

# Does the New European Banking Regulation discourage Earnings Management?

Giuseppe Di Martino<sup>1</sup>, Grazia Dicuonzo<sup>1</sup>, Graziana Galeone<sup>1,2</sup> & Vittorio Dell'Atti<sup>1</sup>

<sup>1</sup>Department of Economics, Management and Business Law, University of Bari Aldo Moro, Bari, Italy

<sup>2</sup>Faculty of Economic, Political and Social Sciences, Catholic University "Our Lady of Good Counsel", Tiranë, Albania

Correspondence: Grazia Dicuonzo, Department of Economics, Management and Business Law, University of Bari Aldo Moro, Bari, Italy.

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## Abstract

In the recent past, the financial crisis has shown important lacks in the EU regulation relating to the banking sector, making the introduction of a unified regulatory framework necessary. Since June 2009 the European Council has recommended a "Single Rulebook", that is a unique and harmonizing discipline applicable to all financial institutions in the Single Market, become effective on January 2014. This prudential discipline requires much more minimum capital, liquidity and information transparency and it defines format and minimum standards of contents.

The aim of this research is to investigate the relation between the new mandatory disclosure and earnings management policies in banking sector realized through Loan Loss Provisions (LLP), the component of income statement mainly subject to manipulations, especially in form of earnings smoothing. Because the new integrated regulatory framework requires a more transparent disclosure, we expected that accruals manipulation (basically LLP) could be discouraged. The empirical analysis is based on a sample of 116 listed European banks over the period prior (2011-2012-2013) and after (2014-2015-2016) the effective date of the Single Rulebook. The evidence confirm our hypothesis suggesting that this banking reform discourages earnings manipulation and improves earnings quality, making financial reporting more useful for investors. The results are important to the regulatory institutions (such as European Union and European Central Bank) supporting more stringent discipline introduced by Basel III.

**Keywords:** loan loss provisions, earnings management, earnings smoothing, earnings quality, banks, single rulebook

## 1. Introduction

Financial reporting assumes the key role in satisfying the information needs of stakeholders. The disclosure of relevant, reliable, complete and prompt information enables to reinforce the strategic and operative credibility on the financial market as well as to show the value creation reflected in the market price.

However, the recent financial scandals (Enron, Parmalat, Worldcom) have strained the credibility of financial statements generating the interest of the economic and financial community in themes such as the accounting policies and, in a broader sense, the earnings quality. For this reason, many countries have developed a set of high-quality rules (*Accounting Quality*) based on the transparency and comparability of accounting information. The aim of these regulations (Sarbanes-Oxley Act, The Market Abuse Directive, Basel 2 and 3, IAS/IFRS) is to limit the discretion of managers and, in this way, to provide a "true and fair view" and "faithfully representation" which improve the investor decision in capital allocation. The literature does not provide a univocal definition of Earnings Quality. However it is generally agreed that the more earnings quality the more the reduction of the information asymmetry in the capital market, also attenuating the agency problem which derives from an opportunistic use, by the management, of the discretion (Healy & Palepu, 2001).

Managers can exercise their discretion in financial reporting in different ways, estimating future economic events (for example losses from bad debts), choosing among acceptable accounting methods (e.g. LIFO, FIFO, weighted-average for inventory valuation), structuring transactions to achieve a preferred outcome (e.g.

operating lease vs finance lease) (Healy & Wahlen, 1999). Numerous works examine the use of specific accruals to manage earnings in different contexts and sectors. In particular, in banks, loans represent one of the most important assets and managers determine the amount of loan loss provisions (LLP) through judgments. Previous studies find that managers use loan loss provisions to manage earnings (Kanagaretnam, Lobo & Mathieu, 2003; Kwak, Lee & Eldridge, 2009). Therefore, a central question for standard setters, regulators and academics is to understand whether new banking reforms are able to limit managers' discretion.

Since 2014 European Union has introduced a single set of harmonized prudential rules (Single Rulebook) applicable to all financial institutions with the aim to ensure a more resilient, transparent and efficient banking sector. This discipline requires much more minimum capital, liquidity and information transparency and it defines format and minimum standards of contents in order to improve the economic decision making process of investors and to promote the efficient allocation of resources.

This paper contributes to the extant literature because it is the first study that analyzes the effect of the introduction of Single Rulebook on earnings management policies. It investigates whether the new reform increases the quality of financial reporting. We suppose that new regulation discourages accrual manipulation because it requires a more transparent disclosure. The results of empirical analysis confirm our expectation.

This paper is structured as follows. Section 2 examines the European regulations and specifically the new reform in the banking sector. Section 3 reviews the two main streams of literature. Section 4 develops our hypothesis, whereas section 5 provides details on research design. Section 6 describes the main findings, while section 7 details the conclusions.

## 2. The New Regulatory Framework

Earnings Quality can be influenced by the context in which the companies operate as well as by the functioning of the capital market, the system of Corporate Governance and the regulatory system.

Starting since 2013 a process aiming at the formulation of the new European regulatory framework (Single Rulebook) has begun, completed with the publication of the Regulation (EU) no. 575/2013 and the Directive 2013/36/EU. The Basel Committee introduces rules for the prudential supervision in the European Union to guarantee the solvency of the banking system, to promote competitive conditions uniform for the international banks of the different countries (leveling the international playing field) and to define a system of minimum capital requirements based on the degree of risk of the assets (Alber, 2014).

The "Single Rulebook" is the result of a legislative initiative, promoted by the European Commission in July 2011 regarding: i) the harmonization of the standards and the definitions of the regulatory capital; ii) the uniform implementation in Europe of Basel III Accord on liquidity requirements; iii) the creation of a European reporting system for all the banks to improve the comparability.

These measures replace entirely the Directive 2006/48/EC, relating to the access to the activity of the financial institutions and its exercise, and the Directive 2006/49/EC, that disciplined the capital adequacy of the investment companies and the financial institutions and constitute the reference regulatory framework in the EU for banks and investment companies since 1 January 2014. The reforms are: i) *micro-prudential*, regarding the regulation, within the single banks, of higher capital requirements to guarantee a greater loss-absorbing capacity in all the cases in which the banks is still active. The objective is to reduce their probability of failure, especially of the systemic ones (SIFI - Systemically Important Financial Institution); ii) *macro-prudential*, regarding the risks at system level and their pro-cyclical amplification. The attempt to reduce the impact of an eventual failure of the banks includes the arrangement of Recovery and Resolution plans, as well as the identification of more stringent standards for the financial system and the improvement of the mechanisms of prudential supervision.

Indeed, the Single Rulebook has regulated the introduction of the Single Supervisory Mechanism (SSM), which consists in the creation of a single European institution of banking supervision.

The regulation of the SSM has been applied since 4<sup>th</sup> November 2014 after a process of "core assessment" conducted by the European Central Bank (ECB) on the 130 most important banks in the Euro area, also including the subsidiaries of the banks not belonging to the Eurozone.

Thus, the new European regulation reinforces the importance of the capital adequacy which represents an important parameter for the risk absorption and it makes the discipline more severe regarding capital adequacy ratios. Capital adequacy is considered: i) a form of funding especially in case of assets with deferred profitability (for example plant and financial assets) since it allows banks to operate with adequate margins of free capital; ii) a way to assess the reputation and credibility of a bank.

Moreover, the Single Rulebook addresses the issue of the public disclosure regulated, since 2014, in the part Eight of Regulation (CRR), recorded as “Disclosure by Institutions” and by the Title I, Chapter 3 of part Ten titled “Transitional provisions, reports, review and amendments”. They are uniform disclosure necessary to make conscious and rational choices on the one hand and on the other to eliminate, or at least reduce, the opacity of banks and market failures ensuring a faithful evaluation of the risk-return profile (credit, liquidity, market and operational risks).

The necessity to provide supplementary information for each risk typology deriving from financial instruments, credits included, is also underlined by the IFRS 7 “Financial instruments: disclosures”. According to IFRS 7, the financial statement must contain qualitative information on risk exposures (credit, liquidity, market) and on their causes, the procedures and the financial risk management processes as well as on the methods employed for their evaluation.

Thus, a strengthening of the disclosure as well as of the capital adequacy is observable through the encouragement of the qualitative representations of the logical processes, which led to the formulation of the decisions. In this way, the importance of the supplementary information (Pillar 3) emerges, which must be presented together with the primary financial statements at least once a year and possibility of more frequent publications on “Own funds” (art. 437, Reg. 575/2013), on “Capital requirements” (art. 438, Reg. 575/2013) as well as on the risk exposition and other elements subject to rapid changes.

In summary, the Single Rulebook may improve the earnings quality by reducing the information asymmetry between internal and external parties. Consequently, it ensures the faithful representation of financial reporting and it discourages insiders to carry out earnings management to gain private benefits.

### 3. Literature Review

Our paper investigates earning quality according to two different streams of literature: 1) earnings management; 2) capital management theory.

#### 3.1 Earnings Management

The concept of Earnings Quality is linked, with a negative connotation, to the one of earnings management. Schipper (1989) defines earnings management as “a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain” and, similarly, Healy & Wahlen (1999) suggest that “earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying business of the company or to influence contractual outcomes that depend on reported accounting numbers”. It is an instrument to achieve opportunistic goals, to maximize the advantages and to improve the quality of financial information through the manipulation of accounting numbers (Stolowy & Breton, 2004). Davidson, Stickney & Weil (1987) and Guan, He & Yang (2006) observe that earnings management is a set of choices aimed at the achievement of a high level of earnings reported in accordance with GAAPs (*Generally Accepted Accounting Principles*). Management can deal with pressure situations aiming at the achievement of specific levels of earnings in different ways: i) ignoring them (King, 2004); ii) disclosing financial information in a more effective way with the investors to manipulate their expectations (Bernhardt & Campello, 2007); iii) implementing “creative accounting” techniques, such as the choice to capitalize some costs rather than report them into the income statement (Degeorge, Patel & Zechhauser, 1999); iv) making management decisions to relieve pressure (Graham, Harvey & Rajgopal, 2005).

The quality of accounting information is strictly connected to two characteristics: i) the reliable representation of economic and financial conditions of the company; ii) the usefulness for the formulation of previsions on future results. The actions of earnings management lead to the violation of both the quantitative requirements through either the classification of values in the financial statements (*classification shifting* or *classificatory earnings management*) (McVay, 2006) or the evaluation of accounting number subject to estimations and conjectures (*accruals earnings management*). The results of these operations will affect not only the current period but they will have an impact, with equal intensity and opposite direction, on the following periods (*reversal property of accounting*).

Prior studies assess the quality of financial reporting considering the amount of accruals (McNichols, 2002). The accruals are distinguished in discretionary accruals (abnormal accruals) and non-discretionary accruals (normal accruals) according to whether the reference is to that part of accruals that managers can control or not (Healy, 1985). Some studies present the manipulation of discretionary accruals as the instrument to achieve a preferred outcome (Jones, 1991; Daniel, Dennis & Naveen, 2008; Lee, 2011). One of the most important advantages of the accruals approach regards the impact of earnings management policies with particular reference to a specific

period (event period) in which management is strongly motivated to manipulate earnings. Accruals management configures itself as a timing problem of the earnings detection, so that to an overestimation of earnings in a period corresponds an underestimation of the same in the following periods (Dechow & Schrand, 2004) with relevant impact both on the reliability of the results and the future sustainability and thus, ultimately, on the earnings quality. In 2003 Nelson, Elliott & Tarpley (2003) identify the items being manipulated through a survey conducted on 253 auditors. The results show that the main classes of financial statements items concerned by policies of earnings management are the provisions for risks and charges and cost capitalization.

After the financial crisis of the years 2007-2009, the IASB started a process of revision of IFRS 9 ‘Financial Instruments’, completed in July 2014. The impairment requirements in the new standard are based on an expected credit loss model and, starting since 1<sup>st</sup> January 2018, will replace the IAS 39 ‘Financial Instruments: Recognition and Measurement’. The expected loss approach should result in the anticipation of the loss identification, with relative negative effect on the equity at the time of the first adoption. The use of provisions reflects the divergent objectives pursued from the different regulatory authorities. The supervisory authorities are interested in protecting the stability of the banking system and so they consider the provisions as a buffer in view of future losses and are thus favorable to provisioning based on the expected loss. The accounting rules, however, are more oriented to accrual policies based on an incurred loss approach to ensure a true and fair view of earnings. Onto this opposing concept, tax authorities have to defend themselves from the risk of window dressing policies that have the purpose to minimize the tax burden through provisions and adjustments.

Previous literature demonstrates that the main accrual used by commercial banks to manipulate earnings is represented by loan loss provisions (Anandarajan, Hasan & Lozano-Vivas, 2003; Ahmed, Takeda & Thomas, 1999; Moyer 1990). This is because LLP are characterized by a greater element of uncertainty if compared to the other financial statements items. One of the incentives to the earnings manipulation is related to income smoothing purpose. The smoothing effect does not necessarily implicate the constancy of earnings in time but it can be referred to the regular variations of the earnings reported in financial statements through the manipulation of the discretionary component of LLP. Greenawalt & Sinkey (1988) analyze a sample of 160 bank groups in the period 1976-1984 and they find that managers engage in earnings management for income smoothing purposes. The authors point out three motivations supporting this policy: i) the restriction imposed by the authorities in terms of capital adequacy; ii) the agency conflicts; iii) the compensation theory, that encourages managers to improve results to get better remuneration, anchored to levels of performance reported in financial statements. Also Collins, Shackelford & Wahlen, (1995) show evidence of a positive relation between loan loss provisions and earnings which is consistent with smoothing earnings via LLP.

In conclusion, although the main purpose of loan loss provisions is to adjust banks’ loan loss reserves to reflect expected future losses in their loan portfolios, the extant literature shows that managers have many incentives to use these accruals to manage earnings, especially in form of income smoothing.

### *3.2 Capital Management Theory*

The equity on the banks assumes the role of protection of creditors but it also represents the first buffer to deal with losses. This explains the attention that the various stakeholders give to the level of capitalization. The minimum level of capitalization of a bank (regulatory capital), needs to achieve ‘capital adequacy’ as defined by Basel Accords, must be sufficient to absorb the management risks and guarantee stability and efficiency. So the minimum capital requirement is commensurate with i) the bank’s risk profile, ii) the scarceness of the resource because of the increased cost and complexity of the operation of share capital increase compared to the issue of any other liability iii) as well as to the high level of remuneration expected by the stakeholders.

An inadequate capital to face the risk management will need the intervention of the bank in order to increase the items that compose the regulatory capital or, as an alternative, modify the qualitative and quantitative dimension of the risk assets in favor of less risky balance sheet items. The trade-off among the different strategic options is included in the Capital Management policies in which the articulation of the regulatory capital has a leading role. The latter is the total capital that bank can use for the company’s risk and loss coverage. Moreover, the adoption of harmonized capitalization allows the overcoming of competitive distortions which would derive from a different treatment of the problems of capital adequacy at international level and fosters the creation of an international level playing field. This process firstly started with the Basel I and II Accords, but the awareness of their limits led to the publication of a new framework, known as Basel III, which kept the approach of the previous accord Basel II based on three pillars.

The underlying logic of the Accords is that to a greater risk exposition corresponds a higher equity and this means that banks are required to hold capital proportionally to their risk-weighted assets (RWA).

A priority or quality scale is introduced to orient the intermediaries towards the instruments with greater loss absorbing capacity. According to the indications of the Basel Committee contained in the three Accords, the composition of the regulatory capital is articulated on two levels: capital base (Tier 1) and supplementary capital (Tier 2). Tier 1 is the capital able to absorb losses in going concern whereas Tier 2 is the capital used to cover the losses in case of gone concern. The loan loss reserves are just included in Tier 2 loan loss provisions replenished in each financial year allocated to face losses on receivables not yet identified. They could often be “hidden reserves”, namely unjustified provisions, constituted when substantial profits are reached and reported in income statement in periods of loss or low results also with the intent of stabilizing the tax revenues to be paid to the treasury (tax smoothing).

The use of LLPs for manipulation of capital adequacy ratios has been documented by previous researches (Collins, Shackelford & Wahlel, 1995; Moyer 1990; Scholes, Wilson & Wolfson, 1990) and arises from the circumstance that the violation of the minimum capital requirement imposed by the prudential regulation implicates costs (Anandarajan, Hasan & Lozano-Vivas, 2003). Recently, Jin, Kanagaretnam & Lobo (2016) demonstrate that the managers rely to accounting policies, following GAAP and existing rules, in order to monitor situations of risk rather than to level the profits.

Examining the annual reports of 469 commercial banks listed in European Union, Balasubramanyan, Zaman & Thomson (2014) find an increase of earnings management arising from the manipulation of book value of equity and regulatory capital. Similar results are achieved by Bornemann, Kick, Memmel, & Pfungsten (2012). The authors show that over the period 1997-2009 managers build hidden reserves to avoid a fall of earnings of listed and non-listed German banks.

On the contrary, Collins et al. (1995) analyze a sample of 160 American banks between 1971 and 1991 and they support the thesis that bad debts provisions (loan loss reserves) are not instrumental to the implementation of capital management policies.

Kim & Kross (1998) and Ahmed et al. (1999) examine the use of LLP for the manipulation of capital adequacy ratios also after the implementation of the Basel I Accord. They conclude that, after the restrictions introduced by the Accord, banks limit capital management behaviors though they are not completely eliminated because of high costs to incur in case of violation of minimum capital requirements requested by the prudential discipline.

However, the recent literature examines other contexts different from US, in particular Australia (Anandarajan, et al. 2003; Anandarajan, Hasan & McCarthy, 2007), Europe (Curcio & Hasan, 2015), Spain (Pérez, Salas-Fumás & Saurina, 2008) and central Eastern Countries (Othman & Mersini, 2014). The conclusions are not unique. Some authors find an association between LLP and capital management, while others confirm the hypothesis according to which these provisions are instrumental to the reduction of earnings volatility rather than to the manipulation of capital adequacy ratios. Anandarajan et al., 2003, 2007, Curcio & Hansans, 2015, Pérez et al. 2008 confirm the idea that in the non-US banks, the LLPs are an instrument to engage in earnings management rather than in capital management. On the contrary, Otman & Mersni, 2014, through a comparative study with the banks of central Eastern Countries, do not observe significant differences since the LLPs have been used by managers to level profits and to manipulate regulatory capital.

#### 4. Research Hypothesis

The purpose of the paper is to fill the research gap on the earnings quality in the banking sector investigating the relation between the new mandatory disclosure and accounting manipulation in the form of earnings management and capital management. The improvement of earnings quality and the strengthening of trust of the public institutions and community (*political cost theory e legitimacy theory*), shareholders (*agency theory*) and financial institutions (*capital need theory*) could reduce earnings management policies, especially in form of income smoothing, ensuring an efficient capital allocation, and limit capital manipulation to reach the capital adequacy targets. Specifically, we examine how the introduction of a unified regulatory framework in Europe could affect managers' decision to manipulate earnings through loan loss provisions (LLPs). Because the new integrated regulations requires a more transparent disclosure and raises the quantity and quality of the minimum capital, accruals manipulation could be discouraged. Consequently, the implementation of the Single Rulebook could increase earnings quality, reducing managerial incentives for income smoothing. Thus, we posit the following hypothesis:

**H:** *The impact of new European banking regulation discourages accrual manipulation by reducing income smoothing and capital management incentives*

## 5. Research Design

### 5.1 Sample Selection

To test our hypothesis we estimate abnormal accruals before the introduction of the Single Rulebook and immediately after. So we consider 2011-2012-2013 as fiscal years prior the introduction of new European banking regulation and 2014-2015-2016 as fiscal years immediately after. We selected a sample of banks listed in European stock exchange markets. To include a company in our sample the following criteria must be satisfied: 1) companies listed on a regulated stock market; 2) companies operated in the banking sector (GICS: “banks”); 3) companies with headquarter in a country of European Union. From the initial sample of 175 banks we excluded: a) 10 banks operated in Croatia (member of EU since 1<sup>th</sup> July 2013); b) 49 banks without available accounting and market data. The final sample included 116 European listed banks operated in the period 2011-2016 (Table 1). We passed from 696 initial observations (116 x 6 = 696) to 498 observations because we excluded 198 observations due to missing data. All data are collected from Datastream database. Table 1 reports details about sample selection.

Table 1. Sample selection

European listed banks	252
- banks with headquarter not in European Union	-77
- banks operating in Croatia	-10
- banks without accounting and market data	-49
<b>Sample banks</b>	<b>116</b>
<b>N. observations for 6 years analysed (116 x 6)</b>	<b>696</b>
- observations with missing data	-198
<b>N. observations</b>	<b>498</b>

Table 2. Sample by European country

Country	N	Country	N
Austria	6	Italy	16
Belgium	2	Lithuania	1
Cyprus	1	Malta	2
Czech Republic	2	Netherlands	3
Denmark	16	Poland	11
Finland	2	Portugal	3
France	12	Romania	2
Germany	5	Slovak Republic	3
Greece	5	Spain	8
Hungary	1	Sweden	4
Ireland	3	United Kingdom	8
<b>Total</b>		<b>116</b>	

### 5.2 Variables and Regression Model

Consistent with prior research (Kim & Kross, 1998; Beaver & Engel, 1996; Beatty, Chamberlain & Magliolo, 1995; Wahlen, 1994), we conduct a two-stage analysis using an accrual manipulation approach to verify the impact of new European banking regulation on earnings quality. Managers can use their discretion in determining discretionary accruals because they contain accounting estimates based on forecasts and it is easier to manipulate. However, it is difficult for users to identify this form of earnings management (Call, Cheng & Miao, 2014; Cassel, Myers & Seidel, 2015). This discretion makes it a useful measure for examining the quality of financial reports and discretionary accruals are assumed as a proxy for earnings manipulation (Warfield, Wild & Wild, 1995). The idea is that a higher amount of discretionary accruals is associated with a lower future earnings and a lower future stock returns. In the banking sector, the attention is focused on specific accruals and, in particular, on the loan loss provisions (McNichols & Wilson, 1988). In banks the amount of loan is relevant and LLPs affect significantly economic and financial performance and capital requirements imposed by regulations. Since loan loss provision (LLP) is composed of a non-discretionary component (NLLP) and a discretionary component (DLLP), we are interested in identifying the unexpected component of total accruals and we have to explicitly account for non-discretionary component of LLP in order to obtain DLLP (Dong, Liu & Hu, 2012).

In the first stage, we regress (equation 1) the LLP on the explicative variables that are associated with non-discretionary loan loss provisions (NLLP) (Kanagaretnam et al., 2003; Kwak et al., 2009; Beaver & Engel, 1996; McNichols & Wilson, 1988):

- the beginning balance of non-performing loans (NPL<sub>t-1</sub>) scaled by total assets. This variable is a proxy of the degree of credit quality;

- changes in non-performing loans ( $CHNPL_t$ ) scaled by total asset. That is a bank-specific indicator of potential future loan losses. The investors use past changes in non-performing loans to predict future changes (Wahlen, 1994);
- changes in loans ( $CHLOAN_t$ ) scaled by total assets. The influence of this variable on LLP largely depends on the quality of the change in total loan amounts relative to time  $t-1$ .

The accruals model is the following:

$$LLP_{i,t} = \beta_0 + \beta_1 NPL_{i,t-1} + \beta_2 CHNPL_{i,t} + \beta_3 CHLOAN_{i,t} + \varepsilon_i \quad (1)$$

where:

$i$  is a given bank;

$t$  is a reference year (2011, 2012, 2013, 2014, 2015 or 2016);

$LLP_{i,t}$  is Loan loss provisions for bank  $i$  at the time  $t$ ;

$NPL_{i,t-1}$  is non-performing loans for bank  $i$  at the time  $t-1$  scaled to total assets;

$CHNPL_{i,t}$  is Change in non-performing loans at the time  $t$  with respect to time  $t-1$ , calculated as non-performing loans for bank  $i$  at the time  $t$  less non-performing loans for bank  $i$  at the time  $t-1$  scaled to total assets;

$CHLOAN_{i,t}$  is Change in loans at the time  $t$  with respect to time  $t-1$ , calculated as total loans for bank  $i$  at the time  $t$  less total loans for bank  $i$  at the time  $t-1$  scaled to total assets.

In the second stage, we used the residual terms of the first regression as measure of discretionary component (DLLP) to investigate the accruals manipulation. The second equation is:

$$DLLP_{i,t} = \beta_0 + \beta_1 EBTLTP_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 CAR_{i,t} + \beta_4 REFORM + \beta_5 GROWTH_t + \varepsilon_i \quad (2)$$

where:

$i$  is a given bank;

$t$  is a reference year (2011, 2012, 2013, 2014, 2015 or 2016);

$EBTLTP_{i,t}$  is earnings before extraordinary items, taxes and loan loss provisions for bank  $i$  at the time  $t$  scaled to total assets;

$SIZE_{i,t}$  is natural logarithm of total assets for bank  $i$  at the time  $t$ ;

$CAR$  is Capital Adequacy Tier 1 ratio for bank  $i$  at the time  $t$ ;

$REFORM$  is equal to 0 in the period prior to the implementation of Single Rulebook (2011, 2012, 2013) and it is equal to 1 in the period after (2014, 2015, 2016);

$GROWTH$  is change in gross domestic product (GDP) per capita at the time  $t$  with respect to time  $t-1$ .

We scaled the variables LLP, NPL, CHNPL, CHLOAN, EBTLTP by total assets to mitigate heteroscedasticity due to size differences. We identify earnings quality determinants based on prior literature and specifically, we use performance (EBTLTPs), size (LnAssets) and Capital Adequacy Ratio (Tier 1) measures.

The coefficient of EBTLTP (*earnings before extraordinary items, taxes and loan loss provisions*) supports the idea that managers can be motivated to exercise discretion in the use of LLP when their current profitability is lower in order to improve their accounting performance (Doyle, Ge & Mcvay, 2007).

About SIZE there is no clear expected sign but it can be argued that smaller firms tend to have lower earnings quality due to weaker internal controls if compared to larger companies (AshBaugh-Skaife, Collins & Kinney, 2007). Thus, we calculated the natural logarithm of total assets.

The Capital Adequacy Ratio or Tier 1 coefficient (measured by bank's core equity capital to its total risk-weighted assets) allows to verify whether banks with lower ratio, and therefore undercapitalized, use LLP to manipulate earnings in order to avoid sanctions deriving from non-compliance with prudential regulations on the capital level. We expect that the new European banking regulation discourages capital management as the strengthening of the quality of capital discipline. To capture the impact of new regulation, we introduced the dummy variable "REFORM", which assumed value 0 in the period prior to the implementation of the single rulebook (2011-2012-2013) and value 1 in the period immediately after (2014-2015-2016).

Finally, we controlled for the previously documented pro-cyclical effect of LLP (Laeven & Majnoni, 2003; Fonseca & González, 2008) using the variation of gross domestic product (GROWTH). Table 3 summarizes all variables included in the empirical analysis and the predicted sign of their coefficients.

Due to the systematically underestimates the absolute value of the regression coefficients in the second stage (Goldberger, 1961), following Kanagaretnam et al. (2003), we also tested a single regression model (equation 3) in order to verify the robustness of our findings:

$$LLP_{i,t} = \beta_0 + \beta_1 NPL_{i,t-1} + \beta_2 CHNPL_{i,t} + \beta_3 CHLOAN_{i,t} + \beta_4 EBTLPP_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 CAR_{i,t} + \beta_7 REFORM + \beta_8 GROWTH_t + \varepsilon_i \quad (3)$$

Table 3. Variables

Name	Description	Predicted sign
$NPL_{i,t-1}^*$	Non-performing loans	+
$CHNPL_{i,t}^*$	Changes in non-performing loans	+
$CHLOAN_{i,t}^*$	Changes in value of loans	+
$EBTLPP_{i,t}^*$	Earnings before extraordinary items, taxes and loan loss provisions	+
$SIZE_{i,t}$	Natural logarithm of total assets	-
CAR	Capital Adequacy Tier 1 ratio	-
REFORM	0 (2011-2012-2013); 1 (2014-2015-2016)	-
GROWTH	$\Delta\%$ GDP	

\* scaled by total assets

## 6. Results

Table 4 contains the descriptive statistics of the variables of the models proposed. The loan loss provisions are in mean 0.85% of total assets ranging from 0.02% to 4.62%, whereas Non-performing loans count on average 5.9% on the total assets reaching a maximum of 49.84% for a Grecian bank.

The ratio EBTLPP to total assets is in mean 1.16%, corresponding to 1,567 million of euro. The sample mean of the total assets is € 244 billion, with values ranging from € 307 million to € 2,250 billion. Mean Capital Adequacy Tier 1 ratio is 10% and it exceeds the regulatory minimum ratio of 6%. This suggests that banks of our sample are adequately capitalized.

Table 4. Descriptive statistics of sample

	LLP	NPL	CHNPL	CHLOAN	EBTLPP	EBTLPP (in thousands €)	Total Assets (in thousands €)	CAR
Mean	0.0085	0.0593	0.0067	0.0101	0.0116	1,567,008	244,793,020	10.00
Median	0.0051	0.0312	0.0004	-0.00004	0.0104	335,894	39,346,653	11.18
Std. Dev.	0.0097	0.0831	0.0260	0.0753	0.0122	3,655,600	448,721,108	6.03
Min	0.0002	0.0001	-0.0548	-0.1459	-0.0293	-10,926,000	307,905	0.05
Max	0.0462	0.4984	0.1292	0.4302	0.0586	23,979,383	2,250,603,949	27.28
N	498	498	498	498	498	498	498	498

Table 5 reports Person correlation coefficients among the variables. As expected, NPL, CHNPL and EBTLPP are positively and significantly related to LLP, whereas SIZE and CAR are negatively related to LLP.

Table 5. Correlation matrix

	LLP	NPL	CHNPL	CHLOAN	EBTLPP	Size	CAR	Reform
LLP	1							
NPL	0.469**	1						
CHNPL	0.327**	0.025	1					
CHLOAN	-0.020	-0.147**	0.140**	1				
EBTLPP	0.177**	-0.106*	0.029	0.386**	1			
Size	-0.266**	-0.039	-0.089*	-0.191**	-0.439**	1		
CAR	-0.082	0.083	0.028	0.152**	-0.066	0.250**	1	
Reform	-0.072	0.224**	-0.243**	-0.017	0.082	0.024	0.057	1

The results of the empirical analysis are presented in Table 6.

In accordance with Kim & Kross, 1998 and Lobo & Yang, 2001 the coefficient of NPL and CHNPL are significantly positive in the LLP model 1 and model 3. As expected, a higher level of a credit risk affects positively the level of provisioning and this means that loan loss provisions reflect change in the relative quality of banks loans. However, contrary to our predictions but in line with the works of Kim & Kross (1998) and Fang, Hasan, & Li (2014), in the model 3 CHLOAN (that measures the overall risk exposure of the bank in its intermediation activities) has a negative coefficient. The significantly positive coefficient of the EBTLPP indicates that managers engage in income smoothing: firms with higher profitability tend to increase LLP to reduce current earnings. Furthermore, as revealed in some studies (Kim & Kross, 1998; Dong et al., 2012; Jin et al., 2016), we find that larger banks are negative related to LLP. Consistent with our hypothesis, the coefficient of REFORM is negative and significant both in model 2 and model 3. These results suggest that after the

introduction of new European banking regulation managers have less room to manipulate accruals through LLPs. Consequently, we can argue that banking reform improves earnings quality and it reinforces the capital base of the banks. Finally, the coefficient of GROWTH has negative and significant at 1% level, confirming the procyclical effect of LLP, tested in previous evidence (Kanagaretnam et al., 2003; Bikker & Metzmakers, 2005; Leaven & Majnoni, 2003). The negative relationship between LLPs and change in GDP reflects a higher credit quality of counterpart during the phase of economic growth, meaning that credit losses and provisions are lower than the levels reached during a period of downturn.

Table 6. Multivariate analysis results

	Model 1			Model 2			Model 3		
	Coefficients	Std Error	t	Coefficients	Std Error	T	Coefficients	Std Error	t
Costant	0.0046	0.0005	10.031	0.012	0.003	3.385	0.0167***	0.0035	4.794
NPL	0.0537***	0.0044	12.287				0.0562***	0.0043	13.169
CHNPL	0.1169***	0.0139	8.385				0.0919***	0.0138	6.661
CHLOAN	0.0005	0.0049	0.099				-0.0098**	0.0050	-1.969
EBTLLP				0.0144***	0.0310	4.635	0.1726***	0.0329	5.245
SIZE				-0.0006***	0.0002	-3.216	-0.0001***	0.0001	-3.421
CAR				-0.0001**	0.0001	-2.060	0.0007	0.0002	-1.487
REFORM				-0.0016**	0.0007	-2.373	-0.0021***	0.0007	-2.895
GROWTH				-0.0318***	0.0101	-3.143	-0.0353***	0.0105	-3.356
F-test		77.239			15.995			45.263	
Sign.		.000			.000			.000	
Std.Err. of estimate		.008			.007			.007	
N		498			498			498	
Multiple R-squared		.319			.140			.425	
Adjusted R-squared		.315			.131			.416	

\* p-value < 10%; \*\* p-value < 5%; \*\*\* p-value < 1%

## 7. Conclusion

For a sample of European listed banks, this paper investigates whether the “prudential discipline” for financial institution (Single Rulebook) discourages earnings manipulation by reducing earnings management, in form of income smoothing, and capital management incentives. Literature does not provide any evidence of the impact of new European banking regulation, while our result support the effort made by national and international authorities on improving transparency of financial reporting.

We test our hypothesis using accruals models which measure the Loan Loss Provisions (LLP) level (dependent variable) before and after the introduction of the new reform. Both applying a two-stage analysis and a single regression model our results confirm our research hypothesis and show that LLPs’ level is lower after the introduction of the new reform. According to our expectation, the new reform discourages earnings manipulation and improves earnings quality, making financial reporting more useful for investors. These findings are important to the regulatory institutions (such as European Union and European Central Bank) supporting more stringent discipline introduced by Basel III.

Our paper investigates the effects of the new regulations on earnings quality and it represents the initial point for future researches. The future analysis could be regarded the impact of new reform on the value relevance of financial reporting.

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