

THE USE OF LOAN LOSS PROVISIONS FOR EARNINGS MANAGEMENT IN LARGE
EUROPEAN BANKS. AN ANALYSIS IN PRE AND POST-CRISIS PERIOD

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Abstracto

Esta dissertação examina o uso das perdas por imparidade de crédito na gestão de resultados dos grandes bancos Europeus, contribuindo com uma análise comparativa os períodos antes e pós a crise financeira de 2008.

Estudos anteriores revelam que desde a implementação de IFRS, que os bancos são supervisionados com regras contabilísticas mais rígidas de modo a garantir uma maior transparência das suas figuras contabilísticas. As regras de IFRS (nomeadamente a IAS 39) limitam os incentivos de comportamento discrecionário por parte dos bancos, relativamente ao uso de perdas por imparidade de crédito, o principal *accrual* bancário para gestão de resultados.

Usando uma amostra de 58 grandes bancos Europeus para o período de 2006-2012, evidencio que os bancos que reportam de acordo com IFRS, ainda gerem os seus resultados através do reconhecimento acelerado de perdas por imparidade de crédito. Embora esta observação seja evidente antes da crise, no período posterior este comportamento é menos pronunciado devido à pro-ciclicidade inerente no modelo de perda incorrida da IAS 39. Por outro lado, no período pós-crise, os bancos tendem a adiar as suas imparidades de crédito o mais tarde possível, de modo a suavizarem os seus resultados positivamente.

De um modo geral, este estudo contribui para evidenciar que os grandes bancos Europeus gerem os seus resultados através do reconhecimento acelerado de perdas por imparidade de crédito, quando: estão num período anterior à crise; são mais lucrativos; ou estão mais sub-capitalizados.

A análise dos resultados desta dissertação levam-me a questionar se é desejável continuar num modelo de perdas incorridas, ou avançar para um modelo baseado em perdas esperadas.

Palavras-chave: Earnings management; Loan loss provisioning; Large European banks; Financial crisis.

Classificação JEL: G21, M41.

Abstract

This dissertation examines the use of loan loss provisions for earnings management on large European banks, comparing the period pre and post the 2008 financial crisis.

Previous studies show that since the implementation of IFRS, banks are subject to tighter accounting rules to ensure transparency in their accounting figures. The IFRS rules (namely IAS 39) limit banks incentives for having an opportunistic discretionary behavior regarding the use of loan loss provisions, the principal bank accrual for earnings management.

Using a sample of 58 large European banks, for the period 2006-2012, I find evidence that banks reporting under IFRS, still engage in earnings management through the accelerated recognition of loan loss provisions. Although this observation is evident before the 2008 financial crisis, in the post-crisis period this behavior is less pronounced, due to the inherent pro-cyclicality of the IAS 39 incurred-loss model. On the other hand, in the post-crisis period banks tend to delay recognition of loan losses until too late in order to smooth income positively.

Overall, this study contributes to evidence that large European banks manage earnings through the acceleration of loan loss provisions, when: are in a pre-crisis period; are more profitable; or are under capital-constraints.

Results of this research raise questions whether it is desirable to continue supporting an incurred loss model or move towards an expected loss model.

Key-words: Earnings management; Loan loss provisioning; Large European banks; Financial crisis.

Classificação JEL: G21, M41.

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1. Introduction

In the years prior to the global financial crisis, European banking sector experienced high profits, strong balance sheets and high capital ratios. Nonetheless, financial institutions were aware of the increase in financial risks and considered necessary to create a second Basel accord to strengthen bank capital ratios. While Basel II was still under implementation in some countries, the financial crisis bursts in U.S. and quickly spread worldwide giving no leeway for banks to invert this situation. Numerous weaknesses were identified as main causes for the crisis, namely the excessive banks leverage, vulnerable liquidity banking structure and the actual accounting incurred-loss model imposed by the International Accounting Standard (IAS) 39, which is deemed of exacerbating pro-cyclicality.

This research focus on the IAS 39 backward-looking model by analyzing whether under International Financial Reporting Standards (IFRS), there is an opportunity for discretionary behavior by banks to engage in earnings management through loan loss provisions (LLPs).

Prior literature signals that a positive association between LLPs and earnings before taxes and loan loss provisions (EBTLLP) evidences opportunistic earnings management (income smoothing) behavior.

Following the work of Gebhardt and Farkas (2011), Leventis, Dimitropoulos and Anandarajan (2010), I analyze whether there is evidence in the period before and after the financial crisis of 2008 for European banks to engage in earnings management, based on a sample of large European banks. During the sample period (2006-2012) European banks are already reporting under IFRS, and thus this study also provides evidence regarding the existence of earnings management after IFRS adoption.

While these prior studies do not consider the recessionary period of the later financial crisis, I consider relevant to update the earnings management findings in European banks covering a period before and during (post) the financial crisis, and analyze if the earnings management incentives change from one period to another.

Specifically, I investigate whether loan loss provisions are used to manage earnings in large European banks in pre and post financial crisis period. Further I test whether profitable banks engage more in earnings management, and finally whether capital constrained banks have more incentives to manage earnings.

I use data for 58 large European banks of 15 European countries from 2006 to 2012. I find evidence of earnings management through the acceleration of loan loss provisions in pre-crisis period. However, this behavior is less evidenced in post-crisis period. Thus, these results go against prior empirical findings that earnings management is not evident under IFRS jurisdiction.

Further, in an additional analysis I also test if there is any potential use of loan loss provisions to capital management. I show no relation between capital and loan loss provisions, a fact that is in line with the introduction of Basel accords that removed loan loss reserves from the tier 1 capital.

Furthermore, I predict and evidence that profitable banks engage more in earnings management.

To test if capital constrained banks (i.e, those banks that fall below the target set capital ratios) engage more in earnings management, I use two alternative methods, reaching in both a positive association between LLPs and EBTLPP. I find that capital constrained banks tend to use more LLPs to manage earnings which is in line with my initial prediction.

Overall, this dissertation contributes to the evidence of loan loss provisioning in several ways. First, I provide empirical evidence that LLPs is treated differently in many jurisdictions according to their respective Generally Accepted Accounting Principles (GAAP). Then I support evidence of pro-cyclicality in the current incurred loss model, which underlines the trend of banks to reduce LLPs during periods of prosperity and to increase during downturn periods. Thus leading to higher default rates and reduction in regulatory equity capital, forcing banks to dwindle lending and providing more for loan losses.

Further I discuss how the forward-looking model would improve the actual IAS 39 backward-looking model, which is pertinent to the discussion whether IASB and FASB should adopt a common standard.

And finally I test the aforementioned hypothesis in three different models, whether LLPs are used to manage earnings in large European banks.

The dissertation is structured as follows: chapter 2 provides background for the study with literature review; chapter 3 present the testing hypothesis; chapter 4 outlines the research design; chapter 5 describe the sample and data; chapter 6 provide the testing results; and finally chapter 7 contribute with conclusions of my research.

2. Background

2.1. Financial Crisis in the Banking Sector

A significant economic slowdown currently plagues the world economy, mainly due to the banking sector vulnerability to a wide range of factors, which led to the financial world-wide crisis of 2008.

As pointed by Shambaugh (2012) and Noeth and Sengupta (2012), there were three interlocking crises: The first was an economic downturn, followed by a banking crisis and then by a sovereign crisis. Poor economic conditions lead to an increase in non-performing loans, which in turn shrink banks' balance sheets, leading, in some cases, to bank failures and bailouts by the respective sovereigns (Noeth and Sengupta, 2012).

In a first place I will present some findings related to what might have caused the financial crisis, and then I present the symptoms and consequences.

2.1.1. Causes

The main causes of the global financial crisis are associated with the strategies followed by banks prior to the onset of the crisis: balance sheet expansion and increased mismatches between assets and liabilities (Cabral, 2012). Related literature shows that balance sheet growth is associated with higher financial leverage, being widely argued that the main causes of the financial crisis was the excessive banks financial leverage and their vulnerable liquidity structure.

The role of the U.S. banking system in propagating the crisis was huge, due to the size of the U.S. economy and the status of the U.S. dollar as the reserve currency underpinning the global banking system (Shin, 2011). In the previous crisis period, the U.S. banking system began offering high-yield, high-risk financial assets (toxic assets) to foreign savers, prominently including financial intermediaries in creditor nations (Shin, 2011). These assets were packaged into debt securities that were structured so as to have high ratings and low risk weights according to the Basel accords, making them attractive investments for regulatory capital arbitrage purpose (Cabral, 2012). This argument is also enforced by Caballero (2009) which points the fact that as a result of prior crisis, emerging countries had an insatiable

demand for safe debt instruments, leading the U.S financial system under pressure. Through this, the U.S. banking sector used their financial engineering to create “safe” (prime) assets from the generation and securitization of a significantly large number of poorer (subprime) quality of assets, exposing U.S. economy to systemic panic.

Through this exposure to toxic cross-border assets, non-U.S. financial intermediaries became exposed to the U.S. subprime mortgage market crisis. Losses in the U.S. mortgage market and other U.S. financial assets quickly propagated to the banking systems of other countries, and particularly the banking systems of creditor nations (Cabral, 2012).

Regarding the European Banks, along with the liabilities, their assets side also focused on U.S. securities. Shin (2012) using consolidated banking statistics from the Bank for International Settlements (BIS), showed that European banks had significantly high foreign claims on U.S. counterparties.

As pointed by Shin (2011), the cross-border banking and the fluctuating leverage of global banks are the channels through which permissive financial conditions are transmitted globally. During their process of increasing maturity transformation, global European banks expanded their balance sheets and significantly increased to an extent not witnessed before under a regulated banking regime. Motivations to increase leverage are usually suboptimal in the long run and had debilitating consequences not just for banks but rather to the entire financial system (Noeth and Sengupta, 2012).

Shin (2012) goes further by signaling that incentives to increase leverage were stronger in Europe than in U.S. owing to the permissive bank risk management practices epitomized in the Basel II proposals. Under these capital adequacy reforms, banks were allowed to expand their balance sheets quickly. Moreover, European banks had incentives to increase their leverage, since it perceived risk weight is low compared to the other type of investments, fulfilling the Basel requirements with strong capital ratios.

In the case of European banks, another cause to the increase of lending was the introduction of the Euro currency in some countries, which reduced risk premia not only on sovereign debt but also on private debt (Shin, 2012).

Another substantial factor that triggered the financial crisis was the asset price appreciation, which improved the balance sheets of households and firms, permitting the enhancement of the creditworthiness and the loan quality of the bank portfolio. This led to peripheral countries in the Eurozone like Portugal, Spain, Greece and Italy to witness housing bubbles (Noeth and Sengupta, 2012).

However, it is debatable whether many causes related to the credit boom and asset prices growth that are attributed to bank risk-taking, would be restrained to some countries, such as the PIIGS¹, and no others, like Germany. Regarding this later country, Steffen (2011) sought they had some prudence, while they didn't choose to take more risks in the markets that witnessed large assets appreciation, as for example the U.S. subprime mortgages, avoiding then a mortgage boom.

Previous researches tried to observe if Fair-Value Accounting had impact on the later Financial Crisis, due to its pro-cyclicality pattern. Although many accused fair-value accounting to exacerbate the later crisis, most of the literature related with this theme shows that there is no causal-relation effect.

Badertscher et al. (2012) focus solely on the regulatory capital effect of fair-value accounting and tested whether OTTI (Other Than Temporary Items) or asset sales during the crisis decreased regulatory capital, thus causing a reduction in lending. He concluded that compared to bad debt expense, OTTI represents only a small reduction in regulatory capital, thus, fair-value accounting cannot be accused for accelerating the financial crisis. Nevertheless, I cannot close out the hypothesis that fair-value had some influence on the later crisis, because fair-value accounting goes beyond regulatory capital issues. An example is the fair-value of assets, which managers may have incentives to sell financial assets in fire-sales, leading to the feedback effect (Beatty and Liao, 2013).

However, Herring (2011) defends that fire-sales occurrence is due to the downward spiral in prices through the increase in margins or haircut requirements, regardless of the accounting regime be at fair-value or historical cost accounting. Ryan (2008) goes further and argues that subprime crisis was caused by bad operating, investing, and financing decisions, managing risks poorly and in some instances committing fraud, but not by fair-value accounting.

Beatty and Liao (2013) consider that understanding the link between pro-cyclicality and contagion and the effects of fair-value accounting more broadly may underline the importance of accounting in the recent financial crisis because most of SFAS 115² gains/losses are not included in the capital ratio calculations. As noted by Laux and Leuz (2009), it is debatable whether historical cost accounting is the best method to avoid these feedback effects.

¹ Acronym used in economics and finance, usually to refer to the economies of Portugal, Italy, Ireland, Greece and Spain

² Statement of Financial Accounting Standards nº 115. For more information visit FASB website.

This study contributes to the debate on whether the incurred loss accounting model currently used under IFRS rules is partly responsible for the financial crisis.

2.1.2. Consequences and symptoms in the European banks

As aforementioned in other words, there was a bust after years of prosperity, mostly in countries that witnessed credit booms. Banks face now an increase in non-performing loans and sharp declines in asset prices. This tough period, although leveraged by the U.S., affected more the European global banks and created a greater impact on the real economy than it did in the U.S.

As pointed by Noeth and Sengupta (2012) a consequence of every boom and bust credit cycle is deleveraging³ by financial intermediaries in the downward phase of the credit cycles.

Another immediate symptom of the deteriorating credibility of central banks and national governments to provide insurance is capital flight, because depositors seek for stable and credible financial institutions. For instance, Europe has witnessed outflows from banks that make part of the PIIGS into those which provide more creditworthiness and stability, like the German and French ones (Noeth and Sengupta, 2012).

Could financial institutions and regulatory entities have prevented the financial crisis occurrence? For the skeptical ones may have not. However, if the regulatory capital requirements weren't so lax in the sense of permitting low reserve requirements and on encouraging greater financial leverage by banks turning them less liquid, we possibly may have been "only" through a recession period, instead of a global financial crisis.

³ Is the process by which banks lower their leverage or asset-to-equity ratio.

2.2. Loan loss provisioning process

In this section I explain firstly the general definition of loan loss provisions and secondly its meaning for pre-IFRS regime and post-IFRS regime.

Loans are financial instruments subject to credit risk, i.e. the risk of a counterparty defaulting on its debt commitments by failing to make the requirement payments.

For accounting purposes, issuers of loans are required to recognize losses in the income statement for non-performing loans via the creation of an allowance account, the so-called allowance for loan losses (ALL).

A credit loss (or loan loss) materializes when it is written off in the issuer's balance sheet.

At each balance sheet date, bank managers have to estimate the losses they expect to have due to defaults. Accounting rules specify to what extent expected loan losses are recognized for the valuation of individual loans or loan portfolios (Gebhardt and Farkas, 2011). The recognition of expected loan losses occurs through the loan loss provision, classified as an expense account, which are recognized for the inherent credit risk of individual loans (specific loan loss provisions). Therefore, LLPs are in practice reserves for the recognition of credit losses before they materialize.

The Allowance for Loan and Lease Losses (ALLL) is a stock variable which comprises current and previous LLPs. It is presented in financial statements either as a contra-asset, or as a deduction from the value of the loan and increases when there is evidence of increment in LLPs.

The purpose of the ALLL is to reflect estimated credit losses within a bank's portfolio of loans and leases. Estimated credit losses are estimates of the current amount of loans that are probable that bank will be unable to collect given the circumstances since the evaluation date (generally balance sheet date).

When loans are assumed to be uncollectible, they are charged off against the ALLL account, which does not affect income. The accounting identity as showed by Gebhardt and Farkas (2011) is then given by:

$$ALLL_t = ALLL_{t-1} + LLP_t - NCO_t + Other_t \quad (1)$$

Where $ALLL_t$ is the ending balance of the allowance for loan loss and leases, $ALLL_{t-1}$ is the beginning level of the later, LLP_t is the current loan loss provision which affects net income, NCO_t is current net charge-off (gross charge-offs net of recoveries) and $Other_t$ represents adjustments due to changes in the scope of consolidation and/or adjustments because of changes in foreign exchange rates.

While LLPs reflects management estimates of the expected loan losses that are to be recognized at the balance sheet date, NCO represent losses on loans that are deemed uncollectible.

2.2.1. Loan loss provisioning in Europe before IFRS

LLP is treated differently in many jurisdictions according to their respective Generally Accepted Accounting Principles (GAAP).

In 1975, the Financial Accounting Standard Board (FASB) issued FAS 5 to address the recognition of estimated losses from loss contingencies. Eighteen years later, the FASB amended FAS 5 with FAS 114, to clarify that a creditor should evaluate the collectability of both contractual interest and contractual principal of all receivables when assessing the need of a loss accrual (recognition). At the time, several jurisdictions around the globe adopted FASB's principles for LLP in their local GAAPs. Others opted to keep their own principles which in many cases made use of provisioning tables (i.e. LLPs are dictated by specific rules rather than by principles). Such different practices created comparability issues.

Essentially, the approaches to loan loss accounting differed in terms of when deterioration in credit quality had to be recognized and how loan losses should be measured for accounting purposes.

Before IFRS adoption, in most European countries loans were initially recognized at the amount repayable at maturity or at their nominal value. After initial recognition, loans were measured at the lower of cost or market value, thus deteriorations in the creditworthiness of the debtors were recognized through LLPs. Characteristically, LLPs included specific impairments which cover the losses expected from individually impaired loans and general loan loss provisions for latent credit risk (Gebhardt and Farkas, 2011).

Impairment ensues either as depreciation to an observable market value or by discounting estimated future cash flows by the current market interest rate to arrive at a lower (fair) value to be attributed at the balance sheet date. Since market values and market interest

rates include all available future information in local GAAPs, individual impairments may already contain expected losses that are probable to occur after the balance sheet date (Gebhardt and Farkas, 2011).

2.2.2. Loan loss provisioning in Europe after IFRS

The introduction of the International Financial Reporting Standards (IFRS) (previously designated International Accounting Standards) by the International Accounting Standards Board (IASB) was an attempt to enforce transparency in the accounting figures, in order to ease the comparability issue. IAS 39 was the standard created to address financial instruments accounting requirements, including loan loss provisioning.

Under IAS 39, a loan is normally classified in the Loans & Receivables category and therefore measured at amortized cost, subject to impairment testing (if a loan is deemed impaired, a loan loss provision is recognized).

Similar to the current FASB model, impairment losses under IAS 39 are recognized if, and only if, a loss has been incurred (the so-called incurred loss model). Losses expected as a result of future events, no matter how likely, are should not be recognized (Camfferman, 2013).

According to IAS 39, significant loans for which loss events have been triggered are subject to an individual impairment assessment at each reporting date. Non-significant loans can be assessed for impairment on a collective basis amongst loans with similar characteristics. If loans (significant and non-significant) are considered not to be impaired, they shall still be assessed for provisioning on a collective basis since loss events may have already been incurred although not yet identified by the entity; the so-called incurred-but-not-yet-identified (IBNI) provision. The impairment of such groups of loans is estimated on the basis of historical loss experience, which is adjusted for changes in the current conditions.

LPP remains a very subjective topic which not only permits financial institutions to continue doing earnings management but also impedes full comparability amongst financial institutions. For this reason, some jurisdictions opted to carve out IAS 39 requirements regarding credit impairments upon adoption of IFRS (e.g. Portugal).

Overall, the introduction of IAS 39 was an effort to harmonize loan loss provisioning across banks, although this area remained prone to subjective interpretation. In this

dissertation, I analyze whether the introduction of IFRS was succeeded or a failed attempt to limit earnings management through the use of LLPs.

2.3. Pro-cyclicality under the incurred loss model

The incurred loss model has been fueled with a massive controversy in the past years. Since the adoption of the restrictive IAS 39 impairment rules, some critics of the incurred loss approach contest the fact that the actual accounting rules do not reflect all expected credit losses in loan portfolios.

Despite the restrictive impairment rules imposed by IAS 39 to limit management's opportunistic discretion behavior in European banks, this standard is accused of exacerbating pro-cyclicality on loan loss provisions. While the risk premium is immediately included in the interest rates and recognized in the net income, the recognition of loan losses is postponed until the borrower defaults. This leads to more earnings in early years (during booms) and lower earnings in later years (during downturns), and thus exacerbates pro-cyclicality in earnings.

By bounding discretionary behavior and opportunistic private information, this implies that markets are well informed about possible impairment of assets quality, only with a delay leading to future trigger events (Gebhardt and Farkas, 2011).

Due to the actual economic climate characterized by the financial crisis, it is debatable whether the current IAS 39 rules are the best way to stabilize the financial markets, taking in consideration the trade-off between accounting transparency and pro-cyclicality.

The term "pro-cyclicality" refers to the tendency of banks to increase, or decrease, lending in periods of economic growth, or downturns, respectively. The current incurred loss approach enforces banks to increase loan loss provisions on recessionary periods.

However, from what regards earnings management, banks accelerate LLPs to smooth income when: hit the regulatory minimum target; are in non-recessionary period; are more profitable (Sood, 2012).

Although there is evidence that banks use Loan Loss Provisions to smooth income downwards during boom periods there is also evidence that banks use Loan Loss Provisions to smooth income upward, during downturns (Sood, 2012; Beccalli et al, 2013).

Laeven and Majnoni (2003) and Bikker and Metzmakers (2005) provide evidence of pro-cyclicality using data for international banks. They show that LLPs are substantially higher when GDP growth is lower.

The limitations of the incurred loss model proposed by IAS 39 are criticized by some authors that recognize that the incentives to use LLPs to manage earnings derive from regulatory pressure to reduce pro-cyclicality in losses (and capital). Credit losses emerge in economic downturns, but began during upturns. Thus, in order to counter pro-cyclicality, loan loss provisions should be higher when banks report positive results. During downturns, banks are expected to draw down LLPs, especially when capital is unavailable or expensive (Beccalli et al, 2013).

Consistent with these findings, Bouvatier and Lepetit (2012) use a partial equilibrium model to show that forward-looking provisioning system with statistical provisions⁴ (Dynamic Provisioning) can be used to smooth total provisions and consequently counter-pro-cyclicality of LLPs.

Beatty and Liao (2011), test a time-series model to observe provision timeliness and found that banks which tend to delay recognition of loan losses are more likely to cut lending in recessionary periods, leading to higher lending pro-cyclical.

Compared to the incurred loss, the expected loss model has advantages on cancelling the effect of pro-cyclicality due to the forward looking sight of recognizing losses that are expected to occur in a near future.

Fillat and Montoriol-Garriga (2010) confirmed the ability of forward-looking provisions to counter pro-cyclicality effect by using a Spanish dynamic provision model to simulate the impact of the same model on US banking system. They concluded that if US have followed this dynamic model, they would be in a better position to absorb loan losses during economic downturns.

Bushman and Williams (2012) measured the coefficient smoothing on a regression of loan loss provisions on contemporaneous earnings, after controlling for non-discretionary determinants of loan loss provisions. They found evidence that forward-looking provisions, that reflect timely recognition of future losses, are associated with enhanced discipline. This evidence was confirmed by the sensitivity of leverage to asset risk, which means, higher

⁴ Statistic provisioning (dynamic provisioning) is a statistical method for loan loss provisioning which uses historical data about estimate level of lending and average ratio of expected losses according to economic cycle phases.

sensitivity of current provisions to current period earnings realizations is interpreted as greater discretionary smoothing.

The accounting standards for financial instruments of both FASB and IASB were highly criticized during the 2008 economic crisis as they were perceived as difficult to understand, apply and interpret. Especially the credit impairment models were highly criticized since an incurred loss model prevents banks from creating provisions for expected losses, thus leading to smaller “buffers” in times of crisis. In April 2009, the G-20 urged both Boards to revise their financial instruments accounting standards. The financial instruments replacement project started has a joint effort between both accounting Boards in order to achieve consistency and comparability. With regard to credit impairments, the main objective was to drift away from the loss incurred model towards an expected loss model.

However, in 2010 feedback received (especially on credit impairments) from the different constituents showed that it would be extremely difficult to pursue a common standard. The FASB decided then to continue its own project. The IASB currently continues developing its project to replace IAS 39, which will result in a new financial instruments standard, the IFRS 9 project⁵.

2.4. Regulatory Capital Environment

Bank regulatory capital is important in a way to limit risk and reduce the potential unexpected losses.

Unlike normal companies, banks are in the business of issuing loans to individuals or entities, which means that if the borrower default on their loans, the bank loses money.

When there is evidence of a default, shareholders’ equity acts as a buffer to cover the respective loss. However, if the bank is running-out on shareholders’ equity, deposits or other funding sources will have to decrease.

The importance of the regulatory capital arises from this, so that a bank can absorb sufficient losses through its shareholders’ equity rather than through customer deposits or other funding sources.

⁵ It is estimated that this standard will replace the actual IAS 39 in 2018

2.4.1. Regulatory Capital and Earnings Management

Prior literature related to the banking industry, analyzed whether banks use financial reporting discretion to circumvent capital adequacy requirements, or to smooth earnings. In contrast with the findings in Fields et al. (2001) that earnings and capital management cannot be tested together in the same model, Beatty et al. (1995) considered the possibility that they could be jointly determined.

Many other authors followed this jointly model, and realized that the motives for the financial reporting discretion depend on the amount of capital, or earnings before the effect of the discretion. To interpret this model, they deem the coefficient of capital as an indication of capital management and the coefficient of earnings as a measure of earnings management.

In the banking sector loan loss provision is the most important bank accrual, and thus the one most likely to be used for earnings management. While LLPs consistently lowers reported earnings under accrual accounting, its effect on regulatory capital has changed with the regulatory regime.

2.4.2. Risk-Weighted Assets

Not all assets are equally risky, for example the likelihood of safety is greater on deposits than residential mortgages. So, it is important to establish requirements relative to the nature of the riskiness of assets.

Loan loss provisioning is related on the determination of regulatory capital. In EU countries, banks have to follow the rules imposed by the EU Capital Adequacy Directives, which are stated and provided by recommendations of the Basel Committee of Banking Supervision (Gebhardt and Farkas, 2011).

The Basel I Accord (1998) established risk weights for different types of assets on a bank's balance sheet.

In order to get the bank's total risk-weighted assets (RWA), we need to multiply the different risk weights per asset by the correspondent asset value and then add everything together.

Table 1 – Examples of Basel I risk-weight assets

Risk Weight	Type of Assets
0%	Cash/ Government Securities
10%	Certain Public Debt
20%	Interbank Loans
50%	Residential Mortgages
100%	Private Sector Debt

1

It is also needed to include off-balance sheet assets, such as derivatives (forwards, futures, options and swaps) in the aforementioned calculation, in order to prevent banks from acquiring a great amount of derivatives and claiming that there is no relevant risk in the portfolio.

Prior to this regulatory change, loan loss allowance formed part of the regulatory capital, which led that additional LLPs decreased earnings, but increased the loan loss allowance and thus, if tax deductible, increased regulatory capital by the LLP times the tax rate. So, in the pre-Basel I regime, banks could easily manage earnings downwards to decrease tax payments and simultaneously increase primary regulatory capital (Collins et al, 1995).

Basel I changed the aforementioned incentives by removing LLAs from Tier 1 capital and only allowing the inclusion of General LLAs in Tier 2 capital. This change means that a one EUR increase in LLP decreases Tier 1 Capital by the after-tax amount of the provision. Therefore, low-capital banks have incentives to decrease their provisions to avoid violations of regulatory capital minimums in the new regime (Beatty and Liao, 2013).

Regarding this regulatory change, Kim and Kross (1998) found a decrease of discretionary LLP in the post-Basel period, whereas Ahmed et al. (1999) support these findings with the negative correlation between regulatory capital and discretionary provisions which is more positive in this new regime.

Also, Ng and Roychowdhury (2011) show that large increases in LLA (via excessive provisioning) result in an increase in the size, but deterioration in the quality of Tier 2 capital.

Basel I had some flaws relative to the risk-weight imposed into the assets. For example, not all private sector debt should have 100% risk-weight, but should instead depend on the entity credit rating.

Through this, Basel II Accord arises in 2004, with a more complex risk weighting scheme, as now many types of loans depend on the entity’s credit rating rather than a simple percentage.

Table 2 – Examples of Basel II risk-weight assets

Risk Weight	Type of Assets
0%	Cash and Equivalents
35%	Residential Mortgages
75%	Credit/ Auto Loans
100%	Commercial Real Estate
100%	Other Assets
By rating	Government Securities
By rating	Interbank Loans
By rating	Corporate Loans

2

Basel II also differs from Basel I in the perspective and purpose of regulatory capital to cover only unexpected losses. Expected Losses (EL) should be covered by specific and general loan loss provisions, which are calculated for a one year time horizon and are the product between the probability of default (PD), the loss given default (LGD) and the exposure at default (EAD). In Basel II there are two main approaches: the IRB (Internal Ratings-Based) approach and the Standardized approach.

Under the IRB approach, banks are required to cover expected losses, as mentioned earlier, with LLPs. Tier 1 and Tier 2 act as a buffer of any shortfall, with 50% of the correspondent EL deduction on each Tier.

Nevertheless, banks that use the Standardized approach still include general loan loss provisions on Tier 2 capital.

2.4.3. Tiers of Capital

Through what was mentioned above related to the different levels of risk to assets, it is logical that not every capital is equally capable on banks’ protection.

Since the implementation of the Basel capital adequacy framework, regulatory capital has been divided in two tiers, Tier 1 with higher loss absorption ability that include common

equity, perpetual preferred stock and minority interests; and Tier 2 (supplementary) which include subordinated debt, revaluation reserves, hybrid capital instruments, undisclosed hidden reserves and general loan loss allowances, up to a maximum of 1,25% of RWA.

These tiers are calculated in the following way:

- Tier 1 (core) Capital: Total Shareholders' Equity – Goodwill – Non MSR Intangibles + Qualifying Hybrid Securities and Noncontrolling Interests.
- Tier 1 Common Capital: Common Shareholders' Equity – Goodwill – Non MSR Intangibles.
- Tier 2 Capital: Subordinated Debt + Non-Qualifying Hybrid Securities + Qualifying Allowance for Loan Losses.
- Total Capital: Tier 1 Capital + Tier 2 Capital

More important than the tiers are the ratios of tiers to Risk-Weighted Assets:

- Tier 1 Ratio: Tier 1 Capital / Average RWA
- Tier 1 Common Ratio: Tier 1 Common / Average RWA
- Tier 2 Ratio: Tier 2 Capital / Average RWA
- Total Capital Ratio: Total Capital / Average RWA
- Leverage Ratio: Tier 1 Capital / Average Tangible Assets

In my sample, EU banks are required by their national bank regulators to comply with minimum ratios of regulatory capital to risk-weighted assets:

- The Tier 1 Ratio must be greater than or equal to 4% at all times;
- The Tier 1 Common Ratio must be greater than or equal to 2% at all times;
- The Total Capital Ratio must be greater than or equal to 8% at all times;
- Tier 2 Capital cannot exceed Tier 1 Capital;

As an example from this capital requirements, an additional LLP of 1 EUR, will require a marginal bank to reduce its lending volume by the amount equivalent to $1/0,08 = 12,5$ EUR.

Therefore, weakly capitalized banks have incentives to reduce LLPs'.

Through the table below it is possible to analyze how capitalized a Bank can be in result to their ratios:

Table 3 – Strength capital levels

Strength	Total Capital Ratio	Tier 1 Ratio	Leverage Ratio	Tangible Equity Ratio
Well Capitalized	≥ 10%	≥ 6%	≥ 5%	
Adequately Capitalized	≥ 8%	≥ 4%	≥ 4%	
Undercapitalized	≥ 6%	≥ 3%	≥ 3%	
Significantly undercapitalized	< 6% or	< 3% or	< 3%	> 2%
Critically undercapitalized				≤ 2%

3

Under good economic conditions, banks present higher earnings and regulatory equity capital, which enable them to extend more credit. Nevertheless, during a financial crisis occur trigger events with higher default rates, leading to increase LLPs and reduce regulatory equity capital. Through the contraction of capital and the increase of riskiness on loans, banks are forced to raise new equity capital or to cut lending, in order to meet the risk-based minimum capital requirements for banks, as established in the Basel framework. As the issuance of new capital is deemed too expensive during economic downturns, banks rather prefer to cut back their lending (Gebhardt and Farkas, 2011).

2.5. Expected Losses Accounting Model

During the financial crisis, the delayed recognition of credit losses on loans (and other financial instruments) was identified as a weakness in existing accounting standards. This incurred loss model, as still is the actual one, delays the recognition of credit losses until there is evidence of a credit loss event. For the sake of enhance this model, the Financial Crisis Advisory Group (FCAG⁶) recommended to explore alternatives to the incurred loss model, in order to use a more forward-looking information.

⁶ Advisory group of senior figures set up by the IASB and the FASB as part of a joint approach to dealing with the financial reporting issues arising from the financial crisis. However, the boards are having difficulties to reach a converged solution owing to jurisdictional differences in regulatory and systems environments.

The exposure draft (ED) issued by the IASB on March 2013 proposed to eliminate the thresholds on recognizing credit losses that are expected to occur. Thus the recognition of credit losses would not be only restricted to the incurred ones.

From an economics perspective and under the expected loss model, LLA should adjust the book value of the loan for changes in the expectation of a borrower’s default and change in interest rates. As shown by Gebhardt and Farkas (2011), this can be written as the follow equation:

$$LLA_0 = \sum_{t=1}^n (Pd_t(I_0) \times \frac{LGD_t(I_0)}{(1 + dr)^t}) \quad (2)$$

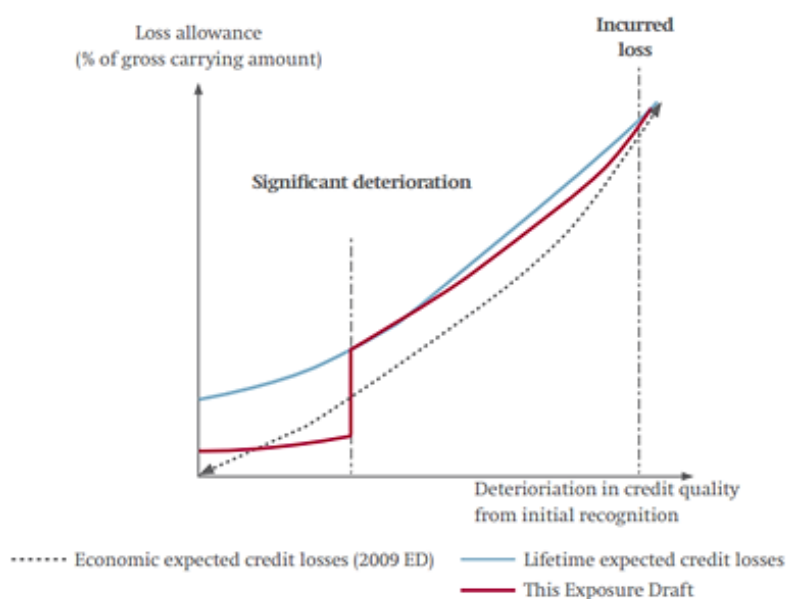
Where LLA_0 is the loan loss allowance at time 0; $Pd_t(I_0)$ is the cumulative probability of loans default based on information at time 0; $LGD_t(I_0)$ is the loss given default based on the information (I_0); and dr is the discount rate which is used to discount expected cash flows. As the time passes, new information (I_t) may arrives which change the expectations regarding the probability of default in future periods (Pd_{t+n}). Therefore, the new information and the corresponding change in the probability of default are immediately reflected in the economic value of the loan. In accounting terms, the change in value shall be recognized through additional LLPs.

Older than this, the IASB issued in 2009 an ED to represent the creditworthiness of borrowers results in an economic loss. As it can be seen in the graph 1, the loss allowance is nil at initial recognition, and the loss allowance will increase as creditworthiness deteriorates.

However, the IASB deemed that the model presented in this ED presented some operational flaws, whereas benefits would not outweigh the costs of overcoming those challenges.

In order to enhance the later ED, the IASB proposed that banks must recognize 12-month expected credit losses from initial recognition, until there has been a significant deterioration in credit quality or increase in credit risk, at which point the lifetime expected credit losses are recognized. Through this, the IASB was able to ensure a more timely recognition of expected credit losses than the existing incurred loss model and to distinguish between financial instruments that have significantly deteriorated in credit quality from those that have not.

Graph 1 – Expected credit losses current proposals



Source: IASB ED March 2013

2.5.1. Economic effect of expected credit losses

Expected credit losses are an estimate of losses that an entity expects will result from a credit event, such as a payment default, representing a cost of lending activity.

These costs are reflected through:

1. The pricing of financial instruments, which compensates the lender for the creditworthiness of the borrower at the time of lending or committing to lend;
2. Changes in the creditworthiness of the borrower after lending or committing to lend. These changes in expected credit losses are not priced into the financial instruments, so give rise to an economic loss.

Expected credit losses would be recognized from the point at which financial instruments are originated or purchased. There would no longer be a threshold before expected credit losses would start to be recognized.

If the initial credit loss is not recognized the full yield would be, as interest revenue with no adjustment for credit losses that were always expected.

The amount of expected credit losses that are recognized would depend on the change in credit quality since initial recognition to reflect the link between expected credit losses and the pricing of the financial instrument.

There are also expectations for lifetime credit losses, which are measured by the present value of credit losses that arise if a borrower defaults on his obligation throughout the life of a financial instrument.

2.5.2. How the Forward-looking model would improve the actual Incurred-loss model?

The improvement that this model can get is by providing to users financial statements with more useful information about an entity/bank expected credit losses on its financial assets and its commitments to extend credit.

More timely information would be provided regarding expected credit losses with updates at each reporting date to reflect changes in credit quality.

When applying the existing incurred loss model, usually the recognition of an allowance for expected credit losses is delayed until a default has already occurred on a financial instrument. This procedure still even when credit losses are expected.

Moreover, credit losses are currently measured in accordance with IFRS, so banks may only consider losses that arise from past events and current conditions, while future credit loss events cannot be considered even when they are expected.

The proposals of the IASB require that banks base their measurement of expected credit losses on relevant information about past events, including historical credit loss events for similar financial instruments, current conditions and reasonable and supportable forecasts.

Although different from the expected loss model, Spain and Portugal introduced the dynamic loan loss provisioning approach, which requires banks to set aside reserves for every loans, even when there is no evidence of impairment. This means that credit risk is inherent in every loan from the moment of its origination. This approach sets that loan loss reserves are built up during periods of high economic growth, which can then be depleted during economic down-swings. However, this approach is different of the expected loss model, since loan loss provisions are determined on the basis of historical loss experience (Gebhardt and Farkas, 2011). Through this, Bouvatier and Lepetit (2012) concluded that dynamic provisioning is relatively stable over time and economic cycles, which leads to smoother income as compared to other provisioning regimes.

2.5.3. BASEL III

In 2010, the Basel Committee met to propose new standards for regulatory capital which will be phased in between 2013 and 2019.

This installment was developed in order to face the flaws in financial regulation revealed in the last financial crisis.

Basel III contains various measures aimed at increasing the level of capital held by institutions, as well as providing counter-cyclical mechanisms by increases to the capital conservation buffer during periods of excessive credit growth.

Another change will be the 30-day Liquidity Coverage Ratio (LCR) which is intended to promote short-term resilience to potential liquidity disruptions. It will help to ensure that banks have sufficient high quality liquid assets to withstand a stressed funding scenario.

In the table below are presented differences between the Basel II and Basel III requirements:

Table 4 – Basel II vs Basel III requirements

Ratio or Requirement	Basel II	Basel III
Tier 1 Ratio	4%	6%
Tier 1 Common Ratio	2%	4,5%
Total Capital Ratio	8%	8%
Tier 2 Capital cannot exceed Tier 1 Capital	Yes	Yes
Leverage Ratio	3% (US only)	3% (All)
Conservation Buffer	N/A	2,5%
Countercyclical Buffer	N/A	2,5%
Liquidity Coverage Ratio	N/A	Enough liquid assets to cover net cash outflows over 30 days
Net Stable Funding Ratio	N/A	Stable funding must exceed what's required over 1-year extended stress period

2.5.3.1. Implications

Banks will face a significant additional capital requirement, and the bulk of this shortfall will need to be raised as common equity or otherwise by retaining dividends.

In principle, banks will be able to draw on the capital conservation buffer during periods of stress, but it seems unlikely that they would choose to do so, given the associated constraints on their earnings distributions.

Consequently, banks are likely to target a higher common equity ratio and the market expectation for common equity Tier 1 appears to be moving to approximately 9 percent.

The introduction of the leverage ratio could lead to reduced lending and is a clear incentive to banks to strengthen their capital position.

The risk of impact from a bank run should be reduced, which would improve the overall stability of the financial sector.

The introduction of the Liquid Coverage Ratio (LCR) will require banks to hold significantly more liquid, low-yielding assets to meet the LCR, which will have a negative impact on profitability.

Yan and Hall (2012) test the economic benefit of Basel III and conclude that the new reforms are expected to generate a significant positive benefit in the economy. They estimated the maximum net benefit when banks also meet the Basel III long-term liquidity requirements and shown that there is a clear role for liquidity to prevent banking crisis and economic downturns.

2.5.3.2. Critics

Regarding the macroeconomic issues, an OECD study lead by Slovik and Cournède (2011), estimated the medium-term impact of Basel III implementation on GDP growth that would be in the range of -0,05% to -0,15% per year. The economic output would be mainly affected by an increase in banks' lending spreads, as they increase their funding costs due to higher capital requirements.

In the same line, Milne (2012) recognizes the challenges of transition and the structural implications of the reform are profound. While the adjustment is in progress, there are material risks that the supply of credit to the economy will be disrupted by the implementation of the new regulations. Furthermore the long run rate of growth of the

economy will be adversely affected if riskier borrowers such as small businesses are unable to get adequate access to finance

2.6. Earnings Management

Prior researches test whether loan loss provisions are proper to cover expected credit losses during the maturity of the loan and the extension that banks used them to manage earnings.

Income smoothing can be interpreted as an earnings management technique to level out net income fluctuations from one period to the next (Fonseca and González, 2007).

Companies manage earnings in order to reduce volatility, thus stabilizing earnings predictions. This practice can be opaque in terms of financial performance transparency, however it is important in a way to not lose investors that are willing to pay a premium for stocks with low volatility on earnings movements.

Examples of earnings management practices might be deferring revenue during an upturn economic cycle if in the next year is expected to be a downturn, or delaying the recognition of expenses in a tough year, due to the expectation of improvement in the following years.

In the case of the banking sector, Loan Loss Provisions are deemed the most important accrual, so it plays an important role in earnings management in a form of understating LLP's in years of low profitability, and overstate during high profitable periods.

These findings are supported by many studies that focus on U.S. banks (Ahmed et al. 1999; Beaver and Engel 1996; Collins et al. 1995; Liu et al. 1997; Liu and Ryan 1995; among others). All these studies conclude that LLPs are used by banks as a mechanism for aggressive earnings management, mainly for stock market purposes. Studies using non-U.S. banks also reach similar conclusions (Anandarajan and Hassan, 2005; Leventis and Dimitropoulos and Anandarajan, 2010; Pérez et al. 2008).

After the IFRS (*International Financial Reporting Standards*) adoption, banks might exhibit less income smoothing behavior due to stricter rules imposed by setters of this framework. The incurred loss approach prescribed by the International Accounting Standards (IAS) 39 increases transparency in the financial statements by reducing the incentive of managers for earnings manipulations.

Nevertheless, it is important to emphasize that even if accounting standards of high quality are properly enforced, the reporting behavior is likely to differ across countries and firms, as the underlying institutional factors and reporting incentives vary (Leuz et.al, 2006).

Regarding the banking sector, this implies that differences in bank supervision and regulation, or in banks' corporate governance mechanisms, leads to differences in the implementation of IFRS (Gebhardt and Farkas, 2011). Therefore, one can expect variation across banks in the use of LLP for earnings management even post-IFRS.

Banks also use the recognition of securities gains and loss (SGL) as another earnings management mechanism. This is observed by Collins et al. (1995) and Beatty et al. (1995).

These authors find a negative association between pre-discretion earnings and discretion in securities gains and losses. Contrarily, Barth et al. (1990), Ahmed and Takeda (1995) find a positive correlation between stock returns and realized securities gains and losses. Further findings of SGL were extended by Beatty and Harris (1998) by comparing the pre-discretion of earnings and SGL for publicly traded versus privately held banks. Although both being negatively correlated, the association is stronger for public banks.

In the same vein Beatty et al. (2002) find that publicly-held banks engage more in earnings management compared to private ones.

Other evidence of earnings management is identified by Ramesh and Revsine (2000), who found that banks benefitted with the adoption of Statement of Financial Accounting Standards (SFAS) 106 and SFAS 109 to reduce regulatory costs and to accrue earnings. Also, Schrand and Wong (2003) found another procedure to manage earnings through the adjustment of the valuation allowance on hidden reserves.

The findings in prior literature suggest that the opportunistic behavior of earnings management varies not only with the actual economic conjecture and rules imposed by the standard setters, but also with the ownership structure of each bank.

Leuz et al. (2003) find that non-financial firms in countries with developed equity markets, dispersed ownership structures and strong investor protection rights, engage less in earnings management. They state that earnings management declines with investor protection, which limits the ability to acquire private control benefits.

However, compared to the non-financial firms, banks in developed countries have more dispersed ownership, and therefore there are more financial statement users, which increase the demand for reliable accounting information.

Gebhardt and Farkas (2011) reach the same conclusion of Leuz, et al. (2003) signaling that widely held banks engage less in earnings management before IFRS rules. However, they

conclude that after the introduction of IFRS, the relation between dispersed ownership structures and earnings management is more evident than before. Similarly, Fonseca and Gonzalez (2008) argue that bank earnings management through LLPs varies from country-to-country depending on variables such as investor protection, disclosure, regulation, supervision, financial structure, and financial development.

3. Hypothesis Development

In this study I investigate whether large European banks use loan loss provisions to manage earnings, and whether loan loss provisions are used to manage earnings before and after the recent financial crisis of 2008.

Prior studies have provided unclear evidence of earnings management through the use of loan loss provisions.

Shrieves and Dahl (2003) find a positive association between loan loss provisions and net income before loan loss provisioning. They interpreted this positive association to banks' management discretion in determining the magnitude and timing of those provisions.

Similarly, Ma (1988) and Greenawalt and Sinkey (1988) show that bank managers tend to raise LLPs in periods of high operating income in order to lower volatility of reported earnings.

Gebhardt and Farkas (2011), Leventis et. Al (2010), Liu and Ryan (1995), Collins et. Al (1995), Bikker and Metzmakers (2005) provide evidence consistent with income smoothing through loan loss provisions. Fonseca (2008) argue that bank income smoothing in the form of loan loss provisions varies across countries, depending on variables such as investor protection, disclosure, regulation, supervision, financial structure, and financial development.

On the other hand, Ahmed and Takeda (1995), Beatty and Liao (2009), Chamberlain and Magliolo (1995) find no evidence of banks earnings management behavior through the use of loan loss provisions.

It is possible that banks do not engage in earnings management through the use of loan loss provisions because of the adoption of IFRS and particularly of IAS 39 that are often viewed as high quality accounting standards that reduced earnings management practices (Barth, 2012). This is consistent with the findings in Ewert and Wagenhofer (2005), who

argue that tighter accounting rules reduce earnings management, due to higher regulatory and litigation risks. Thus, it is possible that under the period of my analysis, which covers periods where banks are using tighter accounting rules I observe less earnings management. On the other hand, the IAS 39 impairment rules still leave some scope for discretion in setting up loan loss provisions. Thus, even if the loan loss provisioning rules are much tighter under IFRS than they were under the previous local GAAP, it is not clear whether banks apply these rules in the way intended by the standard setter.

Based on the above discussion I define my first hypothesis in the negative form:

H₁: There is no association between current year loan loss provisions and earnings for large European banks.

Gebhardt and Farkas (2011), Anandarajan et.al. (2010), Bikker and Metzmakers (2005) find evidence of pro-cyclicality and the use of loan loss provisions to manage earnings. Liu and Ryan (2006) show that banks accelerate charge-offs during inflationary times. Liu and Ryan (1995) showed that provisioning is used to obscure income smoothing during the boom of the decade of 90.

However, these studies do not consider the effects of the financial crisis period.

Through this, I expect that banks tend to delay provisioning to smooth income during recessionary periods and accelerate provisions in inflationary ones.

Consistent with this idea, Beccalli et.al (2013) and Sood (2012) find earnings management in the pre-2008 financial crisis period but not in the post-period. According to Bikker and Metzmakers (2005), Beatty and Liao (2009), Gebhardt and Farkas (2011) and Sood (2012), the use of loan loss provisions on earnings management have a pro-cyclicality behavior.

Therefore, I state my second hypothesis in the negative form as follows:

H₂: There is no difference in the association between earnings and current year loan loss provisions in downturn (crisis) period for large European banks.

In my research I also control the influence of capital adequacy ratio on capital management purposes. Prior researchers have reached mix conclusions. The incentive for manipulating the capital adequacy ratio arises because its violation contributes to regulatory costs (Anandarajan, 2003). Some studies report a negative correlation between LLPs and

capital ratios corroborating the existence of capital management. Beatty et al. (1995), Moyer (1990), Scholes et al. (1990), Ahmed et al. (1999), found evidence that banks manage their capital through LLPs in pre-Basel period. However, Collins et al. (1995) found no evidence of capital management in this period.

Further, Kim and Kross (1998), Ahmed et al. (1999) and Wall and Koch (2000) examined the capital management hypothesis after Basel I accord. They conclude that the use of LLPs for capital management purposes is still evident, although with less significance comparing to the pre-Basel period. While these studies were carried on by U.S. banks data, others find different results in other countries. Anandarajan et al. (2003, 2007) and Pérez et al. (2008) they find no evidence of capital management using LLPs using data for Australian and Spanish banking sectors, respectively. Gebhardt and Farkas (2011) and Fonseca (2006) also analyze the capital management incentives using LLPs, for a large sample of countries outside the US and found no evidence of capital management.

Since my data is after the Basel I agreement, I hypothesize:

H₃: There is no association between loan loss provisions and capital management incentives.

Liu and Ryan (2006) and Sood (2012) observe that the most profitable banks managed more the income downwards during boom periods, compared to the other banks. Following this idea I predict that more profitable banks accelerate provisioning to manage earnings downwards.

H₄: There is a positive association between earnings and current year LLPs for profitable European large banks.

Some researchers test whether capital-constrained banks are motivated to manipulate income, which is included in tier 1 capital by construction, as a way of managing regulatory capital. To test this I used two alternative methods, one already carried out by Collins (1995) and Sood (2012) which comprises to measure bank tier 1 capital ratio average and create a dummy variable that equals one for the ones who fall below the total sample average.

The alternative measure follow the latter one, however the dummy variable is measured in a different way. I considered important to test if banks that fall below the capital requirements to be considered “*well-capitalized*⁷” have more incentives to manage earnings.

H₅: Earnings management behavior differs from those European banks that are capital constrained and those which are not.

4. Research Design

4.1. Earnings management and financial crisis

The main interest of my study is to analyze earnings management in the banking sector, particularly before and after the crisis of 2008. As in prior research I focus on the most important accrual LLPs to measure earnings management. This procedure enables us to analyze in a more precise and efficient manner the key factor that influence the behavior of this particular accrual, instead of testing an aggregate of accruals which could lead us to get misleading results, since each accrual may have a particular behavior.

Conscious of the importance that prior literature gives to isolate the discretionary component of LLPs I control for other elements that are believed to be non-discretionary. In particular I use the level and change in Non-Performing Loans (*NPL*; ΔNPL) which is the main non-discretionary determinant of LLPs.

Many authors fail to include this later variable in their research models, mostly in European samples, due to lack of data from banks annual reports and databases. Thus I believe that by including ΔNPL my model is more reliable.

I also include the variable change in Loans ($\Delta Loans$), which is stated in almost every model of earnings management, to proxy for real growth in the magnitude of Loans and also to control for increased risk in banks financial statements.

Consistent with prior literature, I identify Earnings Before Taxes and Loan Loss Provisions (*EBTLLP*) and Regulatory Capital (*RegCap*) as the main discretionary determinants of LLPs in the Banking Sector.

⁷ Basel II requires a tier 1 ratio $\geq 6\%$; total capital ratio (tier 1 + tier 2) $\geq 10\%$; tier 1 \geq tier 2 to be considered well-capitalized, as explained in table 3.

I also consider bank size (*Size*) as in models of Kanagaretnam and Lobo (2001), Beatty and Liao (2009), Bushman and Williams (2012), Sood (2012) and Beccalli et.al (2013). *Size* is defined as the natural log of total assets, and its inclusion in the model ensures that the results do not merely capture the size effect.

My multiple linear regression model (1) is as follows:

$$\begin{aligned}
 LLP_{it} = & B_0 + B_1EBTLLP_{it} + B_2NPL_{it-1} + B_3\Delta NPL_{it} + B_4RegCap_{it-1} \\
 & + B_5\Delta Loans_{it} + B_6Size_{it-1} + B_7Crisis + B_8Crisis \times EBTLLP_{it} \\
 & + \varepsilon_{it}
 \end{aligned} \tag{3}$$

Where the dependent variable LLP_{it} is the current year loan loss provisioning. The main variable of interest is the current year Earnings Before Extraordinary Items, Taxes and Loan Loss Provisions ($EBTLLP_{it}$) to observe the extent whether banks engage in earnings management or not. As hypothesized, in *chapter 3* in H_1 , I expect a negative sign for B_1 coefficient to confirm the non-earnings management behavior. The others explanatory variables are: lagged Regulatory Capital ratio ($RegCap_{it-1}$) which is the level of capital to the risk-weighted assets $Capital_{it-1}/RWA_{it-1}$ to test whether there is evidence of capital management through the use of Loan Loss Provisions. According to hypothesis H_3 I expect a positive B_4 coefficient, since the beginning of Basel I accord, banks do not have capabilities to manage their LLPs for capital adequacy purposes.

To test earnings management behavior before and after the crisis I add a dummy variable “*Crisis*” that equals the value of one if the year is 2008 or after, and zero otherwise. I then interact the dummy variable with the $EBTLLP$ variable, to test the hypothesis H_2 that there is no difference, from the pre to the post crisis period, in the association between earnings and current year loan loss provisions. I do not expect any change in signal for the B_8 coefficient.

NPL_{it-1} is the balance of Non-Performing Loans at the beginning of the year, ΔNPL_{it} is the current change in Non-Performing Loans ($NPL_{it} - NPL_{it-1}$), whereas $\Delta Loans_{it}$ is the current change in Total Loans ($Loans_{it} - Loans_{it-1}$). These later variables capture the level (NPL_{it-1}) and changes in banks credit risk (ΔNPL_{it} ; $\Delta Loans_{it}$) as the non-discretionary portion of the Loan Loss Provisions. I predict $\Delta Loans_{it}$ to have a negative coefficient, because banks tend to increase loans in periods of rising economy and shrink loans at times of recession (Beatty and Liao, 2009). However, provisions for loan losses are greater in bad periods than in good

economic conditions (Laeven & Majnoni, 2003). Therefore, I expect *Loan Growth* to be negatively associated with LLP_{it} . This negative relation provides evidence of pro-cyclicality on loan loss provisions. The beginning balance of Non-Performing Loans (NPL_{it-1}) is expected to be positively correlated with LLP_{it} , because for a higher level of B_2 , banks will have to make a higher provision for loan losses. Change in Non-Performing Loans (ΔNPL_{it}) is also expected to have a positive effect on loan loss provisions.

The last variable used in this model is the Size ($Size_{it-1}$). I predict a positive coefficient B_6 , because banks with more assets are more vulnerable to greater loan loss provisions occurrence.

4.2. Earnings management and profitability

Taking into account the studies carried out by *Liu and Ryan* (2006) and *Sood* (2012), I also test whether banks smooth income when they are more profitable.

I test hypothesis H_4 that banks are more motivated to engage in more earnings management when they are profitable by including a dummy variable “*Prof*” that equals the value of one if the bank has an above-median $EBTLLP_{it}$, and zero otherwise. The model to test H_4 is as follows:

$$\begin{aligned}
 LLP_{it} = & B_0 + B_1 EBTLLP_{it} + B_2 NPL_{it-1} + B_3 \Delta NPL_{it} + B_4 RegCap_{it-1} & (4) \\
 & + B_5 \Delta Loans_{it} + B_6 Size_{it-1} + B_7 Prof + B_8 Prof \times EBTLLP_{it} \\
 & + \varepsilon_{it}
 \end{aligned}$$

I predict a positive sign of B_8 to validate the aforementioned hypothesis.

4.3. Earnings management evidence on capital-constrained banks

Another test that I consider relevant is to analyze whether banks are more motivated to smooth their income when are “under well-capitalized”⁸ (H_5). To do this, I first analyzed if in

⁸ Basel II requires a tier 1 ratio $\geq 6\%$; total capital ratio (tier 1 + tier 2) $\geq 10\%$; tier 1 \geq tier 2 to be considered well-capitalized, as explained in table 3.

the sample were banks under capital minimum requirements⁹. However, I observed that all banks exceed the regulatory minimum capital requirements for core tier 1 capital.

Further, I use an alternative method proposed by Sood (2012), which comprises in calculating the mean tier 1 capital, and then defining a dummy variable “*Under*” that equals the value of one if the bank falls below the tier1 capital ratio sample mean, and zero otherwise. This dummy is deemed a threshold, below which banks are considered “under-capitalized” in this sample.

The regression model to test H₅ is the following:

$$\begin{aligned}
 LLP_{it} = & B_0 + B_1\Delta EBTL P_{it} + B_2NPL_{it-1} + B_3\Delta NPL_{it} + B_4RegCap_{it-1} \\
 & + B_5\Delta Loans_{it} + B_6Size_{it-1} + B_7Under + B_8Under \times \Delta EBTL P_{it} \\
 & + \varepsilon_{it}
 \end{aligned} \tag{5}$$

In this model the relevant variable is the interaction term $Under \times \Delta EBTL P_t$. If B_8 has a positive sign, I can conclude that banks income smoothing behavior differs significantly for poorly capitalized banks.

5. Sample and Data

My sample consists of 58 large European banks in 15 European countries for the period 2006-2012 obtained from Datastream.

The initial Datastream list included 113 banks, however there were many missing values in relevant variables, namely non-performing loans, Tier 1 capital and risk-weighted assets. In order to complete the data, I hand-collected data from annual reports.

When analyzing the annual reports I realize that many have missing information on relevant variables, particularly in years of 2005, 2006 and 2007, the period of transition to IFRS in some countries. Moreover, in the 2005-2007 period some banks do not provide annual reports in English language, which caused more difficulties in obtaining data. To circumvent these difficulties, I contacted by e-mail those banks asking for the possibility of providing the missing data. Just two banks replied with the information needed.

In spite of my sample analysis ranges for the years of 2006-2012, my database also includes the year of 2005, due to my estimation model had some lagged variables.

⁹ Basel II set a minimum capital requirements of tier 1 ratio = 4% and a total capital ratio of 8%.

6. Empirical Results

In this section I test the hypothesis described in chapter 3 with the main purpose to verify if there is evidence of earnings management in the periods pre and post the financial crisis.

In first place I present the descriptive statistics of the sample, followed by the Pearson correlation analysis, and by the results of the multiple linear regression model, with OLS estimators.

6.1. Descriptive statistics

The descriptive statistics for the split sample by pre-crisis and post-crisis are presented in table 5, while the full sample period is presented in table 6.

The mean (median) value of *LLP* in the pre-crisis period is 0,002274 (0,002350) while the mean (median) value in the post-crisis period increases to 0,006114 (0,004800). This is consistent with the pro-cyclicality behavior of *LLPs* which tend to increase in downturn periods. Negative loan loss provisions can arise because of recoveries and/or write-backs of previously recorded provisions to bring down the balance of allowance for loan losses.

The mean (median) of *EBTLLP* in the pre-crisis period is 0,013255 (0,013150) while the mean (median) value in the post-crisis period decreases to 0,007104 (0,008150), due to the huge losses in this downturn period.

The tendency of *LLP* is also verified in the level and change in non-performing loans.

While (*NPL*) in the pre-crisis period has the mean (median) value of 0,012191 (0,007700) and ΔNPL has the value of 0,001234 (0,000250), in the post-crisis there is an increase in both variables to 0,026634 (0,017300), and 0,009130 (0,003800) to level and change in non-performing loans respectively. This behavior is consistent with the effects of the crisis in increasing the amount of loan defaults.

Tier 1 capital ratio (RegCap) has a mean (median) value in the pre-crisis of 0,083447 (0,077900), while in the mean (median) in the post-crisis period is 0,097491 (0,094500). This ratio results far exceeds the regulatory minimum ratio of 4% for banks to be adequately capitalized, suggesting that in overall large European banks comply with their tier 1 capital ratios imposed by Basel accords. The increase of one period to another is due to a growth in banks intern tighter capital objectives, in order to be considered well-capitalized.

Moreover, $\Delta Loans$ also experience the same behavior of $LLPs$, with a mean (median) value of 0,110528 (0,090700) in the pre-crisis period signaling an increase in their loan portfolio. However, this growth has declined in the post-crisis period with a mean (median) value of 0,016806 (0,012700). This is consistent with the findings by Gebhardt and Farkas (2011) when in downturn periods there is a culmination of trigger events with higher default rates. The contraction of capital and the increased riskiness of loans force banks either to raise new equity capital or to cut lending, in order to meet the capital requirements. As the issuance of new capital is deemed too costly during periods of crisis, banks rather prefer to cut back their lending.

The control variable $Size$, which is measured by the natural log of total assets, shows that banks experienced a growth in their total asset portfolio from the pre-crisis period to the post-crisis period.

6.2. Pearson correlations

Table 7 displays the Pearson correlation coefficients between sample data. The correlations between the dependent variable LLP_{it} and the independent variables are all significant at conventional levels, unless for $Size_{it-1}$. However, the latter is just a control variable to control for bank size in the model, so it is not relevant for us if the correlation between LLP and the banks size is significant or not.

I find a negative correlation between LLP_{it} and $EBTLLP_{it}$ and $RegCap_{it-1}$. Although this finding appears to suggest that banks do not engage in earnings management, inferences should be drawn based on the multiple linear regression model. The negative correlation between loan loss provisions and earnings is due to the large size of my sample comprises the crisis period (five out of seven years).

There is a positive correlation between loan loss provisions and the lagged level and change of non-performing loans. This suggests that an increase in NPL_{it-1} and ΔNPL_{it} results in an increase in LLP_{it} .

The latter result is also visible in $\Delta Loans_{it}$. So, when banks' loan portfolio decreases, this leads to an increase in loan loss provisions.

Table 5 - Descriptive Statistics of Bank-Specific Variables (pre and post-crisis period)

<i>pre-crisis</i>	<i>LLP</i>	<i>EBTLLP</i>	<i>NPL</i>	Δ <i>NPL</i>	<i>RegCap</i>	Δ <i>Loans</i>	<i>Size</i>
<i>N</i>	116	116	116	116	116	116	116
<i>Mean</i>	0,002274	0,013255	0,012191	0,001234	0,083447	0,110528	18,172984
<i>Median</i>	0,002350	0,013150	0,007700	0,000250	0,077900	0,090700	18,040700
<i>Std. Deviation</i>	0,001904	0,006537	0,012945	0,007401	0,019266	0,084964	1,713826
<i>Minimum</i>	-0,003200	0,001900	0,000100	-0,019600	0,055100	-0,009500	14,381500
<i>Maximum</i>	0,007700	0,035200	0,083000	0,056400	0,165000	0,470300	21,114200
<i>Percentiles</i> 25	0,000600	0,008325	0,003850	-0,000675	0,072625	0,056050	16,875800
50	0,002350	0,013150	0,007700	0,000250	0,077900	0,090700	18,040700
75	0,003575	0,016300	0,017125	0,001900	0,090900	0,135975	19,570700
<i>post-crisis</i>							
<i>N</i>	290	290	290	290	290	290	290
<i>Mean</i>	0,006114	0,007104	0,026634	0,009130	0,097491	0,016806	18,510349
<i>Median</i>	0,004800	0,008150	0,017300	0,003800	0,094500	0,012700	18,453050
<i>Std. Deviation</i>	0,006386	0,010541	0,027100	0,018068	0,030468	0,069508	1,716902
<i>Minimum</i>	-0,001100	-0,095100	0,000300	-0,038500	-0,073200	-0,367100	14,197400
<i>Maximum</i>	0,072300	0,026800	0,207700	0,120600	0,271300	0,335400	21,672500
<i>Percentiles</i> 25	0,002500	0,003875	0,007400	0,000700	0,077775	-0,019575	17,254025
50	0,004800	0,008150	0,017300	0,003800	0,094500	0,012700	18,453050
75	0,007625	0,011800	0,037350	0,011800	0,110925	0,047800	19,938600

Table 6 - Descriptive Statistics of Bank-Specific Variables (Period 2006-2012)

<i>all period</i>	<i>LLP</i>	<i>EBTLLP</i>	<i>NPL</i>	Δ <i>NPL</i>	<i>RegCap</i>	Δ <i>Loans</i>	<i>Size</i>
<i>N</i>	406	406	406	406	406	406	406
<i>Mean</i>	0,005017	0,008861	0,022508	0,006874	0,093478	0,043584	18,413959
<i>Median</i>	0,003800	0,009550	0,013500	0,002150	0,088400	0,031950	18,322100
<i>Std. Deviation</i>	0,005758	0,009958	0,024786	0,016163	0,028428	0,085407	1,720687
<i>Minimum</i>	-0,003200	-0,095100	0,000100	-0,038500	-0,073200	-0,367100	14,197400
<i>Maximum</i>	0,072300	0,035200	0,207700	0,120600	0,271300	0,470300	21,672500
<i>Percentiles</i> 25	0,002000	0,005000	0,006075	-0,000025	0,074975	-0,007850	17,115925
50	0,003800	0,009550	0,013500	0,002150	0,088400	0,031950	18,322100
75	0,006325	0,013600	0,030500	0,008625	0,105600	0,083900	19,770925

Table 7 - Pearson correlation analysis for the period 2006-2012

Variables	$EBTLLP_{it}$	NPL_{it-1}	ΔNPL_{it}	$\Delta Loans_{it}$	$Size_{it-1}$	$RegCap_{it-1}$
LLP_{it}	-0,273***	0,540***	0,640***	-0,220***	-0,067	-0,113**
$EBTLLP_{it}$		-0,214***	-0,240***	0,334***	-0,118**	-0,107**
NPL_{it-1}			0,385***	-0,192***	-0,074	-0,059
ΔNPL_{it}				-0,011	-0,078	-0,199***
$\Delta Loans_{it}$					-0,170***	-0,152***
$Size_{it-1}$						-0,063

***. Correlation is significant at the 0.01 level (2-tailed).

**. Correlation is significant at the 0.05 level (2-tailed).

*. Correlation is significant at the 0.10 level (2-tailed).

7

Note: All variables are deflated by average total assets, except for $RegCap_{it-1}$ which is already a ratio and $Size_{it-1}$.

LLP_{it} is the current period level of loan loss provisions to average assets.

$EBTLLP_{it}$ is the current period level of earnings before taxes and loan loss provisions to average assets.

NPL_{it-1} is the lagged period level of non-performing loans to average assets.

ΔNPL_{it} is the change in non-performing loans to average assets.

$RegCap_{it-1}$ is the lagged level of capital tier 1 to risk-weighted assets.

$\Delta Loans_{it}$ is the change in loans outstanding to average assets.

$Size_{it-1}$ is the natural log of total assets.

6.3. Earnings management regression analysis

My principal purpose on this research is to verify if there exists the use of *LLPs* to manage earnings, more precisely to income smoothing purposes in a more recent period troubled by the recent financial crisis.

If there is evidence of earnings management, I expect a significant positive sign for the coefficient of $EBTLLP_{it}$. Table 8 presents the results of earnings management test:

Model (1) tests the general impact of crisis on the relation between *LLPs*, *EBTLLP* and other relevant variables.

LLPs are expenses, so they should result in lower earnings. Surprisingly and against my expectations for H_1 , the coefficient $EBTLLP_{it}$ has a significant positive coefficient 0,124 which indicates a positive relation with LLP_{it} . This result suggests that large European banks use *LLPs* to engage in earnings management.

To answer to the question whether this practice is higher or lower in crisis periods, I need to consider the interaction term $Crisis \times EBTLLP_{it}$. The negative coefficient -0,174 is only the incremental effect in the crisis period. This means that in non-crisis periods (crisis dummy = 0) earnings smoothness is 0,124 but in crisis periods (crisis dummy = 1) the coefficient is $0,124 - 0,174 = -0,050$. This means that while *LLPs* were accelerated to manipulate earnings in the pre-crisis period, the same is not verified in the post-crisis period, whereas the coefficient is negative but almost null. This signal can be interpreted as a slowdown in earnings management due to the inherent pro-cyclicality of *LLPs*, but also because were created enough cushions of provisions under good years to be used in downturn periods, in order to have the minimum impacts on results. Therefore I reject H_2 .

The positive and significant coefficients B_3 and B_4 suggest *LLPs* increase with the beginning level (NPL_{it-1}) and current change (ΔNPL_{it}) in non-performing loans.

The change in loans ($\Delta Loans_{it}$) coefficient has the expected negative and significant signal. This is consistent with the pro-cyclicality behavior of loans, since my sample comprises five out of seven years under the crisis period.

Regarding the coefficient of $RegCap_{it-1}$ I do not verify any significant relation between *LLPs* and the ratio of tier 1 capital. This is consistent with H_3 and prior literature that relates the no evidence of capital management by European banks since the implementation of Basel accords. The negative signal of B_5 may be related with the decrease of capital while there is an increase of *LLPs*, since *LLPs* decrease earnings and earnings make part of capital.

The B_9 coefficient suggests that there is no significant association between the initial period *Size* of Banks and *LLPs* at the end of the year.

In order to test H_4 whether profitable banks engage more in earnings management, I regressed the model (2) and analyzed the interaction coefficient $Prof * EBTLPP_{it}$ which is significant and positively associated with *LLPs*. Therefore I validate the hypothesis that profitable banks engage more in earnings management.

Finally, I test H_5 whether capital constrained banks have more incentives to engage in earnings management through model (3). To verify this, I use two regressions where the difference between them is the specificity of the dummy variable. In the first column I test if banks that do not comply with the minimum ratios of capital to be considered “well-capitalized” have more incentives to manage their earnings. The positive and significant coefficient of $Under_1 * \Delta EBTLPP_{it}$ confirms H_5 . In the second column of model(3) I verify that banks that are below the sample mean capital ratio engage more in earnings management, as we can see for the significant and positive coefficient $Under_2 * \Delta EBTLPP_{it}$, thus also validating the aforementioned hypothesis.

Un-tabulated results show that splitting the sample by pre-crisis and post-crisis period with sub-samples, also evidence that acceleration of *LLPs* are used to manage earnings downward in pre period, while in the post-crisis period banks tend to delay *LLPs* to manage earnings upward, as suggested by Beccalli et.al (2013) and Sood (2012).

Another un-tabulated result, evidence that by scaling the same variables in the same models by lagged total assets, I reach to the same coefficient signals and significances as in the tabulated models which are scaled by average assets. This means that the results presented here are not a merely causality, since present the same results with two strong scaled variables already tested in prior literature.

The models tested here (1), (2), and (3) are correspondent to the equation numbers (3), (4) and (5) respectively.

Table 8 – Estimations of the Multiple Linear Regression Models

Variable	Coefficients	Predicted Sign	Model (1)	Model (2)	Model (3)	
$EBTLLP_{it}$	B_1	-	0,124** (-2,204)	-0,104*** (-4,321)		
$\Delta EBTLLP_{it}$	B_2	?			-0,096*** (-4,257)	-0,118*** (-5,059)
NPL_{it-1}	B_3	+	0,069*** (-7,873)	0,066*** (-7,864)	0,067*** (-7,287)	0,064*** (-7,204)
ΔNPL_{it}	B_4	+	0,170*** (-12,043)	0,163*** (-12,368)	0,165*** (-11,731)	0,159*** (-11,565)
$RegCap_{it-1}$	B_5	+	-0,009 (-1,221)	-0,008 (-1,185)	-0,009 (-1,174)	-0,020** (-2,016)
$\Delta Loans_{it}$	B_6	-	-0,008*** (-3,066)	-0,013*** (-5,223)	-0,010*** (-4,256)	-0,011*** (-4,534)
$Crisis$	B_7	?	0,003*** (-3,019)			
$Crisis * EBTLLP_{it}$	B_8	-	-0,174*** (-2,853)			
$Size_{it-1}$	B_9	+	0 (-0,907)	0 (-0,641)	0 (-1,395)	0 (-0,755)
$Prof$	B_{10}	-		-0,004*** (-4,273)		
$Prof * EBTLLP_{it}$	B_{11}	+		0,367*** (-7,387)		
$Under_1$	B_{12}	+			0 (-0,053)	

Variable	Coefficients	Predicted Sign	Model (1)	Model (2)	Model (3)
$Under_1 * \Delta EB TLLP_{it}$	B_{13}	+			0,115*** (-2,998)
$Under_2$	B_{14}	+			-0,001 (-1,349)
$Under_2 * \Delta EB TLLP_{it}$	B_{15}	+			0,150*** (-4,189)
<i>Year fixed effects</i>			No	No	No
<i>Adjusted R²</i>			0,538	0,586	0,546
n observations			406	406	406

***. Coefficient is significant at the 0.01 level (2-tailed).

**. Coefficient is significant at the 0.05 level (2-tailed).

*. Coefficient is significant at the 0.10 level (2-tailed).

Notes: This table reports results for earnings management (income smoothing) behavior in 15 countries by the 58 large European banks. Model (1) presents the impact of crisis in earnings management. Model (2) evaluate differences between profitable banks engaging in earnings management. Model (3) assesses differences among capital constrained banks in earnings management. The dependent variable LLP_{it} and the explanatory variables (except $RegCap_{it-1}$, $Size_{it-1}$ and dummy variables) are deflated by average assets. t_values are in parentheses. All VIFs <10. Variable definitions: LLP_{it} , current year's loan loss provision; NPL_{it-1} , beginning balance of non-performing loans; ΔNPL_{it} , change in non-performing loans; $RegCap_{it-1}$, ratio of banks' eligible regulatory capital over risk-weighted assets at t-1; $\Delta Loans_{it}$, change in loans; Crisis, dummy with a value of 1 (0) for 2006-2007 (2008-2012) years; $Size_{it-1}$, beginning balance natural log of banks' total assets; $Prof$, dummy variable with a value of 1 (0) if banks are over (under) the earnings sample median; $Under_1$, dummy with a value of 1 (0) if banks not comply (comply) at least with one standard of the ratios to be considered "well-capitalized" as shown in table 3 of chapter 2.4.3; $Under_2$, dummy variable that takes the value of 1 (0) when banks' ratio tier 1 capital is below (above) the sample mean.

7. Conclusion

This research provides empirical evidence regarding earnings management, before and after the financial crisis period of 2008 for large European banks. The study covers the period from 2006 till 2012.

The period of economic recession raise many questions related to accounting standards, namely the IAS 39 incurred loss model that is seen as a backward-looking model and is deemed of exacerbating pro-cyclicality.

In order to reverse this situation, accounting standard setting bodies and bank regulators are debating whether to establish a more forward-looking accounting model. The accounting standard setters are concerned with transparency in documenting loan loss estimates to mitigate earnings and capital management concerns. Nonetheless, the current incurred-loss model for loan loss provisions is under pressure to adapt to tough conditions dictated by the financial crisis.

Therefore, IFRS 9 and Basel III are expected to bring new reforms to strengthen and amend actual regulations, in order to provide more guarantees of stability and protection to the main factors that caused the financial crisis: excessive banks financial leverage; vulnerable banks liquidity structure.

My empirical analysis shows that large European banks, which already report under IFRS, engage in earnings management through loan loss provisions. This evidence contradicts prior studies that find no earnings management during IFRS adoption.

Overall, this research shows evidence that large European banks accelerate loan loss provisions to engage in earnings management when they are in non-crisis periods, however this behavior is less pronounced during and after the financial crisis of 2008. In crisis period banks have income smoothing incentives to delay loan loss provisioning until too late, and then recognizing accumulated losses over more than one period, giving rise to pro-cyclicality concerns. Moreover, I also find that profitable banks and those who are capital-constrained are more likely to engage in earnings management.

Further research is needed to investigate whether earnings and capital management behavior will change with the introduction of IFRS 9 and Basel III frameworks.

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