crises remain ambiguous in our paper, highlighting the potential for future research.

Finally, although the current research has demonstrated robustness through various checks, and the managerial, practical or policy implications could be employed by the banking industry in other regions because of similarity or closeness, it is suggested that the validity and conclusions of the current research framework should be re-examined with diverse samples beyond Asian-Pacific banks.

6. Conclusion

This research fills the knowledge gap about the role of managerial ability in earning management, especially in the Asia–Pacific banking industry. Generally, there is IS through LLP in the Asia–Pacific banking industry and MA plays the role of moderator in the relationship between IS through LLP as well as IS and banks' performances. This research enhances the understanding of UET in the context of the banking industry by emphasizing the importance of interaction context and managerial discretion. Several managerial, practical and policy implications are discussed based on the empirical results, ranging from regulation of financial transparency and specific governance frames for some bank types to training managerial skills.

Notes

1. $Z-scores_{i,t} = \frac{ROA_{i,t}+CAR_{i,t}}{\sigma_{ROA}}$, In which σ_{ROA} denotes the standard deviation of ROA over the sample period.

2. Data for global financial crises are available at: https://www.hbs.edu/behavioral-finance-and-financial-stability/data/Pages/global.aspx

3. Reducing the allowance for loan and lease losses through a negative provision is permissible under Generally Accepted Accounting Principles (GAAP). Accounting standards concerning loan losses permit banks to decrease their reserves via negative provisions and regulators do not object to this practice as long as the decision is well substantiated. Consequently, we incorporate the negative value of LLPs in our study.

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Supplementary material
Supplementary material for this article can be found online.

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