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Stefano Azzali, Luca Fornaciari, e Tatiana Mazza

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Abstract.

Performing univariate and multivariate analysis on the population of listed banks in Italy, this paper tests the following hypotheses: 1) whether Earnings (EM) and capital (MCAP) management are performed via Loan Loss Provision - LLP (2002-2011 period); 2) whether the association of LLP with earnings and capital management is significantly changed under IFRS for listed banks in Italy (2005-2011 period); 3) whether crisis changes the association of LLP and earnings – capital management (2008-2011 period). Coherently with previous literature, in Italian listed bank in the period 2002 – 2011 managers employ LLP for opportunistic behavior. IFRS reduce EM. Financial crisis decreases earnings and capital management based on accruals, in riskier banks; however this result should be further analyzed by future research on cash concern. This is one of the first paper that analyze EM in banking industry in Italy, a country with an economic system focused overall on financial resources provided by banks and other financial institutions.

Keywords: Earnings management, Capital management, Loan Loss Provision, Bank industry, International financial reporting standards.

1 – Introduction

Earning Management (EM) researches are widely developed, overall in manufacturing and services industry, where accruals (specifically discretionary and non discretionary accruals) are one of the best proxy employed to measure it. However even in the banking industry EM develop through different econometric model, such as loan loss provisions (LLP) model. Prior research shows that LLP are used as a tool to manage earnings and/or capital by listed banks (Ma, 1988; Greenawalt and Sinkey, 1988; Ahmed *et al.*, 1999; Beaver and Engel, 1996; Collins *et al.*, 1995; Healy and Wahlen, 1999; Liu *et al.*, 1997; Liu and Ryan, 1995; Beatty *et al.*, 1995; Moyer, 1990; Scholes *et al.*, 1990; Kim and Kross, 1998; Ahmed *et al.*, 1999 Wall and Koch, 2000; Anandarajan et al., 2003, 2007; Pérez *et al.*, 2008; Oosterbosch, 2009; Leventis *et al.*, 2012; Norden and Stoian, 2013).

In many European countries the relation between IFRS and EM in non financial industries is controversial: on one side, the adoption of IFRS should significantly reduce the ability to engage in earnings management behavior because IFRS could limits the opportunity of management to engage in opportunistic behavior by limiting the accounting options available to them (Hung and Subramanyam, 2007; Barth *et al.*, 2008), effect that could be caused by incentive related for example to voluntary or mandatory adoption (Christensen *et al.*, 2008; Ahmed *et al.*, 2013; Capkun *et al.*, 2012). On the other side, the first introduction of IFRS in Italy show that IFRS introduce also criticism about the application of many principles that may give managers the opportunities to manage the accounting number as in the pre IFRS period (Andrei, 2006; Azzali, 2007).

This paper test EM in the finance industry, with a special focus on IFRS and crisis effect, considering the level of solvency risk. Other studies investigates the banking industry in Europe, on the influence of IFRS on the quality of reported earnings by focusing on the use of LLP for earnings and capital management (Anandarajan *et al.*, 2003; Pérez *et al.*, 2008; Oosterbosch, 2009; Leventis *et al.*, 2012). The last 2 studies investigates Europe as a whole sample, including Italy; but they do not appreciate the situation of each single country. Our contribution is to study a country, Italy, where the IFRS implementation has not always improved earnings quality reducing EM (Andrei, 2006; Azzali, 2007) in contrast with study that address European countries as a whole (Hung and Subramanyam, 2007; Barth *et al.*, 2008; Christensen *et al.*, 2008; Ahmed *et al.*, 2013; Capkun *et al.*, 2012). Our motivation is to show that, despite the negative evidences founded in Italy on the IFRS adoption in non financial industry, the IFRS could affect positively EM (reducing their level) and earnings quality in

the post IFRS period in banks because the industry is more regulated.

Previous literature finds that the economic and financial crisis affects EM (Choi *et al.*, 2011; Lim and Lu, 2011). The influence of crisis on the EM with LLP has been investigated in US (El Sood, 2012) and in Europe (Curcio *et. al.*, 2014). Leventis *et al.* (2011) clarify that a possible explanation of their results can be the economic cycle, but he does not test it. Our contribution is to test the economic cycle, throughout the financial crisis from 2008. Our contribution is to study a country, Italy, where the financial crisis is having strong negative effects in the long term till nowadays on the economy and, thus, on the bank system that has the central role in the Italian economy.

On the population of listed banks in Italy, this paper tests the following hypotheses: 1) whether Earnings and capital management are performed via Loan Loss Provision (2002-2011 period); 2) whether the association of LLP with earnings and capital management is significantly changed under IFRS for listed banks in Italy (2005-2011 period); 3) whether crisis changes the association of LLP and earnings – capital management (2008-2011 period).

Firstly, the paper confirms that listed banks in Italy use LLP for opportunistic purposes. Secondly, IFRS effect is significant: comparing pre (2002-2004) and post (2005-2011) IFRS period, the research found that IFRS decrease EM in listed Italian banks, probably due to the specific accounting principles that Bank of Italy establish for banks financial statement. Thirdly, crisis decreases opportunistic behavior via LLP for riskier banks.

Next contents are related to the specific accounting regulation in the finance industry before and after the mandatory adoption of IFRS in Italy (Section 2), literature review and hypothesis development (Section 3), sample and methodology (Section 4 and 5), descriptive statistics and correlation matrix (Section 6), results (Section 7). Finally, the paper summarizes the most relevant results and contribution to the literature in the conclusion (Section 8).

2 – Background

In Italy the financial statement for banks before the mandatory implementation of IAS/IFRS in 2005 was regulated by the Italian law n. 87 in 1992, that implement the EEC Directive n. 635 (1986/635/EEC).
Bank of Italy has issued specific "accounting standards" in 1992 (July 15th "Istruzioni per la redazione del bilancio dell'impresa e del bilancio consolidato degli enti creditizi e degli enti finanziari). They specifies rigid schemes of balance sheet, income statement and notes. For this reason, the financial statement of banks is more comparable and accurate than those of non financial industry because banks are obliged to register the value in the same accounts that are fixed.

The requirements on LLP, based on the Italian law (that implements the ECC Directive) and on the Bank of Italy requirements, define 2 level of provisions for loan losses. The first is a LLP that represent a cost in the income statement and that every year is added at the prior provisions and is presented as deduction of loans in the assets in balance sheet. The second is a LLP adjunctive that is a cost in the income statement and it is presented in the liabilities in balance sheet to take into account the possible risk that a specific client cannot repay the loan because it is view as critic (Fiume, 1999). Our contribution is to include in the analysis both the LLP to have a more accurate analysis. LLP is the account n. 120, 130 and 140 of income statement (sum of LLP, as gains and losses, and the second level of LLP related to critic client).

The disclosure of LLP is regulated also by the Basel accord and the regulations that implement it. Basel I capital accord (Basel Committee on Banking Supervision, 1988; 1989/647/ECC) has been implemented in Italy by the law n. 386 in 1989. The regulation n. 229 issued by Bank of Italy in 1999 (April 21th "Istruzioni di vigilanza per le banche") specifies the requirements of Basel I, that include also requirements for LLP.

The mandatory implementation of IAS/IFRS in 2005 has been introduced by the Regulation EU n.1606 in 2002 (1606/2002/EU) directly applicable in the European countries. The Italian law n. 38 in 2005 specified that all the banks (listed and not listed) have to mandatory apply these international standards.

"Accounting standards" n. 262 issued by Bank of Italy in 2005 (December 22nd "Il bilancio bancario: schemi e regole di compilazione") regulates how to apply the international standard in Italy, specifying rigid schemes of balance sheet, income statement and notes. These "accounting standards" are object to continuous updating following the continuous revisions of IFRS. The adoption of IFRS has introduced a new criteria to evaluate the loans. Following IAS 39, the banks record in the balance sheet the present value of expected cash flows from the loans– i.e., the result of application of amortized cost. The difference between the present value determined in t and the present value determined in t-1 must be charged on the bank income statement, that is the account n. 130a of the scheme defined by Bank of Italy (impairment losses on loans view as gains and losses).

The disclosure of LLP is changed after the issue of Basel II capital accord (Basel Committee on Banking Supervision, 2006; 2006/48/EC; 2006/49/EC), implemented in Italy by the law n.15 in 2007 that has transformed in law the regulation n. 297 in 2006. The regulation n. 263 issued by Bank of Italy in 2006 (December 27th "Nuove disposizioni di vigilanza prudenziale per le banche") specifies the requirements of Basel II, that include also requirements for LLP.

A summary of the Banks Financial statement regulation is presented in Table 1.

3 – Literature review and hypotheses development

One of the most widely used proxy to measure EM has been the investigation of discretionary accruals (DA). The literature on EM derives from the first studies carried out in 1980s in which authors developed models to separate the components of earnings (E) most subjected to management, called total accruals (TA), from the more objective cash flow components (CF): TA = E – CF. However the accruals can be discretionary, due to EM, or non-discretionary, due to economic cause that brings variation in that counts. By modeling the non-discretionary part of accruals (NDA), researchers have attempted to isolate a DA proxy that is substantially due to opportunistic manipulation. Therefore, the DA were measured indirectly by the difference between TA and NDA: DA = TA – NDA (Healy, 1985; DeAngelo, 1986; McNichols *et al.*, 1988).

Table 1–Banks Financial statement regulation

	Before IAS/IFRS	After IAS/IFRS
Europe regulation	Directive 1986/635/CEE	Regulation1606/2002/EU
Italian regulation	D. Lgs. n. 87/1992	IAS/IFRS
Bank of Italy	Accounting standards July 15th 1992	Accounting standards n. 262/2005

Empirical research on modeling NDA started with model for non-financial companies (Jones, 1991; Dechow *et al.*, 1995; Kothari *et al.*, 2005). However the gap in the literature regards the finance industry. The literature analyze samples that always exclude the finance industry because the model to measure DA is based on the purchase-transformation-sale of goods (based on sales and receivable) that is not applicable for finance industry. Banks and other financial institutions are often excluded from EM research because their characteristics differ fundamentally from other firms (Peasnell *et al.*, 2000; Oosterbosch, 2009).

For banks the larger area of EM can be the loans, the investment and services areas. We focus on the loan area. Ahmed et al. (1999) and Leventis *et al.*, (2012) justifie the use of LLP as proxy for EM because they focus on commercial banks, excluding from the sample central banks, government development banks, cooperative banks and export–import banks. We include in our sample listed banks that make commercial activities. We do not have in the sample central bank, government development banks, not listed cooperative banks and export–import banks.

Norden and Stoian investigate whether banks use of LLPs to manage the level and volatility of their earnings and examine the implications for bank risk. The authors find that banks use LLPs to manage the earnings downward when they are abnormally high.

Banks facing increased levels of solvency risk could have an incentive to manage earnings in order to avoid costs related to regulatory intervention. Yasuda et al. (2004) provide evidence that troubled banks engage in excessive window dressing in profits by, among other strategies, adjusting for provisions for bad loans. Bhat (1996) finds a significant association between poor financial health and banks engaging in excessive earnings management. Therefore, banks facing a higher probability of insolvency may have greater incentives for using LLPs to manipulate reported accounting numbers.

EARNINGS AND CAPITAL MANAGEMENT

The purpose of LLP is to adjust banks' loan loss reserves to reflect expected future losses on their loan portfolios (AICPA 1983). However, bank managers also have incentives to use LLP to manage earnings and regulatory capital. We thus investigate earnings and capital management:

1. the EM via LLP is their increasing when the earnings (before LLP) increases (positive relation). Managers have incentives to smooth earnings because in general, reduced volatility is assumed to represent lower risk. Because less volatile earnings are a fundamental predicate for stable stock prices, managers are given an incentive to use LLP for EM (Anandarajan *et al.*, 2007) Thus, when earnings are expected to be low, LLP are deliberately understated to mitigate the adverse effects of other factors on earnings (Ahmed *et al.*, 1999).

2. the Capital Management via LLP is their increasing when the capital (excluding LLP) decreases (negative relation). Bank capital regulation is intended to mitigate moral hazard problems that arise from the provision of deposit insurance, lender-of-last resort facility, and other guarantees by the government (Greenbaum and Thakor, 1995; Berger *et al.*, 1995). Primary capital included book value of equity, loan loss reserves, perpetual preferred stock and mandatory convertible debt. Thus, managers of banks with high regulatory capital had less incentives to increase LLP. The seminal paper about LLP is Scheiner (1981).

Many studies concluded that, in US, LLP are used by banks as a mechanism for aggressive EM and capital management (Ma, 1988; Greenawalt and Sinkey, 1988; Beaver and Engel, 1996; Collins *et al.*, 1995; Healy and Wahlen, 1999; Liu *et al.*, 1997; Liu and Ryan, 1995; Scholes *et al.*, 1990; Beatty *et al.*, 1995; Moyer, 1990; Scholes *et al.*, 1990; Kim and Kross, 1998; Ahmed *et al.*, 1999; Wall and Koch, 2000).

Studies using non-US banks (Anandarajan *et al.*, 2003, 2007; Pérez *et al.*, 2008; Oosterbosch, 2009; Leventis *et al.*, 2012) found EM via LLP but not capital management. Some studies include Italy, for example in Oosterbosch (2009) only for earnings and Leventis et al. (2012) also for capital management; but this studies investigate Europe as a single sample controlling for GDP or GAAP and do not separate and appreciate the situation of single country. Oosterbosch (2009) use Bankscope (Bureau van Dijk) database and defines Italy's GAAP as similar to IFRS, with detailed requirements issued under Circular 263 for loan loss provisioning and detailed disclosures required in the annual statements, subjected to Basel capital accord. Leventis *et al.* (2012) use Thomson database. We think that with private collected data we can improve the accuracy of the analysis for Italy.

Hp1: Earnings and capital management are performed via Loan Loss Provision

THE IFRS EFFECT

A strong discussion about the quality and the usefulness of International Accounting Standards has started with their mandatory introduction in the European Union (EU) in 2005. The EU thinks that, in a contest where the globalization is one of the most important change to take into account, also the accounting standards need an harmonization. Italy, as part of EU, adopted IAS/IFRS from 2005.

Prior researches analyze the quality of IFRS and the impact on their introduction on earnings quality, thought the analysis of capital market influence such as liquidity and cost of capital, macroeconomic effect such as the foreign investment, the contractual outcome such as compensation, value relevance, comparability and EM. We focus on EM because we want to explore the peculiarities of the Italian banking financial reporting in the account of LLP. Given that the value relevance, the comparability, the macroeconomic effect, the contractual outcome are related to the overall financial information view as a whole, we want to investigate in deep the EM in the loan area where Italy can be a specific interesting context due to the Italian GAAP and regulations on LLP.

The international EM literature about the IAS/IFRS compares the financial statement values between GAAP and IFRS. Hung and Subramanyam (2007) compare accounting numbers reported under German GAAP with those under IAS for the same firm years, and find that total assets and book values of equity are significantly higher under IAS. The following studies compare the financial statement values before and after 2005. Barth *et al.* (2008) find that firms applying IAS from 21 countries generally evidence less EM, more timely loss recognition, and more value relevance of accounting amounts than do matched sample firms applying non-U.S. domestic standards. Early voluntary adopters firms applying IAS generally evidence an improvement in accounting quality between the pre- and post-adoption periods, after controlling for the change in the financial reporting system rather than to changes in firms' incentives and the economic environment. Christensen et al. (2008) examining the impact of incentives on accounting quality (earnings management and timely loss recognition) changes around IFRS adoption, find that accounting quality improvements following IFRS adoption are confined to firms with incentives indicating that incentives dominate accounting standards in determining accounting quality. Firms that resist IFRS have closer connections with banks and inside shareholders, which could explain these firms' lack of incentives to adopt IFRS. Ahmed *et al.* (2013) provide evidence on the preliminary effects of mandatory adoption IFRS on accounting quality for a relatively broad set of firms from 20 countries that adopted IFRS in 2005 relative to a benchmark group of firms from countries that did not adopt IFRS matched on the strength of legal enforcement, industry, size, book-to-market, and accounting performance. There is a significant increase in income smoothing and aggressive reporting of accruals and a significant reduction in timeliness of loss recognition for IFRS firms relative to benchmark firms after mandatory IFRS adoption for firms in strong enforcement countries which suggests that enforcement mechanisms in these countries were not able to counter the initial effects of greater flexibility in IFRS relative to domestic GAAP. EM decreases for early voluntary adopters and increases for mandatory adopters because early adopters had incentives to voluntarily adopt while those firms that waited until IFRS adoption became mandatory in

EU countries did not. Capkun *et al.* (2012) find an increase in EM (earnings smoothing) from pre-2005 to post-2005 for Early Voluntary Adopters and Late Adopters in countries that allowed early IAS/IFRS adoption, and for Mandatory Adopters in countries that did not allow early IFRS adoption. They argue that IAS/IFRS standards changed dramatically from the early voluntary adoption period to the mandatory adoption year (2005). Compared to earlier IAS standards, revisions of old IAS standards and new IFRS standards allow greater flexibility in choosing among alternative accounting treatments facilitating EM (smoothing).

The Italian literature about the IAS/IFRS show also some criticisms. Andrei (2006) studied the potential effect of introduction of IAS in Italy with an argumentative analysis in the non financial industries. The IAS for consolidated financial statement have the potential effect to improve the construction of the financial statement but they cannot solve the lack of disclosure for intra-group operation and minority protection. Azzali (2007) studied the first effect of introduction of IAS in Italy including also banking industry. For consolidate financial statement, the IAS improve the disclosure on differences of consolidation solving the issues of timing of Italian GAAP, but the IAS do not improve the disclosure for minorities and intra-group transactions. The comparability of the financial statements schemes is lower due to the higher flexibility of IAS in non financial industries; but the result for the banking industry is the opposite: the more rigid schemes, thanks to the higher regulation of Bank of Italy, let to confirm a good comparability after IAS. This first evidence bring us to develop the hypothesis of improved earnings quality in banks' financial statement, even if the earnings quality in non financial industries is lower after IAS.

Our contribution is to study a country, Italy, where the IFRS implementation has not always improved earnings quality reducing EM (Andrei, 2006; Azzali, 2007) in contrast with study that address European countries as a whole (Hung and Subramanyam, 2007; Barth et al., 2008; Christensen et al., 2008; Ahmed *et al.*, 2013; Capkun et al., 2012). Our motivation is to show that, despite the negative evidences found in Italy on the IFRS adoption in non financial industries, the IFRS could affect positively EM (reducing their level) and earnings quality in the post IFRS period in banks because the industry is more regulated.

Hp2: IFRS reduce earnings and capital management via Loan Loss Provision

THE CRISIS EFFECT

Financial crisis, started conventionally in 2008, (Lim and Lu, 2011) is running again.

During this period, companies have more incentive to produce positive earnings and thus to manage them. Choi *et al.* (2011) and Lim and Lu (2011) argue that during a crisis, managers are encouraged to use DA more for earnings manipulation rather than for efficient signaling. Choi *et al.* (2011) find this result in the Asian financial crisis of 1997-1998. Lim and Lu (2011) found that DA are relevant and NDA are not relevant during the Global Financial Crisis in Australia.

Our contribution is to investigate if the financial crisis increases the EM in the finance industry. The influence of crisis on the EM with LLP has been investigated in US (El Sood, 2012) and in Europe (Curcio *et. al.*, 2014). We focus on Italy because the banks have an important role in the capital market with a long tradition and because in this country crisis is having a lengthened effect.

Differently from Anglo-Saxon companies, Italian ones are financed mainly by debt capital than equity. Within the financial institutions, banks are those who mainly provide this financial resources to companies. In Italy the financial crisis is having negative effect in the long term till nowadays on the economy and, thus, on the bank system that has the central role in the Italian economy.

Hp3: The financial crisis increases earnings and capital management via Loan Loss Provision

4 – Sample

The sample includes the banks listed in the Milan Stock Exchange in 2002. We include in our sample listed banks that make commercial activities. We do not have in the sample central bank, government development banks, not listed cooperative banks and export–import banks.

In Italy there is not separation between commercial, investment and other different types of banks as defined by the Italian law n. 385 in 1993 ("Testo unico delle leggi in material bancaria e creditizia").
For example with this law there are not anymore banks that operate only in the export-import activity and a bank with a foreign legal office can operate directly in other countries. Further in the period analyzed in Italy all banks are private and there are not government development banks.

We exclude companies with corporate address outside Italy, in order to avoid influence from contexts different from the Italian one; not closing the financial statements on 31 December, to ensure homogeneity of the date of closure; and companies that did not provide all the necessary information for the analysis.

The dataset used in our study regards a ten-year period (2002–2011) and the sample is stable during

this period. We select companies listed in 2002 that are still listed in 2011.

This procedure produced a final sample of 22 listed banks with a total number of 220 firm-year observations, reduced to 158 for Hp1, 141 for Hp2 and 114 for H3 due to the data availability. Table 2 presents the sample selection procedure. Data were collected from the public financial statements.

Table 2 – Sample selection

Description	Number
Total number of banks listed on the Milan Stock Exchange in 2002	24
Less companies not closing the financial statements on 31 December	-1
Less companies with corporate address outside Italy	-1
Total number of companies included in the study	22
Total number of observations for the period 2002-2011 (10 years)	220
Less number of observations without information for the analysis	
Total number of observations for the period 2002-2011 (10 years) Hp1	158
Total number of observations for the period 2002-2011 (10 years) Hp2	141
Total number of observations for the period 2005-2011 (7 years) Hp3	114

5 – Methodology

We perform multivariate regressions based on Leventis *et al.* (2011) adapted from Ahmed *et al.* (1999). To measure the insolvency risk on the discretion of bank managers to mask banks' capital and earnings via LLPs, we introduced, in each models, a dummy variable, Dz, which capture the level of insolvency risk. As Leventis *et al.* (2011), we estimated the Z-index, developed by Boyd et al. (1993), which defines bankruptcy as the situation where losses exceed equity in market values. Z is the number of SDs below the mean by which profits must fall in order to eliminate equity. The higher the value of the Z-score the lower the insolvency risk and thus the Dz takes the value of 1 when Z-score < Median.

1. Hp1 is tested with this model:

$$LLP = \alpha_0 + \alpha_1 MCAP + \alpha_2 EBIT + \alpha_3 Dz + \alpha_4 MCAP*Dz + \alpha_5 EBIT*Dz + \alpha_6 SIZE + \alpha_7 GROWTH + Year\ fixed\ effect + Firm\ fixed\ effect + e$$

We expect a negative coefficient for MCAP (α_1) if banks managers' decisions on LLP are motivated by capital management and a positive coefficient for EBIT (α_2) if bank managers' decisions on LLP are motivated by EM.

2. Hp2 is tested with this model:

$$LLP = \alpha_0 + \alpha_1 MCAP + \alpha_2 EBIT + \alpha_3 IAS/IFRS + \alpha_4 MCAP*IAS/IFRS + \alpha_5 EBIT*IAS/IFRS + \alpha_6 Dz + \alpha_7 MCAP*Dz + \alpha_8 EBIT*Dz + \alpha_9 MCAP*IAS/IFRS*Dz + \alpha_{10} EBIT*IAS/IFRS*Dz + \alpha_{11} SIZE + \alpha_{12} GROWTH + Year\ fixed\ effect + Firm\ fixed\ effect + e$$

The dummy variable IAS/IFRS assumes value 1 for 2005-2011 period and 0 otherwise. The coefficients of the interaction term with IFRS α_4 is expected to be positive if in the post-IFRS period the capital management via LLP is lower and the influence of IFRS reduce the value of α_1 (α_4 should be positive to reduce α_1 that is negative). The coefficients of the interaction term with IFRS α_5 is expected to be negative because in the post-IFRS period the EM via LLP is lower and the influence of IFRS reduce the value of α_2 (α_5 should be negative to reduce α_2 that is positive). We include the variable IAS/IFRS as control.

The coefficients of the interaction term with IAS/IFRS*Dz α_9 is expected to be positive because IFRS reduce earnings management in riskier banks. The coefficients of the interaction term with IAS/IFRS*Dz α_{10} is expected to be negative because IFRS reduce capital management in riskier banks.

3. Hp3 is tested with this model:

$$LLP = \alpha_0 + \alpha_1 MCAP + \alpha_2 EBIT + \alpha_3 CRISIS + \alpha_4 MCAP*CRISIS + \alpha_5 EBIT*CRISIS + \alpha_6 Dz + \alpha_7 MCAP*Dz + \alpha_8 EBIT*Dz + \alpha_9 MCAP*CRISIS*Dz + \alpha_{10} EBIT*CRISIS*Dz + \alpha_{11} SIZE + \alpha_{12} GROWTH + Year\ fixed\ effect + Firm\ fixed\ effect + e$$

The dummy variable CRISIS assumes value 1 for 2008-2011 period and 0 otherwise. The coefficients of the interaction term with Crisis α_4 is expected to be negative because in the post-crisis period the capital management via LLP is higher and the influence of crisis increase the value of α_1 (α_4 should be negative to increase α_1 that is negative). The coefficients of the interaction term with Crisis α_5 is expected to be posi-

tive because in the post-crisis period the EM via LLP is higher and the influence of crisis increase the value of α_2 (α_5 should be positive to increase α_2 that is positive). We include the variable CRISIS as control.

The coefficients of the interaction term with CRISIS*Dz α_9 is expected to be negative because crisis increases Capital management in riskier banks. The coefficients of the interaction term with CRISIS*Dz α_{10} is expected to be positive because crisis decreases Earnings management in riskier banks.

Control variables used in each models are: SIZE (natural logarithm of total asset); GROWTH (Total asset t - Total asset t-1 / Total asset t-1).

For the variable definition see Table 3.

Table 3 – Variable definition

Variable	Description
Dependent variable	
LLP	Loan loss provisions/ Total asset: Before IFRS: LLP is the account n. 120, 130 and 140 of income statement (sum of LLP, as gains and losses, and the second level of LLP related to critic client) IFRS: LLP is the account n. 130a of income statement (impairment losses on loans view as gains and losses).
Independent variables	
IFRS	0 = 2002-2004 1 = 2005-2011
Crisis	0 = 2005-2007 1 = 2008-2011
MCAP	TIER 1
EBIT	Earnings before interest and tax and loan loss provisions / Total asset
Dz	1 = Z-score< Median 0 = otherwise
Control Variables	
SIZE	Ln(total assets)
GROWTH	Total asset t - Total asset t-1 / Total asset t-1

All continuos variables are winsorized at 1%

6 – Descriptive statistics and correlation matrix

Descriptive statistics are presented in Table 4 in thousand of euro for the full sample and for the subperiod pre-IFRS, post-IFRS and CRISIS period. In the column of the mean, we report the t-test for the mean group difference to compare the mean of EMs in two group of years: 2002-2004 pre IAS/IFRS (5th column) versus 2005-2007 post IAS/IFRS (9th column); 2005-2007 pre financial crisis (9th column) versus 2008-2011 financial crisis (13rd column).

The mean value of LLP in the pre-IFRS period is 231664, in the post-IFRS period is 175119 and in the post-CRISIS is 611632. Looking at this data the trend seems to decrease after IFRS implementation and to increase after the crisis.

However to understand the time trend we need to consider the scale effect based on total asset. Therefore, to compare with Leventis *et al.* (2011), we also compute the variables deflated by total asset. The mean value of LLP deflated by total asset pre-IFRS is 0.008 while the mean value in the post-IFRS period decreases to 0.002 pre-crisis and 0.004 post-crisis, in contrast with Leventis *et al.* (2011).To interpret this result we have to consider the variation of total assets in banks across time.

The absolute value of LLP decreases after IFRS but increases after crisis; while the relative value scaled by asset decreases after IFRS but increase less after crisis reaching a level lower than the pre-IFRS (0.004<0.008). This is due to the increase of total assets probably due to financial instruments revaluation that had a big effect with IFRS.

The t-test for the mean differences is significant pre and post crisis, but not pre and post IFRS. This means that only the crisis has an important effect in modifying the value of LLP recognized in the income statement.

This can be explained because the difference in LLP/TA pre and post IFRS is mainly driven by the increase of assets with the relative similar value of LLP; while the difference in LLP/TA pre and post crisis is mainly driven by the increase of LLP.

The mean value of TIER1 capital (MCAP) shows a significant decrease over time from 0.80 to 0.06, consistent with Leventis *et al.* (2011). The t-test is significant pre and post IFRS. The change in Basel accord over time changes the requirement for TIER capital based on risk, having an impact on its variation over time.

The mean value of EBIT increases from 751020 in the pre-IFRS to 2218299 in post-IFRS and is quite stable in post-crisis 2518275. Looking at the ratio with total asset, EBIT/TA is 0.016 in pre-IFRS, (mean value similar to Leventis et al., 2011) and increases post-IFRS and post-Crisis reaching the level of 0.03.

The higher difference is pre and post IFRS. The significant differences in earnings, and indirectly in capital, are found around the IFRS implementation because IFRS bring to different earnings configurations.

The size in logarithm is stable over time.

The control variable GROWTH in the full sample is 0.11. Before the introduction of IAS/IFRS (2002-2004) total asset increase in mean of 0.12, while in the IAS period (2005-2007) the same variable increase of 0.17. The effects of the crisis period (2008-2011) show a reduction of the GROWTH (0.06).

The correlation matrix (Table 5) shows that there is not problem of multicollinearity between MCAP and EBIT. The multicorrelation can give statistical problem in the model with the control variable SIZE and GROWTH; but repeating the regressions without GROWTH the results are confirmed.

7 – Results

Table 6 shows the results of regressions for our three hypotheses.

In the Hp1 we evaluate in general the presence of earnings and capital management performed via Loan Loss Provision. This model does not show significant results for both earnings and capital management evaluated individually and earnings and capital management evaluated with the interaction of the insolvency risk. The lack of significance can depend on omitted variables due to relevant factors happened in the period analyzed:

1. The adoption of IAS/IFRS
2. The financial crisis

Column Hp2 and Hp3 in Table 6 includes these two events.

Column Hp2 in Table 6 shows the interaction with IAS/IFRS. The Adj. R-square increases from 0.428 to 0.452 showing that the adoption of IAS/IFRS was an omitted variables and it's important to include it in the model. The interaction with IAS/IFRS is investigated for riskier (interaction with Dz) and less risky banks.

For riskier banks, the expected sign for

Table 4 – Descriptive statistics

	Full sample				Pre-IFRS 2002-2004				Post-IFRS 2005-2007				Post-IFRS and Post-Crisis 2008-2011			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
LLP	-375717	994874	-815215	1002281	-231664	421663.7	-2400000	0	-175119 **(-0.47)**	371639.6	-219641	10	-611632.6 **(1.98)****	1448785	-815215	1002281
LLP/TA	-0.00499	0.018297	-0.2697	0.005113	-0.00806	0.034158	-0.26968	0	-0.00217 **(-1.36)**	0.001283	-0.00568	4.79E-06	-0.00485 **(5.78)*****	0.00296	-0.01121	0.00511
MCAP	.273788	.347541	0	1.14587	0.801457	.1811843	0	1.14587	0.064685 **(32.7)*****	.0433444	0	.2677688	0.0661824 **(-0.18)**	.049638	0	.336700
EBIT	1958905	4182455	-20362	2.40e+07	751020.7	1260516	4407	4762000	2218299 **(-2.71)*****	4019913	34206	2.11e+07	2518275 **(-0.35)**	4976322	-20362	2.15e+07
EBIT/TA	0.02945	0.03	-0.0393	0.279414	0.016472	0.01348	0.00342	0.10815	0.039151 **(-5.30)*****	0.02081	0.01285	0.13275	0.030001 **(1.75)***	0.03132	-0.03933	0.27941
SIZE	16.6244	1.92781	12.5285	20.7678	16.36815	1.92390	12.5285	19.4529	16.57766 **(-0.73)**	1.92112	12.8273	20.5288	16.81261 **(-0.68)**	1.936141	13.0612	20.7679
GROWTH	0.11	0.20	-0.28	0.98	0.12	0.26	-0.28	0.98	0.17 **(0.114)**	0.22	-0.28	0.98	0.06 **(3.573)*****	0.12	-0.28	0.45
Dz	0.48	0.50103	0	1	0.477273	0.50525	0	1	0.4736 **(0.000)**	0.5037	0	1	0.486487 **(0.000)**	0.503229	0	1

In bold text the t-test of the mean difference: in the column of the mean for post-IFRS is presented the t-test with its difference with pre-IFRS; and in the column of the mean for post-Crisis is presented the t-test with its difference with post-IFRS. t-statistics and *** p<0.01, ** p<0.05, * p<0.1 are presented.

Dz*MCAP*IAS/IFRS (α_9) and Dz*EBIT*IAS/IFRS (α_{10}) are confirmed, overall the results for the interaction with EBIT is significant. The regression coefficient of Dz*EBIT*IAS/IFRS (-0.249) is negative, significant and reduces the positive effect of variables that include earnings on LLP (-0.354+0.341+0.254). For less risky banks the results is confirmed with the opposite sign.

Tabella 5 – Correlation Matrix

	LLP	MCAP	EBIT	SIZE	GROWTH	Dz
LLP	1					
MCAP	0.0083	1				
EBIT	**0.187**	**-0.3017**	1			
SIZE	**-0.1444**	**-0.1262**	**-0.3433**	1		
GROWTH	-0.0653	-0.1136	**-0.1849**	**0.6972**	1	
Dz	-0.0668	-0.0427	**-0.1787**	**0.1343**	**0.2321**	1

Significance at 10% in bold text

The results show that IAS/IFRS reduce Earnings management through LLP. IFRS implementation in Italy has not always improved earnings quality reducing EM in non financial industry (Andrei, 2006; Azzali, 2007) in contrast with study that address European countries as a whole (Hung and Subramanyam, 2007; Barth *et al.*, 2008, Christensen *et al*., 2008, Ahmed *et al.*, 2013; Capkun *et al.*, 2012). Our contribution is to show that in financial industry, IAS/IFRS improve earnings quality reducing earnings management through LLP.

Column Hp3 in Table 6 show also the interaction with CRISIS. The Adj. R-square increases to 0.532 showing that the CRISIS was an omitted variables and it's important to include it in the model. The interaction with CRISIS is investigated for riskier (interaction with Dz) and less risky banks.

The interaction with insolvency risk is significant and show that banks in financial difficulty reduce Capital management and Earnings management through LLP during the crisis. The expected sign for Dz*MCAP*CRISIS (α_9) and Dz*EBIT*CRISIS (α_{10}) are not confirmed comparing with the literature for riskier banks. The motivation can be linked to the type of measure used for earnings and capital management. Literature on other industries (Choi *et al.*, 2011 and Lim and Lu, 2011) and in other context (Curcio *et. al.*, 2014; El Sood, 2012) show lower earnings quality in financial crisis.

This study analyses earnings and capital management through accruals. Earnings and capital management through frauds could increase during financial crisis because they have an impact on cash. Accruals are not the mainly method to manage earnings and capital because in financial crisis, firms are more concerned on cash. Thus, further research are need to integrate our results.

Comparing Earnings and Capital management, in the second column Earnings management is significant and in the third column the magnitude of the coefficient of Dz*EBIT*CRISIS is higher than the magnitude of the coefficient of Dz*MCAP*CRISIS. These results show that banks managers' decisions on LLP are motivated mainly by earnings management.

These results confirm the finding of other researchers (Anandarajan *et al.*, 2003, 2007; Pérez *et al.*, 2008; Oosterbosch, 2009; Leventis *et al.*, 2012). LLP are used by banks as a Earnings management for opportunistic behavior as showed by US sample (Ma, 1988; Greenawalt and Sinkey, 1988; Beaver and Engel, 1996; Collins *et al.*, 1995; Healy and Wahlen, 1999; Liu *et al.*, 1997; Liu and Ryan, 1995; Scholes *et al.*, 1990; Beatty *et al.*, 1995; Moyer, 1990; Scholes *et al.*, 1990; Kim and Kross, 1998; Ahmed *et al.*, 1999; Wall and Koch, 2000).

8 – Conclusion

The paper tests the following hypothesis related to the Earnings and Capital management on the population of listed banks in Italy: 1) Earnings and Capital management are performed via LLP; 2) IFRS reduce Earnings and Capital management via LLP; 3) the financial crisis increases Earnings and Capital management via LLP.

Firstly, the research improves the literature on EM in the finance industry. Most of previous papers on EM exclude the finance industry because the model to measure DA is based on the purchase-

transformation-sale of goods (based on sales and receivable). Among the several areas of EM in banks financial statement, the paper, following previous literature, focus on LLP. The paper shows evidence that, in spite of changes in financial statement regulation and economic cycle, managers manipulate financial reporting via LLP.

Table 6 – Capital and Earnings management via LLP

VARIABLES	Exp. Sign	Hp 1 Estimate (t-value)	Hp 2 Estimate (t-value)	Hp 3 Estimate (t-value)
MCAP	-	0.00282	0.0092	0.0115
		(0.44)	(1.65)	(0.65)
EBIT	+	-0.0165	-0.354	-0.121
		(-1.44)	(-2.47)**	(-1.68)
IAS/IFRS			0.00425	
			(0.96)	
MCAP* IAS/IFRS	+		-0.0144	
			(-1.39)	
EBIT* IAS/IFRS	-		0.341	
			(2.39)**	
Dz		-0.0012	-0.00054	-0.00153
		(-1.64)	(-0.66)	(-1.51)
Dz *MCAP		0.0005	-0.0055	-0.0376
		(0.56)	(-2.42)**	(-1.55)
Dz *EBIT		0.0183	0.254	0.0985
		(1.09)	(2.78)**	(1.57)
Dz *MCAP* IAS/IFRS	+		0.0073	
			(0.69)	
Dz *EBIT* IAS/IFRS	-		-0.249	
			(-2.61)**	
CRISIS				-0.00296
				(-2.59)**
MCAP*CRISIS	-			-0.044
				(-1.49)
EBIT*CRISIS	+			0.117
				(1.67)
Dz *MCAP*CRISIS	-			0.0539
				(2.48)**
Dz *EBIT*CRISIS	+			-0.0843
				(-2.02)*
SIZE	-	-0.0001	-0.0021	-0.00251
		(-0.21)	(-2.02)*	(-1.72)
GROWTH	+	0.0008	0.00156	0.00113
		(0.67)	(1.71)	(0.93)
Constant		-0.0025	0.0291	0.0433
		(-0.14)	(1.59)	(1.71)
Year fixed effect		Included	Included	Included
Firm fixed effect		Included	Included	Included
Observations		158	141	114
Adjusted R-squared		0.428	0.452	0.532

t-statistics in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Secondly, the research offers interesting results related to the effect of IFRS in finance industry. Accounting principles employed by listed banks (IFRS integrated with Bank of Italy accounting standards specific for finance industry), lead to a decrease of Earnings management via LLP, because they impose a more level of transparency, also in the LLP policies.

This result is very important for a country like Italy, where evidence of mandatory IFRS in non financial industry do not show relevant improvement in earning quality.

Thirdly, we find that financial crisis decreases Earnings and Capital management via LLP, because less riskier listed bank needs more transparency in financial crisis.

Limitation of the research may be related to the few previous literature on the topic. Next, we consider LLP as proxy of EM in the banking industry but other important areas (services and investment) characterize the core business of most of listed banking in Italy and we could not exclude that manager employ these areas for their EM purposes.

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