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The Impact of Loan Loss Provision on EU Listed Banks Under Local GAAP and IFRS

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Executive Summary

The aim of this study is to investigate the impact of loan loss provision (LLP) under the International Financial Report Standards (IFRS) and local Generally Accepted Accounting Principles (GAAP) in European publicly traded banks' earnings and the change of stock prices. For this purpose, I empirically investigate the association between LLPs and earnings, LLPs and change of stock price for 132 banks in 22 European Union (EU) countries. I focus on the importance of LLP research and the trade-off between reliability and relevance of LLP from the perspective of accounting going concern.

I include controls for factors that prior research identifies as associated with earnings and change in stock prices, such as LLP in banks total asset as a proxy for banks' size, and the lagged operational income as a proxy of profitability and the change in GDP (Marton & Runesson, 2016). I hypothesizes that the LLP under IFRS has a higher association with earnings and lower influence in change of bank stock prices than it under local GAAP. From the data analysis for 132 traded banks in EU for the period from 2000 to 2010, I find that the negative magnitude association between LLP and earnings are higher under IFRS/ International Accounting Standard 39 (IAS 39) than it under local GAAP. While as the association between LLP and the change of banks' stock price under IFRS and local GAAP is not statistically different. Overall, findings are important in understanding the effect of IFRS adoption on market dynamics and information environment. Additionally, they bear implications for accounting professions, policymakers, investors and corporate managers.

Table of Content

Introduction and Motivation

The purpose of this thesis is to study the impact of loan loss provision (LLP) in EU listed banks under local GAAP and IFRS. The analysis focuses on how the high judgement required for assets impairment under local GAAP and the low judgement required under the IAS 39 incurred loss model influence EU listed banks' earnings and their stock prices (Marton & Runesson, 2016). The local GAAP in EU is based on the bank accounting directive 86/635/EEC (Marton & Runesson, 2016). Marton and Runesson (2016) state that although practices of local GAAP differ across countries, lead earlier recognition of credit losses compared to IFRS in general (Marton & Runesson, 2016).This thesis treats all EU listed banks who adopt local GAAP in a same manner, as if they would use the same local GAAP regardless where they are located in.

The European Union proposal for a new legislation in February 2001, which required all listed companies in the EU to prepare consolidated financial statements in accordance with a single set of International Accounting Standards (IAS) since 1st January 2005 (EC Regulation 1606/2002). Now it is known and referred to as IFRS. It aims to achieve transparency, comparability, and harmonization of financial reports, as well as enhance the integration of European capital markets (Devalle, et al., 2010). With respect to accounting standard for financial instruments, IAS 39 prescribed an incurred loss model (ILM) for bank loans' impairment. The adoption of IAS 39 introduces some changes: it does not allow recognition of general provisions without identifying potential default customers as previously permitted under local GAAP; loan loss provision cannot reflect losses based on expected future events which are allowed previously under local GAAP (Devalle, et al., 2010).

I use a sample of 132 listed banks from 22 EU countries to exam the impact of loan loss provisions on earnings and change in stock price, and review value relevance and accounting quality under IFRS. I analyze the loan loss provision for two reasons. Firstly, LLPs mitigate information asymmetry since managers may use LLPs to convey their private information (Beauty & Liao, 2014). Secondly, LLPs of bank play an essential role in bank stability and economic soundness of a nation (Beatty & Liao, 2014). Prior studies show that the measurement and recognition of LLP under IAS 39 results in more volatile earnings and less

value relevance of accounting information (Voulgaris, et al., 2011). The incurred loss model of IAS 39 also leads to a more objective estimation of LLPs and less timely to recognize LLPs compared with local GAAP (Gebhardt & Novotny-Farkas, 2011; Marton & Runesson, 2016).

Prior studies mainly focus on comparing accounting quality, LLPs predictability, earning smoothing, persistence, and timeliness loss of recognition of LLP before and after the adoption of IFRS. Gebhardt and Novotny-Farkas (2011) find that earnings of banks are less smoothing and loan loss recognition is less timely. Marton and Runesson, (2016) find LLPs predict future credit losses to a lesser extent after IFRS adoption. Barth et al. (2008) find evidence indicates that less earnings management, more timely loss recognition and more value relevance post adoption of IFRS. Paananen and Lin (2009) find that accounting quality has not been enhanced but aggravated after EU adopting IFRS in 2005.

Beisland and Knivsfla (2015) examine whether the usefulness of accounting information has changed from an investor-oriented perspective before and after the adoption of IFRS in Norway. They find that fair value accounting increases the value relevance of book values and decreases the value relevance of earnings in Norway after the adoption of IFRS. Jaweher and Mounira (2014) find that earnings are closer associated with market value of equity under local GAAP than IAS/IFRS. Atwood et al., (2010) find that earnings under U.S. GAAP are more strongly associated with future cash flows than earnings reported under IFRS. They further claim that earnings under U.S. GAAP plays a key role to help investors evaluate firms, since it is more value relevant to predict future cash flows (Atwood et al, 2010).

I review prior literature on accounting quality related to relevance and reliability before and after adoption IFRS. I use two models to compare the association between LLPs and earnings, LLPs and change in banks stock prices for the period from 2000 to 2010 for 132 listed EU banks. I find that LLPs under IAS 39 are more strongly associated with earnings. When comparing the association between LLPs and changes in stock prices under IFRS and local GAAP, I find no significant difference. My study contributes to the effect of IFRS adoption on earnings volatility, the fair value related to earnings dynamics and information disclosure, specifically, the association between LLP and earnings, and the relationship between LLP and change in stock prices.

The remainder of this thesis is organized as follows. The background describes the mandatory adoption of IFRS. Section 2 briefly state its impacts. Section 3 contains the importance of research on LLPs. Section 4 provides literature review and hypothesis development. Section 5 presents the research design. Section 6 describes hypotheses test models and the methodology respectively. Section 7 describes the study testing results. Section 8 presents the study conclusion and limitations

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2. Background

2.1 From Partial Expected Loss Model and Incurred Loss Model

Marton and Runesson (2016), Gebhardt and Novotny-Farkas (2011) consider that the change in accounting for LLPs under local GAAP to IFRS is a shift from a partially expected loss model (ELM) to an incurred loss model (ILM). IFRS provides more specific guidance related to the timing of recognition of LLPs than the local GAAP. IAS 39 paragraph 59 requires that the recognition of LLPs only if there is objective evidence that a credit event has occurred. Especially, general loan loss provisioning for unspecified credit risks or the anticipation of expected credit losses due to future events are not allowed under the IAS 39 paragraph 59. But under prior local GAAP, general loan loss provisioning for expected credit losses is allowed. Before the adoption of IFRS, the Seventh Directive (83/349/EEC) allows loans to be recognized at their nominal value, which implies banks can set aside specific loan loss provision based on deteriorations in the creditworthiness of individually identifiable debtors. Moreover, banks are required to create general loan loss allowances to cover latent risks inherent in loan portfolios (83/349/EEC).

2.2 Income Smoothing and Its Positive Perspectives

Gebhardt and Novotny-Farkas (2011) examine the implications of the IFRS adoption on accounting quality of twelve EU banks. They analyze how LLPs affect income smoothing behavior and timely loss recognition. They find that LLPs under IAS 39 reduces income smoothing significantly compared to LLPs under local GAAP. However, Marton and Runesson (2016) point out that the income smoothing decreases after implementation of IFRS can be interpreted as the accounting quality is decreasing. They argue that from the conservative perspective, smoothing behaviors are favorable and preferred. Because smoothed income leads LLPs to be timelier recognized, which can promote counter-cyclicality. Anandarajan et al. (2007) and Leventis et al. (2011) find evidence to support that smoothed income reduces earnings variability and decreases fluctuation of stock prices which is preferred by investors. Additionally, Platikanova and Nobes (2006) investigate the information asymmetry of the bid-ask spread among firms pre and post-adoption of IFRS in 2005. They find that firms from countries where earnings management is more commonly

conducted exhibit a lower information asymmetry compared to others. Thus, they conclude that smoothed income reduces information asymmetry (Platikannova & Nobes, 2006).

3 The Prior Important Research of LLPs

3.1 The Double-edged Sword LLPs

LLPs of bank play an essential role for bank stability and economic soundness of a nation while fulfilling their lending function to individuals, firms, and governments (Beatty & Liao, 2014). Cummings and Durrani (2016) state that LLPs are buffers to preserve banks from solvency by absorbing the current and future credit losses, which can also reflect the quality of loan portfolio. Moreover, LLPs are double-edged swords, which lead a trade-off between banks earnings and regulatory capital (Beatty and Liao, 2014). Because LLPs lower the reported earnings under accrual accounting, but increase the pre-tax loan loss allowance, which resulted in increasing regulatory capital by the amount of the deferred taxes associated with the provision expense during the financial report period (Beatty and Liao, 2014). They argue that the counter- intuitive regulatory capital calculation potentially provides an area for accounting research in terms of earnings versus capital management using LLP (Beatty & Liao, 2014).

3.3 The Discretionary LLPs

The research literature identifies three discretionary actions, such as capital management, income smoothing and signal financial strength, which bank managers may take when recognizing LLP (Cumming & Durrani, 2016). Leventis et al, (2011) use 91 EU listed commercial banks to study the impact of the implementation of IFRS on the adoption of LLP to manage earnings and capital. They find that risky banks earnings management behavior is more pronounced compared to the less risky banks pre IFRS adoption, but the capital management behavior is not significant in both pre and post IFRS adoption (Leventis et al., 2011). Anandarajan et al. (2007) examine whether and to what extent Australian banks use LLP for capital management, earnings management and signaling as a result of the implementation of Basel Accord of 1988, they find that listed banks engage more aggressively in earnings management by using LLP than unlisted commercial banks. Additionally, they find that earnings management behavior is more pronounced in the post-

Basel period, but Australian banks do not use LLP for signaling future higher earnings to investors (Anandarajan et al., 2007).

4. Literature Review and Hypothesis Development

4.1 Earnings Volatility under IAS 39

The fair value accounting results in changing value being reflected in other comprehensive income. IAS 39 requires gains or losses on available-for-sale financial assets to be recognized directly in other comprehensive income, and gains or loss on derivatives which classified as hedging must be reported in other comprehensive income (IAS 39: Section 95-101), which results in increasing the volatility of comprehensive income. Duh, Hsu and Alves (2012) examine the impact of adopting IAS 39 financial instruments on non-US commercial banks cross-listed in the US on earnings volatility and its risk relevance.

Voulgaris, et al. (2011) argue that earnings under IFRS are less useful for evaluating banks performance because the adoption of the fair value accounting potentially makes accounting numbers more volatile and sensitive to market movements. They further clarify that the fair value method under IFRS results in accounting numbers are closer to market values, the less they are able to provide information to evaluating banks performance (Voulgaris et al., 2011). Similarly, Kim and Suh (1993) also argue that if accounting numbers become more sensitive to market movements, the less the additional information about firms and managing performances the accounting-related signals is provided. Based on the above research, I predict that banks' earnings under IAS 39 decreases the value relevance of prediction and expect LLPs under IAS 39 will exhibit higher association with earnings, less influence on stock prices, than LLPs under local GAAP bank years. Thus, it leads to hypothesis 1

H1: Loan loss provisions under IAS 39 is more strongly associated to reported earnings than LLPs under the local GAAP.

4.2 Value Relevance

The value relevance of earnings is the magnitude to which accounting earnings contain information impounded in market prices, and its metrics capture both relevance and

reliability (Barth, et al 2001). The higher the value relevance is, the greater usefulness is (Collins et al., 1997). Manganaris et at. (2015) claim that the introduction of fair value measurement under IFRS for recognition of financial instruments resulted in a mixed historical and fair value models. The implementation of fair value valuation model under IAS 39 depends on financial instruments' classification, which leads financial instruments are treated asymmetrically. Therefore, the asymmetrical valuation of financial instruments may hinder value relevance of accounting information in general (Manganaris et at., 2015). Moreover, comparing value relevance pre and post adoption IFRS accounting standards, results are inconclusive on a country-specific level. Gjerde, et al. (2008) find limited evidence of increase value relevance after IFRS adoption in Norway. Goodwin et al. (2008) find little evidence that earnings under IFRS are more value relevant than earnings under Australian GAAP. Beisland and Knnivsfla (2015) find that fair value accounting increases the value relevance of book values and decreases the value relevance of earnings in Norway after adoption of IFRS. Whereas, Latris and Rouvolis (2010) suggest increasing in value relevance for both earnings and book value post-IFRS adoption in Greece. However, Devalle, et al. (2010) investigate firms from five European countries for the period from 2002 to 2007, and find value relevance of the book value of equity decreased (increase) in Germany, Spain, France, and Italy (the United Kingdom). Manganaris et al. (2015) examine value relevance of accounting information before and after mandatory IFRS adoption of the European banking sector by using bank data from 15 European countries. They find that there is a significant increase in the informativeness of earnings, and a significant decrease in book value relevance after adoption of IFRS.

4.3 Information and Volatility of Stock Prices

Baumann and Nier (2004) state that there is an increasing number of initiatives have attempted to improve the transparency of financial institutions by pushing toward more disclosure on LLPs over the last decade. Flannery et al. (2004) argue that bank loans are opaque because no one knows the true value of non-marketable loans due to the information asymmetry between bank managers and depositor, as well as regulators, thus disclosure is important for financial report users. Benston and Kaufman (1998) argue that fair value approach leads bank loans less opaque because of footnote disclosure of fair values of financial instruments. Baumann and Nier (2004) investigate 600 banks across 31 countries over the period 1993-2000. They find that the more information disclosed, the less the stock

volatility is. Whereas, Leuz and Verrecchia (2000) find that the American corporate disclosure is weakly associated with firms' stock return. Based on these above studies, I expect that the greater fair value method applied and the lower the information asymmetry is, the less volatile the stock return is.

4.4 The Earnings and Accruals Qualities

Dechow, et al. (2010) state that higher quality earnings provide more information about firms' financial performance, which are relevant to specific decision-makers. They argue that the earnings quality is determined by the relevance of underlying financial performance to the decision, and the ability of an accounting system to measure performance (Dechow, et al., 2010). They further clarify that quality of reported earnings depends on whether they are informative about the firm's financial performance (Dechow, et al., 2010). Jaweher and Mounira (2014) investigate the impact of IFRS on earnings quality, such as value relevance, predictability, persistence and timeliness of loss recognition, smoothing and accruals quality for listed companies among 16 European countries and Australia from 2001 to 2010. They find that earnings under IFRS are not more conservative than earnings based on local GAAP. Their findings also suggest that the quality of accruals is better, and earnings are closer associated with the market value of equity under local GAAP year (Jaweher & Mounira, 2014). Lai et al., (2013) investigate the impact of IFRS on accrual reliability among Australian firms before and after switch from Australian GAAP to IFRS. They use persistence of accruals over cash flow as a proxy for reliability. They find that the accrual reliability declined significantly after the mandatory adoption of IFRS (Lai et al., 2013). Furthermore, Richardson et al. (2005) document that less reliable accruals lead to lower earnings persistence, and investors do not fully anticipate the lower earnings persistence and leads to misprice stocks. With respect to the above studies, I expect to observe higher association between change in stock prices with higher quality of reported earnings and accruals. Thus, it leads the hypothesis 2

H2: The LLPs under IFRS is expected to have a lower correlation with the change in stock price than LLP under the local GAAP.

5.Research Design

I follow Altamuro and Beatty (2010) and Marton and Runesson (2016), in order to exam the effect LLPs under IFRS versus local GAAP associate with earnings and change in stock prices. I divide my study period into two time periods: the GAAP period ranging from 2000 to 2004; the IFRS period ranging from 2005 to 2010. To examine the effect of LLPs under IFRS versus local GAAP on reported earnings, I use an interaction of LLP with IFRS. When IFRS variable takes the value of "1", IFRS is applied, and when it takes the value "0", local GAAP is applied.

Regression model to test *H1*:

$$NI_{i,t} = a_0 + a_1 LLP_{i,t} + a_2 IFRS_{i,t} + a_3 LLP \times IFRS + \alpha_4 TA + \alpha_5 NPL + \alpha_6 Loan/TA + \alpha_7 \Delta GDP + \beta_9 LLP \times OP + \beta_{10} LLP \times NPL + \beta_{11} LLP \times TA + \varepsilon_{i,t}$$

The main variables NI and LLP are scaled by lagged total asset times 100 (Marton & Runesson, 2016). The co-efficient interaction of LLPxIFRS is the interest of test for H1. I include control variables the logarithm of total assets (TA) as a proxy for bank size; NPL as economic factor affecting earnings variability; total loans over total assets (Loan/TA) as a proxy for risk profile; ΔGDP of each country as an indicator of the country's economic situation (Marton & Runesson, 2016). The a_3 is predicted to be significant negative if the H1 holds. The percentage change in GDP of countries is expected positively associated with earnings. I follow Martonn and Runesson (2016) and also introduce interactions between LLP and OP (Operating income), LLP and NPL. This is to prevent spurious omission of correlated variables and ensure comparability with the results in H1 and H2.

My second measure of LLPs effect on change in stock price under IFRS versus local GAAP is also the co-efficient interaction of LLPxIFRS (Marton & Runesson, 2016). ΔSP is used to measure volatility of banks stock return. All variables are defined in Table 2. The expectation for $\beta_3$is significantly positive if the *H2* Holds. The net operating income (OP) is scaled by lagged total asset, and it serves as proxy for profitability of banks. I follow the model of Altamuro and Beatty (2010) and Marton and Runesson, (2016), I control for the interaction between LLP and OP, LLP and NPL, LLP and TA, as same as model 1.

The following regression model is used to test the second Hypothesis:

$$\Delta SP = \beta_0 + \beta_1 LLP_{i,t} + \beta_2 IFRS_{i,t} + \beta_3 LLP_{i,t} \times IFRS + \beta_4 TA + \beta_5 OP + \beta_6 NPL + \beta_7 Loan/TA + \beta_8 \Delta GDP + \beta_9 LLP \times OP + \beta_{10} LLP \times NPL + \beta_{11} LLP \times TA + \varepsilon_{i,t+s}$$

6. Methodology

6.1 Sample Selection Process

As mentioned above, my primary objective is to investigate the impact of LLPs on EU listed banks under local GAAP and IFRS. The sample consists of 132 listed banks from 22 EU countries that adopted IFRS for fiscal years ending in 2005. The analysis covers the period 2000-2010, split into two sub-periods (2000-2004 and 2005-2010). In order to reflect the different correlations of reported earnings and change in stock price with LLP before and after the application of IFRS, I classify all banks observations prior to the mandatory adoption of IFRS by the European countries in 2005 as the local GAAP years and banks observations after as the IFRS banks years. All fundamental and market data are gathered from Datastream.

The initial sample consists of 217 banks from 26 European countries. The detail of selected countries and number of banks is shown in table 1. Banks that had not adopted IFRS regulation during the period from 2005 to 2010 or their accounting standards are unknown are excluded. Deleting voluntary IFRS earlier adopters allows me to avoid possible confusing effects of incentives for banks to adopt IFRS voluntarily (Barth et al., 2008). Christensen et al. (2015) argue that the voluntary adoption IFRS itself may signal a desire to acquire foreign capital or to be traded on high-profile stock exchange market. However, Leventis et al. (2010) study LLP behaviors across listed companies in EU and find no evidence to indicate that early adopter of IFRS do materially differ to mandatory adopter. After this process, it generates 132 listed banks in total from 22 EU countries. Table 1 summarizes the sample selection procedure.

Table 1: Sample Composition

Panel A: Sample Selection	Bank
Initial Sample	217
Excluded observations due to missing data & earlier adoption	−75
Total Sample	132

Panel B: Sample Composition by Country		
No.	Country	Bank
1	AUSTRIA	6
2	BELGIUM	2
3	CYPRUS	1
4	DENMARK	18
5	FINLAND	3
6	FRANCE	18
7	GERMANY	1
8	GREECE	6
9	HUNGARY	1
10	IRELAND	3
11	ITALY	14
12	LITHUANIA	1
13	MALTA	4
14	NETHERLANDS	2
15	NORWAY	20
16	POLAND	9
17	PORTUGAL	1
18	ROMANIA	3
19	SLOVAKIA	4
20	SPAIN	5
21	SWEDEN	3
22	UNITED KINGDOM	7
22		132

6.2 Variables and Statistical Models

In order to test these two hypotheses, the relevant data of public listed European bank is collected from Datastream, which included in the following table.

Table 2: Variable Descriptions

Variable	Descriptions
Main	
NI	The net income scaled by lagged total assets and multiplied by 100.
ΔSP	The difference between the stock price of the beginning and end of this year divided by stock price of the beginning of this year.
LLP	The recognized credit loss expenses and scaled by lagged total assets and multiplied by 100.
Dummy	
IFRS	The dummy variable, an indicator variable taking the value of "1" for IFRS bank years, and "0" for the local GAAP year.
Controls	
TA	The natural logarithm of total assets.
NPL	The non-performing loans, scaled by lagged total assets times 100.
ΔGDP	Annual % change in GDP of a country where the bank is located in. Obtained from World bank's website.
Loan/TA	The total loan over total assets
OP	The net operating profit scaled by lagged total assets times 100

All main variables in this paper is presented by this table. The interaction variables, the year indicator, the bank ID included in the study will not be provided in this table.

6.3 Descriptive statistics

Descriptive statistics of variables for the full sample are provided in Table 3. LLP is about 3.4% of lagged assets. The loan in the sample banking sector constitute on average approximately 70.7% of total assets, and non-performing loans on average is 0.323% of the lagged total asset. The operating profit (OP) is 7.3% on average. The growth in bank stock price and GDP is 0.063% and -0.317% on average from 2000 to 2010. All continuous variables have been winsorized at the 1st and 99th percentiles. Variables are expressed in monetary amounts and have been converted to euros. I control for bank and year fixed effects to decrease the impact of time-invariant difference between banks in terms of economic and accounting standards implementation conditions (Marton & Runesson, 2016). My research design does not mitigate any effects from the global financial crisis 2008-2010. Curcio et al (2017) find that Euro Area banks have a strong incentive to adopt discretionary LLPs to smoothen income during the financial crisis 2008-2010.

Table3: Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max	Q1	Median	Q3
NI	1318	.05	.174	-.022	1.353	.0134	.0051	0.18
ΔSP	1334	.063	.377	-.785	1.297	-.140	.0523	0.246
LLP	1255	3.407	14.226	-1.067	114.209	.0469	.2516	4.069
IFRS	1452	.552	.497	0	1	0	1	1
TA	1342	16.181	2.442	11.529	21.223	15.976	21.223	17.957
OP	1312	.0726	.25238	-.0157	1.9246	.00250	.0092	.02682
NPL	786	.323	1.585	0	14.357	0.0032	.0718	.0718
Loan/TA	1296	.707	.155	.213	.925	.6182	.7288	.8373
ΔGDP	1452	-.317	2.964	-16.061	8.434	-.4956	-.1242	.4772

Table 4 presents the pairwise correlation. The dependent variable OP is highly positively correlated (0.978) with independent variable net income (NI). Thus, operating income for testing H1 is omitted in the fixed effect regression to avoid the multicollinearity. Such multicollinearity make it difficult to identify the independent effect on the interest outcome of these dependent variable (Arceneaux & Huber, 2007). However, OP is included in test H 2. The LLP is significant negatively correlated with total asset, operational income and change in GDP, as well as net income, but positively associated with NPL. The change in GDP is significantly negative associated with the growth of SP. LLP is negatively associated with total asset and the ratio of loan to total assets.

Table 4: Pairwise Correlations

Variables	NI	ΔSP	LLP	IFRS	TA	OP	NPL	Loan/TA	ΔGDP
NI	1								
ΔSP	0.0720*	1							
LLP	0.577***	0.0694	1						
IFRS	0.0289	-0.0658	0.0953**	1					
TA	-0.319***	-0.138***	-0.273***	-0.0219	1				
OP	0.978***	0.0807*	0.614***	0.0295	-0.321***	1			
NPL	0.490***	0.0311	0.701***	0.0317	-0.231***	0.542***	1		
Loan/TA	-0.175***	-0.0136	-0.232***	-0.0107	-0.260***	-0.171***	-0.142***	1	
ΔGDP	0.00344	-0.221***	-0.174***	-0.261***	0.0242	-0.00184	-0.0923*	-0.0330	1

** p < 0.05, ** p < 0.01, *** p < 0.001. Variable definitions refer to Table 2*

The dependent variable NI is highly significantly correlated with independent variable OP at 0.978, close to 1

7. Results

Table 6 shows results from tests of hypothesis 1 (Model 1). The measure correlation between LLPs and earnings is based on the model of Marton and Runesson (2016). The coefficient of the interaction LLPxIFRS is negative 2.41 and statistically significant, which suggests that LLPs under IFRS has a stronger correlation with earnings than it under local GAAP. Thus, H1 holds. This result is consistent with Jaweher and Mounira (2014) find that IFRS adoption increases earnings' volatility after 2005 because of the greater use of fair value valuation. Additionally, Whittington (2005) and Armstrong et al. (2007) document governments of some EU countries strongly voiced their concerns about IAS 39. They claim that the most active opponent is French President Chirac because bank must report fair values of their financial instruments under IAS 39, thus banks will increase volatility in their balance sheet and earnings, which affect investors and regulator view of stability of financial institutions.

The test does not isolate the influence of the global financial crisis of 2008 on LLPs. Pool et al. (2015) study how credit risk affects bank lending for a sample of 12 OECD countries. They find that there is a sharp rising in provisioning. They claim that many countries experienced an increase in provisioning close to 0.2 percentage point during the beginning of the global financial crisis (Pool et al., 2015). Although my test approach considers the impact of time-invariant difference between banks in terms of economic and accounting standards, the mean of standard deviation of LLPxIFRS still can be affected by the sharping rising in provisioning during the beginning of the global finance.

Table 5: Test Result of H1

	NI
LLP	0.005
	(3.37)**
IFRS	0.031
	(1.29)
LLPXIFRS	-0.001
	(2.41)*
TA	-0.000
	(4.59)**
NPL	0.013
	(1.04)
Loan/TA	0.168
	(1.83)
ΔGDP	0.005
	(1.99)*
LLPxOP	0.000
	(4.89)**
LLPxNPL	0.000
	(0.85)
LLPxTA	-0.000
	(0.05)
Year FE	Yes
BankID FE	Yes
_cons	-0.128
	(1.81)
R^2	0.64
N	774

* $p<0.05$; ** $p<0.01$

This table shows the regression results. The model adapted from Altamuro and Beatty (2010), Marton and Runesson (2016) for testing the correlation between LLPs and earnings under IFRS and GAAP. Year and BankID fixed effects are included in all specifications.

For variable definitions, see Table 2

***and * denote p-value of 0.01, 0.05 and respectively (two tailed).*

The R^2 is 69% and observation number is 774

The regression equation is $NI_{i,t} = \alpha_0 + \alpha_1 LLP_{i,t} + \alpha_2 IFRS_{i,t} + \alpha_3 LLP \times IFRS + \alpha_4 TA + \alpha_5 NPL + \alpha_6 Loan/TA + \alpha_7 \Delta GDP + \beta_9 LLP \times OP + \beta_{10} LLP \times NPL + \beta_{11} LLP \times TA + \varepsilon_{i,t}$

IFRS is dummy variable that equals 1 if IFRS applies, and 0 if local GAAP apples

TA is natural logarithm bank total asset for controlling bank size

As shown in Table 6, I find there is no difference between LLP and change in stock prices under IFRS and local GAAP since interaction LLPxIFRS is not statistically significant. Anadarajan et al. (2007) and Leventis et al (2011) find no evidence to support that discretionary LLPs (DLLPs) can lower the fluctuations of stock return, even though DLLPs lower the volatility of earnings. Ozili and Outa (2017) review the recent academic and policy literature on bank LLPs, they claim that they do not elaborate on the relationship between LLPs and stock return because change in stock prices may be driven by other unobservable factors rather than LLP. Agostino et al. (2010) investigate the market valuation of accounting information in the European banking industry before and after the adoption of IFRS. They find there is no significant influence on stock price (Agostino et al., 2010). These studies may explain why I do not find the difference between LLP and change in stock prices under IFRS and local GAAP.

Table 6: Test Result of H2

	ΔSP
LLP	0.000
	(0.37)
IFRS	0.199
	(2.66)**
LLPXIFRS	0.000
	(1.29)
TA	-0.000
	(1.19)
OP	-0.000
	(0.01)
NPL	-0.002
	(0.26)
Loan/TA	-0.249
	(1.36)
ΔDP	-0.016
	(2.89)**
LLPxOP	0.000
	(4.46)**
LLPxNPL	-0.000
	(1.49)
LLPxTA	0.000
	(1.07)
Year FE	Yes
BankID FE	Yes
_cons	0.327
	(1.58)
R^2	0.66
N	750

* $p<0.05$; ** $p<0.01$

This table shows the model adapted from Altamuro and Beatty (2010), Marton and Runesson (2016) for testing the correlation between LLPs and change in stock price under IFRS and GAAP. Year and BankID fixed effects are included in all specifications.

For variable definitions, see Table 2

***and * denote p-value of 0.01, 0.05 and respectively (two tailed).*

The adjusted R^2 is 66% and observation number is 750

The regression is

$$\Delta SP = \beta_0 + \beta_1 LLP_{i,t} + \beta_2 IFRS_{i,t} + \beta_3 LLP_{i,t} \times IFRS + \beta_4 TA + \beta_5 OP + \beta_6 NPL + \beta_7 Loan/TA + \beta_8 \Delta GDP + \beta_9 LLP \times OP + \beta_{10} LLP \times NPL + \beta_{11} LLP \times TA + \varepsilon_{i,t+s}$$

8. Conclusion

This study addresses how LLPs impact the reported earnings and change in stock prices under IFRS and local GAAP. The incurred loss model under IFRS is more objective compared to local GAAP. I have hypothesized, tested and compared the magnitude of negative impact of LLPs on reported earnings and change in stock price under IFRS and local GAAP. I find LLPs under IFRS are incrementally more negative associated to reported earnings than under local GAAP. The test result of H1 suggests that reported earnings under IFRS is more volatile than earnings under local GAAP, which is consistent with Voulgaris et al. (2011). However, the test result of hypothesis 2 does not support that LLPs under IFRS has less impact on change in stock prices than under local GAAP. My study contributes to understand how adoption IFRS impacts earnings volatility, and the influences of fair value on earnings and information disclosure.

My thesis has some limitations. First, LLPs are error terms extracted from the partial expected loss models under local GAAP that are not free from estimation errors. However, the estimation for LLPs is consistent with Marton and Runesson , (2016) and Gebhardt and Novotny-Farkas (2011). Second, my study maintains the assumption of market efficiency in the change of stock price test result. If market efficiency did not hold during the crisis years 2008-2010, these results may be invalid. Third, the comparative advantage of local GAAP is largely contingent on strict enforcement, such as audit, official and capital effect (Marton & Runesson, 2016). Therefore, an enforcement effect could be taken into consideration as a determinant of LLP, and the impact of national factors associated with culture and legal system which potentially associated with earnings management through LLP. It may be a matter for future research.

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