Income Smoothing and Earnings Management in the Banking Industry: Evidence in Asian Countries

Chin-Yu Wang

Department of Finance, National Sun Yat-sen University, Taiwan
E-mail: inadajava@gmail.com
Tel: +886-7-5252000; Fax: +886-7-5254899

Ming-Chi Chen

Department of Finance, National Sun Yat-sen University, Taiwan
E-mail: mcchen@cm.nsysu.edu.tw
Tel: +886-7-5252000; Fax: +886-7-5254899

Chien-Chiang Lee

Department of Finance
National Sun Yat-sen University, Taiwan
E-mail: cclee@cm.nsysu.edu.tw
Tel: +886-7-5252000; Fax: +886-7-5254899

So-De Shyu

Department of Banking and Finance
Takming University of Science and Technology, Taiwan
E-mail: dshyu@takming.edu.tw
Tel: +886-2-26585801; Fax: +886-2-26588448

Abstract

This paper mainly investigates the income smoothing behavior and earnings management through loan loss provisions in the banking industry for 318 banks in 16 Asian countries over the period 1996 to 2009, applying the panel fixed effect models to control the impact of unobserved heterogeneity. We shed light on the impacts of different non-interest income activities, accounting quality, and countries governance on earnings management measured by the magnitude of discretionary components of loan loss provisions. Our results in the income smoothing model show that the earnings' level is positively related to the degree of loan loss provisions and indicate that banks managers might tend to smooth their earnings. They would recognize a higher level of loan loss provisions to make income less volatile. The loan quality has a significant and positive effect on the estimation of loan loss provisions. When banks have a high magnitude of non-performing loans, they would estimate more loan loss provisions to absorb the future loan loss. As for earnings management, we find that the relationship between diversification of the income structure and discretionary loan loss provisions might not be significant. On the contrary, banks adopting the accounting standards that require more detailed disclosure might incline to manage their earnings less aggressively. The magnitude of discretionary loan loss provisions would be reduced by the higher accounting quality. The higher control

of corruption and the good quality of regulations in countries' governance would effectively constrain banks manages to manipulate earnings.

1. Introduction
Financial crises and accounting scandals shocked the financial market in the late 1990s and the early 2000s. The issue of earnings management is raised a great of attention. Accrual estimations attributed to the difference between accrual-based accounting standards and cash-based standards would play an important role in manipulating earnings and financial reporting. Recently, International Financial Reporting Standards (IFRS) that are market oriented and improve transparency of financial reports to better reflect a firm's economic performance weights the debate of accruals estimation while the adoption of local generally accepted accounting principles (GAAP) might provide wide latitude for discretion in the estimation of accrual items. The environment of information asymmetry and the flexibility for managerial discretion give rise to the practice of earnings management[1]. Bank managers who possess private information might use the discretionary components of accruals to convey future information or to distort financial reporting. The magnitude of information asymmetry might increase when the level of discretionary accruals is high.

In banking sector, the largest part of accruals is measured by loan loss provisions (LLP) which are intended to capture expected future losses. Bank managers may use the discretionary components of loan loss provisions to signal good news or to reduce variability. One of the important factors to influence the level of earnings management could be diversification. Diversified firms might be subjected to more severe asymmetric information problems than are focused firms because it complicates the business' operation. Otherwise, it might help to alleviate asymmetry information problem due to the imperfect correlation between different sources of accruals estimation. Hence, diversification may have an impact on the degree of earnings management. Financial deregulation and technology innovations of the banking industry have opened the way for full financial integration for banks to engage in new activities and offering new products like brokerage, advisory, and underwriting (Claessens, 2009). Non-interest income activities become prevailing and might affect the estimation of discretionary loan loss provisions. Different sources of income activities might make banks' operations hard to forecast because they engage in the new business that are not skilled as in interest activities. On the other hand, the imperfect correlation between interest activities and non-interest income might make it difficult for managers to manage earnings.

The other mechanism to affect earnings management would be governmental governance. A lower control of countries' corruption or a poor accounting system would worsen the problem of information asymmetry and increase the possibility of earnings management. The high quality of regulations would also mitigate the earning management. In addition to the governance environment, bank managers could enhance the quality of accounting reporting by hiring the big auditors such as Deloitte, Ernst & Young, KPMG, and PricewaterhouseCoopers. Big auditors are perceived as more competent and more independent. Therefore, they provide higher quality services than smaller auditors and play an important role to constrain managers from aggressive earnings management.

This paper sheds light on relationship between earnings management, accounting quality, and diversification in the banking industry, applying the panel date techniques with a wider range of bank-level data that cover 16 Asian countries from 1996 to 2009. The main purpose of this study is to investigate whether the diversification behavior intensify or alleviate the level of earnings management measured by discretionary components of accruals, and moreover to examine the impact of the

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1 Richardson (2000) finds a significant and positive relationship between the magnitude of information asymmetry and the level of earnings management.

accounting standards, audit quality, governmental governance on the magnitude of earnings management.

This study contributes that it firstly links the relationship between earnings management measured as discretionary loan loss provisions and diversification in the banking industry, using a broader sample of banks across 16 Asian countries over a longer period 1996 to 2009. Second, we investigate both direct impacts of diversification on different estimations of discretional accruals internationally and further to decompose the non-interest income activities into three components such as trading, commission and fee, and other non-interest income activities for a deeper examination. Furthermore, we consider the impacts of countries' corruption and accounting standard adoption on earnings management to analyze the relationship between accounting quality and the level of discretionary accruals.

Our main findings suggest that the loan quality is significantly related to the estimated level of loan loss provisions, and bank managers would engage income smoothing activities in most Asian countries. For the discretionary components of loan loss provisions, more transparent information and higher requirements of disclosures would constrain the managerial discretion on earnings. The control of corruption is related to the level of earnings management significantly and negatively. The results indicate that accounting quality and information transparency play an important role in determinants of earnings management.

The remainder of this paper is organized as follows. Section 2 reviews the relevant literature and develops hypotheses. Section 3 describes the data and the empirical model that we employ. Section 4 discusses the empirical results, and Section 5 presents the conclusions and limitations.

2. Previous Research

Earnings management related to utilize discretionary accounting accruals to influence reported earnings where managers have wide latitude for discretion in estimation of accruals (Jones, 1991). As applied to banking industry, bank managers might properly engage in earnings management through estimation of loan loss provisions, the largest accruals of banks' operations (Ahmed et al., 1999; Beatty and Harris, 1999; Collins et al., 1995). Beatty and Harris (1999) argue that private firms with a greater proportion of long-run investors have less asymmetric information and less incentive to manage earnings. Kanagaretnam et al. (2004) document that the managers of undervalued banks use loan loss provisions to signal their banks' future earnings prospects and provide evidence consistent with the use of loan loss provisions to smooth earnings, particularly when pre-managed earnings are extreme.

Fonseca and Gonzales (2008) examine the determinants of income smoothing via loan loss provisions from 40 countries and stronger investor protection and greater transparency in accounting disclosures reduce bank managers' incentives to manage earnings, while there is more income smoothing with market orientation and development of the financial system[2]. The findings are similar to Shen and Chih (2005) who find that the stringent accounting disclosure requirements appear to be more effective to weaken banks' incentives of earnings management and the higher real GDP per capita would decrease the degree of earnings management. Cornett et al. (2009) find evidence of earnings smoothing, and indicate that more independent broads appear to constrain earnings management at large US bank holding companies. Kanagaretnam et al. (2009) find the impact of earnings on the estimation of loan loss provisions is positive and significant at the 1% level. Further, Kanagaretnam et al. (2010) argue that auditor reputation plays an important role in constraining income-increasing earnings management, especially for banks audited by auditor industry expertise as KPMG auditors. GAO report (2003) indicates that KPMG and PWC are the top two auditors in the banking industry. DeBoskey and Jiang (2012) use KPMG and PWC as a proxy for auditor specialists

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2 Brown et al. (2011) provide a review of corporate governance and suggest that the role of corporate governance would mitigate agency cost, enhance the accounting quality and information disclosure, such as monitoring by external auditors, regulations of accounting standards, etc.

and find that audit industry expertise plays an effective monitoring role in constraining management's discretionary accounting choices.

There is a sparse amount of literature that directly examines the relationship between diversification and earnings management. Jiraporn, Kim, and Mathur (2008) first distinctly investigate whether earnings management is exacerbated or alleviated in diversified firms. They propose two competing hypotheses that potentially explain the relationship between the extent of earnings management and corporate diversification. The information asymmetry hypothesis argues that diversification creates additional organizational complexity, which leads to a higher level of informational asymmetry between managers and stockholders or the public, thereby exacerbating earnings management. On the other hand, the competing hypothesis is the offsetting accruals hypothesis, which argues that diversified firms derive their cash flows from diverse sources where the accruals generated are imperfectly correlated and tend to cancel each other out, thereby making it difficult for managers to manage earnings. Their findings of Jiraporn et al. (2008) show that diversified firms do not suffer more severe informational asymmetry and support the offsetting accruals hypothesis, which indicates the accruals generated from different cash flows are less than perfectly correlated, and therefore it is more difficult for managers of diversified firms to manage earnings substantially upward or downward.

Similarly, Thomas (2002) proposes two hypotheses - the transparency hypothesis and the information diversification hypothesis - to investigate the relationship between diversification and information asymmetry. The findings of Thomas (2002) present that greater diversification is not associated with increased asymmetric information, supporting the information diversification hypothesis which suggests forecasting errors are not perfectly related and therefore the degree of expectations by outsiders that differs from managers' private information could be decreased. Recently, Rodríguez-Pérez and van Hemmen (2010) investigate the relation among debt, diversification, and discretionary accruals in Spain and find that diversification increases the complexity of firms' activities and reduces their transparency to outsiders, and derived asymmetries from diversification may be exploited by managers to manipulate earnings. However, there is very little in the literature to examine the relationship between diversification and earnings management in the banking industry.

3. Hypotheses

This paper highlights the impacts of accounting quality and diversification behavior on discretionary components of loan loss provisions. Prior literature suggests that the higher level of accounting quality, investor protection, and disclosure transparency are assumed to positively related to the level of loan loss provisions (Fonseca and Gonzales, 2008; Shen and Chih, 2005). A poor accounting system would increase the magnitude of earnings management. Therefore, we state the first two hypotheses as follows:

H1: The relation between earnings transparency and discretionary loan loss provisions is negative for a bank who adopts the International Financial Reporting Standards (IFRS) rather than local generally accepted accounting principles (GAAP).

H2: A poor governance of countries would increase the earnings management. More control of corruption would be negatively related to the estimated discretionary loan loss provisions.

Banks inclined to engage in higher shares of non-interest income activities in recent years since the financial deregulation and technology innovations in the last decade. The diversification in the income structure may make banks' operation become more complicate. The new services such as brokerage, advisory, underwriting or insurance products would increase banks' fixed costs and make earnings too volatile to forecast. Also banks have to train their employees about new knowledge. Thus, information asymmetry might increase and the diversification would increase the level of discretionary accruals Otherwise, the information might be less asymmetric because accruals estimation from the

different sources of cash flows or earnings where the accruals generated are imperfectly correlated and tend to cancel each other out, thereby making it difficult for managers to manage earnings (Jiraporn et al., 2008). Thus, we presume the following hypotheses to test the relationship between diversification and earnings management.

H3a: Diversification would increase the complication of banks' operations, and therefore increasing in non-interest income activities to diversify earnings would increase the level of discretionary loan loss provisions.

H3b: Accruals estimations might be offset each other due to imperfect correlation. Thus, diversification via increasing shares of non-interest income activities would mitigate the earnings management.

4. Variables and Research Method
4.1. Earnings Management Measures

Following Kanagaretnam et al. (2009), this paper construct model (1) to indentify the non-discretionary and discretionary components of accruals. The formulation is based on panel fixed effect model to control for the impact of unobserved heterogeneity from the firm-specific and period-specific effects. . The fitted values and the residuals from model (1) represent the normal or non-discretionary component of accruals as loan loss provisions (LLP) and the abnormal or discretionary component (DLLP), respectively. The absolute value of DLLP (ABS_DLLP) is used to estimate the level of earnings management. Further, we divide the full sample into observations with negative DLLP and the others with positive DLLP to consider the income-increasing and income-deceasing managements. We investigate this claim that income measured on a comprehensive basis is a better measure of firm performance than other summary income measures. For this purpose, we estimate the models in which, return is dependent variable and comprehensive income and net income are dependent variables.

$$LLP_{ijt} = \alpha_0 + \alpha_1 EBTPS_{ijt} + \alpha_2 LLA_{ijt} + \alpha_3 Ch\_Loans_{ijt} + \alpha_4 NPL_{ijt-1} + \alpha_5 Ch\_NPL_{ijt} \qquad \text{(Model 1)}$$
$$+ \alpha_6 NLCO_{ijt} + \alpha_7 Tier1_{ijt-1} + \alpha_8 TCAP_{ijt-1} + Bank\ effect + Year\ effect + \varepsilon_{ijt}$$

where i = 1, ...,N; j = 1, ...,J; t = 1, ...,T; N refers to the country number; J is the bank and T is time for each country. The estimation of loan loss provisions is measured by each country. All variables are scaled by the beginning total assets for each bank. The dependent variable is loan loss provisions for bank managers to reflect the future expectation. The primary explanatory variables of interest are earnings before loan loss provisions and tax (EBTPS). The income smoothing behavior is found when the impact of EBTPS is significantly positive, indicating that bank managers would recognize more loan loss provisions if the earnings' level is high. The loan quality is also important to capture the level of loan loss provisions. A portion of loan loss would be affected by the nonperforming loans and the change in non-performing loans (NPL and Ch_NPL, respectively) to reflect the improvement or deterioration in loan quality. We also control the change of total loans (Ch_Loans), the prior loan loss allowance (LLA), and the net loan charge-offs (NLCO). Bank regulations regarding capital management are considered by using the two capital ratio measured ad Tier 1 risk adjusted capital and total risk adjusted capital (Tier1 and TCAP, respectively). The expected coefficients of capital management might be negative. Higher levels of net loan charge-offs (NLCO) indicate larger loan losses, thereby expecting higher provision estimations for loan losses. We also consider the bank-dummy and year-dummy variables to control for specific fixed effects we may omit in model specifications.

4.2. The Empirical Model

To investigate the hypotheses on the relation among income diversification, accounting quality, and earnings management, we estimate panel-regression models, where the different categorizations of discretionary loan loss provisions (DLLP) calculated from model (1). On the right hand side of the specifications, diversification, auditor specialization, accounting disclosure, and other control variables

are considered. Moreover, we include country-dummy and year-dummy variables to control for country-specific and period-specific effects and mitigate the influence of omitted variables. The basic and extended models (models (2) and (3)) thus are developed as follows:

$$ABS\_DLLP_{ijt} = \kappa + \alpha_t + \lambda_i + \delta_1 NNII_{ijt} + \delta_2 DIV1_{ijt} + \delta_3 Equity_{ijt} + \delta_4 Size_{ijt} + \delta_5 GA_{ijt}$$
$$+ \delta_6 NetLoan_{ijt} + \delta_7 GDPPC_{ijt} + \delta_8 GROWTH_{ijt} + \delta_9 KP_{ijt} \qquad \text{(Model 2)}$$
$$+ \delta_{10} KP \times EBTPS_{ijt} + \delta_{11} IFRS_{ijt} + \delta_{12} IFRS \times EBTPS_{ijt}$$
$$+ \delta_{13} WGI\_CORR_{ijt} + \upsilon_{ijt}$$

$$ABS\_DLLP_{ijt} = \kappa + \alpha_t + \lambda_i + \beta_1 TRAD_{ijt} + \beta_2 COM_{ijt} + \beta_3 OTH_{ijt} + \beta_4 DIV2_{ijt}$$
$$+ \beta_5 Equity_{ijt} + \beta_6 Size_{ijt} + \beta_7 GA_{ijt} + \beta_8 NetLoan_{ijt} + \beta_9 GDPPC_{ijt} \qquad \text{(Model 3)}$$
$$+ \beta_9 GROWTH_{ijt} + \beta_{10} KP_{ijt} + \beta_{11} KP \times EBTPS_{ijt} + \beta_{12} IFRS_{ijt}$$
$$+ \beta_{13} IFRS \times EBTPS_{ijt} + \beta_{14} WGI\_CORR_{ijt} + \varepsilon_{ijt}$$

The dependent variable is the absolute values of DLLP (ABS_DLLP) estimated from the absolute value of residuals of model (1). α and λ represent the period-specific and country-specific effects. The structure of income statement is used to consider the degree of diversification of bank activities. NNII is the proportion of net non-interest income to net operating income, and the income diversification index (DIV1) is measured by a Herfindahl-style construct and computed as one minus the summation of the square values of NNII and NNI which is the ratio of net interest income to net operating income. Further, the non-interest income is decomposed into net commission and fee income (COM), trading income (TRAD), and the other non-interest income (OTH). Its diversification (DIV2) is computed as one minus the summation of the square values of NNI, COM, TRAD, and OTH. Equity is the leverage variable, defined as total equity over total assets. Net Loan is the ratio of net loan to total assets to account for the loan position difference. GA is the growth rate of total assets and the natural logarithmic value of total assets (Size) is considered as the size indicator. IFRS and KP stand for the accounting standards adoption and auditor specialization, using dummy variable coded one if a bank adopts IFRS and the auditor is PWC or KPMG, respectively, and zero otherwise. In addition to the fixed effects of countries and periods, we also consider other macroeconomic environment common to all banks (economic development and the state of the economy) such as the natural logarithmic values of GDP per capita (GDPPC) and the annual growth rates of GDP (GROWTH). We also consider the worldwide governance indicators to take account for the level of government corruption (WGI_CORR) produced by Kaufmann et al. (2009) and obtained from the database of World Bank.

5. Data and Empirical Results
5.1. Data and Descriptive Statistics

We use a sample consisting of an unbalanced panel of annual report data from 1996 to 2009 for a set of Asian commercial, cooperative banks, and bank holding companies in 16 Asian countries: China, Hong Kong, India, Indonesia, Israel, Japan, Jordon, Korea, Malaysia, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, and Turkey. The consolidated balance sheet and income statement data for banks are obtained from BankScope Database complied by *Bureau Van Dijk*. We then eliminate those banks that over the sample period had less than three consecutive years of balance sheet observations and observations with missing values and delete banks whose average shares of net non-interest income are over one or below zero. Furthermore, we exclude countries with less than three banks over the sample period. The final sample is an unbalanced panel with 318 banks.

Table 1 presents the descriptive statistics of the full sample across countries, the loan loss provision (LLP) has a mean (median) of 0.006 (0.005). The mean of DLLP is -0.0002 while the median is around zero. The average absolute value of discretionary accruals of loan loss provisions (*ABS_DLLP*) is about 0.0016. The average value of the non-interest ratio is around 30% and the highest proportion of net non-interest income is attributed to net commission and fee income at 16%.

The diversification indicators of the income structure are around 0.35 and 0.39 for *DIV1* and *DIV2*, respectively. indicating that banks engaged in a more diversified and less concentrated set of activities, while 0.5 is an even split between net interest and non-interest income. The share of non-interest income is lower than 50%, and therefore any increase in the share of non-interest income would on average increase the income diversification indices. The full sample comprises 15% banks that adopt the International Financial Reporting Standards (IFRS) and includes average 26% banks whose auditors are audit industry expertise, KPMG and PWC. The average values of governance indicators to consider the level of corruption and regulation quality (WGI_CORR and WGI_REG) are 0.65 and 0.74, respectively. The higher values of world governance indicators imply a higher level of countries' governance, indicating higher control of corruption and higher quality of regulations.

Table 1:   Descriptive Statistics

Variables	Mean	Median	St dev	Max	Min
LLP	0.0063	0.0053	0.0052	0.0491	-0.0103
EBTPS	0.0169	0.0157	0.0142	0.1139	-0.0241
Ch_Loans	0.0592	0.0373	0.1177	1.7590	-0.0587
LLA	0.0231	0.0177	0.0293	0.4175	0.0000
NPL	0.0354	0.0289	0.0388	0.3855	0.0000
Ch_NPL	0.0018	0.0011	0.0068	0.0238	-0.0556
NLOC	0.0046	0.0022	0.0070	0.0652	-0.0054
TCAP	0.0589	0.0570	0.0476	0.4253	0.0000
Tier1	0.0470	0.0425	0.0434	0.4326	0.0000
DLLP	-0.0002	0.0000	0.0008	0.0025	-0.0036
ABS_DLLP	0.0016	0.0016	0.0006	0.0036	0.0002
NII	0.7082	0.7266	0.1554	0.9687	0.0318
NNII	0.2918	0.2734	0.1554	0.9682	0.0313
TRAD	0.0442	0.0322	0.0461	0.2797	0.0000
COM	0.1628	0.1425	0.1104	0.7437	0.0000
OTH	0.0843	0.0587	0.0868	0.5343	0.0006
DIV1	0.3455	0.3735	0.1112	0.4976	0.0042
DIV2	0.3922	0.4119	0.1390	0.6989	0.0590
Equity	0.0913	0.0693	0.0878	0.7455	0.0049
Size	13.9177	14.3952	2.9909	19.8955	6.5355
GA	0.1060	0.0902	0.1116	0.8100	-0.0792
Net Loan	0.5625	0.5766	0.1295	0.8577	0.0949
IFRS	0.1572	0.0000	0.3646	1.0000	0.0000
KP	0.2579	0.0000	0.4381	1.0000	0.0000
WGI_CORR	0.6474	1.0793	0.8535	2.2524	-0.9346
WGI_REG	0.7365	0.8913	0.7101	1.9585	-0.6101
GDPPC	9.1190	9.9045	1.4420	10.4529	6.4005
GROWTH	0.0336	0.0341	0.0236	0.0983	0.0060

Table 1 presents the descriptive statistics of the full sample across countries, the loan loss provision (LLP) has a mean (median) of 0.006 (0.005). The mean of DLLP is -0.0002 while the median is around zero. The average absolute value of discretionary accruals of loan loss provisions (ABS_DLLP) is about 0.0016. The average value of the non-interest ratio is around 30% and the highest proportion of net non-interest income is attributed to net commission and fee income at 16%. The diversification indicators of the income structure are around 0.35 and 0.39 for DIV1 and DIV2, respectively. indicating that banks engaged in a more diversified and less concentrated set of activities, while 0.5 is an even split between net interest and non-interest income. The share of non-interest income is lower than 50%, and therefore any increase in the share of non-interest income would on average increase the income diversification indices. The full sample comprises 15% banks that adopt the International Financial Reporting Standards (IFRS) and includes average 26% banks whose auditors are audit industry expertise, KPMG and PWC. The average values of governance indicators to consider the level of corruption and regulation quality (WGI_CORR and WGI_REG) are 0.65 and

0.74, respectively. The higher values of world governance indicators imply a higher level of countries' governance, indicating higher control of corruption and higher quality of regulations.

5.2. Earnings Management Results

As for earnings management estimations, Table 2 reports the estimated results of loan loss provisions, the largest part of accruals in banks' operations. We use model (1) to estimate the level of loan loss provision, considering the factors of the earnings level, loan quality, capital management, bank-specific effects, and period-specific effects. When banks managers tend to smooth their earnings, they would estimate a higher magnitude of loan loss provisions with larger earnings.

Table 2 shows that the estimated coefficients of earnings before loan loss provisions and tax (EBTPS) are significantly positive in 9 of the 16 countries. Banks managers would engage in income smoothing activities in most Asian countries. Loan quality further plays an important role in estimating loan loss provisions. The results present that the level and the change values of nonperforming loans (NPL and Ch_NPL) both have positive influences on estimated loan loss provisions because higher levels of nonperforming loans might imply the problems in the loan portfolio and hence require more loss provisions. The positive impact is also found in the change of total loans. The increase in total loans might increase the possibility of bad loans. The estimated coefficients of loan loss allowance (LLA$_{t-1}$) are significantly negative in most countries and indicate a larger loan loss provision in the beginning might make bank managers estimate a lower level of LLP. The negative coefficients of Tier1 and TCAP imply that lower capital ratios may lead to a higher level of LLP. Capital management would provide higher protection from unexpected loss. Thus, a higher level of capital management might be negatively related to the estimation of loan loss provisions. The model of earnings management is significant in each country and the explaining power is higher than 40% for each country except Sri Lanka. The regressions in Table 2 also include bank and time dummy variables that are not reported.

5.3. Panel Regression Results

Table 3 presents the relationship between diversification, accounting quality, and earnings management measured by the absolute values of discretionary loan loss provisions from model (1) in full sample and sub-samples of income-increasing and income-decreasing observations. The income-increasing sample is sorted by the observations with negative discretionary loan loss provisions, and others are sorted into the income-decreasing sample. The regressions are taken into account the impacts of counties' governance indicators for control of corruption and accounting standard adoption of International Financial Reporting Standards (IFRS) on the estimation of loan loss provisions. Specifications (1a) through (1b) of Table 3 report that banks engaging higher shares of non-interest income activities might not increase the degree of deviations of discretional accruals thereby increasing the possibility of earnings management. The influence of the diversifying process might not be significant to the level of earnings management. The important factors to affect the deviations from the expected level of loan loss provisions are the levels of accounting disclosure and governmental governance. The estimated coefficients of IFRS and it interaction with earnings are significantly negative. The results suggest that the requirement of detailed accounting disclosure in IFRS would constrain the earnings management and reduce the deviations from the expected loan loss provisions. The negative impact remains when banks earn higher level of earnings. The level of control of corruption would also significantly reduce the level of difference between the actual accruals and expected accruals. The higher control of corruption and the higher degree of accounting disclosure might significantly mitigate the level of earnings management.

Table 2: Panel Regressions Models for Loan Loss provisions across Different Countries

Panel A. Loan Loss Provisions Estimations of High and Upper Income countries																
Country	Hong Kong		Israel		Japan		Korea		Malaysia		Singapore		Taiwan		Turkey	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
C	0.0026	0.05**	0.0104	0.01***	0.0053	0.00***	0.0082	0.01***	0.0105	0.00***	0.0074	0.00***	0.0006	0.72	0.0056	0.01***
EBTPS	0.0952	0.08*	-0.2269	0.19	-0.1314	0.12	0.2987	0.00***	-0.1215	0.31	-0.0485	0.03**	0.3404	0.00***	0.0855	0.00***
LLA_{t-1}	-0.0985	0.23	0.1884	0.15	-0.0482	0.40	0.0081	0.92	-0.1556	0.02**	-0.1943	0.02**	-0.2262	0.10*	-0.2009	0.00***
Ch_Loans	-0.0028	0.58	0.0007	0.92	-0.0192	0.00***	-40944.49	0.10*	-0.0121	0.02**	-0.0062	0.26	-0.0066	0.15	0.0017	0.60
NPL_{t-1}	-0.0044	0.95	-0.1186	0.09*	0.0783	0.00***	-0.0126	0.88	0.0986	0.00***	0.0737	0.16	0.1307	0.03**	0.0829	0.04**
Ch_NPL	0.0806	0.20	0.0068	0.85	0.1837	0.00***	-0.0510	0.31	0.1454	0.00***	0.0788	0.10*	0.0991	0.16	0.3229	0.00***
NLCO	0.1654	0.19	-0.6082	0.13	0.1345	0.00***	-0.0023	0.99	-0.0889	0.43	0.1600	0.28	0.5563	0.00***	-0.3633	0.22
$Tier1_{t-1}$	0.0118	0.06*	-0.0192	0.71	0.0361	0.32	0.0161	0.66	0.0176	0.41	0.0209	0.08*	-0.0233	0.28	-0.0012	0.96
$TCAP_{t-1}$	0.0019	0.75	0.0051	0.91	-0.0650	0.06*	-0.0214	0.30	-0.0193	0.21	-0.0171	0.04**	-0.0045	0.83	0.0042	0.85
Adjusted R^2	0.5497		0.4451		0.5637		0.5777		0.4791		0.8047		0.6994		0.8253	
Panel B. Loan Loss Provisions Estimations of Lower and Low Income countries																
Country	China		India		Indonesia		Jordon		Pakistan		Philippines		Sri Lanka		Thailand	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
C	0.0011	0.38	0.0021	0.07*	0.0405	0.00***	-0.0002	0.90	0.0032	0.27	0.0032	0.21	0.0106	0.17	0.0036	0.49
EBTPS	0.2192	0.01***	0.1882	0.00***	-0.5485	0.07*	0.2396	0.00***	0.0531	0.31	0.1918	0.06*	-0.0507	0.83	0.3531	0.00***
LLA_{t-1}	-0.0347	0.06*	-0.0457	0.52	-0.1248	0.00***	-0.0901	0.00***	-0.2797	0.01***	-0.0497	0.14	0.0434	0.42	-0.2151	0.00***
Ch_Loans	0.0010	0.74	-0.0234	0.00***	0.0031	0.41	-0.0104	0.16	-0.0316	0.02**	-0.0031	0.61	-0.0092	0.31	-0.0251	0.02**
NPL_{t-1}	0.0033	0.57	0.0738	0.01***	0.0396	0.30	0.0639	0.00***	0.2447	0.00***	0.0236	0.72	-0.0301	0.27	0.1848	0.00***
Ch_NPL	0.0061	0.31	0.0654	0.16	-0.0128	0.86	0.0418	0.00***	0.3399	0.00***	0.1298	0.05**	-0.0652	0.04**	0.1801	0.01***
NLCO	0.0663	0.01***	0.4376	0.00***	0.0176	0.87	-0.2919	0.00***	0.0065	0.99	0.3017	0.02**	-0.3575	0.11	0.2406	0.00***
$Tier1_{t-1}$	0.0165	0.34	0.0285	0.13	-3.5321	0.12	-0.0339	0.17	-0.0118	0.94	-0.0297	0.01***	-0.0126	0.55	0.0126	0.60
$TCAP_{t-1}$	-0.0245	0.05**	-0.0051	0.83	2.9795	0.13	0.0294	0.12	0.0002	1.00	0.0305	0.06*	-0.0044	0.85	-0.0536	0.01***
Adjusted R^2	0.4028		0.6452		0.5690		0.6604		0.7877		0.4245		0.1418		0.7388	

*** denotes significance at the 1% level; ** denotes significance at the 5% level; * denotes significance at the 10% level.

Table 3: Panel Regressions Results with Net Non-interest Income Ratios

Samples	Full				Income-Increasing				Income-Decreasing			
Specifications	(1a)		(1b)		(2a)		(2b)		(3a)		(3b)	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
C	0.0022	0.10*	0.0022	0.11	0.0041	0.03**	0.0039	0.04**	0.0002	0.92	0.0002	0.93
NNII	0.0003	0.14	0.0003	0.13	0.0001	0.75	0.0001	0.70	0.0007	0.05**	0.0007	0.04**
DIV1	-0.0002	0.46	-0.0002	0.43	0.0001	0.76	0.00005	0.84	-0.0007	0.15	0.0007	0.14
Equity	0.0008	0.03**	0.0010	0.01***	0.0008	0.12	0.0010	0.06*	0.0009	0.13	0.0012	0.04**
Size	0.00001	0.56	0.00001	0.53	-0.00001	0.85	-0.000005	0.85	0.00003	0.34	0.00003	0.28
GA	-0.0001	0.75	-0.00003	0.88	-0.0001	0.66	-0.0001	0.75	-0.00002	0.95	0.0001	0.72
Net Loan	0.0001	0.72	0.0001	0.67	-0.0001	0.83	-0.0001	0.83	0.0004	0.32	0.0005	0.23
GDPPC	-0.0001	0.44	-0.0001	0.46	-0.0004	0.18	-0.0003	0.20	0.0001	0.73	0.0001	0.78
GROWTH	0.0003	0.82	0.0004	0.80	0.0004	0.85	0.0004	0.85	0.0003	0.87	0.0004	0.83
KP	-0.0001	0.18	-0.0001	0.47	-0.0001	0.10*	-0.0001	0.43	-0.00002	0.85	-0.0001	0.73

Table 3:   Panel Regressions Results with Net Non-interest Income Ratios - continue

KP x EBTPS			-0.0009	0.81			-0.0026	0.57			0.0022	0.76
IFRS	-0.0003	0.00***	-0.0003	0.03**	-0.0003	0.05**	-0.0002	0.18	-0.0004	0.01***	-0.0002	0.40
IFRSx EBTPS			-0.0039	0.08*			-0.0029	0.22			-0.0112	0.11
WGI_CORR	-0.0003	0.10*	-0.0003	0.09*	-0.0005	0.06*	-0.0005	0.06*	-0.0001	0.82	-0.0001	0.77
Adjusted R²	0.0608		0.0606		0.0460		0.0450		0.0719		0.0728	

*** denotes significance at the 1% level; ** denotes significance at the 5% level; * denotes significance at the 10% level.

In the income-increasing sample, specifications (2a) through (2b) of Table 3 show that the accounting quality and the control of governmental corruption remain critical to determine the level of earnings manipulation. The audit industry expertise might alleviate the income-increasing behavior. The relationship between discretionary loan loss provisions and auditors with industry specialization is negative and significant at the 10% level. The audit industry expertise might play an effective monitoring role in constraining management's discretionary accounting choices and reduce the income-increasing earnings management. On the other hand, the negative relationship between discretionary loan loss provisions and governmental governance is insignificant for the income-decreasing observations. Specification (3a) of Table 3 presents that the adoption of IFRS would reduce the deviations of discretionary loan loss provisions from the expected level. Moreover, banks engaging higher shares of non-interest income activities would increase the degree of deviations of discretional accruals thereby increasing the possibility of earnings management in the income-decreasing sample. However, the impact of diversifying through non-interest income shares on the level of earnings management is insignificant in all specifications of Table 3.

Control variables appear to be insignificant except the equity ratio. The high ratios of equity to total assets would increase the level of discretionary loan loss provisions, implying that banks reserve more equity to absorb loan loss and therefore the discretionary components of accruals might increase. The regressions in Table 3 also include country and time dummy variables that are not reported.

In short, our results in Table 3 present that accounting quality would affect the estimation for the discretionary loan loss provisions. The requirement of detailed accounting disclosure in IFRS would constrain the earnings management, supporting the hypothesis (**H1**) that the higher level of transparency and disclosure would reduce the degree of discretionary loan loss provisions. The broader non-interest income activities might not have significant influence on the deviations from the expected loan loss provisions. Regarding the countries' governance for control of corruption, higher control of countries' corruption is more effective in constraining bank managers' discretionary loan loss provisions. The results are consistent with the hypothesis (**H2**).

5.4. Additional Analysis: Different Diversification Index

We further decompose the net non-interest income into net trading income (TRAD), net commission and fee income (COM), and net other non-interest income (OTH), and construct a new diversification measure that take into account three separate components of non-interest income, using them to compute a Herfindahl–Hirschman Index of income specialization. The alternative income diversification index (DIV2) is computed as one minus the sum of the square of the share of net interest income, of the share of net commission and fee income, of the share of the share of net trading income, and of the share of other non-interest income over net operating income.

Specifications (4a) and (4b) of Table 4 report that banks engaging in higher shares of trading and other non-interest income activities would estimate larger deviations from their expected loan loss provisions. An income diversifying trough various non-interest income activities might mitigate the positive relation between different sorts of non-interest activities and discretionary loan loss provisions. More disclosure in accounting statements and higher control of countries' corruption would also decrease the difference between the actual accrual and expected loan loss provisions. Furthermore, specifications (5a) and (5b) for income-increasing observations show that an increase in shares of trading income activities would enlarge the discretionary loan loss provisions. The accounting quality and control of corruption would constrain the level of earnings management.

Table 4: Panel Regressions Results with Different Sorts of Net Non-interest Income Ratios

Samples	Full				Income-Increasing				Income-Decreasing			
Specifications	(4a)		(4b)		(5a)		(5b)		(6a)		(6b)	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
C	0.0023	0.09*	0.0022	0.10*	0.0039	0.04**	0.0038	0.04**	0.0004	0.83	0.0004	0.84
TRAD	0.0005	0.05**	0.0006	0.04**	0.0007	0.03**	0.0007	0.02**	0.0002	0.83	0.0004	0.67
COM	0.0003	0.27	0.0003	0.27	-0.0003	0.49	-0.0002	0.55	0.0009	0.05**	0.0009	0.05**
OTH	0.0008	0.02**	0.0008	0.02**	0.0003	0.48	0.0003	0.46	0.0013	0.03**	0.0013	0.02**
DIV2	-0.0004	0.02**	-0.0004	0.02**	-0.0001	0.62	-0.0001	0.57	-0.0008	0.13	-0.0008	0.11
Equity	0.0008	0.03**	0.0010	0.01***	0.0009	0.10*	0.0011	0.05**	0.0008	0.15	0.0011	0.06*
Size	0.00002	0.35	0.00002	0.33	0.00001	0.85	0.000002	0.86	0.00003	0.26	0.00004	0.22
GA	-0.00003	0.89	0.000003	0.99	-0.0001	0.71	-0.0001	0.79	0.00003	0.91	0.0001	0.64
Net Loan	0.0001	0.74	0.0001	0.69	-0.0001	0.80	-0.0001	0.81	0.0004	0.33	0.0004	0.25
GDPPC	-0.0002	0.40	-0.0002	0.42	-0.0004	0.19	-0.0003	0.21	0.0001	0.84	0.00004	0.88
GROWTH	0.0004	0.76	0.0005	0.73	0.0006	0.78	0.0006	0.77	0.0003	0.86	0.0004	0.83
KP	-0.0001	0.21	-0.0001	0.46	-0.0001	0.14	-0.0001	0.45	-0.00001	0.92	-0.0001	0.70
KP x EBTPS			-0.0006	0.88			-0.0021	0.63			0.0029	0.68
IFRS	-0.0003	0.00***	-0.0002	0.04**	-0.0003	0.06*	-0.0002	0.20	-0.0004	0.01***	-0.0002	0.27
IFRS x EBTPS			-0.0040	0.07*			-0.0031	0.18			-0.0100	0.15
WGI_CORR	-0.0003	0.09*	-0.0003	0.08*	-0.0004	0.06*	-0.0005	0.06*	-0.0001	0.82	-0.0001	0.78
Adjusted R²	0.0622		0.0621		0.0481		0.0472		0.0750		0.0752	

*** denotes significance at the 1% level; ** denotes significance at the 5% level; * denotes significance at the 10% level.

Table 5: Robust Test: Alternative Indicator for Governance

Samples	Full				Income-Increasing				Income-Decreasing			
Specifications	(7a)		(7b)		(8a)		(8b)		(9a)		(9b)	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
C	0.0022	0.09*	0.0022	0.09*	0.0038	0.04**	0.0037	0.05**	0.0006	0.77	0.0008	0.69
NNII	0.0003	0.17			0.0001	0.80			0.0007	0.05**		
TRAD			0.0005	0.06*			0.0006	0.04**			0.0004	0.68
COM			0.0003	0.29			-0.0003	0.49			0.0009	0.06*
OTH			0.0007	0.04**			0.0002	0.58			0.0013	0.03**
DIV1	-0.0002	0.38			0.00002	0.93			-0.0007	0.14		
DIV2			-0.0004	0.02**			-0.0001	0.65			-0.0008	0.11
Equity	0.0010	0.01***	0.0010	0.01***	0.0010	0.06*	0.0011	0.05**	0.0012	0.03**	0.0011	0.05**
Size	0.00001	0.59	0.00002	0.40	-0.00001	0.81	0.000002	0.94	0.00003	0.32	0.00003	0.25
GA	-0.00003	0.88	-0.000001	1.00	-0.0001	0.78	-0.0001	0.80	0.0001	0.72	0.0001	0.64
Net Loan	0.0001	0.66	0.0001	0.68	-0.0001	0.79	-0.0001	0.77	0.0005	0.20	0.0005	0.22
GDPPC	-0.0001	0.44	-0.0001	0.42	-0.0003	0.25	-0.0003	0.26	0.00002	0.94	-0.00001	0.97
GROWTH	0.0001	0.93	0.0003	0.85	-0.0001	0.97	0.0001	0.95	0.0004	0.82	0.0004	0.82
KP	-0.0001	0.49	-0.0001	0.48	-0.0001	0.46	-0.0001	0.47	-0.0001	0.71	-0.0001	0.68
KP x EBTPS	-0.0009	0.81	-0.0006	0.87	-0.0029	0.52	-0.0024	0.58	0.0026	0.73	0.0032	0.66

Table 5:   Robust Test: Alternative Indicator for Governance - continue

IFRS	-0.0003	0.01***	-0.0003	0.01***	-0.0003	0.07*	-0.0003	0.09*	-0.0002	0.33	-0.0002	0.30
IFRS x EBTPS	-0.0039	0.09	-0.0040	0.07*	-0.0026	0.28	-0.0028	0.24	-0.0118	0.10*	-0.0106	0.13
WGI_REG	-0.0005	0.02**	-0.0004	0.02**	-0.0006	0.03**	-0.0005	0.03**	-0.0004	0.18	-0.0004	0.20
Adjusted R²	0.0622		0.0633		0.0463		0.0480		0.0750		0.0772	

*** denotes significance at the 1% level; ** denotes significance at the 5% level; * denotes significance at the 10% level.

For income-decreasing observations, the commission and fee income activities are significantly and positively related to the magnitude of earnings management. The impact of other non-interest activities such as insurance services on earnings management is also positive and significant at the 5% level in specifications (6a) and (6b) of Table 4. The positive influence of different kinds of non-interest income activities on the deviations from the expected loan loss provisions might indicate non-interest income activities make banks' operations more complicate and increase the level of earnings management, consistent with hypothesis (**H3a**). The estimated coefficients of control variables remain the same in Table 3.

The results in Table 4 present that different non-interest income activities would influence the estimated discretionary loan loss provisions in different income behaviors. When the banks adopt the accounting standards that require more detailed disclosure of financial information, bank managers would reduce the degree of estimated discretionary loan loss provisions. The influence of the country's governance is more pronounced in the full and income-increasing observations.

5.5. Robustness Check

As a final exercise, we use the alternative governance indicators to consider the regulation quality (WGI_RQ) of different countries obtained from the World Bank database and reexamine the influences of non-interest income activities, accounting quality, and governmental regulation quality on the estimated earnings management.

The results shown in Table 5 are similar to those in Table 3 and Table 4. A higher share of non-interest income would be related to a higher level of discretionary loan loss provisions. The adoption of IFRS might constrain earnings management. When banks adopting IFRS and having higher level of earnings, actual loan loss provisions estimated by banks managers might be closer to the expected level of loan loss provisions and mitigate the possibility of earnings management. Moreover, the effectiveness of regulation quality would significantly reduce the unsigned discretionary loan loss provisions for the full and the income-increasing observations

6. Summary and Concluding Remarks

The purpose of this study is to analyze the earnings management implications of the trend towards higher shares of non-interest income activities in banking industry, as well as to investigate whether accounting disclosure and governmental governance would moderate the estimations for discretionary loan loss provisions, using 318 banks from 16 countries over the period from 1996 to 2009.

The empirical results demonstrate that banks would engage in income smoothing when they have more earnings. Loan quality would significantly influence the estimation of loan loss provisions. The most important determinant on discretionary loan loss provisions is accounting quality. The adoption of IFRS would make banks estimate lower deviations from their expected loan loss provisions. A higher degree of disclosure requirement would constrain earnings management. When countries have more control of corruption and higher level of regulation quality, bank manager would tend to estimate a lower level of discretionary loan loss provisions, thereby mitigating the level of earnings management. Moreover, an increase in shares of trading income would increase the discretionary loan loss provisions in income-increasing observations. An income diversifying through trading, commission, and other non-interest activities would reduce the different between actual loan loss provisions and the expected level in the full sample.

Overall, financial supervision and regulation play an important role on the latitude in estimating loan loss provisions. Hence, the authorities should strengthen their financial regulations to increase the information transparency and improve accounting quality, and prevent aggressive earnings management. This research has some limitations. First, possible determinants of managerial discretion on estimation of loan loss provisions have not been considered and therefore it may induce the estimated bias of earnings management. Second, the representative of KPMG and PWC to proxy for

the audit industry expertise might be confusing when the investigation is based on banks across international countries, and otherwise it is proper for the US banking sector. Also, this paper considers the governance indicators in the country-level. The impact of differential corporate-governance mechanisms on firm-level data would be the subject of future research.

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