Earnings conservatism and litigation exposure in the banking industry *

Conservadurismo del resultado y riesgo de litigio en el sector bancario

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ABSTRACT This paper examines the effect of managers' liability exposure on earnings conservatism in the banking industry. Focusing on a wide international sample of commercial banks and using TIER1 as a proxy of bank managers' exposure to litigation, our results show a negative relationship between the level of TIER1 and earnings conservatism. We interpret these results as evidence of an increase in bank managers' liability exposure increasing earnings conservatism. Moreover, we find that this negative relationship holds for both, those banks with a TIER1 below the median country level of TIER1 (low-TIER1 banks) and those with a TIER1 above the median country level of TIER1 (high-TIER1 banks), even though it is less pronounced for the former group. Thus, although it is expected that higher public scrutiny scenarios in the banking industry (low-TIER1 banks) trigger a higher degree of unconditional conservatism, they do not prevent managers from resorting to earnings conservatism in an attempt to minimize not only litigation costs but also the likelihood of adverse political action.

KEYWORDS Commercial banks; Capital adequacy; Earnings conservatism; TIER1; Panel data analysis.

RESUMEN Este trabajo examina el efecto del riesgo de litigio de los directivos sobre el conservadurismo contable en el sector bancario. A partir de una amplia muestra internacional de bancos comerciales, y empleando el TIER1 como subrogado de la exposición de los directivos bancarios al riesgo de litigo, nuestros resultados muestran una relación negativa entre el nivel de TIER1 y el conservadurismo condicional. Interpretamos estos resultados como evidencia de que un incremento en la exposición al riesgo de litigio por parte de los gestores bancarios incrementa el conservadurismo condicional. Además, encontramos que esta relación negativa se mantiene tanto para los bancos con TIER1 por debajo de la mediana de TIER1 del país (bancos low-TIER1) como para los que presentan un TIER1 por encima de la mediana del país (bancos high-TIER1), aunque la relación es menos pronunciada para el primer grupo. Así pues, aunque se espera que un escenario de mayor escrutinio público (bancos low-TIER1) suponga un mayor grado de conservadurismo no condicional, ello no impide que los gestores recurran al conservadurismo condicional en un intento de minimizar, no solo los costes de litigio, sino también la probabilidad de una acción política adversa.

PALABRAS CLAVE Bancos comerciales; Capital regulatorio; Conservadurismo condicional; TIER1; Análisis de datos de panel.

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1. INTRODUCTION

The aim of the present work is to examine the incidence of managers' exposure to litigation risk on earnings conservatism in the banking industry. This research topic is potentially interesting, particularly in light of the recent World financial crisis which has increased the number of failed and troubled banks, turning bank managerial exposure to legal liability into an issue that has caught the attention of investors, mass media, and regulators. Moreover, the shift towards fair-value accounting, extended with the progressive implementation of IASB standards in the European Union as well as in many developing countries, and promoted by FASB [(1)], has emphasized the debate on the benefits and drawbacks of conservative accounting.

Previous research has shown that earnings conservatism is an important property of accounting earnings (see, *e.g.* Basu, 1997; Pope and Walker, 1999; Ball *et al.*, 2000; Givoly and Hayn, 2000; Giner and Rees, 2001; Holthausen and Watts, 2001; García-Lara and Mora, 2003; García-Lara and Mora, 2004; Raonic *et al.,* 2004; LaFond and Watts, 2008; García-Lara *et al.*, 2009). While the literature has advanced different explanations for the existence of conservatism, such as those related to tax minimization or to the asymmetry in regulators' costs, the contractual explanation and shareholder litigation are the main reasons that, in general terms, dictate the demand for conservative accounting (Watts, 2003).

According to this explanation, Watts (2003) predicts that managers and auditors select accounting procedures that allow them to reduce litigation costs, since overstating the firm's net assets is more likely to result in litigation costs than understating net assets. Therefore, in accordance with the litigation explanation for earnings conservatism, previous empirical works show evidence of an increase in earnings conservatism in response to a raise in the litigation environment (see, *e.g.* Kothari *et al.*, 1988; Ball *et al.,* 2000; Holthausen and Watts, 2001; Huijgen and Lubberink, 2005; Ball and Shivakumar, 2005).

The banking industry provides an interesting framework to expand the study on the effect of managers' threat of litigation on earnings conservatism. In this sense, compared with other industries, banks are subject to closer regulation and supervision (see, *e.g.* Levine, 2004; Barth *et al.*, 2004; Barth *et al.*, 2006) as their political visibility is high because they administer the payments system, supply backup liquidity and are the conduit through which monetary policy is administered (Corrigan, 1982). Furthermore, banks are considered to have firm and industry specific human capital and, in this sense, legal and disciplinary actions against banks relayed through the media might considerably affect the reputation of the banks and their managers. For all these reasons, bank managers are especially vulnerable to litigation.

(1) The IASB and FASB are developing a joint Conceptual Framework in which the use of fair value is discussed as the preferred measurement basis. On June 2010 the FASB published its proposed Accounting Standards Update, *Fair Value Measurements and Disclosures (Topic 820): Amendments for Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs.* The same month, on June 2010, the IASB issued its Exposure Draft, *Measurement Uncertainty Analysis Disclosure for Fair Value Measurements.*

As the previous literature suggests (see, *e.g.* Moyer, 1990; Beatty *et al.*, 1995; Collins *et al.*, 1995; Niswander and Swanson, 2000), the extent of public scrutiny in the banking industry is influenced by a capital adequacy threshold, since this capital level could be considered a proxy of the likelihood of bank failure. Thus, since the 1988 Basel Capital Accord, regulators require that banks hold a minimum *TIER1* capital (equity capital and disclosed reserves) equal to 4% of risk-adjusted assets and this measure has come to be considered *(see, e.g.* Chami and Cosimano, 2003) the main constraint in analysing and controlling bank behaviour.

In this context, managers' financial reporting choices are one of the available tools for addressing an increase in litigation exposure. Particularly, in the present work, we provide evidence on a positive relationship between managers' litigation threat and earnings conservatism in the banking industry by using a bank specific measure of managers' exposure to litigation risk, the level of *TIER1.* Overall, our results are consistent with an increase in public and private scrutiny, derived from an increase in the perceived likelihood of bank failure, promoting conditional conservatism. Nevertheless, as the previous literature suggests (see *e.g.* Moyer, 1990; Beatty *et al.*, 1995; Collins *et al.,* 1995; Niswander and Swanson, 2000) it is important to distinguish between potentially troubled banks and those with a safe margin of capital. In this sense, banks with low capital ratios may be required to follow supervisor' plans, in which relevant short term decisions or even strategic ones are conducted. According to this, banks with a lower margin of capital face not only greater liability exposure but also higher supervisory pressures. Therefore, to gain a deeper understanding of the effect of managers' liability exposure on earnings conservatism, we extend previous analysis by considering the effect of *TIER1* on earnings conservatism for those banks with a *TIER1* below the median-country level of *TIER1* («low *TIER1*») and those with a *TIER1* above the median-country level of *TIER1* («high *TIER1*»). Our results show that the negative relationship between *TIER1* and earnings conservatism holds for both «high *TIER1*» banks and «low TIER1» banks. Nevertheless, this negative relation is greater for the former group. In light of previous results, we conclude that higher scrutiny scenarios where unconditional conservatism is likely to play a significant role (see *e.g.* Qiang, 2007; García Lara *et al.*, 2009) does not prevent managers from resorting to earnings conservatism in an attempt to minimize litigation costs and the likelihood of unfavorable political actions.

For this study we considered a panel comprising 335 worldwide commercial public banks collected from *BankScope* database, covering from 1998 to 2007. In our analysis we have considered the examination of earnings conservatism as proposed by Basu (1997), Ball and Shivakumar (2005) and Nichols *et al.* (2009), extending previous models by including the *TIER1* variable. Our model was estimated by using the Arellano and Bond (1991) GMM estimator, adding the corrections proposed by Arellano and Bover (1995) and Blundell and Bond (1998). That estimator allows us to control for both heterogeneity and endogeneity problems, which could bias our results.

Our paper contributes to the literature by furthering our understanding on the effect of litigation risk on earnings conservatism. Moreover, to the best of our knowledge, this is the first study that analyses the effect of managers' liability exposure on earn-

ings conservatism in the banking industry. Additionally, by focusing on an international context, our results provide evidence of a powerful driver for earnings conservatism in the banking industry all over the world. Finally, our work complements Nichols *et al.* (2009), who find that ownership structure is also a driver of earnings conservatism in the banking industry.

The remainder of the paper is organized into five sections. Section 2 reviews related research to derive our hypotheses. Section 3 explains the sample data configuration and the research methodology. Section 4 shows the empirical results obtained from some regression analyses of current earnings changes and *TIER1*. Concluding remarks are provided in section 5.

2. THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

In this section, we link previous available evidence on capital adequacy ratios as determinants of managers' litigation exposure in the banking industry and the use of earnings conservatism in order to develop our hypotheses.

2.1. Capital regulation in the banking industry

The capital structure of financial institutions is determined in part by the same departures from the frictionless world of Modigliani and Miller that determine the capital structures of other firms, such as taxes, expected costs of financial distress, transactions costs, signalling behaviour and agency problems arising from asymmetric information.

To date, a number of works have dealt with banking business, regulation affecting the banking industry, and the relevance of maintaining minimum levels of capital as a guarantee to creditors. International banks' financial health and fair competition were the main concerns in Basel Capital Accords, giving rise to an international set of capital requirements. To avoid bankrupts and to keep the proper functioning of the international financial industry, common standards on the computation of regulatory minimum levels of capital, and on the scope and frequency of the information provided by banks have been established [(2)]. Researchers have analysed these rules in detail, with a special emphasis on their implementation, fulfilment, consequences and, particularly, on the

(2) As Wagster (1996) says, the first Basle Accord was a landmark regulatory agreement. It was reached in 1988 in order to reduce the risks of the international banking system and to minimize competitive inequality that arises from differences among national bank-capital regulations (BCBS, 1988). A modification, concerning some specific conditions to compute capital, was published in 1998 (BCBS, 1998). A second Accord (known as *Basel II*) was published in 2004 (BCBS, 2004). The Basle Accords provide a common international definition of bank capital that divides capital into two tiers. Tier 1 capital is common to all of the signatory countries and consists of common stockholder equity and disclosed reserves, except for some forms of hybrid instruments that are restrictedly permitted in lightly different conditions in different countries (a good comparison of these conditions can be found in Delfiner and Pailhe, 2006). Tier 2 capital can include any combination of eligible capital elements permitted by the national regulator. Consequently, meaningful cross-country comparisons of the capital holdings of international banks can be made with Tier 1 capital but not with Tier 2. The Basle Accord assigns various weights to broad categories of risk in a bank's balance sheet and off-balance-sheet exposures are included with their appropriate conversion factors. The sum of weighted assets constitutes adjusted total assets of which 8 percent (4 percent in Tier 1 elements and 4 percent in Tier 2) is the minimum capital base. Tier 2 elements are only eligible up to 100 percent of Tier 1.

determinants of bank-capital variations (some representative references could be found in Kim and Santomero 1988; Zarruk and Madura, 1992; Barber *et al.*, 1996; Aggarwal and Jacques, 2001; Rime 2001; Milne, 2002; Chami and Cosimano, 2003; Barth *et al.*, 2004; Van Hoose, 2007).

Compliance with the regulatory capital requirements is an important issue because banks regulators use these measures of capital adequacy to determine prominent aspects of banking functioning. Thus, banks with low capital ratios may be refused permission to acquire other firms, may not pay dividends, may not pay management fees to their holding company, may be required to follow a supervised plan for raising those ratios, or may not even be allowed to continue in operation. For instance, in the United States, banks categorized as "undercapitalized" or "significantly undercapitalized" are subject to significant restrictions and in the worst case are placed in receivership (Barth *et al.*, 2006). As Berger *et al.* (1995) point out, regulatory capital requirements are a means to protect the economy from negative externalities caused by bank failures, especially systemic risk. Thus, supervisors and market participants have come to rely on *TIER1* capital or equity capital as the main measure for analysing and controlling banks (Chami and Cosimano, 2003).

Barth *et al.* (2006) carry out a comprehensive empirical study using the results of two different surveys on bank regulation and supervision across the world. In their work, they conclude that the overwhelming majority of countries comply, technically, with Basel capital rules. Moreover, they find that for many countries, supervisory authorities possess the power of taking corrective action when confronted with violations of regulations or other imprudent behaviour on the part of banks. Additionally, under some circumstances, courts may intervene by limiting, delaying, or even reversing the actions taken by the supervisory authorities. The results of the study also show that the supervisory authorities have significant power in bank restructuring and reorganization (including removing or replacing management and directors) but not in declaring a bank insolvent (as the courts have the dominant power in this regard).

The theory of capital structure holds that equity capital is relatively more costly than debt because of tax and dilution of control reasons (Saunders and Schumacher, 2000). Supporting evidence has shown that under non-increasing risk aversion, bank profitability, credit extension, and the overall economic activity of the bank can be damaged by increasing capital, since it primarily produces effects such as the reduction of interest margins (Zarruk and Madura, 1992) or even the increase of bank failure probability [(3)] (Barber *et al.*, 1996). Notwithstanding, evidence shows the banking industry's ability to transfer costs to their clients through interest margins (see, *e.g.,* Saunders and Schumacher, 2000; Demirgüç-Kunt *et al.*, 2004). In this line, Berger (1995) finds a positive relation between capital and earnings in the banking industry when certain conditions are fulfilled. The author suggests that higher capital is followed by higher earnings over the next few years and argues that this occurs primarily through lower interest rates

(3) As Barber *et al.* (1996) point out the probability of bank failure depends upon both the risk and return of the asset portfolio. Therefore, more capital results in a reduction of return which produces a risk-return combination with a higher probability of bank failure.

paid on uninsured funds. Thus, banks with increased expected bankruptcy costs that react by increasing capital quickly appear to pay lower uninsured debt rates and have higher earnings than those that do not react this way.

Banks usually hold excess capital over the minimum regulatory requirements. As Chami and Cosimano (2003) emphasize, banks view the capital «requirement» as being regulatory minimums plus some basis points (4), probably varying across banks. Even if regulators change capital requirements, banks have to increase their capital to maintain the spread. Several reasons have been put forward to explain why banks maintain capital buffers (see *e.g.* Marcus, 1984; Berger *et al.*, 1995; Jackson, 1999; Milne and Whalley, 2001; Estrella, 2004; Milne, 2004). Banks may hold extra capital as protection against the violation of the regulatory minimum requirements (see, *e.g.* Marcus, 1984; Milne and Whalley, 2001; Milne, 2004). In this way, banks insure themselves against costs arising from a supervisory intervention in response to a violation of the requirements. Besides, banks generally tend to assess their risks differently from regulators, using a variety of internal data, criteria, methods or models. Appropriate bank-specific capital levels will therefore be set according to their own assumptions and risk appetites. Banks may also increase capital as a rational response to environment changes, particularly to the withdrawal of implicit government guarantees (Flannery and Rangan, 2004).

By holding extra capital, banks can take advantage of unexpected profitable opportunities, as they are in a better position to obtain wholesale funds quickly and at a competitive rate of interest. For instance, in the event of a substantial increase in loan demand, banks with relatively little capital may lose market share to those that are well capitalised. Finally, banks may also need to hold excess capital in order to signal soundness to the market and satisfy the expectations of rating agencies (see *e.g.* Jackson, 1999; Kliger and Saring 2000; Gropp and Richards, 2001).

2.2. Managers' litigation exposure and earnings conservatism in the banking industry

Conservatism can be understood in two ways: balance-sheet conservatism, also known in Anglo-Saxon literature as *ex ante* conservatism or unconditional conservatism, and earnings conservatism, also referred to as *ex post* conservatism (Ball *et al.*, 2000) or conditional conservatism. The former is defined by Feltham and Ohlson (1995) as a systematic undervaluation of equity. The latter, introduced by Basu (1997), refers to an attribute that captures the accountant's tendency to require a higher degree of verification to recognize good news as gains than bad news as losses. According to that asymmetry, accounting earnings reflect bad news more quickly than good news (5).

Although previous literature has considered different explanations for the existence of conservatism, such as tax optimization or the asymmetry in regulators' costs, the

(4) Regulatory standards in several countries require banks to maintain minimum levels higher than Basel ones, such as in the U.S.

(5) Ball and Shivakumar (2005) highlight the fact that the requirement imposed by the definition of conservatism is precisely that the reduction in the accounting earnings necessarily reflects a current economic loss, which represent a fundamental difference from other interpretations of the term.

contractual and litigation explanations are the main drivers of conservative accounting (Watts, 2003). In the context of this latter explanation, previous studies analyse the following: the effect of auditors' exposure to litigation on earnings conservatism (see, *e.g.* Kothari *et al.*, 1988; Holthausen and Watts, 2001); or the effect of managers litigation exposure as measured by the cross-listed nature of the firm, the legal origin or the public or private nature of the firm on earnings conservatism (see, *e.g.* Ball *et al.*, 2000; Huijgen and Lubberink, 2005; Ball and Shivakumar, 2005).

Nevertheless, studies on the determinants of earnings conservatism in the banking industry are recent and scarce. Thus, under the contractual explanation, Nichols *et al.* (2009) analyse the effect of ownership structure on earnings conservatism in the banking industry. They predict and find that stakeholders in public banks demand greater degrees of accounting conservatism than in private banks. Particularly, these authors find that public banks recognize more timely earnings declines but less timely earnings increases than private banks.

As Levine (2004) points out, there are two attributes that make banks special in practice: greater opaqueness than other industries and greater government regulation. Trying to prevent systematic risk or mitigate its adverse consequences, common standards have been established on the scope and frequency of the information provided by banks and on the computation of regulatory minimum levels of capital, being TIER1 one of the main measures used for this last purpose. Thus, all governments regulate and supervise banks to promote a «safe and sound» banking industry and so, once a bank is operating within the regulatory environment, it is subject to narrow monitoring and control through and by various official supervisory actions (Barth *et al.*, 2004). In fact, *Basel II*'s supervisory review process pillar (in its second principle) asks supervisors to review and evaluate banks' internal capital adequacy assessments and strategies, as well as their ability to monitor and ensure their compliance with regulatory capital ratios. The periodic review may involve on- or off-site examinations or discussions, external auditing, and periodic reporting. It can be appreciated that regulatory rules are pointing not only to troubled institutions, but to owners and managers that are poorly managing those institutions (Van Hoose, 2007).

Previous literature (see, *e.g.* Moyer, 1990; Beatty et al., 1995; Collins *et al.*, 1995; Niswander and Swanson, 2000) suggests that the extent of regulatory scrutiny in the banking industry is influenced by a capital adequacy threshold. Thus, as *TIER1* decreases, regulators' scrutiny over the bank intensifies due to the increase of the perceived risk of bank failure. Since legal and disciplinary actions against banks are relayed through the media, this closer scrutiny potentially attracts additional scrutiny by investors and the mass media. In this context, earnings conservatism is one of available tools for managers in dealing with litigation exposure because, according to Watts (2003), when the likelihood of litigation increases, overstating the firm's net assets is more likely to result in litigation costs than understating net assets. Thus, we argue that this increase in litigiousness as *TIER1* decreases raises managers' net benefits of using earnings conservatism as a way to mitigate expected litigation costs. Therefore, a decrease in *TIER1* would provide bank managers' with the incentives to address litigation exposure

through earnings conservatism. Note that bank managers are assumed to have firm and industry specific human capital [6] and additionally the supervisory authority is the same for the whole bank industry in the country. For these reasons, banks are particularly vulnerable to litigation exposure since being involved in a litigation process may put the manager out of the whole industry in the country.

Hence, in a more formal manner, we state the following hypothesis:

H1 There is a negative relationship between TIER1 and earnings conservatism.

At this point, we must acknowledge that a competing interpretation of this negative cross sectional association between *TIER1* and earnings conservatism is that this relation is primarily mechanical. In this sense, it is important to consider how conservatism can affect *TIER1* ratios. Thus, as in *TIER1* ratio the numerator contains permanent equity capital and the denominator risk-weighted assets, conditional conservatism affects both the numerator, via lower earnings that result in lower equity capital, and the denominator, as conservatism generates lower assets. The net effect is that higher conservatism reduces *TIER1* ratio. For this reason it could be argued that conservatism is mechanically and negatively associated with *TIER1*, the litigation proxy considered in the present work. Although we agree that the mechanical interpretation is consistent with a negative cross sectional association between *TIER 1* and earnings conservatism, we also consider that under the mechanical interpretation one would not expect differences in the response coefficients of earnings conservatism to changes in *TIER1* for banks with a safe margin of capital and those others with a lower level of *TIER1*.

Therefore, in order to gain a deeper understanding of the effect of *TIER1* on earnings conservatism, we extend the analysis by considering the effect of *TIER1* on earnings conservatism in banks with a *TIER1* below the median-country level of *TIER1* («low *TIER1*») and those with a *TIER1* above the median-country level of *TIER1* («high *TIER1*»). Thus, although managers' litigation concern increases as TIER1 decreases, the extent of regulatory scrutiny in the banking industry seems to be influenced by capital adequacy thresholds (see *e.g.* Moyer, 1990; Beatty *et al.*, 1995; Collins *et al.,* 1995; Niswander and Swanson, 2000). For this reason it is important to distinguish between potentially troubled banks and those with a safe margin of capital. Since we expect low TIER1 banks' managers to face not only greater liability exposure but also comparatively higher regulatory and/or supervisory pressures, it is also important to consider how regulation can create incentives for conservative accounting in these banks.

Thus, regulators' preference for the unconditional *versus* the conditional form of accounting conservatism can drive managers into unconditionally conservative practices by imposing regulation costs on firms (see, *e.g.*, Qiang, 2007; García Lara *et al.*, 2009).

(6) Rajan (1998) refers to the positive incentives that regulation provides to the banking management (by giving them economic rents) if they conduct their business appropriately. And the credibility of bankers is based on the fact that they could offer their wealth and human capital as collateral. In the same line, Jeitschko and Jeung (2005) conclude that the manager who stands to lose his private benefit of control in case of bankruptcy is generally more conservative in determining asset risk than the shareholder.

Nevertheless, as previous authors consider, the unconditional conservatism resulting from these regulatory demands does not shield managers from political costs and regulatory scrutiny. For this reason, managers still have incentives to use the remaining flexibility within accounting standards to resort to conditional conservatism in an attempt to minimize not only litigation costs but also the likelihood of adverse political action. In this context, we expect a negative relationship between TIER1 and earnings conservatism for both, low and high TIER1 banks. However, since according to previous literature (see, *e.g.* Qiang, 2007; García Lara *et al.*, 2009) unconditional conservatism is likely to play a more significant role in higher scrutiny scenarios, we expect a less pronounced degree of conditional conservatism for low TIER1 banks, since unconditional conservatism pre-empts conditional conservatism (Beaver and Ryan, 2005).

Therefore, we state the following hypothesis:

H2: The negative relationship between TIER1 and earnings conservatism is less pronounced for banks with a TIER1 below the median-country level of TIER1 («low TIER1») compared with those with a TIER1 above the median-country level of TIER1 («high TIER1»).

3. DATA AND RESEARCH DESIGN

In this section, we explain the sources of the data used to build the sample of our empirical work, and the estimation procedures we follow in testing the effect of *TIER1* on gain and loss recognition timeliness.

3.1. Data

The bank data are taken from *BankScope* database by *Bureau van Dijk Electronic Publishing* (BvDEP). We begin with all listed commercial banks with consolidated accounts filed in update 208.1 (year 2007) from 69 countries over 1998-2007 analysis period. In order to identify and eliminate any possible outliers, we apply the method developed by Hadi (1992; 1994) [7]. This method allows us to detect multiple outliers in multivariate data [8]. As a result, we construct an unbalanced panel comprising 335 banks and 2026 observations.

The set of specific variables used in our empirical tests are:

ΔNI_{it} is change in net income from fiscal year *t-1* to fiscal year *t*, scaled by beginning-of-year book value of total assets.

(7) As an alternative methodology, we winsorize variables and signs and significance levels generally remain the same.

(8) This method orders the observations and divides the data set into two initial subsets: a basic subset which contains p+1 good observations and a non-basic subset which contains the remaining n-p-1 observations. Then, the method computes the relative distance from each point in the data set to the centre of the basic subset, relative to the covariance matrix of the basic subset. This method has been used in previous works about earnings conservatism (Grambovas *et al.*, 2006; Bona *et al.* 2010).

$D\Delta NI_{it-1}$ is a dummy variable that takes the value of 1 when the prior-year change in net income (ΔNI_{it-1}) is negative and 0 otherwise.

$TIER1_{it}$ is the regulatory capital adequacy ratio, constructed using shareholder funds plus perpetual non cumulative preference shares as a percentage of risk weighted assets and off balance sheet risks measured under the Basel rules. In general, this figure should be at least 4% to avoid regulatory problems. *TIER1* variable data are provided directly by *BankScope* in %.

$LowTier_{it}$ is a dummy variable that takes the value of 1 if *TIER1* of the bank *i* in year *t* is below the median-country level of *TIER1* of listed banks in the year *t* and 0 otherwise.

$IFRS_{it}$ is a dummy variable that takes the value of 1 when the bank *i* in year *t* is from a country in which accounting practices for banks are in accordance with IFRS or US GAAP, and 0 otherwise.

$MkBook_{it}$ is the Market-to-Book ratio at the end of year *t*.

$Size_{it}$ is measured as the natural log of total assets at the end of year *t*.

3.2. Variables and descriptive statistics

Table 1 provides summary statistics for the entire sample, and for the two subsamples based on median *TIER1* in each country.

The narrower measure [9] of capital is called *TIER1* capital and gathers a variety of equity capital accounts including common stock, perpetual preferred stock, and retained earnings. As *TIER1* is a ratio that combines bank capital and risk weighted assets, lower levels reflect two possible scenarios: weaker capital levels, or excessive risk; whereas higher levels of *TIER1* are due to either strong capital levels (to compensate increasing risks) or safer assets.

Minimum and maximum values indicate wide variability across banks; therefore median values are more representative measures than mean values. As in the case of mean, total median is more than twice (8.5%) the regulatory minimum *TIER1*.

In three countries, Japan, Brazil, and China, there are banks that would have to face supervisory intervention because the minimum *TIER1* is below 4%. However, the percentage of banks in this situation is only 1.05% of the total banks, only 18 cases in 1,711.

The data show that Commercial Banks maintain capital buffers in order to avoid the intervention of supervisors or to take advantage of extra capital for the different purposes we have mentioned in section 2. The mean value of *TIER1* is 10.1%, more than twice the minimum regulatory capital under Basel rules, even though with a significant standard deviation.

(9) Total capital includes not only *TIER1* capital but also other types of accounts (*TIER2* capital) that would absorb losses. Such accounts include limited-life preferred stock, subordinated debt, and the loan-loss allowance to the extent that it is not allocated for losses on specific loans. The risk-based standards set minimum ratios for both *TIER1* (4%) and total capital, whereas national rules can impose more restrictions.

TABLE 1

DESCRIPTIVE STATISTICS BY TIER GROUP

TIER1 Level	*Variable*	*Obs.*	*Mean*	*Median*	*Std. Dev.*	*Min*	*Max*
Total	ΔNI_{it}	2026	0.000389	0.0003	0.0085	-0.0443	0.0471
	ΔNI_{it-1}	1699	0.0012095	0.0005	0.0150	-0.1931	0.2804
	$D\ \Delta NI_{it-1}$	1699	0.4108299	0	0.4921293	0	1
	$TIER1_{it}$	1711	10.10811	8.5000	5.843354	0.0000	98.6
	$IFRS_{it}$	2026	0.5162883	1.0000	0.499858	0.0000	1
	$MkBook_{it}$	1504	1.674516	1.3920	1.1134	0.0002	8.8229
	$SIZE_{it}$	2026	16.10362	16.2428	1.8020	10.9259	21.1228
High TIER	ΔNI_{it}	888	0.0007533	0.0004	0.0075	-0.0443	0.0423
	ΔNI_{it-1}	771	0.0014247	0.0006	0.0122	-0.1457	0.1677
	$D\ \Delta NI_{it-1}$	771	0.3787289	0	0.4853853	0	1
	$TIER1_{it}$	888	12.11736	10.1000	7.066389	6.2000	98.6
	$IFRS_{it}$	888	0.4808559	0.0000	0.4999149	0.0000	1
	$MkBook_{it}$	689	1.576923	1.2663	1.1103	0.0013	8.8229
	$SIZE_{it}$	888	16.19492	16.4314	1.9060	11.2596	21.1228
Low TIER	ΔNI_{it}	823	0.0005948	0.0003	0.0079	-0.0338	0.0471
	ΔNI_{it-1}	688	0.0015979	0.0005	0.0157	-0.0623	0.2804
	$D\ \Delta NI_{it-1}$	688	0.4215116	0	0.4941604	0	1
	$TIER1_{it}$	823	7.94017	7.3000	2.842849	0.0000	28.28
	$IFRS_{it}$	823	0.4823815	0.0000	0.4999933	0.0000	1
	$MkBook_{it}$	628	1.725162	1.4231	1.0511	0.0020	7.4333
	$SIZE_{it}$	823	16.33495	16.3988	1.7106	10.9259	20.5582
Obs. With TIER Missing	ΔNI_{it}	315	-0.0011758	0.0001	0.0116	-0.0424	0.0471
	ΔNI_{it-1}	240	-0.0005947	0.0002	0.0204	-0.1931	0.1120
	$D\ \Delta NI_{it-1}$	240	0.4833333	0	0.5007665	0	1
	$TIER1_{it}$	0	.	.	.	.	.
	$IFRS_{it}$	315	0.7047619	1.0000	0.4568755	0.0000	1
	$MkBook_{it}$	187	1.864014	1.5402	1.2856	0.0002	7.6610
	$SIZE_{it}$	315	15.24186	15.3691	1.4525	11.4813	19.9247

ΔNI_{it} is change in net income from fiscal year *t-1* to fiscal year *t*, scaled by beginning-of-year book value of total assets. ΔNI_{it-1} is change in net income from fiscal year *t-2* to fiscal year *t-1*, scaled by beginning-of-year book value of total assets. $D\Delta NI_{it-1}$ is a dummy variable that takes the value of 1 when the prior-year change in net income (ΔNI_{it-1}) is negative. $TIER1_{it}$, measured in %, is the regulatory capital adequacy ratio, constructed using shareholder funds plus perpetual non cumulative preference shares as a percentage of risk weighted assets and off balance sheet risks measured under the Basel rules. In general, this figure should be at least 4% to avoid regulatory problems. $LowTier_{it}$ is a dummy variable that takes the value of 1 if *TIER1* of the bank i in year t is below the median-country level of *TIER1* of listed banks in the year *t* and 0 otherwise. $IFRS_{it}$ is a dummy variable that takes the value of 1 when the bank i in year t is from a country in which accounting practices for banks are in accordance with IFRS or US GAAP, and 0 otherwise. $MkBook_{it}$ is the Market-to-Book ratio at the end of year *t*. $SIZE_{it}$ is measured as the natural log of total assets at the end of year *t*.

After dividing the sample into two subsamples by using the *TIER1* median value of listed banks in each country as the cut-off point, we note that banks with *TIER1* below the median have a lower dispersion in *TIER1* and are larger than banks with *TIER1* above country medians. Also, we perform tests on the equality of means of size for high and low *TIER1* banks. The results show that banks with low TIER are significantly larger. Moreover, Table 1 shows that the market-to-book ratio for *low-TIER1* banks is higher than for *high-TIER1* banks (the means are 1.72 and 1.57, respectively, and the medians

exhibit the same pattern). A test on the equality of means shows that the means of market-to-book ratio for high and *low-TIER1* banks are significantly different. If we consider market-to-book a valid proxy for unconditional conservatism (*e.g.,* Pope and Walker, 2003; Beaver and Ryan, 2005; Pae *et al.*, 2005; Roychowdhury and Watts, 2007), banks in high scrutiny scenarios *(low-TIER1* banks) are more likely to be unconditionally conservative. ΔNI_{it} shows changes in net income from one year to the following. In the total sample and in both the low *TIER1* and the high *TIER1* subsamples, average and median values are positive. Banks with low levels of *TIER1* display less change in net income than those with high levels of *TIER1*, as mean and median values show.

In table 2 we have analysed the eventual existence of multicollinearity problems. The values shown in the correlation matrix lead us to assume the absence of multicollinearity problems in the specification of the regression models.

Table 2
Correlations matrix

	ΔNI_{it}	ΔNI_{it-1}	$D\,\Delta NI_{it-1}$	$TIER1_{it}$	$IFRS_{it}$	$MkBook_{it}$	$SIZE_{it}$
ΔNI_{it}	1						
sig.							
ΔNI_{it-1}	-0.1918	1					
sig.	0						
$D\,\Delta NI_{it-1}$	0.1116	-0.3861	1				
sig.	0	0					
$TIER1_{it}$	0.0395	0.0836	-0.0397	1			
sig.	0.1025	0.0014	0.1004				
$IFRS_{it}$	0.0157	0.0505	-0.0216	0.2948	1		
sig.	0.4802	0.0375	0.3323	0			
$MkBook_{it}$	0.1556	0.1023	-0.0722	0.101	0.3291	1	
sig.	0	0.0002	0.0051	0.0002	0		
$SIZE_{it}$	-0.0095	-0.0105	-0.0016	-0.3534	-0.189	0.0334	1
sig.	0.6676	0.6645	0.9441	0	0	0.195	

ΔNI_{it} is change in net income from fiscal year *t-1* to fiscal year *t*, scaled by beginning-of-year book value of total assets. ΔNI_{it-1} is change in net income from fiscal year *t-2* to fiscal year *t-1*, scaled by beginning-of-year book value of total assets. $D\Delta NI_{it-1}$ is a dummy variable that takes the value of 1 when the prior-year change in net income (ΔNI_{it-1}) is negative. $TIER1_{it}$, measured in %, is the regulatory capital adequacy ratio, constructed using shareholder funds plus perpetual non cumulative preference shares as a percentage of risk weighted assets and off balance sheet risks measured under the Basel rules. In general, this figure should be at least 4% to avoid regulatory problems. $LowTier_{it}$ is a dummy variable that takes the value of 1 if *TIER1* of the bank i in year t is below the median of *TIER1* of listed banks at country level in the year t and 0 otherwise. $IFRS_{it}$ is a dummy variable that takes the value of 1 when the bank *i* in year *t* is from a country in which accounting practices for banks are in accordance with IFRS or US GAAP, and 0 otherwise. $MkBook_{it}$ is the Market-to-Book ratio at the end of year *t*. $SIZE_{it}$ is measured as the natural log of total assets at the end of year *t*.

Nevertheless, a formal test is performed to make sure that the multicollinearity problem is not present in our regressions. To do so, we calculate the Variance Inflation Factor (VIF) for each independent variable included in the estimated model and the largest VIF

value result is quite far from 5 [the value indicating that a multicollinearity problem may arise (Studenmund, 1997)].

3.3. Measuring the effect of capital adequacy on earnings conservatism

As Nichols *et al.* (2009) point out, the Basu (1997) approach [10] (1) is appropriate within the banking industry because timely recognition of losses is a key dimension of financial reporting among banks. This is because of *(a)* the importance of exposure to losses from various types of risk intermediation in banking; and *(b)* capital adequacy regulations, which relate to the ability of a bank to absorb losses and remain solvent for depositors.

$$\Delta NI = \alpha_0 + \alpha_1 D\Delta NI + \alpha_2 \Delta NI + \alpha_3 D\Delta NI \times \Delta NI + \nu_{it} \quad (1)$$

In equation (1), ΔNI_{it} is the change in net income from fiscal year *t-1* to *t*, scaled by beginning-of-year book value of total assets; $D\Delta NI_{it-1}$ is a dummy variable that takes the value of 1 when the prior-year change in net income (ΔNI_{it-1}) is negative and 0 otherwise; and ν_{it} is the random disturbance. Similarly to Nichols *et al.* (2009), we expect some degree of conservatism in financial reporting for all banks in the sample. Under conservatism, timely recognition of economic gains and losses in accounting earnings should be asymmetric. As a result, we also expect timely recognition of economic losses in accounting, implying that earnings declines would be more transitory. Consequently, we predict a negative value for α_3, the coefficient on $\Delta NI_{it} \times D\Delta NI_{it}$. Moreover, Nichols *et al.* (2009) argue that recognition of economic gains in accounting income would be deferred, so earnings increases would be more persistent, implying a positive value of α_2.

To test our first hypothesis, we extend the Basu's model by including the *TIER1* variable, considering the examination of earnings increases and decreases as proposed by Nichols *et al.* (2009). Since we have to make sure that the increase in conservatism does not mechanically affect the litigation proxy (*TIER1*) we estimate the models considering the one-year lagged *TIER1* variable. Thus, the intuition is that as litigation exposure increases (*TIER1*$_{t-1}$ decreases) we expect bank managers to react supplying higher conditional conservatism in time *t*. According to that, we expect higher deferred recognition of economic gains, producing more persistent earnings increases. The implication is $\alpha_6 < 0$ in (2). Since *TIER1* is a continuous variable [11], if α_2 is positive and the effect of the interaction term (α_6) is negative, it would imply that the lower the *TIER1* variable, the higher the persistence of earnings increases. Moreover, as bank's *TIER1* decreases, we expect higher timely recognition of economic losses in accounting earnings, producing more transitory income reductions. The implication is $\alpha_7 > 0$ in (2). Furthermore, if α_3 is negative and the effect of the interaction term (α_7) is positive, it would imply that the lower the *TIER1* variable, the lower the persistence of earnings declines.

(10) Following Nichols *et al.* (2009) we use the first model suggested by Basu (1997) in his seminal paper. In the sensitivity test we re-estimate the models by using the Basu (1997) reverse regression model.

(11) Similarly, other works such as those by Wang (2006) and Zhao and Chen (2008) also interact continuous variables with the variables included in the Basu model.

Considering Berger *et al.* (2008) findings, we control for bank size, $SIZE_{it}$, measured as the natural log of the total assets at the end of year *t*. Moreover, one of the main attributes of IFRS and US GAAP is fair value accounting. Under this financial reporting approach, banks are required or permitted to measure and report on an ongoing basis certain assets and liabilities at estimates of the prices they would receive if they were to sell the assets or would pay if they were to be relieved of the liabilities. This is important in our research framework because under fair value accounting, banks not only report losses when the fair values of their assets decrease or liabilities increase but these losses are deeper starting from unrealized gains than from amortized costs (12). Concerning trading securities, those losses reduce banks' net income. Thus, in order to specifically test the incidence of the financial reporting framework on earnings conservatism, we included the variable $IFRS_{it}$, a dummy variable that takes the value of 1 when the bank i in year t is from a country in which accounting practices for banks are in accordance with IFRS or US GAAP, and 0 otherwise.

Moreover, Roychowdhury and Watts (2007) highlight the importance of controlling for equity values using the market-to-book ratio in studies of conservatism, because that ratio is correlated with the degree of conditional conservatism. In particular, previous studies find a negative association between conditional and unconditional conservatism, as the latter pre-empts the application of conditional conservatism (see, *e.g.* Pope and Walker, 2003; Beaver and Ryan, 2005; Pae *et al.*, 2005; Roychowdhury and Watts, 2007). Besides, in firms with a high market-to-book ratio, a high proportion of the equity value comprises economic rents (growth options and unverifiable increases in the value of separable net assets). As a result, earnings timeliness with respect to bad news is expected to be low in firms with a high market-to-book ratio, since the increase in market-to-book is due to a rise in rents and/or unverifiable increases in the value of separable net assets that were not previously recognized in the accounting system. Given these findings, we include the market-to-book ratio in order to control for the incidence of economics rents and unconditional conservatism on earnings conservatism. Thus, we estimate the following model, in which we expect $\alpha_{18} < 0$ and $\alpha_{19} > 0$ in (2).

$$\begin{aligned}\Delta NI_{it} = {} & \alpha_0 + \alpha_1 D\Delta NI_{it} + \alpha_2 \Delta NI_{it} + \alpha_3 D\Delta NI_{it} \times \Delta NI_{it} + \alpha_4 TIER1_{it-1} + \alpha_5 D\Delta NI_{it} \times TIER1_{it-1} + \\ & \alpha_6 \Delta NI_{it} \times TIER1_{it-1} + \alpha_7 D\Delta NI_{it} \times \Delta NI_{it} \times TIER1_{it-1} + \alpha_8 IFRS_{it} + \alpha_9 D\Delta NI_{it} \times IFRS_{it} + \\ & \alpha_{10} \Delta NI_{it} \times IFRS_{it} + \alpha_{11} D\Delta NI_{it} \times \Delta NI_{it} \times IFRS_{it} + \alpha_{12} SIZE_{it} + \alpha_{13} D\Delta NI_{it} \times SIZE_{it} + \\ & \alpha_{14} \Delta NI_{it} \times SIZE_{it} + \alpha_{15} D\Delta NI_{it} \times \Delta NI_{it} \times SIZE_{it} + \alpha_{16} MKBOOK_{it} + \alpha_{17} D\Delta NI_{it} \times MKBOOK_{it} + \\ & \alpha_{18} \Delta NI_{it} \times MKBOOK_{it} + \alpha_{19} D\Delta NI_{it} \times \Delta NI_{it} \times MKBOOK_{it} + p_j + \nu_{it}\end{aligned} \quad (2)$$

To test the second hypothesis, we increase the equation (2) by adding the variable $TIER1_{it}$ *x* $LowTier1_{it}$. Since $LowTIER1_{it}$ is a dummy variable that takes the value of 1 if *TIER1* of the bank i in year t is below the median country-level of *TIER1* and zero otherwise, the

(12) As for financial instruments, both IFRS and USGAAP use a «mixed attribute» accounting model, in which trading securities are reported at fair value in the balance sheet with unrealized gains and losses included in net income each period. Available-for-sale securities and cash flow hedge derivatives are recorded at fair value on the balance sheet but unrealized gains and losses are recorded at fair value, as they occur, in accumulated other comprehensive income, a component of owners' equity. Ryan (2008) mentions, for example, those unrealized gains resulting from bubble prices or skewed distributions of future cash flows.

TIER1$_{it}$ *x LowTier1*$_{it}$ variable allows us to test the differences in the response coefficient of earnings conservatism when *TIER1* decreases in those banks with lower *TIER1*, compared to those ones with higher *TIER1*. And p_j is the country specific effect. Thus, we estimate the following regression model:

$$\begin{aligned}\Delta NI_{it} = {} & \alpha_0 + \alpha_1 D\Delta NI_{it} + \alpha_2 \Delta NI_{it} + \alpha_3 D\Delta NI_{it} \times \Delta NI_{it} + \alpha_4 TIER1_{it-1} + \alpha_5 D\Delta NI_{it} \times TIER1_{it-1} + \\ & \alpha_6 \Delta NI_{it} \times TIER1_{it-1} + \alpha_7 D\Delta NI_{it} \times \Delta NI_{it} \times TIER1_{it-1} + \alpha_8 IFRS_{it} + \alpha_9 D\Delta NI_{it} \times IFRS_{it} + \\ & \alpha_{10} \Delta NI_{it} \times IFRS_{it} + \alpha_{11} D\Delta NI_{it} \times \Delta NI_{it} \times IFRS_{it} + \alpha_{12} SIZE_{it} + \alpha_{13} D\Delta NI_{it} \times SIZE_{it} + \\ & \alpha_{14} \Delta NI_{it} \times SIZE_{it} + \alpha_{15} D\Delta NI_{it} \times \Delta NI_{it} \times SIZE_{it} + \alpha_{16} MKBOOK_{it} + \alpha_{17} D\Delta NI_{it} \times MKBOOK_{it} + \\ & \alpha_{18} \Delta NI_{it} \times MKBOOK_{it} + \alpha_{19} D\Delta NI_{it} \times \Delta NI_{it} \times MKBOOK_{it} + \alpha_{20} LowTIER_{it} + \\ & \alpha_{21} D\Delta NI_{it} \times LowTIER_{it} + \alpha_{22} \Delta NI_{it} \times LowTIER_{it} + \alpha_{23} D\Delta NI_{it} \times \Delta NI_{it} \times LowTIER_{it} + \\ & \alpha_{24} TIER1_{it-1} \times LowTIER_{it} + \alpha_{25} D\Delta NI_{it} \times TIER1_{it-1} \times LowTIER_{it} + \alpha_{26} \Delta NI_{it} \times TIER1_{it-1} \times LowTIER_{it} + \\ & \alpha_{27} D\Delta NI_{it} \times \Delta NI_{it} \times TIER1_{it-1} \times LowTIER_{it} + p_j + \nu_{it}\end{aligned} \quad (3)$$

According to our second hypothesis, we expect an increase in the level of earnings conservatism as bank's *TIER1* decreases for all banks in the sample, being this relationship weaker for banks with lower *TIER1*. The implications are (1) $\alpha_6 < 0$ and $\alpha_{22} > 0$, (2) $\alpha_7 > 0$ and $\alpha_{23} < 0$.

4. EMPIRICAL RESULTS

Although the models were firstly estimated by using ordinary least squares (OLS) regressions, we focus our comments in the Arellano and Bond (1991) GMM estimator [(13)], adding the corrections proposed by Arellano and Bover (1995) and Blundell and Bond (1998). More exactly, we use the two-step system GMM estimation included in the *xtabond2* stata routine written by Roodman (2008). The two-step approach estimates the regression with heteroskedasticity robust standard errors. The system GMM estimator, introduced by Arellano and Bover (1995) and Blundell and Bond (1998), improves the GMM estimator, combining the standard set of equations in first differences with an additional set of equations in levels with appropriate lagged first differences as instruments (Roodman, 2008). This way, we overcome both heterogeneity and endogeneity problems, which would bias the OLS results. More precisely, the GMM estimator addresses the heterogeneity problem by modelling it as an individual effect, which is then eliminated by taking first differences of the variables. The endogeneity problem is addressed by using all the right-hand side variables in the model lagged twice to six as instruments, with the only exceptions of *country effects* variables, which are considered strictly exogenous.

To test our first hypothesis, we run the regression showed in equation (2) (table 3). The results show the existence of asymmetric persistence in good news and bad news, regardless of the level of *TIER1*. More exactly, earnings increases regardless of the level of *TIER1* are more persistent ($\alpha_2 = 1.04238$, positive and statistically significant) and earnings decreases, regardless of the level of *TIER1,* are associated with more earnings reversals in the following period ($\alpha_3 = -0.6068$ negative and statistically significant). Now, if we focus on the effect of *TIER1*, table 3 shows a negative

(13) The GMM estimator was first proposed by Holtz-Eakin *et al.* (1988).

relationship between *TIER1* and earnings conservatism. Thus, as *TIER1* decreases we appreciate that earnings increases are more persistent (α_6 = -0.0418, negative and statistically significant) and earnings reversals following earnings declines are higher (α_7 = 0.09425 is positive and statistically significant). These results are consistent with our first hypothesis, which predicts a negative relationship between earnings conservatism and *TIER1* (14).

Moreover, we show a positive relationship between IFRS and earnings conservatism. Thus, in countries with IFRS earnings increases are more persistent (α_{10} = 0.30923, positive and statistically significant) and earnings reversals following earnings declines are higher (α_{11} = -0.9620 is negative and statistically significant). These results show that more pronounced earnings conservatism in common-law countries, as found in prior literature (Ball *et al.*, 2000; Bushman and Piotroski, 2006; Garcia Lara *et al.*, 2005 and 2008), is also present in the banking industry. In addition, they are consistent with the common view that fair value introduces more volatility in financial statements.

Finally, results are consistent with our prediction of a negative and significant association between the market-to-book ratio and earnings conservatism (α_{18} = -0.1528< 0 and α_{19} = 0.05360 > 0). Thus, changes in growth options create variation in the asymmetric timeliness of earnings that is not related to earnings conservatism (Roychowdhury and Watts, 2007). Likewise, consistent with previous studies (see, *e.g.*, Pope and Walker, 2003; Beaver and Ryan, 2005; Pae *et al.*, 2005; Roychowdhury and Watts, 2007), unconditional conservatism pre-empts the application of conditional conservatism.

Since the first essential property of an instrument is statistical independence from the disturbance process, we check the adequacy of instruments with a test of over-identifying restrictions (Hansen test), under the null hypothesis that all instruments are uncorrelated with the disturbance process. If the null hypothesis is rejected, we cast doubts on the suitability of the instrument set (Baum, 2006). Since the null hypothesis is not rejected in the model in table 3 (sig. 0.795), we can conclude that the instruments used are suitable. Moreover, Arellano and Bond (1991) show that consistency of the GMM estimators depends crucially on the assumption that there is no second-order serial correlation in the first-difference residuals. Thus, we use the Arellano and Bond statistic (m2) that tests the null hypothesis of lack of second order serial correlation in the first-difference residuals. We show in the GMM estimation (table 3) that we can consider the absence of this type of correlation (sig. 0.376). Finally, we run two additional tests: z1, a Wald test of the joint significance of the reported coefficients; and z2, a Wald test of the joint significance of the country dummies.

(14) As an alternative measure of TIER1 we have used a dummy variable that takes the value of 1 if TIER1 of the bank *i* in year *t* is below the median country-level of TIER1 in year *t*, and zero otherwise. The results remain the same.

TABLE 3

ANALYSIS OF EARNINGS CONSERVATISM AND TIER, CONTROLLING BY MARKET-TO-BOOK

$$\Delta NI_{it} = \alpha_0 + \alpha_1 D\Delta NI_{it} + \alpha_2 \Delta NI_{it} + \alpha_3 D\Delta NI_{it} \times \Delta NI_{it} + \alpha_4 TIER1_{it-1} + \alpha_5 D\Delta NI_{it} \times TIER1_{it-1} + \alpha_6 \Delta NI_{it} \times TIER1_{it-1} + \alpha_7 D\Delta NI_{it} \times \Delta NI_{it} \times TIER1_{it-1} + \alpha_8 IFRS_{it} + \alpha_9 D\Delta NI_{it} \times IFRS_{it} + \alpha_{10} \Delta NI_{it} \times IFRS_{it} + \alpha_{11} D\Delta NI_{it} \times \Delta NI_{it} \times IFRS_{it} + \alpha_{12} SIZE_{it} + \alpha_{13} D\Delta NI_{it} \times SIZE_{it} + \alpha_{14} \Delta NI_{it} \times SIZE_{it} + \alpha_{15} D\Delta NI_{it} \times \Delta NI_{it} \times SIZE_{it} + \alpha_{16} MKBOOK_{it} + \alpha_{17} D\Delta NI_{it} \times MKBOOK_{it} + \alpha_{18} \Delta NI_{it} \times MKBOOK_{it} + \alpha_{19} D\Delta NI_{it} \times \Delta NI_{it} \times MKBOOK_{it} + p_j + \nu_{it}$$

			OLS	*GMM*	
Variable	*Coefficient*	*Predicted sign*	*Coefficient*	*Coefficient*	
Intercept	α_0	?	-0.0000	-0.0102***	
			(-0.02)	(-4.94)	
D ΔNI_{it-1}	α_1	?	-0.0027	0.01662***	
			(-0.43)	(12.42)	
ΔNI_{it-1}	α_2	+	0.06814	1.04238***	
			(0.08)	(9.05)	
D ΔNI_{it-1} x ΔNI_{it-1}	α_3	-	-1.6206*	-0.6068**	
			(-1.65)	(-2.26)	
$TIER1_{it-1}$	α_4	?	0.00006	0.00075***	
			(0.64)	(22.05)	
D ΔNI_{it-1} x $TIER1_{it-1}$	α_5	?	0.00011	-0.0003***	
			(0.5)	(-9.9)	
ΔNI_{it-1} x $TIER1_{it-1}$	α_6	-	-0.0052	-0.0418***	
			(-0.43)	(-19.66)	
D ΔNI_{it-1} x ΔNI_{it-1} x $TIER1_{it-1}$	α_7	+	0.05573***	0.09425***	
			(2.72)	(32.94)	
$IFRS_{it}$	α_8	?	-0.0017**	-0.0022***	
			(-2.12)	(-13.44)	
D ΔNI_{it-1} x $IFRS_{it}$	α_9	?	-0.0007	-0.0011***	
			(-0.74)	(-6.05)	
ΔNI_{it-1} x $IFRS_{it}$	α_{10}	+	0.21290	0.30923***	
			(1.32)	(19.24)	
D ΔNI_{it-1} x $\Delta N_i I_{t-1}$ x $IFRS_{it}$	α_{11}	-	-0.5957	-0.9620***	
			(-1.33)	(-33.34)	
$SIZE_{it}$	α_{12}	?	-0.0001	0.00007	
			(-0.63)	(0.91)	
D ΔNI_{it-1} x $SIZE_{it}$	α_{13}	?	0.00019	-0.0007***	
			(0.69)	(-9.99)	
ΔNI_{it-1} x $SIZE_{it}$	α_{14}	?	-0.0070	-0.0442***	
			(-0.14)	(-6.02)	
D ΔNI_{it-1} x ΔNI_{it-1} x $SIZE_{it}$	α_{15}	?	0.06003	-0.0273	
			(0.87)	(-1.56)	
$MkBook_{it}$	α_{16}	?	0.00185***	0.00316***	
			(3.9)	(42.74)	
D ΔNI_{it-1} · $MkBook_{it}$	α_{17}	?	-0.0017**	-0.0011***	
			(-2.39)	(-17.03)	
ΔNI_{it-1} x $MkBook_{it}$	α_{18}	-	-0.0868*	-0.1528***	
			(-1.83)	(-25.36)	
D ΔNI_{it-1} x ΔNI_{it-1} x $MkBook_{it}$	α_{19}	+	0.0585	0.05360***	
			(0.36)	(3.09)	
Country effects			Yes	Yes	
Observations			1145	1145	
R sq.			0.1520	—	—
Adj R sq.			0.1377	—	—
Hansen			—	189.06	(sig. 0.795)
m2			—	-0.89	(sig. 0.376)
z1			—	2894.71***	(sig. 0.0000)
z2			—	439.24***	(sig. 0.0000)

t-student in parenthesis; *** p<0.01, ** p<0.05, * p<0.1
ΔNI_{it} is change in net income from fiscal year *t-1* to fiscal year *t*, scaled by beginning-of-year book value of total assets. ΔNI_{it-1} is change in net income from fiscal year *t-2* to fiscal year *t-1*, scaled by beginning-of-year book value of total assets. $D\Delta NI_{it-1}$ is a dummy variable that takes the value of 1 when the prior-year change in net income (ΔNI_{it-1}) is negative. $TIER1_{it-1}$, measured in %, is the regulatory capital adequacy ratio at the end of year *t-1*, constructed using shareholder funds plus perpetual non cumulative preference shares as a percentage of risk weighted assets and off balance sheet risks measured under the Basel rules. In general, this figure should be at least 4% to avoid regulatory problems. $IFRS_{it}$ is a dummy variable that takes the value of 1 when the bank i in year t is from a country in which accounting practices for banks are in accordance with *IFRS* or US GAAP, and 0 otherwise. $MkBook_{it}$ is the Market-to-Book ratio at the end of year *t*. $SIZE_{it}$ is measured as the natural log of total assets at the end of year t.
Hansen test. Ho: All instruments are uncorrelated with the disturbance process.
m2 test. Ho: There is no second-order serial correlation in the first-difference residuals. z1. Wald test of the joint significance of the reported coefficients; z2. Wald test of the joint significance of the country dummies

Regarding our second hypothesis, in table 4 we show the results of the regression (3). If we focus on the effect of *TIER1* on earnings conservatism for those banks with a level of *TIER1* above the median country-level of *TIER1*, we observe that earnings increases are more persistent (or less transitory) as *TIER1* decreases (α_6 = -0.0659, statistically significant) and earnings decreases are more transitory (or less persistent) as *TIER1* decreases (α_7 = 0.1122, statistically significant). Now, if we focus on banks with a level of *TIER1* below the median country-level of *TIER1*, we appreciate that the coefficient α_{26} is positive and statistically significant (α_{26} = 0.0337) and the coefficient α_{27} is negative and statistically significant (α_{27} = -0.0505). These results show that the negative relationship between *TIER1* and earnings conservatism is less pronounced for those banks with a *TIER1* below the median-country level of *TIER1*. More exactly, for those high-*TIER1* banks the coefficient on earnings increases is -0.0659 $\Delta NI_{t-1} \times TIER1_{t-1}$ (being -0.0659 = α_6), while for low-*TIER1* banks is -0.0322 $\Delta NI_{t-1} \times TIER1_{t-1}$ (being -0.0322 = $\alpha_6 + \alpha_{26}$). Moreover, for those high-*TIER1* banks, the coefficient on the asymmetric persistence in good news and bad news is 0.1122 $\times D\Delta NI_{t-1} \times \Delta NI_{t-1} \times TIER1_{t-1}$ (being 0.1122 = α_7), while for low-*TIER1* banks is 0.0617 $\times D\,\Delta NI_{t-1} \times \Delta NI_{t-1} \times TIER1_{t-1}$ (being 0.0617 = $\alpha_7 + \alpha_{27}$). Thus, these results are consistent with our second hypothesis, which predicts a weaker negative relationship between earnings conservatism and *TIER1* for low-*TIER1* banks.

TABLE 4

ANALYSIS OF EARNINGS CONSERVATISM AND TIER, CONTROLLING BY MARKET-TO-BOOK AND LOW VS. HIGH TIER GROUP

$$\Delta NI_{it} = \alpha_0 + \alpha_1 D\Delta NI_{it} + \alpha_2 \Delta NI_{it} + \alpha_3 D\Delta NI_{it} \times \Delta NI_{it} + \alpha_4 TIER1_{it-1} + \alpha_5 D\Delta NI_{it} \times TIER1_{it-1} + \alpha_6 \Delta NI_{it} \times TIER1_{it-1} + \alpha_7 D\Delta NI_{it} \times \Delta NI_{it} \times TIER1_{it-1} + \alpha_8 IFRS_{it} + \alpha_9 D\Delta NI_{it} \times IFRS_{it} + \alpha_{10} \Delta NI_{it} \times IFRS_{it} + \alpha_{11} D\Delta NI_{it} \times \Delta NI_{it} \times IFRS_{it} + \alpha_{12} SIZE_{it} + \alpha_{13} D\Delta NI_{it} \times SIZE_{it} + \alpha_{14} \Delta NI_{it} \times SIZE_{it} + \alpha_{15} D\Delta NI_{it} \times \Delta NI_{it} \times SIZE_{it} + \alpha_{16} MKBOOK_{it} + \alpha_{17} D\Delta NI_{it} \times MKBOOK_{it} + \alpha_{18} \Delta NI_{it} \times MKBOOK_{it} + \alpha_{19} D\Delta NI_{it} \times \Delta NI_{it} \times MKBOOK_{it} + \alpha_{20} LowTIER_{it} + \alpha_{21} D\Delta NI_{it} \times LowTIER_{it} + \alpha_{22} \Delta NI_{it} \times LowTIER_{it} + \alpha_{23} D\Delta NI_{it} \times \Delta NI_{it} \times LowTIER_{it} + \alpha_{24} TIER1_{it-1} \times LowTIER_{it} + \alpha_{25} D\Delta NI_{it} \times TIER1_{it-1} \times LowTIER_{it} + \alpha_{26} \Delta NI_{it} \times TIER1_{it-1} \times LowTIER_{it} + \alpha_{27} D\Delta NI_{it} \times \Delta NI_{it} \times TIER1_{it-1} \times LowTIER_{it} + p_j + \nu_{it}$$

			OLS	*GMM*
Variable	*Coefficient*	*Predicted sign*	*Coefficient*	*Coefficient*
Intercept	α_0	?	-0.0032	-0.0099***
			(-0.7617)	(-4.6289)
$D\,\Delta NI_{it-1}$	α_1	?	-0.0004	0.0200***
			(-0.0787)	(14.3994)
ΔNI_{it-1}	α_2	+	0.7404	1.6486***
			(1.4036)	(8.9172)
$D\,\Delta NI_{it-1} \times \Delta NI_{it-1}$	α_3	-	-2.4117***	-1.3575***
			(-2.8384)	(-3.8902)
$TIER1_{it-1}$	α_4	?	0.0002	0.0007***
			(1.3503)	(25.9563)
$D\,\Delta NI_{it-1} \times TIER1_{it-1}$	α_5	?	-0.0001	-0.0006***
			(-1.0430)	(-19.6395)
$\Delta NI_{it-1} \times TIER1_{it-1}$	α_6	-	-0.0358***	-0.0659***
			(-3.3296)	(-38.9965)
$D\,\Delta NI_{it-1} \times \Delta NI_{it-1} \times TIER1_{it-1}$	α_7	+	0.0702***	0.1122***
			(4.4283)	(44.9350)
$IFRS_{it}$	α_8	?	-0.0013	-0.0021***
			(-1.5229)	(-15.2321)
$D\,\Delta NI_{it-1} \times IFRS_{it}$	α_9	?	-0.0002	-0.0008***
			(-0.1556)	(-3.0596)
$\Delta NI_{it-1} \times IFRS_{it}$	α_{10}	+	0.4220***	0.5216***
			(4.3602)	(25.4326)

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TABLE 4 (CONT.)

ANALYSIS OF EARNINGS CONSERVATISM AND TIER, CONTROLLING BY MARKET-TO-BOOK AND LOW VS. HIGH TIER GROUP

$D\ \Delta NI_{it-1} \times \Delta NI_{it-1} \times IFRS_{it}$	α_{11}	-	-0.8322***	-1.4058***	
			(-4.8141)	(-24.7546)	
$SIZE_{it}$	α_{12}	?	0.0000	0.0003**	
			(0.0764)	(2.4957)	
$D\ \Delta NI_{it-1} \times SIZE_{it}$	α_{13}	?	0.0002	-0.0008***	
			(0.6295)	(-10.1124)	
$\Delta NI_{it-1} \times SIZE_{it}$	α_{14}	?	-0.0430	-0.0835***	
			(-1.3036)	(-6.7281)	
$D\ \Delta N_iI_{t-1} \times \Delta NI_{it-1} \times SIZE_{it}$	α_{15}	?	0.1411***	0.0495**	
			(2.6632)	(2.2089)	
$MkBook_{it}$	α_{16}	?	0.0025***	0.0029***	
			(7.6881)	(36.3867)	
$D\ \Delta NI_{it-1} \times MkBook_{it}$	α_{17}	?	-0.0018***	-0.0019***	
			(-3.5985)	(-18.8878)	
$\Delta NI_{it-1} \times MkBook_{it}$	α_{18}	-	-0.1222***	-0.1757***	
			(-3.7835)	(-26.8305)	
$D\ \Delta NI_{it-1} \times \Delta NI_{it-1} \times MkBook_{it}$	α_{19}	+	0.1290	0.1158***	
			(1.4700)	(4.6813)	
$LowTIER_{it}$	α_{20}	?	0.0006	-0.0008***	
			(1.1926)	(-7.2151)	
$D\ \Delta NI_{it-1} \times LowTIER_{it}$	α_{21}	?	-0.0008	-0.0002	
			(-0.9073)	(-0.8750)	
$\Delta NI_{it-1} \times LowTIER_{it}$	α_{22}	?	0.0301	0.0117	
			(0.3914)	(0.6195)	
$D\ \Delta NI_{it-1} \times \Delta NI_{it-1} \times LowTIER_{it}$	α_{23}	?	0.2383	0.2497***	
			(1.3593)	(6.9182)	
$TIER1_{it-1} \times LowTIER_{it}$	α_{24}	?	-0.0000	-0.0002***	
			(-0.2835)	(-5.1735)	
$D\ \Delta NI_{it-1} \times TIER1_{it-1} \times LowTIER_{it}$	α_{25}	?	0.0000	0.0002***	
			(0.1308)	(5.8515)	
$\Delta NI_{it-1} \times TIER1_{t-1} \times LowTIER_{it}$	α_{26}	+	0.0289***	0.0337***	
			(2.8947)	(16.3439)	
$D\ \Delta NI_{it-1} \times \Delta NI_{it-1} \times TIER1_{it-1} \times LowTIER_{it}$	α_{27}	-	-0.1110***	-0.0505***	
			(-4.8024)	(-8.9275)	
Country effects			Yes		
Observations			1145		
R sq.			0,2491	—	—
Adj R Sq.			0,1949	—	—
Hansen			—	213,48	(sig.1.000)
m2			—	-1,43	(sig. 0.153)
z1			—	4209,45***	(sig. 0.0000)
z2			—	2680,95***	(sig. 0.0000)

t-student in parenthesis; *** p<0.01, ** p<0.05, * p<0.1

ΔNI_{it} is change in net income from fiscal year *t-1* to fiscal year *t*, scaled by beginning-of-year book value of total assets. ΔNI_{it-1} is change in net income from fiscal year *t-2* to fiscal year *t-1*, scaled by beginning-of-year book value of total assets. $D\Delta NI_{it-1}$ is a dummy variable that takes the value of 1 when the prior-year change in net income (ΔNI_{it-1}) is negative. $TIER1_{it-1}$, measured in %, is the regulatory capital adequacy ratio at the end of year *t-1*, constructed using shareholder funds plus perpetual non cumulative preference shares as a percentage of risk weighted assets and off balance sheet risks measured under the Basel rules. In general, this figure should be at least 4% to avoid regulatory problems. $LowTier_{it}$ is a dummy variable that takes the value of 1 if *TIER1* of the bank *i* in year *t* is below the median-country level of *TIER1* of listed banks in the year *t* and 0 otherwise. $IFRS_{it}$ is a dummy variable that takes the value of 1 when the bank *i* in year *t* is from a country in which accounting practices for banks are in accordance with IFRS or US GAAP, and 0 otherwise. $MkBook_{it}$ is the Market-to-Book ratio at the end of year t. $SIZE_{it}$ is measured as the natural log of total assets at the end of year *t*.

Hansen test. *Ho: All instruments are uncorrelated with the disturbance process.*

m2 test. *Ho: There is no second-order serial correlation in the first-difference residuals.*

z1. Wald test of the joint significance of the reported coefficients;

z2. Wald test of the joint significance of the country dummies

5. SENSITIVITY ANALYSIS

In order to test the robustness of the results shown in table 3 and table 4, we perform an extension of the reverse regression proposed by Basu (1997). That author proposes the inversion of the traditional model of Earnings Response Coefficients (ERC), in which earnings constitute the dependent variable and return, as a proxy for «news», becomes the independent variable:

$$EAR_{it} = \beta_0 + \beta_1 D_{it} + \beta_2 RET_{it} + \alpha_3 D_{it} \times RET_{it} + \nu_{it} \quad (4)$$

where:

EAR_{it} is the earnings per share of firm i for fiscal year t scaled by prior year-end price.

RET_{it} is the annual stock rate of return of the firm, measured compounding twelve monthly stock returns ending three months after the last day of fiscal year t.

D_{it} is a dummy variable that takes the value of 1 if the rate of return of firm i for fiscal year t is negative and 0 otherwise.

Thus, $ß_2$ measures the responsiveness of earnings to good news while the sensitivity to bad news is captured by combining coefficients $ß_2$ and $ß_3$. Hence, the incremental response of earnings to bad news is captured by the interaction term D_{it} *x*RET_{it} ($ß_3$). This coefficient constitutes the measure of earnings conservatism. In that respect, it is predicted that coefficient $ß_3$ will be positive since, under accounting conservatism, earnings will have a higher sensitivity to bad news than to good news.

Based on the above and in order to test our first hypothesis, the Basu (1997) model is first expanded to include both the variable $TIER1_{it-1}$ and the control variables ($IFRS_{it}$, $SIZE_{it}$ *and* $MkBook_{it}$). Thus, we estimate the following regression, expecting a negative relationship between TIER1 and earnings conservatism ($ß_7$<*0*).

$$\begin{aligned} EAR_{it} = {} & \beta_0 + \beta_1 D_{it} + \beta_2 RET_{it} + \beta_3 D_{it} \times RET_{it} + \beta_4 TIER1_{it-1} + \beta_5 D_{it} \times TIER1_{it-1} + \\ & \beta_6 RET_{it} \times TIER1_{it-1} + \beta_7 D_{it} \times RET_{it} \times TIER1_{it-1} + \beta_8 IFRS_{it} + \beta_9 D_{it} \times IFRS_{it} + \\ & \beta_{10} RET_{it} \times IFRS_{it} + \beta_{11} D_{it} \times RET_{it} \times IFRS_{it} + \beta_{12} SIZE_{it} + \beta_{13} D_{it} \times SIZE_{it} + \\ & \beta_{14} RET_{it} \times SIZE_{it} + \beta_{15} D_{it} \times RET_{it} \times SIZE_{it} + \beta_{16} MKBOOK_{it} + \beta_{17} D_{it} \times MKBOOK_{it} + \\ & \beta_{18} RET_{it} \times MKBOOK_{it} + \beta_{19} D_{it} \times RET_{it} \times MKBOOK_{it} + p_j + \nu_{it} \end{aligned} \quad (5)$$

Consistent with the existence of earnings conservatism, in model of table 5 the β_3 coefficient, which captures the additional recognition speed of bad news with respect to good news, is positive and significant. Moreover, in line with our first hypothesis, the negative and significant β_7 coefficient shows the existence of a negative relationship between *TIER1* and earnings conservatism. Moreover, the β_{11} coefficient is positive and significant (table 5), showing more conditional conservatism for those banks applying IFRS. Finally, the negative and significant β_{19} coefficient shows unconditional conservatism pre-empting the application of conditional conservatism. All these results are consistent with those previously obtained in table 3.

TABLE 5

ANALYSIS OF EARNINGS CONSERVATISM AND TIER1

$$EAR_{it} = \beta_0 + \beta_1 D_{it} + \beta_2 RET_{it} + \beta_3 D_{it} \times RET_{it} + \beta_4 TIER1_{it-1} + \beta_5 D_{it} \times TIER1_{it-1} + \beta_6 RET_{it} \times TIER1_{it-1} + \beta_7 D_{it} \times RET_{it} \times TIER1_{it-1} + \beta_8 IFRS_{it} + \beta_9 D_{it} \times IFRS_{it} + \beta_{10} RET_{it} \times IFRS_{it} + \beta_{11} D_{it} \times RET_{it} \times IFRS_{it} + \beta_{12} SIZE_{it} + \beta_{13} D_{it} \times SIZE_{it} + \beta_{14} RET_{it} \times SIZE_{it} + \beta_{15} D_{it} \times RET_{it} \times SIZE_{it} + \beta_{16} MKBOOK_{it} + \beta_{17} D_{it} \times MKBOOK_{it} + \beta_{18} RET_{it} \times MKBOOK_{it} + \beta_{19} D_{it} \times RET_{it} \times MKBOOK_{it} + p_j + \nu_{it}$$

Variable	*Coefficient*	*Predicted sign*	*GMM*	
Intercept	β_0	?	14.1649	
			(0.58)	
D_{it}	β_1	?	0.61695***	
			(3.21)	
RET_{it}	β_2	+	0.0109	
			(0.09)	
$D_{it} \times RET_{it}$	β_3	+	3.25145***	
			(5.34)	
$TIER1_{it-1}$	β_4	?	-0.0126***	
			(-4.01)	
$D_{it} \times TIER1_{it-1}$	β_5	?	0.00380	
			(1.54)	
$RET_{it} \times TIER1_{it-1}$	β_6	+	0.02349***	
			(6.48)	
$D_{it} \times RET_{it} \times TIER1_{it-1}$	β_7	-	-0.0943***	
			(-10.02)	
$IFRS_{it}$	β_8	?	-0.0996	
			(-0.03)	
$D_{it} \times IFRS_{it}$	β_9	?	0.00733	
			(0.27)	
$RET_{it} \times IFRS_{it}$	β_{10}	-	-0.1296***	
			(-7.58)	
$D_{it} \times RET_{it} \times IFRS_{it}$	β_{11}	+	1.04413***	
			(8.8)	
$SIZE_{it}$	β_{12}	?	-0.0276*	
			(-1.85)	
$D_{it} \times SIZE_{it}$	β_{13}	?	-0.0425***	
			(-3.86)	
$RET_{it} \times SIZE_{it}$	β_{14}	?	-0.0065	
			(-1.02)	
$D_{it} \times RET_{it} \times SIZE_{it}$	β_{15}	?	-0.1329***	
			(-4.01)	
$MkBook_{it}$	β_{16}	?	0.03383***	
			(6.88)	
$D_{it} \times MkBook_{it}$	β_{17}	?	0.03226***	
			(2.95)	
$RET_{it} \times MkBook_{it}$	β_{18}	+	0.00030	
			(0.15)	
$D_{it} \times RET_{it} \times MkBook_{it}$	β_{19}	-	-0.4153***	
			(-10.2)	
Country effects			Yes	
Observations			855	
Hansen			96.02	(Sig. 0.367)
m2			-1.34	(Sig. 0.180)
z1			116.00***	(Sig. 0.00)
z2			6.63***	(Sig. 0.00)

t-student in parenthesis
*** p<0.01, ** p<0.05, * p<0.1

EAR_{it} is the earnings per share of firm i for fiscal year t scaled by prior year-end price. RET_{it} is the annual stock rate of return of the firm, measured compounding twelve monthly stock returns ending three months after the last day of fiscal year t. D_{it} is a dummy variable that takes the value of 1 if the rate of return of firm i for fiscal year t is negative and 0 otherwise. $TIER1_{it-1}$, measured in %, is the regulatory capital adequacy ratio at the end of year t-1, constructed using shareholder funds plus perpetual non cumulative preference shares as a percentage of risk weighted assets and off balance sheet risks measured under the Basel rules. In general, this figure should be at least 4% to avoid regulatory problems. *$IFRS_{it}$* is a dummy variable that takes the value of 1 when the bank *i* in year *t* is from a country in which accounting practices for banks are in accordance with IFRS or US GAAP, and 0 otherwise. *$MkBook_{it}$* is the Market-to-Book ratio at the end of year *t. $SIZE_{it}$* is measured as the natural log of total assets at the end of year *t.*

Hansen test. *Ho: All instruments are uncorrelated with the disturbance process.*

m2 test. *Ho: There is no second-order serial correlation in the first-difference residuals.*

z1. Wald test of the joint significance of the reported coefficients;

z2. Wald test of the joint significance of the country dummies.

In order to test the sensitivity of the results obtained for our second hypothesis (table 4), we show in table 6 the results of the Basu's reverse regression model Eq. (6).

$$EAR_{it} = \beta_0 + \beta_1 D_{it} + \beta_2 RET_{it} + \beta_3 D_{it} \times RET_{it} + \beta_4 TIER1_{it-1} + \beta_5 D_{it} \times TIER1_{it-1} + \beta_6 RET_{it} \times TIER1_{it-1} + \beta_7 D_{it} \times RET_{it} \times TIER1_{it-1} + \beta_8 IFRS_{it} + \beta_9 D_{it} \times IFRS_{it} + \beta_{10} RET_{it} \times IFRS_{it} + \beta_{11} D_{it} \times RET_{it} \times IFRS_{it} + \beta_{12} SIZE_{it} + \beta_{13} D_{it} \times SIZE_{it} + \beta_{14} RET_{it} \times SIZE_{it} + \beta_{15} D_{it} \times RET_{it} \times SIZE_{it} + \beta_{16} MKBOOK_{it} + \beta_{17} D_{it} \times MKBOOK_{it} + \beta_{18} RET_{it} \times MKBOOK_{it} + \beta_{19} D_{it} \times RET_{it} \times MKBOOK_{it} + \beta_{20} LowTIER_{it} + \beta_{21} D_{it} \times LowTIER_{it} + \beta_{22} RET_{it} \times LowTIER_{it} + \beta_{23} D_{it} \times RET_{it} \times LowTIER_{it} + \beta_{24} TIER1_{it-1} \times LowTIER_{it} + \beta_{25} D_{it} \times TIER1_{it-1} \times LowTIER_{it} + \beta_{26} RET_{it} \times TIER1_{it-1} \times LowTIER_{it} + \beta_{27} D_{it} \times RET_{it} \times TIER1_{it-1} \times LowTIER_{it} + p_j + \nu_{it} \quad (6)$$

In table 6, the effect of *TIER1* on earnings conservatism for those banks with a level of *TIER1* above the median country-level of *TIER1* is negative (β_7 = -0.0445, statistically significant). If we focus on banks with a level of *TIER1* below the median country-level of *TIER1*, we appreciate that the coefficient β_{27} is positive and statistically significant (β_{27} = 0.0397). These results show that the negative relationship between *TIER1* and earnings conservatism is, as in our previous model (3), less pronounced for those banks with a *TIER1* below the median-country level of *TIER1*. Thus, the coefficient on earnings conservatism for those high-*TIER1* banks is -0.0445 $D_t \times RET_{it}$ $TIER1_{it-1}$ (being *-0.0445* = β_7), while for low-*TIER1* banks is *-0.0048* $D_t \times RET_{it}$ $TIER1_{it-1}$ (being -0.0048= $\beta_7 + \beta_{27}$). Thus, these results are consistent with our second hypothesis, which predicts a weaker negative association between TIER1 and earnings conservatism for low *TIER1* banks.

Table 6.
Analysis of earnings conservatism and TIER1, controlling by low vs. high TIER1 group

$$EAR_{it} = \beta_0 + \beta_1 D_{it} + \beta_2 RET_{it} + \beta_3 D_{it} \times RET_{it} + \beta_4 TIER1_{it-1} + \beta_5 D_{it} \times TIER1_{it-1} + \beta_6 RET_{it} \times TIER1_{it-1} + \beta_7 D_{it} \times RET_{it} \times TIER1_{it-1} + \beta_8 IFRS_{it} + \beta_9 D_{it} \times IFRS_{it} + \beta_{10} RET_{it} \times IFRS_{it} + \beta_{11} D_{it} \times RET_{it} \times IFRS_{it} + \beta_{12} SIZE_{it} + \beta_{13} D_{it} \times SIZE_{it} + \beta_{14} RET_{it} \times SIZE_{it} + \beta_{15} D_{it} \times RET_{it} \times SIZE_{it} + \beta_{16} MKBOOK_{it} + \beta_{17} D_{it} \times MKBOOK_{it} + \beta_{18} RET_{it} \times MKBOOK_{it} + \beta_{19} D_{it} \times RET_{it} \times MKBOOK_{it} + \beta_{20} LowTIER_{it} + \beta_{21} D_{it} \times LowTIER_{it} + \beta_{22} RET_{it} \times LowTIER_{it} + \beta_{23} D_{it} \times RET_{it} \times LowTIER_{it} + \beta_{24} TIER1_{it-1} \times LowTIER_{it} + \beta_{25} D_{it} \times TIER1_{it-1} \times LowTIER_{it} + \beta_{26} RET_{it} \times TIER1_{it-1} \times LowTIER_{it} + \beta_{27} D_{it} \times RET_{it} \times TIER1_{it-1} \times LowTIER_{it} + p_j + \nu_{it}$$

Variable	*Coefficient*	*Predicted sign*	*Coefficient*
Intercept	β_0	?	-3.1363 (-0.2348)
D_{it}	β_1	?	0.3125*** (2.8267)
RET_{it}	β_2	+	0.6631*** (8.4941)
D_{it} x RET_{it}	β_3	+	1.0146** (2.4149)
$TIER1_{it-1}$	β_4	?	-0.0042 (-1.5976)
D_{it} x $TIER1_{it-1}$	β_5	?	-0.0016 (-0.5540)
RET_{it} x $TIER1_{it-1}$	β_6	+	0.0023* (1.80)
D_{it} x RET_{it} x $TIER1_{it-1}$	β_7	-	-0.0445** (-2.1876)
$IFRS_{it}$	β_8	?	-0.0042 (-1.5976)
D_{it} x $IFRS_{it}$	β_9	?	-0.0016 (-0.5540)

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TABLE 6 (CONT.)

ANALYSIS OF EARNINGS CONSERVATISM AND TIER1, CONTROLLING BY LOW VS. HIGH TIER1 GROUP

RET_{it} x $IFRS_{it}$	β_{10}	-	-0.0023
			(-0.7141)
D_{it} x RET_{it} x $IFRS_{it}$	β_{11}	+	0.0245**
			(2.1876)
$SIZE_{it}$	β_{12}	?	-0.0171***
			(-3.4923)
D_{it} x $SIZE_{it}$	β_{13}	?	-0.0276***
			(-5.0962)
RET_{it} x $SIZE_{it}$	β_{14}	?	-0.0377***
			(-9.0570)
D_{it} x RET_{it} x $SIZE_{it}$	β_{15}	?	-0.0445**
			(-2.3230)
$MkBook_{it}$	β_{16}	?	0.0185***
			(6.7870)
D_{it} x $MkBook_{it}$	β_{17}	?	-0.0158**
			(-2.3738)
RET_{it} x $MkBook_{it}$	β_{18}	+	0.0091***
			(3.7098)
D_{it} x RET_{it} x $MkBook_{it}$	β_{19}	-	-0.1468***
			(-5.5087)
$LowTIER_{it}$	β_{20}	?	3.5339
			(0.2643)
D_{it} x $LowTIER_{it}$	β_{21}	?	0.0695
			(1.5984)
RET_{it} x $LowTIER_{it}$	β_{22}	?	0.2013***
			(3.5132)
D_{it} x RET_{it} x $LowTIER_{it}$	β_{23}	?	-0.0192
			(-0.1234)
$TIER1_{it-1}$ x $LowTIER_{it}$	β_{24}	?	0.0190***
			(4.8425)
D_{it} x $TIER1_{it-1}$ x $LowTIER_{it}$	β_{25}	?	0.0134***
			(3.6709)
RET_{it} x $TIER1_{it-1}$ x $LowTIER_{it}$	β_{26}	-	-0.0260***
			(-4.7097)
D_{it} x RET_{it} x $TIER1_{it-1}$ x $LowTIER_{it}$	β_{27}	+	0.0397**
			(2.4494)
Country effects	Yes		
Observations	845		
Hansen	129.63	(Sig. 0.238)	
m2	-1.28	(Sig. 0.199)	
z1	2659.37***	(Sig. 0.0000)	
z2	2.36***	(Sig. 0.0000)	

t-student in parenthesis
*** p<0.01, ** p<0.05, * p<0.1
EAR_{it} is the earnings per share of firm i for fiscal year t scaled by prior year-end price. RET_{it} is the annual stock rate of return of the firm, measured compounding twelve monthly stock returns ending three months after the last day of fiscal year t. D_{it} is a dummy variable that takes the value of 1 if the rate of return of firm i for fiscal year t is negative and 0 otherwise. $TIER1_{it-1}$, measured in %, is the regulatory capital adequacy ratio at the end of year t-1, constructed using shareholder funds plus perpetual non cumulative preference shares as a percentage of risk weighted assets and off balance sheet risks measured under the Basel rules. In general, this figure should be at least 4% to avoid regulatory problems. *$LowTier_{it}$* is a dummy variable that takes the value of 1 if TIER1 of the bank *i* in year *t* is below the median-country level of TIER1 of listed banks in the year *t* and 0 otherwise. *$IFRS_{it}$* is a dummy variable that takes the value of 1 when the bank *i* in year *t* is from a country in which accounting practices for banks are in accordance with IFRS or US GAAP, and 0 otherwise. *$MkBook_{it}$* is the Market-to-Book ratio at the end of year t. *$SIZE_{it}$* is measured as the natural log of total assets at the end of year t.
Hansen test. *Ho: All instruments are uncorrelated with the disturbance process.*
m2 test. *Ho: There is no second-order serial correlation in the first-difference residuals.*
z1. Wald test of the joint significance of the reported coefficients;
z2. Wald test of the joint significance of the country dummies

6. CONCLUDING REMARKS

Several works have studied the opaqueness of the banking business (see *e.g.* Berger *et al.*, 2000 and Morgan 2002) and the agency problems arising from the information asymmetry between shareholders, managers, creditors and regulators (see *e.g.* Saunders *et al.* 1990, Dewatripont and Tirole, 1994, Besanko and Kanatas, 1996, Diamond and Rajan, 2000; Jeitschko and Jeung, 2005). Nevertheless, the works that analyse the drivers of earnings conservatism in the banking industry are recent and scarce (Nichols *et. al*, 2009).

Our research adds to the literature on the effect of litigation exposure on earnings conservatism. Particularly, by focusing in the banking industry and using a sample of commercial banks from 69 countries between 1998 and 2007, we find a negative relationship between the level of *TIER1* as a proxy for managers' litigation exposure and earnings conservatism. Our results show that as litigation exposure increases (as *TIER1* decreases), earnings increases are more persistent and earnings reversals following earnings declines are higher. Overall, our results are consistent with an increase in public and private scrutiny derived from an increase in the perceived likelihood of bank failure, promoting conditional conservatism. Moreover, we evidence that this negative relationship holds for both, those banks with a *TIER1* below the median-country level of *TIER1* («*low TIER1*») and those with an average value of *TIER1* above the median country-level of *TIER1* («*high TIER1*»), although it is less pronounced for the former group due to a higher level of unconditional conservatism in these higher scrutiny scenarios. Thus, in these situations managers seem to resort to earnings conservatism, to minimize not only litigation costs but also the likelihood of adverse political action.

We think our contribution is twofold. Firstly, to the best of our knowledge, this is the first work that directly analyses the relationship between managerial litigation exposure and earnings conservatism in the banking industry. So, our work seeks to contribute to the finance and accounting literature by considering another driver of earnings conservatism in the banking industry. In addition, as we adopt an international perspective, we would also contribute to the current literature by identifying an important driver of earnings conservatism in the banking industry worldwide. Besides, the results of our study indicate that differences in conservatism across banks are a function of the specific liability exposure of bank managers.

Our results are consistent with a high level of international homogeneity in the banking sector concerning structure, regulation and supervision (see *e.g.* Dewatripont and Tirole, 1994; Bhattacharya *et al.,* 1998, Barth *et al.*, 2004), especially in light of the International Convergence of Capital Measurements and Capital Standards, published in June, 2004 by the Basel Committee on Banking Supervision (known as «Basel II»), Consequently, this growing process of harmonization in banking regulation, in addition to a growing interest of supervision authorities in the enforcement of *r*ules **i**mplementing *Basel II Capital Accord*, contributes to lighten institutional environment influences in this specific industry and support our results on a negative relationship between *TIER1* and earnings conservatism in the banking industry all over the world.

As we have previously pointed out, this work complements Niswander and Swanson's (2000) by direct linking earnings conservatism and capital ratios. In their study, Niswander and Swanson consider the roles of bank auditors and regulators as well as of bank managers finding that, for low capital banks, auditors and regulators prefer conservative accounting estimates. However, their study is not focused on conditional conservatism and their sample is restricted to US in pre-*Basel Accord* years [(15)]. Consequently, their proxies do not take into account the relation between capital and risky assets. In contrast, we apply a standard approach to test earnings conservatism using a proxy of managers' litigation exposure that takes into account not only capital but also risky assets in a wide international sample.

Finally, we must acknowledge our work has some limitations. The most important one relates to the use of the level of *TIER1* as a proxy for bank managers' liability exposure due to the existence of other potential confounding agency pressures that might affect the observed levels of earnings conservatism. Although we are aware of this limitation, we consider that our research design and especially our model extension, by including low and high *TIER1* banks allow us to obtain a better understanding on the effect of managers' liability exposure on earnings conservatism. Further extensions of this work should consider more refined measures of bank managers' liability exposure. For instance, under compensation incentive or job preservation considerations, capital adequacy ratios are not the only important indicators to measure bank managers' liability exposure, different measures of profitability and non-performing loan ratio are key indicators too. Thus, upcoming research could be built on the current findings to pursue alternative explanations for differences in conservatism across banks, furthering our understanding of why conservative accounting persists through time and what other factors influence firm-specific differences in conservatism. We leave such inquiry for future research.

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