UNIVERSIDAD DE MURCIA

FACULTAD DE ECONOMÍA Y EMPRESA

The Three Pillars of Basel II and the Quality of Accounting
Information in Worldwide Banks

Los Tres Pilares de Basilea II y la Calidad de la Información
Contable en la Banca a Escala Mundial

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Contable en la Banca a Escala Mundial

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A Julia, porque desde que está aquí,
todo esfuerzo tiene sentido y recompensa

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ABBREVIATIONS

ASB: Accounting Standards Board

BCBS: Basel Committee on Banking Supervision

CAC: Conditional Accounting Conservatism

CBE: Circular Banco de España

CCCB: Counter-cyclical Buffer

CEO: Chief Executive Officer

CONC: Concentration

CRI: Capital Regulatory Index

EBP: Earnings Before Provisions

EBTP: Earnings Before Taxes and Provisions

ECB: European Central Bank

ESM: European Stability Mechanism

EFSF: European Financial Stability Facility

EU: European Union

FASB: Financial Accounting Standards Board

FSAP: Financial Sector Assesment Program

FSB: Financial Stability Board

FSF: Financial Stability Forum

GAAP: Generally Accepted Accounting Principles

GDP: Gross Domestic Product

IAS: International Accounting Standards

IASB: International Accounting Standards Board

IFRS: International Financial Reporting Standards

IMF: International Monetary Fund

IND: Individualism

IOSCO: International Organization of Securities Commissions

IRB: Internal ratings-based

LCO: Loans charge-offs

LCR: Liquidity Coverage Ratio

LGD: Loss Given Default

LLP: Loans Loss Provisions

LLR: Loans Loss Reserves

MD: Market Discipline

MoU: Memorandum of Understanding

NPL: Non Perfoming Loans

OAR: Overall Activity Restrictiveness

OLS: Ordinary Least Squares

OSP: Official Supervisory Power

PD: Probability of Default

PIB: Producto Interior Bruto

RED: Real Estate Development

ROE: Return on Equity

ROA: Return on Assets

RS: Regulation and Supervision

RWA: Risk Weighted Assets

SAREB: Sociedad de Gestión de Activos Procedentes de la Reestructuración Bancaria S.A.

SB: Savings Banks

TA: Total Assets

TLAC: Total Loss Absorbing Capacity

UA: Uncertainty Avoidance

ABSTRACT IN SPANISH / RESUMEN

El proceso de desregulación financiera de los años 80 derivó en un incremento de la internacionalización de los bancos, mientras que la creciente competencia en el sector bancario conllevó unos requerimientos de capital más laxos y la estabilidad del sistema financiero empezó a peligrar. Esto motivó que en 1988 el Comité de Basilea sobre Supervisión Bancaria (BCBS) publicara un conjunto de requisitos mínimos de capital para los bancos, más conocido como Basilea I, que se centraba casi enteramente en el riesgo de crédito. El acuerdo de Basilea II se adoptó en 2004 e introducía una mayor sensibilidad al riesgo de capital exigido a los bancos a la vez que desarrollaba sus propios modelos en función de los cuales se aumentaba o disminuía el capital en función del riesgo de los activos involucrados. Las recomendaciones introducidas por Basilea II se pueden agrupar en tres pilares: Requisitos de capital mínimo, proceso de revisión supervisora y disciplina de mercado.

A pesar de que la idea de Basilea II estaba muy bien concebida respecto a los tres pilares, no se implementó con el poder suficiente para surtir los efectos esperados y conseguir la ansiada estabilidad financiera. Se seguía centrando demasiado en el riesgo de crédito y no tenía suficientemente en cuenta otros riesgos como el de mercado, el de liquidez o el riesgo operacional, que pueden suponer importantes fuentes de insolvencia para los bancos. Hubo también considerables problemas con la definición del capital y de los activos ponderados por riesgo, dadas las diferentes prácticas contables entre países. Además, adolecía una serie de limitaciones como que no incluía regulación explícita sobre la cantidad de deuda que los bancos podían contabilizar y se centraba más en las instituciones financieras individuales que en el riesgo sistémico. A ello hay que añadir que la implementación de Basilea II fue una muy ardua tarea debido a la gran cantidad de recursos que se necesitaban, tanto por parte de los bancos como de los supervisores.

La caída de Lehman Brothers supuso el inicio de la última y más profunda crisis financiera de nuestra época. Ésta puso en evidencia debilidades en las prácticas bancarias y supervisoras, así como en la disciplina de mercado. El comportamiento tradicional de los bancos es procíclico, es decir, dotan más provisiones por insolvencias en tiempos de recesión

o cuando el crecimiento del PIB se reduce, lo cual acaba profundizando más aún los efectos adversos de la crisis[1].

Sin embargo, estudios previos evidencian que, frente al carácter de la normativa contable bancaria, los bancos ya provocaban un comportamiento anticíclico a través de las provisiones por morosidad, ya que dotaban en exceso en períodos de expansión, para reducir las necesidades de provisión en tiempos de recesión, mecanismo que se conoce como alisamiento del resultado. Parece que se achaca a la insuficiencia de las recomendaciones de Basilea II el hecho de que muchas entidades acabaran quebrando. Por ello, es de nuestro interés investigar la eficacia de las normas de Basilea II, del comportamiento de los bancos y de la contabilidad de la morosidad, tanto antes como durante los períodos de crisis. Asimismo, y pese a que Basilea II tiene carácter mundial, pretendemos comprobar si existen comportamientos culturales distintos y cuáles son las características de aquellos países que proporcionan una información contable de mayor calidad.

Nuestro segundo objetivo será enfrentar los pilares de Basilea para ver qué papel ha tenido el tercero de ellos, es decir, la disciplina de mercado medida a través de distintos aspectos bancarios, frente a los dos pilares tradicionales de regulación y supervisión. Analizaremos si podemos dejar en manos de la disciplina de mercado el control más robusto o si finalmente, como es tradición, se ha optado por el establecimiento de sistemas más rígidos de regulación y supervisión. En 2010 se propusieron las normas de Basilea III, en aras de fortalecer todavía más el sistema bancario y su estabilidad a través de unos sistemas de regulación y supervisión más rígidos. Ese ímpetu por reforzar los pilares 1 y 2, nos lleva a estudiar si Basilea II no ha funcionado o no ha sido suficiente. Nos planteamos si es razonable que después del período de desregulación que derivó en Basilea II, de nuevo la regulación y la supervisión bancaria hayan pasado a ser más estrictas y rígidas en Basilea III para tratar de evitar los efectos de la prociclicidad.

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[1] Por eso, el Foro de Estabilidad Financiera (FSF, por sus siglas en inglés), centró su objetivo en identificar las debilidades subyacentes del sistema financiero y recomendó llevar a cabo una serie de medidas para fortalecer sus elementos clave. En su informe, incide en un cambio de la regulación contable para evitar el comportamiento procíclico de la contabilidad de la morosidad, promoviendo en tiempos de bonanza la creación de colchones de recursos que puedan mitigar estos efectos indeseables de la crisis en las cuentas de resultados de los bancos. Se trata de establecer un nivel mínimo de capital con el que absorber las pérdidas futuras, evitando en la mayor medida posible cualquier perjuicio para el sistema financiero.

Como tercer objetivo nos fijamos el estudio del impacto de la falta de calidad en la información contable sobre una restricción del crédito en tiempos de crisis, además del efecto indeseable de la prociclicidad. Limitándonos al ámbito español, y distinguiendo por tipos de entidades financieras, comprobaremos si los bancos más conservadores restringen menos crédito en la etapa de recesión.

A lo largo de nuestro estudio, tendremos presente la idea de que, en ciertas ocasiones, los supervisores bancarios y los expertos contables parecen tener perspectivas algo diferenciadas en cuanto a los objetivos del sistema contable se trata. Por un lado, a los teóricos o académicos contables les interesa una representación fiel de los activos y pasivos, lo cual no siempre es compatible con la recomendación por parte de los supervisores bancarios de prácticas contables que promuevan la consecución de unos resultados menos volátiles y que, en cierto modo, constituirían mecanismos de alisamiento del resultado. Este tipo de comportamientos se llegan a identificar por los supervisores como prácticas conservadoras, dado que una menor variabilidad de los resultados siempre repercutirá favorablemente en la estabilidad financiera.

La tesis se divide en tres capítulos:

El primero se titula "El alisamiento del resultado a través de la provisión por insolvencia: Factores culturales y coyunturales" y analiza los factores explicativos del alisamiento en el sector bancario durante el periodo 1997-2009. Dado el carácter procíclico del comportamiento bancario, nuestro interés es estudiar la eficacia de las normas de Basilea II, así como la contabilidad de la morosidad, tanto antes como durante los períodos de crisis. Pretendemos comprobar si existen comportamientos culturales y coyunturales distintos a la hora de suministrar una información contable de mayor calidad. Examinamos las prácticas de alisamiento del resultado tanto antes como después de la implementación de Basilea II y de las normas internacionales de contabilidad financiera (IFRS por sus siglas en inglés). El tema es muy relevante, ya que la crisis puso en cuestión el sistema de reconocimiento de pérdidas incurridas en los créditos morosos, lo que llevó a una revisión de la IFRS 39 para introducir un nuevo sistema basado en pérdidas esperadas.

Utilizamos una muestra que comprende los estados financieros de bancos comerciales y cajas de ahorro de 54 países diferentes para el período 1997-2009, incluyendo 31,057

observaciones. Siguiendo el enfoque de alisamiento de Greenwalt y Sinkey, utilizamos ecuaciones revisadas del modelo de Laeven y Majnoni (2003).

Los resultados evidencian la hipótesis de que las provisiones por insolvencias en banca llevan a cabo un papel anticíclico, mostrando un comportamiento diferenciado en períodos de expansión y recesión. Se confirma que los bancos gestionan el resultado a través de las provisiones durante el periodo 2005-2009, es decir, después de la implementación de IFRS, si bien lo hacen de manera más especialmente después de 2008, con la introducción de las recomendaciones de Basilea II, que a su vez coinciden con el comienzo de la crisis financiera. Sin embargo, no encontramos evidencia del uso de provisiones para gestionar el capital, ni diferentes comportamientos entre bancos comerciales y cajas de ahorro.

Nuestros resultados documentan el efecto de diferentes dimensiones culturales sobre la gestión del resultado a través de las provisiones por insolvencias. Confirmamos que tanto la aversión al riesgo como el individualismo tienen un efecto negativo en la cantidad de provisiones dotadas, si bien sólo los países con tendencia individualista alisan realmente el resultado a través de las provisiones por insolvencias.

El segundo capítulo, "Regulación, supervisión y conservadurismo contable en banca", relaciona los efectos de los pilares de Basilea II con el conservadurismo, entendiendo este como el reconocimiento oportuno y temprano de las insolvencias de los bancos. Nuestro objetivo será enfrentar el tercer pilar de Basilea II, es decir, la disciplina de mercado, medida a través de tres proxies -cotización, estructura de capital y concentración del mercado- para ver qué papel ha tenido frente a los dos pilares tradicionales de regulación y supervisión, medidos a través de los indicadores de Barth, Caprio y Levine (2006).

Utilizando la misma muestra que en capítulo anterior, y siguiendo el modelo de Beatty y Liao (2011), obtenemos evidencia empírica que sugiere que el rigor o rigidez de los regímenes regulatorios y supervisores están asociados a un mayor conservadurismo contable y que una disciplina de mercado más robusta también se relaciona con un mayor conservadurismo.

Uno de los factores que influyen en la calidad de la información contable y, concretamente en el grado de conservadurismo, es el hecho de que las entidades sean o no cotizadas. Los bancos cotizados tienden a tener una estructura de propiedad más dispersa, más asimetrías de información y problemas de riesgo moral, por lo que los accionistas les demandan más calidad en el suministro de información financiera. Sin embargo, los directivos de entidades

cotizadas también se enfrentan a unos mayores incentivos para desarrollar comportamientos oportunistas, reduciendo así la calidad de los estados financieros. Según la teoría de la agencia, es posible que en tiempos de crisis prime más el objetivo de alcanzar ciertos resultados que de obtener determinados niveles de cobertura o provisiones de riesgos futuros. Dado que los accionistas de entidades no cotizadas se involucran más en la gestión, estos incentivos por parte de los directivos se ven reducidos. En línea con esto, en nuestro estudio obtenemos que los bancos no cotizados son más conservadores que los cotizados.

Por otro lado, la estructura de capital es otro de los factores de disciplina de mercado que van a influir en la calidad de la información contable. Las cajas de ahorro se someten a una gran presión al mostrar sus cifras de resultados y sus modelos de negocio son más sensibles en tiempos de crisis. Dada su incapacidad para emitir acciones y ampliar capital, son menos conservadoras y más tendentes a ofrecer una imagen algo más maquillada. En consonancia con la mayoría de la literatura, obtenemos que los bancos son más conservadores que las cajas.

La concentración del mercado está inversamente relacionada con el nivel de competencia, por lo que en los mercados más concentrados los bancos tienen más poder, y la disciplina de mercado y el conservadurismo son menores. La competencia mitiga los problemas de agencia y alinea los objetivos de todas las partes del mercado. Los resultados evidencian nuestra proposición en el sentido de que aquellos bancos que operan en mercados más concentrados muestran un menor grado de conservadurismo.

Pero no solo evidenciamos cómo influyen los factores institucionales en la calidad de la información contable, sino que también comparamos el impacto relativo en el conservadurismo bancario de los tradicionales pilares uno y dos frente al nuevo pilar de disciplina de mercado, encontrando que los mecanismos de regulación y supervisión operan cubriendo los fallos de la disciplina de mercado en aquellos países donde esta es débil.

En aras de dar una mayor robustez a las medidas de disciplina de mercado al ejecutar el pilar 3, documentamos también las diferencias en instituciones legales y cultura de transparencia entre países. Utilizamos para ello el índice de requisitos de divulgación elaborado por La Porta et al. (2006), que mide la transparencia y las asimetrías de información como factor intrínseco de cada país y que se relaciona negativamente con el nivel de conservadurismo. Este efecto se refuerza cuando hay un estricto sistema de regulación y supervisión.

En cierto modo, y aunque los estándares de Basilea II se fijaron a nivel mundial, se constata un "gap" entre lo que la normativa establece y la perspectiva del supervisor de cada país. Aplicando los datos de carácter institucional, las diferencias son significativas entre países en cuanto a la robustez de los sistemas de regulación y supervisión, siendo estos los que controlan los mercados financieros en aquellas situaciones en que la disciplina de maercado falla.

El tercer capítulo, "Conservadurismo contable en banca y la caída del crédito durante la crisis financiera" calcula el impacto de dos medidas diferentes de conservadurismo sobre la oferta de préstamos durante la crisis en el caso concreto de España. Nuestra intención es medir el impacto de la falta de calidad de la información contable en la restricción del crédito durante la recesión. Hemos basado este trabajo en el sistema bancario español debido a su adopción de provisiones dinámicas como una herramienta contracíclica en el 2000 y por la significativa presencia de cajas de ahorro en la muestra. Además, España fue especialmente sacudida por la crisis económica. Este análisis se propone arrojar luz sobre las políticas necesarias para prevenir el colapso del sistema bancario durante posibles crisis financieras futuras.

Utilizamos una muestra española con 1.388 observaciones de bancos y cajas de ahorro desde el año 1997 al 2010 y basamos el modelo en la investigación de Beatty y Liao (2011) sobre una muestra estadounidense. Como ellos, analizamos dos medidas diferentes de conservadurismo, pero a diferencia de ellos, las incluimos en el mismo modelo después de asegurarnos de que no son mutuamente excluyentes, sino complementarias. La primera se centra en las diferencias temporales en el reconocimiento de las insolvencias, y la segunda, en el ratio entre las reservas para insolvencias y los créditos fallidos.

En épocas de bonanza encontramos que la actividad crediticia no varía en relación a los requerimientos de capital, si bien, en épocas de recesión el ratio de capital sí que pasa a mitigar la caída de los préstamos concedidos para la generalidad de las entidades, salvo las grandes instituciones financieras. Por otro lado, vemos que, en el caso de las cajas de ahorro, el conservadurismo condicional mitiga significativamente la caída de los préstamos durante las recesiones. Las cajas de ahorro que han acumulado reservas por encima del nivel mínimo exigido por ley, son también las que sufren una menor caída de la actividad crediticia. Así que, con la excepción de los bancos comerciales, que parecen no ser sensibles a los beneficios del conservadurismo, el resto de entidades financieras se comportan conforme a nuestra hipótesis. También comprobamos que el impacto de la contabilidad conservadora aumenta

conforme la crisis avanza; si bien al principio de la crisis hay una caída generalizada de los préstamos, conforme pasan los años, el conservadurismo mitiga cada vez más la caída del crédito.

Hemos estudiado todos los mecanismos disponibles para garantizar la calidad de la información contable. Estos mecanismos coinciden con las recomendaciones de Basilea II, cuyo fin último es mejorar la calidad de la información bancaria y garantizar la solvencia. Dados los resultados obtenidos, podemos decir que los estándares fijados por Basilea II han funcionando correctamente en el período de estudio pero han resultado insufucientes.

Queda demostrado que los bancos ya alisaban el resultado de forma previa a la implementación de las nuevas normativas. Ha prevalecido pues, las recomendaciones del supervisor bancario, que llevan a la introducción de Basilea III y a la modificación de la IFRS 39, teniendo en cuenta las pérdidas esperadas y provocando un efecto anticíclico. Además, hemos demostrado que la regulación y la supervisión complementan al resto de factores ambientales en aquellas situaciones en las que la disciplina de mercado falla. Por tanto, que Basilea III incida en el establecimiento de unos mayores requisitos y coeficientes más potentes es acorde a los resultados obtenidos en el capítulo 2, dado que la disciplina de mercado no es suficiente.

Enfatizamos pues, que el conservadurismo contable en años prósperos ayuda a mitigar la caída de la actividad crediticia en época de crisis. Esto nos indica que las reformas introducidas con Basilea II, han conseguido el efecto esperado, ya que aquellos bancos que se han comportado de manera menos conservadora en la etapa de expansión del período de estudio, son aquellos que más han visto reducir el crédito cuando ha llegado una etapa de recesión. Sin embargo, la dotación de provisión durante el período expansivo, no ha sido suficiente para evitar la prociclicidad en época de crisis, lo cual ha llevado a tener que mejorar cada uno de los pilares en el acuerdo de Basilea III y a la aplicación de la IFRS 9, promoviendo de esta forma sistemas de regulación y supervisión más estrictos. Este mayor conservadurismo evitaría la caída del crédito y la prociclicidad en el futuro.

Como idea última, los resultados de este trabajo apoyan fuertemente la reacción de Basilea III al reforzar intensamente los tradicionales pilares de regulación y supervisión de Basilea II.

INTRODUCTION

The role of banks in both economic growth and economic downturns, has encouraged the Basel Committee to focus on the regulation of the banking sector and the enforcement of its capital standards. We would like to take this opportunity to share some ideas on this important subject, which is currently engaging the attention of bank regulators, not just in our country, but worldwide.

Deregulation and globalization of financial services, together with a more sophisticated financial technology are increasing the risk of the activities carried out by banks. In this context, not only credit, interest rate and market risks, but also other risks can put in danger the stability of a financial system.

The first Basel capital requirements accord was launched in 1988 to set the regulatory capital ratio. The second accord was released in 2004 to further regulate banks as Basel I framework appeared to be insufficient.

Basel II accord came up with the three pillar concept, and incorporated further risks in the calculations of the regulatory capital ratio. In the end of 2007 the global financial crisis revealed the various distortions of Basel II capital requirements and emerged the need for a more robust framework.

To address, the financial crisis, the Basel Committee released the Basel III framework in 2010 in order to further strengthen the banking system. Basel III requires higher capital requirements and for the first time sets up specific liquidity requirements. The new capital standards have been criticized. Many argued that holding higher capital requirements would have a negative impact on credit markets. Others consider that the better banks are capitalized the fewer they will suffer from distortions in lending decisions, and thus the better they will perform.

Before going into greater detail, we will contextualize the beginning of Basel.

Deregulation period after 1980 derived in an increasing internationalization of banks, while Banks competitiveness was leading to lower capital requirements and financial systems' stability was put at risk.

This motivated that, in 1988, the Basel Committee on Banking Supervision (BCBS) in Basel, Switzerland, published a set of minimum capital requirements for banks. These were known as Basel I. It focused almost entirely on credit risk (default risk). It defined capital requirements and structure of risk weights for banks.

Under these norms, assets of banks were classified and grouped in five categories according to credit risk. Banks with an international presence were required to hold capital equal to 8% of their risk-weighted assets (RWA).

One of the major roles of Basel norms was to standardize the banking practice worldwide. However, there were major problems with definition of capital and differential risk weights to assets across countries, like Basel standards are computed on the basis of book-value accounting measures of capital, not market values. Accounting practices vary significantly across the G-10 countries and often produce results that differ from market assessments.

Other problem was that the risk weights do not take into account other risk than credit risk, such as market risks, liquidity risk and operational risks that may be important sources of insolvency exposure for banks.

Then, we will first deal with the Basel II agreement, adopted in 2004, which introduced greater sensitivity to risk in banks' capital requirements, and developed its own models in which capital is raised or lowered according to the risk of the assets involved.

So, Basel II laid down guidelines for capital adequacy with more refined definitions, risk management (market risk and operational risk) and disclosure requirements. The aim was to eliminate regulatory arbitrage by getting risk weights right, align regulation with best practices in risk management and provide banks with incentives to enhance risk measurement and management capabilities. To meet these goals, different instruments are used:

- Use of external ratings agencies to set the risk weights for banks.

- Operational risk has been defined as the risk of loss resulting from inadequate internal processes, people and systems or from external events. It includes legal risk, but excludes strategic and reputation risk.

- Disclosure requirements allow market participants assess the capital adequacy of the institution based on information on the scope of application, capital, risk exposures, risk assessment processes, etc.

The requirements introduced by Basel II can be grouped in three pillars:

Pillar I. Minimum capital requirements. It basically encompasses risk management incentives, new operational capital charge, risk weighted assets (RWA) and market risk.

Pillar II. Supervisory Review Process. It includes solvency reports, regulatory review, capital determination and regulatory intervention, as well as addresses risks that are not captured in Pillar 1 like concentration, interest rate and liquidity risks. I is based in the following principles: Banks should have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels; Supervisors should 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; Supervisors should expect Banks to operate above the minimum regulatory capital ratios and should have the ability to require banks to hold capital in excess of the minimum; Supevisors should intervene at an early stage to prevent capital from falling below the minimum levels required and should require rapid action if capital is not maintained or restored.

Pillar III. Market Discipine. It comprises minimum disclosure requirements regarding scope, capital transparency, capital adequacy, risk measurement & management and risk profiling. This pillar greatly increases the disclosures that the bank must make. It is designed to allow the market to have a better picture of the overall risk position of the bank and to allow the counterparties of the bank to properly price and deal.

Pillar 1 of Basel II already existed in Basel I though in a more non risksensitive form. Pillar 2 has always existed, but has now been formalised in Basel II (thereby promoting international consistency). Pillar 3 is a totally new part of the accord. It is about conveying information to the market about the banks inherent risk and risk mitigating measures. This information is distinct from financial information that is required by accounting standard-setters.

The financial crisis has demonstrated weaknesses in bank and supervisory practices, and it is fair to say also weaknesses in market discipline. Pillar 3 will promote deeper analysis of the risk profile of banks by market participants. Market discipline can respond more quickly than regulation to changes in banks' risk taking. Individual actions by supervisors can be implemented quickly and effectively, however across the board changes in regulatory policies generally take much longer to implement.

Pillar 3 aims to strengthen the safety and soundness of the banking system. Reliable and timely information allows market participants such as investors, large depositors, and counterparties to assess key information about a bank's risk profile, capital structure and level of capital. Many supervisory authorities (whether or not they have implemented Basel II) face resource constraints. Given the complexity of financial institutions and financial products, it is to the benefit of supervisors to promote disclosures and market discipline, as it reduces the burden on supervisors to detect and remedy unsound banking practices.

It should be highlighted that, since the creation of the first Accord, an objective of the Basel Committee has always been to promote international consistency and comparability. Basel II (including its Pillar 3) seeks to promote international consistency of supervisory requirements. The effective implementation of Pillar 3 requires supervisors, banks and analysts to each play an important part.

However, there were many factors that created uncertainties regarding Basel II, such as complexity of the assessment process and required changes, uncertainty in the implementation date of Basel Accord, some banks' attitude towards implementing the Accord and variability in data. The challenge for banks was to build up databases for operational losses, both historical and potential future losses, while the challenge for regulators was to ensure that banks started collecting this type of data in a systematic manner.

Today, the degree of sophistication in financial markets urge all market participants, including regulators and supervisors, to increase their focus on risk management in an effort to build more robust and sound financial systems. In that sense, Basel II, aiming at further strengthening of the soundness and stability of the international banking system, was supposed to offer an opportunity to respond to all these concerns and pay attention to face the main sources of risk and vulnerability for the financial system stability. But

implementation of Basel II was very tough since it required great capital and human resources on the part of banks and the supervisors.

For banks, the main problems were skills shortages and data inadequacies coupled with costs associated with implementation. Supervisors and regulators were required to review the efficiency of banks' risk management practices and capital allocation methodologies, in order to enable market participants have an opinion on the efficiency of banks.

It is widely felt that the limitations in Basel II norms is what led to the global financial crisis of 2008. That is because Basel II did not have any explicit regulation on the debt that banks could take on their books, and focused more on individual financial institutions, while ignoring systemic risk. To ensure that banks do not take on excessive debt, and that they do not rely too much on short term funds, Basel III norms were proposed in 2010.

Next, we will discuss how Basel III deals with an even further strengthening of the banking system. Basel III is a set of measures with the aim to strengthen the regulation, supervision and risk management of the banking sector. The purpose of these measures is improving the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source; improving risk management and governance and strengthening banks' transparency and disclosures.

Basel III reinforced the amount and quality of capital, introduced new leverage and liquidity ratios, developed a specific regulation for systemic financial institutions, as well as a new bank resolution framework, reformed the treatment of derivatives and undertook other changes in areas such as rating agencies. More specifically, the guidelines focus on four vital banking parameters such as capital, leverage, funding and liquidity. Requirements for common equity and Tier 1 capital are 4.5% and 6%, respectively. The liquidity coverage ratio (LCR) requires banks to hold a buffer of high quality liquid assets sufficient to deal with the cash outflows encountered in a short term stress scenario.

Basel III requirements have also modified the previous pillars in Basel II, which now are described as follows:

> **Pilar I.** Enhanced Minimum Capital & Liquidity Requirements
> **Pilar II.** Enhanced Supervisory Review Process for firm-wide risk management and capital planning

Pilar III. Enhanced risk disclosure and market discipline.

The word 'enhanced' has been added to the three pillars of Basel III. It means that supervisory/regulatory controls are now improved. The important key elements of Basel III are the following:

(i)   Capital and its stricter standards: Basel III requires overall capital to be 10.5 % of the Risk Weighted Assets.

(ii)   Capital conservation buffer (at 2.5%) has been introduced with the aim of ensuring that banks maintain a buffer (like a cushion or a shock absorber) of capital that can be used to face financial and economic crises.

(iii)   Counter-cyclical buffer (CCCB), ranging from 0 to 2.5%, has been introduced to protect the banking sector of excess credit growth.

More recently, Basel regulators are considering changing banking regulations, fact which has been named as Basel IV. The new reforms aim to correct the excesses found in the use of internal models, whose complexity has been taken advantage of, in the opinion of many regulators, to artificially reduce capital consumption. The degree of permissiveness in the use of these models has been very disparate, depending on the supervisor, which has created competition problems between banks. To correct this, they propose establishing limits on capital savings derived from using internal models, reinforce the standard models and set floors for capital consumption in certain portfolios.

The objective of these changes is not to increase capital requirements, but correct excess. Some of the measures being proposed seem redundant compared to the reforms already adopted and pending implementation, such as the leverage ratio and the new Total Loss Absorption Capacity. In particular, all the regulation related to bank resolution will considerably increase the resilience of the banking system, which raises doubts about whether capital regulations should be made even stricter before seeing the effects of these new measures.

Apparently, some regulators feel that they were not strict enough in the reform of Basel III. To correct it, many supervisors have raised the capital requirements above the minimum, through pillar 2, a relatively discretional increase by the supervisors based on the valuation of each bank and heterogeneous according to the supervisor who sets it.

Basel works according to a coordination based on minimums, in which national regulators are free to set higher requirements. This mechanism seems to work when there is a period of deregulation such as the one from the decade of the 70s to the recent crisis, but not in the current situation.

Another problem is the predomination of developed countries with scant sensitivity to the problems faced by emerging countries. Often the parent company's regulation is stronger and it could frustrate the financial inclusion processes emerging economies are currently undertaking.

A bureaucracy of regulators and supervisors has been created whose main task is to permanently reform the regulatory framework. Regulatory uncertainty has frustrated the bank decision-making process in a difficult environment regarding low interest rates. The implementation of reforms is increasingly unequal among countries, which is creating a dangerous fragmentation of the international financial system.

Problem statement

Basel II capital requirements are quite interesting to analyze and discuss their impact on the financial sector and the real economy. We are mainly interested in answering the following question:

Is it reasonable that after the deregulation process that led to Basel II, regulation and supervision become more rigid and stringent in Basel III, overcoming market discipline?

But further research questions are also necessary to better present the purpose of this thesis:

- Do banks smooth their earnings through loan loss provisions?
- Are there differences regarding expansion periods and downturns? Are there cultural differences which affect the level of smoothing?
- Do banks under stronger and more stringent regimes of supervision and regulation practice more conservatism than banks in countries with less enforcement?
- Are there differences between comercial banks and savings banks? And regarding the concentration of the industry?
- Does the enforcement affect the way in which regulation and supervision determine the level of conservatism?

- ▪ Does conditional conservatism help to mitigate drops in loan supply during recessionary periods? Does it depend on the capital structure or the size of the entities?

Thesis structure

The thesis is divided into three main chapters:

The first chapter, **Income smoothing through loans loss provision: Cultural and cyclical factors**, analyzes the factors explaining the use of income smoothing through loan loss provisions (LLP) in the banking industry during the period 1997-2009.

The second chapter, **Regulation, Supervision and Accounting Conservatism in Banks,** evaluates the effects of the three pillars of Basel II, i.e. bank regulation, supervision and market discipline, on the timeliness of loan loss provisioning by banks. In particular, we analyze explicitly how regulatory and supervisory regimes interact with the market discipline measures.

The third chapter, **Accounting Conservatism in Banks and the Drop in Supply of Loans during the Financial Crisis**, calculates the effects of two different measures of conditional conservatism on the change in loans supply during the recession in Spain.

CHAPTER 1

Income smoothing through loans loss provisions:
Cultural and cyclical factors

Income smoothing through loans loss provisions:
Cultural and cyclical factors

1.1 INTRODUCTION

Financial crisis in the banking sector has led to major regulatory reforms both in accounting and supervisory environments, such as IFRS and Basel II, respectively. Credit losses are unavoidable and surface frequently in a cyclical manner, so there is a general attempt of achieving an anticyclic effect among the different regulations. This usually means the promotion of income smoothing practices by which provisions are increased when the earnings are high and reduced when they are low.

The new accounting framework based on IFRS and the implementation of the new capital framework (Basel II) has significantly changed the regulatory environment of European banks. The IFRS framework is a step forward in the direction of less detailed rules and more principles in the elaboration of accounting statements, while Basel II makes capital requirements more risk sensitive. Moreover, Basel II raises the issue of the purpose of regulatory capital and, more specifically, the issue of whether loan loss reserves should be included or not as part of regulatory capital. These regulatory changes precipitated questions about the quality of banks' accounting data.

Banking supervisors and accounting standards setters do not usually share the same views about the objectives of the accounting system. On the one hand, accounting regulators focus on the faithful representation of assets and liabilities, which is not necessarily compatible with income smoothing, i.e. with the earnings management practice carried out by managers, generally leading to a reduced variability of reported income. On the other hand, bank regulators and supervisors deal with all the issues that might have an impact on bank stability, such as capital ratios, risk taking strategies, leverage and others. Whether the views of accounting regulators prevail over those of banking supervisors is an empirical question. We will evidence that bank supervisors view preponderates.

We contribute to the current policy debate on the new guidelines for capital and banking regulations drawn up by the Basel Committee on Banking Supervision (BCBS), usually referred to as Basel III, which suggest that strengthening core capital helps to ensure a smooth transmission of monetary policy and propose the creation of a counter-cyclical capital buffer of additional core capital that can be used to absorb losses during periods of stress.

During the 2008 financial crisis, the Financial Stability Forum[2] focused on identifying the underlying weaknesses of the financial system and recommended measures to strengthen its key elements. In this context, in April 2008, it submitted to the G-7 a report on improving the resilience of markets and financial institutions. These recommendations were divided into five areas, which constituted the weaknesses of the financial system: neglect of capital, liquidity and risk management; enhancement of transparency; changes in the function and uses of credit indices; strengthening of responsible authorities; and strengthening of the system that can overcome the frequent tensions in the financial system. The new requirements seek to establish a minimum level of capital from which to determine the ability of a bank to absorb losses -TLAC or total loss absorbing capacity- without irreparable damage to its solvency. In short, they promote a buffer with which to face future crises and prevent future bailouts to be solved with public money, especially if they are big banks capable of endangering international financial stability, as happened with Lehman Brothers.

Bank managers estimate loan loss provisions (LLP) to reflect expected future losses on loans in their existing portfolios. Since these future losses cannot be estimated with certainty, bank managers have substantial discretion to set the provision. This process allows them wide latitude for discretion in the estimation of LLP. How managers use that discretion and the underlying motivations for their behaviour are questions that have received much attention from academics. Empirical evidence shows that provisions do not reflect only expected credit losses but are prone to be used for other objectives. Prior research suggests three main

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[2] The Financial Stability Forum (FSF) was a group consisting of major national financial authorities such as finance ministries, central bankers, and international financial bodies. The Forum was founded in 1999 to promote international financial stability. Its founding resulted from discussions among Finance Ministers and Central Bank Governors of the G7 countries, and a study which they commissioned. The Forum facilitated discussion and co-operation on supervision and surveillance of financial institutions, transactions and events. FSF was managed by a small secretariat housed at the Bank for International Settlements in Basel, Switzerland. The FSF membership included about a dozen industrialized nations who participate through their central banks, financial ministries and departments, and securities regulators. At the G20 summit on November 15, 2008, it was agreed that the membership of the FSF will be expanded to include emerging economies, such as China. The 2009 G-20 London summit decided to establish a successor to the FSF, the Financial Stability Board. The FSB includes members of the G20 who were not members of FSF.

motives for bank managers' discretionary behaviour with respect to loan loss provisions: income smoothing, signalling and capital management. We will mainly focus on the first of the motives, i.e. income smoothing.

We aim to prove if banks and savings banks smooth their results through the use of loan loss provisions and if the provision created during expansion periods reduces the impact of loan loss provisions during the financial crisis allowing in that way an antyciclic behavior. Different institutional roles derive in different regulations and hence in different levels of loan loss provisioning. The purpose is to study how differences in organizational structure influence the use of loan loss provisions as a tool for earnings management, or more precisely, for income smoothing. We also investigate whether the use of loan loss provisions by bank managers has been affected by the financial crisis broken out in the second half of 2007. The financial crisis strongly impacted banking systems in Europe, and its consequences on bank managers' provisioning decisions are not straightforward. Since it severely affected banks' loan portfolio quality and earnings, it could have constrained the opportunity to discretionally manage earnings and capital via loan loss provisions (Curcio et al. 2017).

Supporters of income smoothing claim that it should be viewed as an element of prudent credit-risk policy, in which forward-looking reserves are created to accommodate expected portfolio deteriorations that emerge during downturns (Wall and Koch 2000; Laeven and Majnoni 2003; Fonseca and González 2008; Skala 2015). Basel III recommendations in line with this reasoning call for a change in accounting standards to incorporate the expected-loss perspective, and a similar rationale led the Bank of Spain to introduce regulatory measures that obliged Spanish banks to perform income smoothing. It is interesting to point out the case of Spain, because the regulation of loan loss provisions was made by the Central Bank, which dictated strict rules on how such provisions had to be accrued and it left little room for managerial discretion[3].

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[3] In year 2000, the Central Bank introduced the so-called statistical provision aimed at, during good times, forcing banks to set aside provisions for the expected losses that were embedded in their expanding credit portfolios, and during bad times, allowing to use the reserve to cover realised losses (Fernández de Lis et al. 2000). After the reform of CBE 4/2004, with the adaptation of the bank regulation to IFRS, the statistic provision was converted into a generic or dynamic provision in 2005. The dynamic provisions produces flat loan loss provision ratios through the economic cycle.

Opponents of income smoothing, however, argue that it distorts bank financial results such that they do not adequately convey underlying profitability at a given point in time (Wall and Koch 2000; Bushman and Williams 2012).

Furthermore, we contribute to the Debate of the IFRS 39 reform by the IASB, by examining if the provisions of banks actually have an anticyclic effect which allows to reduce the LLP impact during financial crisis periods. Likewise, we analyze if the managers incentives to smooth earnings are greater after the implementation of new accounting standards such as IFRS or Basel II or during the financial crisis period (2008-2009) through the use of interaction effects. In addition, amongst a great variety of possible LLP explanatory factors, we consider two main dimensions of culture which could have a significant impact on the level of provisioning and, hence, on earnings management.

The level of income smoothing depends, on the one hand, on earnings before provisions, and on the other hand, on other institutional factors such as specific regulations, cultural environment and psychology of the society. The reform of IFRS 39 deals with the sustitution of a model of loan loss provisioning estimation based on incurred losses for another based on expected losses. IFRS 39 involves banks' evaluation of their credit portfolio and requires loan assessment to be based on the amortized cost, that is to say the current value of expected cash flows. It states that loans must be recorded in the bank balance sheet at their nominal value – i.e., the result of their amortization plan – unless objective proofs of deterioration occur. In this case, the difference between the loan nominal value and the loan value calculated as the value of its expected cash flows must be charged on the bank profit and loss account. As to the net charge-offs, IFRS 39 refers to the concept of incurred loss, which is very different from that of expected loss: according to IFRS 39, adjustments are allowed only to face losses already occurred, or that are presumed, but on the basis of an event already occurred, though after the loan was granted. Consequently, banks' provisions cannot be set aside based on expected loan losses, even if those provisions are estimated by means of the statistical methods which bank internal rating systems are founded on.

As mentioned before, during the financial crisis, the delayed recognition of credit losses on loans (and other financial instruments) was identifed as a weakness in existing accounting standards. As part of IFRS 9, the IASB has introduced a new, expected loss impairment model that will require more timely recognition of expected credit losses. Specifically, the new Standard requires entities to account for expected credit losses from when financial

instruments are first recognised and it lowers the threshold for recognition of full lifetime expected losses. The final version of the IFRS 9 was published in 2014; it replaces earlier versions of IFRS 9 and completes the IASB's project to replace IFRS 39, *Financial Instruments: Recognition and Measurement*. IFRS 9 will be effective for annual periods beginning on or after 1 January 2018.

The banking industry mainly consist of commercial and savings banks. Commercial banks are stock institutions funded by investors, and are hence responsible to external parties. Saving banks, on the other hand are owned by the depositors. These differences in organizational structures may have implications for earnings and capital management behaviour patterns via the use of loan loss provisions. Hence, we also examine if these regulations changes are equally applicable to the two main types of banking institutions and if the crisis effect vary depending on the type of bank.

The new regulation after the crisis, such as Basel III and IFRS 9, is very concerned with the anticyclic effect and promotes specific accounting treatments that are compatible with smoothing income practices. In short, this chapter aims to presents empirical evidence about the practice of income smoothing through LLP during the period 1997-2009 by answering the following questions:

Was there income smoothing in international banks before these new regulations? What does income smoothing depend on? Does the level of income smoothing change with institutional factors such as cultural characteristics or capital structure of banks? Do regulations reforms such as IFRS and Basel II affect the level of income smoothing? Is it the crisis an explanatory factor of the level of income smoothing?

We find that the use of loan loss provisions increased after the implementation of both IFRS and Basel II recommendations, but income smoothing practices have opposite behavior in the periods studied, its level decreased after 2005 and it significantly rised during the 2008-2009 financial crisis compared to the pre-financial crisis period. We evidence that more individualistic countries tend to have higher levels of income smoothing. However, we do not find significant differences in the behavior of savings banks in comparison to commercial banks.

The rest of this chapter is organized as follows. We review prior research and provide the rationales for our hypothesis in section 1.2. This is followed by the research design of the

study in section 1.3. We discuss our results in section 1.4 and present our conclusions in section 1.5.

1.2   PRIOR RESEARCH AND DEVELOPMENT OF HYPOTHESES

Jensen and Meckling (1976) point out that the lack of alignment between managers and shareholders' interests creates incentives for managers to use the firm's resources in a selfbeneficial way. In line with this general idea, earnings management can be defined as a purposeful alteration of the financial reports. A frequently used description is given by Healy and Wahlen (1999):

> *"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 economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers"*

Previous literature has regarded negatively the practice of earnings management by non-financial companies, as it obscures the companies' true economic performance (Goel and Thakor 2003; Leuz et al. 2003; Bushman and Williams 2012). They give a negative view on earnings management; managers do not present the financial information of the firm in a fair manner, and mislead the stakeholders in this way. Management that intervenes in the accounting process is not presenting a true view on the financial information provided and will have influence on the decision made by the users of the financial information. These decisions would be different when no intervention had taken place.

Another negative approach of earnings management can be defined through the information perspective, which means that managers have the opportunity to reveal their private information. Such a definition is given by Schipper (1989):

> *"Disclosure management in the sense of a purposeful intervention in the external financial reporting process, with the extent of obtaining some private gain, as opposed to merely facilitating the neutral operation of the process."*

These broad definitions encompass a number of practices carried out by managers, generally leading to a reduced variability of reported income (earnings smoothing) or to covering deteriorating firm performance. Numerous studies examine how widespread and pervasive these practices are, seeming to affect most publicly traded companies and being common to firms all over the world (Healy and Wahlen, 1999; Dechow and Skinner, 2000). However, the objective and direction of these earnings management practices vary depending on the incentives that managers face.

The credit-granting activities of financial institutions set them apart from nonfinancial institutions: credit losses are unavoidable and surface frequently in a cyclical manner. As a result, some degree of earnings management in the form of income smoothing is recommended (Laeven and Majnoni 2003; Fonseca and González 2008; Pérez et al. 2008, 2011). Income smoothing in banks entails taking advantage of high earnings to create a buffer of loan-loss reserves, which are consumed during cyclical downturns, as explained before. Thus, income smoothing may be regarded as establishing forward-looking reserves, which cover not only the existing, but also the expected, defaults in loan portfolios (Laeven and Majnoni 2003). Such behaviour is regarded positively and recommended both in the literature and by some bank supervisory regimes, such as the obligatory dynamic provisioning system in Spain.

There are studies that conclude that earnings management can also have a positive value. Beneish (1997) state that earnings management is a way for managers to disclose their private expectations about the firm's future cash flows to investors. According to Fields et al. (2001), earnings management will occur, because managers have the flexibility to choose accounting treatment, whereby they can maximize their own utility. In contrast to the definition of Healy and Wahlen (1999), the consequence of earnings management will not harm the stakeholders.

Prior to them, Beidleman (1973) noted that income smoothing benefits could be defined as the intentional dampening of fluctuations on a certain level considered as normal for the company. In this sense, smoothing represents an attempt by the company's managers to reduce the variations of benefits to the extent permitted by accounting principles. There are key aspects in this definition: Smoothing consists on the reduction of income variability; there must be wilfullnes or intentional behavior by the manager; income variability is measured in relation to a certain level considered as 'normal'; income smoothing practices must respect the Generally Accepted Accounting Principles (GAAP). Gill de Albornoz

(2003) points out that income smoothing represents a specific strategy of earnings management, together with agressive and conservative accounting policies. Earnings management is a more general concept than income smoothing.

Apelláriz and Labrador (1995) state that the phenomenon known as earnings management can be defined as the selection of techniques by the manager to obtain a desired level of benefits, using the flexibility allowed by the GAAP. They confirm that income smoothing is, in fact, a particular case of earnings management whose main objective is to present a lower variability in the declared benefit. This idea is focused on the smoothing derived from managers discretion, assuming that they have incentives to do it. Gill de Albornoz (2003) suggests that there are discrepancies about which practices of income smoothing should also be considered as earnings management. Some authors as Apelláriz and Labrador (1995) consider that the concept only encompasses those practises that respect the GAAP, despite taking advantage of the regulation flexibility. Other authors consider situations where GAAP have been violated as earnings management practices (Beneish, 1997). Respecting this debate, Dechow and Skinner (2000) consider that there is a clear difference between fraudulent accounting practices which violate the GAAP, and those accounting decissions subject to managerial discretion and respecting GAAP that constitute earnings management practices. Anyways, they reckon that in absence of evidence of the existence of discretion, it is very difficult to differ between fraudulent practices and a fair use of accounting discretion.

García Lara et al. (2005) show that earnings management is a key factor enhancing the measures of earnings conservatism in European continental countries. However, they do not refer to this phenomenon as earnings conservatism, since it is only attributable to earnings management techniques implemented by managers to accomplish certain objectives regarding tax payments, the dividend policy of the firm and/or the relation with other third parties like labour unions. These objectives are different from complying with the prudence or conservatism principle as stated in the conceptual frameworks (FASB, IASB or ASB), and enhanced (enforced) by a greater development of financial markets and a more litigious environment.

There are concrete sectors where there are specific accounting items which can easily be subject of earnings management and which have a significant effect on the result, such as loan loss provisions within the banking sector. Prior research focused on the use of accrual adjustments as an earnings management tool, specifically on the relationship of LLPs and

earnings management (Collins et al., 1995; Liu y Ryan, 1995; Beaver y Engel, 1996; Liu et al., 1997; Ahmed et al., 1999; Saurina, 1999; Beatty et al, 1995; Greenwalt and Sinkey, 1988; among others), relationship of LLPs and capital management (Beatty et al, 1995; Collins et al, 1995; Kim and Kross, 1998; among others) and the use of LLPs as a tool for signaling information to the stock market (Liu and Ryan, 1995; Wahlen, 1994; among others). Using data on U.S. banks, Wahlen (1994), Collins et al. (1995), Greenwalt and Sinkey (1988), Liu and Ryan (2006) and Fonseca and González (2008), among others, find evidence that banks use LLP to manage income. On the other hand, Moyer (1990), Beatty et al. (1995) and Ahmed et al. (1999) do not find support for the income-smoothing hypothesis.

Although there is a substantial empirical literature in accounting that examines income smoothing, the theoretical underpinnings of smoothing are not well understood (Kanagaretman *et al.* 2004). One explanation is that bank managers attempt to reduce earnings variability to reduce perceived risk, because earnings variability is a key indicator of risk (Beaver et al. 1989). Consistent with this idea, Gebhardt et al. (2001) find that the implied risk premium is consistently higher for commercial banks and that the variability of earnings is one of the key factors in explaining cross-sectional differences in the implied risk premium. They argue that earnings variability is likely to capture fundamental cash flow risk (Gedhardt et al. 2001). Similarly, Barth et al. (1995) argue that bank shareholders will demand a higher risk premium for the increased risk perceived from a more variable earnings stream.

According to Skala (2015), smooth income streams lower the perceived riskiness of a bank, directly influencing its rating levels, funding costs and share prices as such. Since managerial contracts are also frequently based on earnings stability or share price stability (Healy 1985), managerial compensation, reputation and stability—in addition to shareholder returns—all depend on gross profit fluctuations. Lambert (1984) draws on agency theory to explain why managers work to smooth income. Since shareholders set managerial compensation as a function of output, managers expend extra effort to boost production, thereby smoothing income, when it is low. In such a case, income smoothing is effectively a goal of both shareholders and managers. Similarly, because of income-smoothing firms' higher valuations, investors expect these practices; their absence may therefore be viewed negatively in the capital market (Goel and Thakor 2003).

Despite existing regulations on reserve levels, it is assumed that bank managers possess some discretion over annual LLP (Beaver and Engel 1996; Bikker and Metzemakers 2005; Pérez et al. 2008; Bushman and Williams 2012). Total annual provisions may therefore be viewed as the sum of nondiscretionary and discretionary provisions. A prime example is when managers decide to 'take a bath', deliberately reducing already-low earnings (Healy 1985). When existing losses prevent managers from taking bonuses in the present, they may make extra reserves to improve future bonus prospects. 'Taking a bath' behaviour has been identified on the part of incoming CEOs who wish to decrease benchmark earnings used for future performance evaluations (Guan et al. 2012).

Regardless, Pérez et al. (2011) show that the introduction of transparent income smoothing via Spanish regulations in 2000 has led to an abolition of discretionary non-transparent smoothing. The authors advocate implementing regulatory smoothing, which allows managers to smooth in a transparent manner. In such a case, smoothing for opportunistic reasons can be largely eliminated.

García Osma (2010) states that earnings management has both positive and negative economic consequences. On the one hand, companies reach their accounting goals without being penalized by the markets, but on the other hand, information transparency decreases, which has consequences on the cost of capital and investment efficiency of companies.

Given all that, we predict that the relationship between loan loss provisions and pre-smooth earnings will be positive, which is in line with the idea that international banks smooth income as a regular strategy.

1.2.1 National culture dimensions

In a European context, Giner and Rees (2001), García Lara and Mora (2005) or Raonic et al. (2004), fail to find significant differences between common-law and code-law based countries in Europe regarding earnings conservatism. García Lara et al. (2005) argue that managers in European continental countries have incentives to manage earnings downwards, and that this behaviour is likely to affect seriously the results of accounting research in Europe.

Following Lim et al. (2013), we focus on two dimensions of national culture identified by Hofstede (2001), individualism and uncertainty avoidance, which we argue are related to bank financial reporting conservatism and risk taking[4].

Individualism/Collectivism refers to people's behavior toward the group. Individualism pertains to societies in which the ties between individuals are loose -everyone is expected to look after him or herself. Collectivism as its opposite pertains to societies in which people are integrated into strong, cohesive ingroups, which throughout people's lifetime continue to protect them in exchange for unquestioned loyalty (Hofstede et al., 2010). Literature points to individualism/collectivism as the cultural dimension most often associated with cooperative behavior (Wagner, 1995).

High individualism cultures emphasize individual achievements, self-orientation and autonomy (Hofstede, 2001). Chui et al. (2010) argue that individualism, as defined by Hofstede (2001), can be linked to overconfidence, i.e., in high individualism societies more decisions are made by the individual and these decisions tend to be driven more by overconfidence. Risk taking incentives likely are greater in high individualism societies where concern for other stakeholders' welfare is likely to be low. According to Hofstede, the higher level of overconfidence and risk taking in high individualism societies will, in turn, be reflected in less conservative and more volatile earnings for firms in such societies. Table 1.1 shows individualism differences amongst countries worldwide.

Desender et al. (2011) find a significant cultural influence on earnings management. Specifically, their results show that countries scoring high on individualism tend to have lower levels of earnings management. In the same line, Zhang et al. (2013) find that earnings management is more severe in collectivist as opposed to individualist cultures, consistent

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[4] The dimensions of culture developed by Hofstede (1980) have been widely accepted since Hofstede first published his results, and have been used by many business researchers. For example, Schultz et al. (1993) and Kachelmeier and Shehata (1997) have employed Hofstede's measures of cultural values in accounting, Gorodnichenko and Roland (2011) in economics, Beugelsdijk and Frijns (2010) and Chui et al. (2010) in finance, Nakata and Sivakumar (1996) and Aaker and Williams (1998) in marketing, and Franke et al. (1991), Geletkanycz (1997), Tan et al. (1998), Han et al. (2010) and Kanagaretnam et al. (2011) in management.

Han et al. (2010) also study only the individualism and uncertainty avoidance dimensions of national culture. Although Kanagaretnam et al. (2011) examine all four commonly used dimensions of national culture, they find consistent results only for individualism and uncertainty avoidance.

with the argument that agency problems between corporate insiders and outside investors are severe in collectivist culture.

Table 1.1 Individualism index by countries distinguishing between above and below the mean index (Hofstede, 2001).

BELOW MEAN			ABOVE MEAN		
ISO 3166	COUNTRY	IDV	ISO 3166	COUNTRY	IDV
HOK	Hong Kong	25	USA	U.S.A.	91
CHL	Chile	23	AUL	Australia	90
THA	Thailand	20	GBR	Great Britain	89
BAN	Bangladesh	20	HUN	Hungary	80
CHI	China	20	NET	Netherlands	80
VIE	Vietnam	20	CAN	Canada	80
SIN	Singapore	20	NZL	New Zealand	79
SAL	El Salvador	19	ITA	Italy	76
KOR	Korea South	18	BEL	Belgium	75
TAI	Taiwan	17	DEN	Denmark	74
PER	Peru	16	FRA	France	71
TRI	Trinidad and Tobago	16	SWE	Sweden	71
COS	Costa Rica	15	LAT	Latvia	70
PAK	Pakistan	14	IRE	Ireland	70
IDO	Indonesia	14	NOR	Norway	69
COL	Colombia	13	SWI	Switzerland	68
VEN	Venezuela	12	GER	Germany	67
PAN	Panama	11	FIN	Finland	63
ECA	Ecuador	8	POL	Poland	60
GUA	Guatemala	6	LUX	Luxembourg	60

People in those countries in the box at the right, would manage earnings mainly if it is good for the individual deciding about those issues. On the contrary, in countries on the left, people shall avoid earnings management minding about possible negative effects for the internal firm's groups, the firm or the society.

We can notice that countries with higher individualism index are those with more developed capital markets. In these markets, the importance of high quality financial information would lead to higher levels of income smoothing with the aim of showing the interested parties the expectations regarding benefits and cashflows. This idea is somehow against Hofstede view of high individualism deriving in less conservative and more volatile earnings.

Uncertainty Avoidance (UA) is the extent to wich the members of a culture feel threatened by uncertain or unknown situations (Hofstede et al., 2010). The UA dimension determines the cultural need for structure in order to cope with situations whose outcomes are not easy to predict. According to López-Duarte et al. (2015), in high UA contexts, people perceive

new situations as dangerous, show a low degree of tolerance to ambiguity, and seek to reduce uncertainty and limit risk by imposing rules and systems to bring about order and coherence.

Hofstede (2001) notes that ''uncertainty-avoiding cultures shun ambiguous situations. People in such cultures look for structure in their organizations, institutions and relationships, which makes events clearly interpretable and predictable.'' When applied to our context, it implies that banks in high uncertainty-avoidance societies are more likely to avoid high risk taking. Additionally, if higher uncertainty avoidance leads to a preference for less risk and ambiguity, then we are more likely to observe higher smoothing.

This cultural dimension's centre is at 60 and it has been clearly identified by Barradas (2016) as a direct and positively related variable to accounting uniformity, conservatism and secrecy, where uncertainty avoidance shows high scores, but inversely related to accounting professionalism where UA ranks low.

Nabar et al. (2007) find that earnings management is relatively high in countries with high uncertainty avoidance scores, while supplementary analysis of earnings management components indicates that uncertainty avoidance is associated with earnings discretion but not with earnings smoothing.

Table 1.2 Uncertainty avoidance index by countries distinguishing between above and below the mean index (Hofstede, 2001).

BELOW MEAN			ABOVE MEAN		
ISO 3166	COUNTRY	UAI	ISO 3166	COUNTRY	UAI
NET	Netherlands	53	GRE	Greece	112
AUL	Australia	51	POR	Portugal	104
SLK	Slovak Rep	51	GUA	Guatemala	101
NOR	Norway	50	URU	Uruguay	100
NZL	New Zealand	49	MLT	Malta	96
CAN	Canada	48	RUS	Russia	95
IDO	Indonesia	48	BEL	Belgium	94
USA	U.S.A.	46	SAL	El Salvador	94
PHI	Philippines	44	POL	Poland	93
IND	India	40	SUR	Suriname	92
MAL	Malaysia	36	JPN	Japan	92
GBR	Great Britain	35	SER	Serbia	92
IRE	Ireland	35	ROM	Romania	90
CHI	China	30	SLV	Slovenia	88
VIE	Vietnam	30	PER	Peru	87
SWE	Sweden	29	FRA	France	86
HOK	Hong Kong	29	SPA	Spain	86
DEN	Denmark	23	ARG	Argentina	86
JAM	Jamaica	13	CHL	Chile	86
SIN	Singapore	8	COS	Costa Rica	86

In Table 1.2 we perceive that regarding uncertainty avoidance index, there is more dispersion between developed and underdeveloped capital markets.

Lim et al. (2013) indicate that banks in low individualism and high uncertainty avoidance societies report earnings more conservatively than banks in high individualism and low uncertainty avoidance societies. Specifically, relative to banks in high individualism and low uncertainty avoidance societies, these banks recognize losses in a timelier manner, recognize larger and timelier loan los provisions, recognize proportionately larger loan loss allowances, and recognize larger and timelier loan charge-offs. Additionally, they find that individualism is positively and uncertainty avoidance negatively related to three accountingbased measures of bank risk (i.e., volatility of earnings, volatility of net interest margin and z-score).

Following Callen et al. (2011), earnings management is found to be negatively related to the updated Hofstede cultural variable of individualism and positively related to uncertainty avoidance.

However, in tests of income smoothing through loan loss provisions, Kanagaretnam et al. (2011) find that banks in high individualism, high power distance, and low uncertainty avoidance societies report smoother earnings. Equally, Guan and Pourjalali (2012) find that uncertainty avoidance affects the direction of earnings management downwards and other cultural values, such as individualism, power distance, and masculinity, have a significant effect on the magnitude of earnings management. The results indicate that the higher the values of these variables, the higher the magnitude of earnings management.

That being said, since we identify income smoothing practices with a conservative accounting, and following Kanagaretnam et al. (2011) and Guan and Pourjalali (2012), we predict that the higher level of individualism and lower uncertainty avoidance in the society, the less volatile earnings for firms in such societies will be, showing higher income smoothing levels.

1.2.2 Introduction of new accounting standards and bank capital requirements.

Loan loss accounting has received enormous attention not only from banking supervisors but also from international accounting authorities. Scant coordination and different objectives of the two kind of set of rules occasionally generated issues to be addressed: although both the Basel Committee and IFRS generally favors a use of accounting principles by banks based

on prudent and conservative valuations, being the soundness and safety of the international banking system its statutory objective, in contrast, from the accounting regulators' perspective, provisioning policies must be based on loan losses which actually affect banks and that can be objectively proven, since pursuing higher levels of accounting information transparency and quality, and developing a common set of accounting rules are their main goals (Curcio et al. 2017). Both authorithies pursue a conservative accounting but the difference is in their view of income smoothing: while bank supervisors identify conservatism with smoothing practices, accounting authorities are not that sure about this idea.

Two major changes in accounting standards and regulatory rules for banks occurred during our sample period: the introduction of IFRS in 2005 and the new capital adequacy framework (Basel II) in 2008.

The International Organization of Securities Commissions (IOSCO) is the worldwide association of national securities regulatory commissions. IOSCO's enforcement role extends to matters of interpretation of IFRS, where IOSCO maintains a (confidential) database of enforcement actions taken by member agencies. In September 2013, IOSCO and the IFRS Foundation announced agreement on a set of protocols to improve consistency in the implementation of IFRS. The Statement of Protocols for Cooperation on International Financial Reporting Standards identifies four new areas for mutually supportive work: use of IFRSs within jurisdictions around the world; how securities regulators will be affected by IASB; discussion of IFRS enforcement matters and providing critical and timely input.

IFRS is compulsory for listed banks. According to IFRS 39, provisions for loan losses are determined with an incurred loss model. The application of IFRS might have reduced the amount of the unallocated provisions for loan losses that banks had established in prior years to adequately reflect subjective assessments of credit risk which were not considered on an individual basis. Note that IFRS 9 has published in July 2014 the new methodology for loan loss provisions that uses an expected loss method rather than an incurred loss approach. In light of the new methodology, the tradeoff between expected and unexpected losses might become even more important.

Street et al. (1999), on the basis of Sharpe (1998), described benefits related to international accounting standards. The benefits include a reduction of investment risk and the cost of

capital. The cost will be lower, since reporting under multiple criteria will fall. Third, confusion on using different measures of financial position and performance will be eliminated. Finally, international accounting standards should result in an efficient allocation of savings across the world. Despite the benefits there are also some disadvantages. The most important disadvantage is the costs, although it may seem a paradox. Compared to a national accounting standard, there are some higher costs associated with IFRS, as more information should be collected and monitored.

There is extensive prior research on the different effects of IFRS. According to Armstrong et al. (2010), it is possible that investors would react positively to movement toward IFRS adoption if, for example, they expected application of IFRS to result in higher quality financial reporting relative to application of domestic standards, thereby enhancing financial reporting transparency, and reducing information asymmetry and information risk and, thus, lowering cost of capital. For example, Barth et al. (2008) finds that application of International Accounting Standards (IAS), which comprise a large portion of extant IFRS, is associated with higher quality accounting amounts than application of non-U.S. domestic standards. Similarly, Karamanou and Nishiotis (2005) finds positive abnormal returns for a small set of non-U.S. firms announcing voluntary adoption of IAS between 1989 and 1999. Diamond and Verrecchia (1991), Baiman and Verrecchia (1996), Leuz and Verrecchia (2000), and Barth et al. (2009), among others, find that higher financial reporting quality is associated with lower cost of capital.

Armstrong et al. (2010) also suggest that investors might also react positively to movement toward IFRS adoption if they expect application of IFRS to have positive cash flow effects. These effects could include reduced contracting costs (e.g., Beatty et al. 1996) or reduced scope for managerial rent extraction associated with greater financial reporting transparency (e.g., Hope et al. 2006). It is also possible that investors in European firms would react positively to movement toward IFRS if they believed IFRS would provide convergence benefits. For example, Barth et al. (1999) finds that there can be positive market effects associated with convergence.

Leventis et al. (2011) find that earnings management (using loan loss provisions) for both early and late adopters is significantly reduced after implementation of IFRS. They also find that, for risky banks, earnings management behavior is more pronounced when compared to the less risky banks, but is significantly reduced in the post IFRS period. The implementation

of IFRS in the EU appears to have improved earnings quality by mitigating the tendency of bank managers to engage in earnings management using loan loss provisions. Here, we will study the potential effect of the implementation of IFRS on accounting quality through the increase or decrease in the use of income smoothing practices after 2005.

On the other hand, the new capital requirements for banks (Basel II) are compulsory for all banks, but the mode of adoption and implementation differs across banks because of differentiated approaches for different exposure categories and the possibility for banks to choose between standard and more advanced approaches. As explained in the introduction, under Basel I, banks were allowed to include LLP in Tier 2 capital up to 1.25% of risk-weighted assets. Under Basel II, for IRB banks, the expected loss is calculated as the product of one year horizon probability of default (PD) and the loss given default (LGD). In other words, loan loss provisions might be counted as regulatory bank capital. Therefore, bank managers might have incentives to use loan loss provisions to alter regulatory capital ratios. Within the wider reform project of the Basel II Accord, a countercyclical buffer of common equity or other fully loss absorbing capital will be implemented, according to national circumstances, in order to grant a higher protection of the banking sector from periods of excess aggregate credit growth. For any given country, this buffer, which should vary within a range of 0% - 2.5%, will only be in effect when there is excess credit growth that is resulting in a system wide increase of risk.

However, according Bikker and Hu (2002), banks contribute significantly more to loss provisions in years of relatively high net profits. Apparently, banks reserve more in these good years, because as a precaution or, possibly, to present flattened out profits. Irrespective of the underlying motives, such provisioning policy causes the banking sector to be less procyclical than would, at first sight, seem to follow from the dependency of banks' profits on the business cycle. This prudent provision policy is strongly encouraged under the new Basel accord where, in the context of the Supervisory Review of Pillar II, Banks need to show that they have surplus capital and provisions to also meet the minimum capital requirements when the business cycle deteriorates.

Thus, we predict that there will be a positive relation between loan loss provisioning and the implementation of both IFRS and Basel II standards. Specifically, and according to the perspective of accounting quality that accountants and bank supervisors have, we expect that

income smoothing practices will apply after the introduction of IFRS in a negative sense and after Basel II in a positive sense.

Kim and Kross (1998) examined whether the level of LLP and write-offs declined in the new capital regime relative to the old regime. Their results indicated that, for low capital banks, LLPs declined significantly after the new capital adequacy regulations. This is consistent with the notion that there is no incentive to increase LLPs to avoid minimum capital adequacy regulation since LLPs do not constitute an integral component of minimum capital requirements. These findings are corroborated by Ahmed et al. (1999).

The capital management hypothesis predicts that the capital ratio is negatively related to LLP because bank managers with low capital ratios can increase them by charging more LLPs to reduce regulatory costs imposed by capital adequacy ratio regulations. In general, banks that face higher costs of violating capital requirements are likely to have greater incentives to engage in capital management. Capital adequacy is especially important in the merger approval process and regulators are thought to impose higher regulatory capital standards for banks that are actively involved in growth via mergers and acquisitions. Capital requirement regulations also act as a constraint to banks (Anandarajan et al. 2003). This is because if a bank's capital is at or below the minimum capital level, the bank cannot issue more deposits or invest in additional loans.

Consistent with this hypothesis, Moyer (1990) presents evidence that the capital adequacy ratio is significantly negatively related to LLP, implying that bank managers adjust LLP to reduce regulatory costs. Kim and Kross (1998) and Ahmed et al. (1999) report strong support for the hypothesis that LLP are used for capital management, especially during the period prior to the regulatory change of 1989. By the same token, Beatty *et al.* (1995) also find that LLP is used to achieve capital management. However, the results are mixed. While Moyer (1990), Beatty et al. (1995) and Kanagaretman *et al.* (2004) found evidence of a negative relation between loan loss provisions and capital ratios, Collins et al. (1995) do not find evidence of capital management. Collins et al. (1995) hypothesize that bank managers can respond to increase demand for regulatory capital by increasing any or all of equity, net income, and the loan loss allowance. However, they document an unexpected positive relation between capital and loan loss provision, which is inconsistent with the capital management hypothesis. Their explanation is that bank managers with low capital appear to decrease, rather than to increase, discretionary loan loss provisions as predicted by

mechanical relations between the loan loss provision, loan loss allowance and capital ratio. These results are also consistent with Lobo and Yang (2001).

In summary, the preponderance of evidence suggests that LLPs are used as a tool to manage capital even though some studies find evidence to the contrary. Given the mixed results, we make no prediction regarding the relation between capital ratio and LLP.

1.2.3 The impact of the financial crisis on loan loss provisioning

The recent financial crisis has not been the worst in the history, but it has actually been the longest and the one with greatest long term impact. It has vividly highlighted the importance of the stability of the banking sector and its role in providing credit for global economic activity. In the decades prior to the credit crisis, however, most of the macroeconomic literature tended to overlook the role of banks as a potential source of frictions in the transmission mechanism of monetary policy. This crisis, however, has reminded us of the crucial role performed by banks in supplying lending to the economy, especially in a situation of serious financial distress. In particular, the crisis has shown that the whole monetary transmission mechanism has changed as a result of deregulation, financial innovation and the increasing role of institutional investors.

As an extension of this study, we would like to test if LLP develop a countercyclical mechanism through a greater use of income smoothing during the financial crisis than during expansion periods.

Ming Chia et al. (2007) show that service-oriented companies engage in income decreasing earnings management during the crisis period. Cohen et al. (2014) show that a pattern of earnings management in bank financial statements has little bearing on downside risk during quiet periods, but seems to have a big impact during a financial crisis. Banks demonstrating more aggressive earnings management prior to 2007 exhibit substantially higher stock market risk once the financial crisis begins as measured by the incidence of large weekly stock price "crashes" as well as by the pattern of full-year returns.

Huizinga and Laeven (2012) results indicate that banks' balance sheets offer a distorted view of the financial health of the banks during the US mortgage crisis and provide suggestive evidence of regulatory forbearance and noncompliance with accounting rules.

The results of the analysis of the ECB (2012) also suggest that the impact of loan supply shocks seems to be particularly important during slowdowns in economic activity. As regards to the most recent recession, they find that the contribution of these shocks can explain about one half of the decline in annual real GDP growth during 2008 and 2009 in the Euro Area and the United States and possibly about three fourths of that observed in the United Kingdom.

Pro-cyclicality is one of the main issues related to those regulatory frameworks where capital requirements are calculated as a percentage of bank risky loans: it means that capital requirements are higher when economic conditions get worse, and borrowers' defaults increase, and lower in case of economic upturn (Curcio et al. 2017). In benign economic conditions, banks would be seeking for capital to fund lending opportunities but as defaults rise, loan loss provisions and write-offs increase, hitting bank equity. In general, capital requirement systems exacerbate the effect via rating downgrades or upgrades. Due to the difficulty in raising new capital during economic recession, in order to keep the ratio between capital and risky loans above the minimum, banks should reduce the size of their lending activity, thus stressing firms' financial issues, that is to say the negative impact of the cycle too. The mechanism works in the reverse during a period of upward economic trend.

Skala (2015) states there is no evidence that banks perform income smoothing with respect to the business cycle. Instead, banks have been shown to act procyclically, with a significant and negative relation between LLP and GDP growth. Thus, banks lower provisions during economic booms and create reserves during downturns (Laeven and Majnoni 2003; Bikker and Metzemakers 2005; Fonseca and González 2008; Bouvatier et al. 2014). As bank earnings cycles and business cycles are not perfectly synchronised, it is possible that reserves created when bank earnings are high do not cover credit losses suffered during macroeconomic downturns.

Income smoothing through LLP is directly related to capital adequacy. Provisions directly affect the level of net profit and thus retained earnings, which are part of bank capital. In addition, deterioration in loan-portfolio quality during economic downturns forces banks to deplete their capital if loan-loss reserves do not cover credit losses. As additional capital is pricey or unavailable for weaker banks during a downturn, they decrease lending. Such a credit crunch affects the whole economy by restricting financing to the real sector and delaying a potential economic recovery. Thus, adequate levels of loan-loss reserves created

during better times reduce the procyclicality of minimum capital requirements and help the economy avoid a credit crunch (Laeven and Majnoni 2003; FSF 2009; Fillat and Montoriol-Garriga 2010; FSB et al. 2011). The role of forward-looking reserves in curbing the procyclicality of capital requirements is also noted by the Basel Committee on Banking Supervision (2011) within Basel III.

Depending on what kind of losses capital requirements are designed to cover, bank provisioning policies can make a system of capital requirements more or less cyclical. If capital requirements have to face the only unexpected loss, provisioning policies can reduce capital requirements' pro-cyclicality since banks would increase loan loss reserves by making more provisions during an economic expansion, taking advantage of good profit margins, while they would draw from these reserves, reducing provisions, when the credit loss amount gets higher. The mechanism that we have just described lies at the basis of the so called "dynamic" provisioning policies adopted in the Spanish banking system. When the loan is granted, the amount of loan loss provisions to be set aside is proportionate to the long-run expected loss of the different counterparties, thus producing flat ratios of provisions to customer loans through the economic cycle (Perez et al., 2006, Fernandez de Lis et al., 2000). This mechanism, which leaves very little room to managerial discretion, aims at determining a counter-cyclical behavior that automatically smoothes income over time. On the contrary, if capital requirements are designed to cover also the expected loss, pro-cyclicality stretches to the provisions as well.

We evaluate the impact of recent financial crisis on the use LLP to manage reported earnings. We argue that bank managers are especially expected to be more sensitive to reported earnings because they are significantly reduced during the financial crisis. This is evaluated by including the variable GDPGROWTH comparing the use of LLP during the financial crisis period with the pre-crisis period. To test the impact of recent financial crisis on the use LLP, the interaction effect EBP_GDPGROWTH is included.

1.3 SAMPLE SELECTION, DATA SOURCES AND EMPIRICAL METHODOLOGY

To empirically test our hypotheses, Bureau Van Dijk's BANKSCOPE database is used. In particular, our dataset comprises the financial statements of active commercial banks and savings banks from 54 countries for the period 1997-2009. Bank-year observations with missing total assets were dropped from the sample. For banks with consolidated and non-consolidated financial statements, only consolidated data are considered. According to these selection criteria, our sample includes 31,057 bank-year observations.

Prior research (McNichols and Wilson, 1998; Beatty *et al.* 1995; Beaver y Engel, 1996; Kanagaretman *et al.* 2003; and Kwak *et al.* 2009) has used a two stage model, which estimates discretionary LLP in the first stage and the income smoothing or capital management coefficient in the second stage. This two-stage approach potentially underestimates the absolute value of the coefficient of interest (Goldberger, 1961). Unlike most prior research, we avoid such potential underestimation by employing a single-stage model to test the income smoothing and capital management hypotheses.

This chapter uses Greenwalt and Sinkey's approach to income smoothing, with an equation based on revised models put forward by Laeven and Majnoni (2003), Bikker and Metzemakers (2005), Pérez et al. (2008) and Fonseca and González (2008). The following basic regression model was used to examine how LLPs are used in earnings smoothing and capital management:

$$LLP_{it} = \alpha + \beta_1 \Delta LOAN_{it} + \beta_2 \Delta NPL_{it} + \beta_3 NPL_{it-1} + \beta_4 LCO_{it} + \beta_5 LLR_{it-1} + \beta_6 RISK_{it}$$
$$+ \beta_7 EBP_{it} + \beta_8 TIER1RATIO_{it} + \beta_9 GDPGROWTH_{jt} + \beta_{10} SIZE_{it} + \beta_{11} LO/DE_{it} + \beta_{12} EQ/TA_{it}$$
$$+ \beta_{13} D\_TYPE_{it} + + \varepsilon_{it} \, (1)$$

Subscript i denotes a bank, j the country and t the year. $\Delta LOAN_{it}$, ΔNPL_{it}, NPL_{it-1}, $\beta_4 LCO_{it}$, LLR_{it-1} and $RISK_{it}$ measure insolvency risk; $TIER1RATIO_{it}$ and $GDPGROWTH_{jt}$ represent macroeconomic control variables; $SIZE_{it}$, LO/DE_{it}, EQ/TA_{it} and D_TYPE_{it} constitute bank control variables.

The variable EBP captures the income-smoothing; The variable TIER1RATIO controls the effects of the capital management incentives; GDPGROWH controls for economic period;

the remaining variables account for the nondiscretionary component of LLP (ΔLOAN, ΔNPL, NPL, LCO, LLR, RISK).

To smooth income, managers will increase LLP when premanaged earnings (EBP) are high and decrease LLP when premanaged earnings are low (Ahmed et al. 1999; Kim and Kross, 1998; Kanagaretnam et el. 2004). Therefore, the direct effect β_7 (Model 1) will be positive.

The model includes a regulatory capital variable (TIER1RATIO) to control for the potential effects on LLP of motivations related to capital management. The capital management hypothesis posits that managers of banks with low regulatory capital have incentives to increase LLP because banks are required to maintain minimum primary capital ratios. The change in bank capital adequacy requirements altered banks' incentives to manage capital through LLP because loan loss allowance is no longer considered part of Tier I or core capital under this new regulation. Furthermore, loan loss allowance is included in Tier II or supplementary capital only up to 1.25 percent of risk-adjusted assets. Given that the incentive to manage capital through LLP is relatively weak in the new capital regime, the sign of the coefficient is unpredictable.

In addition to the variables described in the preceding paragraphs, the model includes net loan charge-offs (LCO), beginning balance of nonperforming loans (NPL), change in nonperforming loans (Δ NPL), beginning balance of loan loss reserves (LLR) and asset portfolio risk (RISK) to explicitly account for the nondiscretionary portion of LLP. These variables have been used in several prior studies on banks (Wahlen, 1994; Beaver and Engel, 1996; Kim and Kross, 1998; Kanagaretman *et al.* 2004). This research has argued that LCO, NPL, and Δ NPL will be positively related to LLP. The amount of net loan charge-offs (LCO) is related to LLP by construction. Higher levels of nonperforming loans indicate that problems in the loan portfolio will require higher provisions. Therefore, the beginning balance of nonperforming loans (NPL) will be positively related to LLP. Change in nonperforming loans (Δ NPL) in the current period will also have a positive effect on LLP and an increase in of loan loss reserves (LLR) will have a negative effect on LLP because a higher initial leves of reserves will require a smaller provision in the current period, and viceversa.

The effect of change in the total loan portfolio (ΔLOAN) on LLP is unpredictable due to the uncertainty in the quality of incremental loans. It is argued that banks with high-risk asset

portfolios are expected to use LLP to manage reported earnings to control volatility in earnings and stock returns (Alali y Jaggi, 2010). The economics reports indicate that the last worldwide financial crisis started at the end of 2007. We therefore consider years 2008 and 2009 as the financial crisis period and 1997-2007 as the expansion period, but these periods exactly coincide with Basel II pre and post implementation periods, so we finally use GDP growth to control the economic cycle.

According to Bikker and Metzemakers (2005), loan loss provisioning turns out to be substantially higher when GDP growth is lower, reflecting increased riskiness of the credit portfolio when the business cycle turns downwards, which also increases the risk of a credit crunch. This effect is mitigated somewhat as provisions rise in times when earnings are higher, suggesting income smoothing, and loan growth is higher, indicating increased riskiness.

Bank control variables account for internal bank characteristics, such as share of loans in total deposits (LO/DE), level of capital (EQ/TA) and bank size (SIZE), expressed as the logarithm of total assets. Additionally, bank capital levels control for efforts to manage capital through loan-loss provisions, a phenomenon documented in the previous literature on earnings management (Beatty et al. 1995; Ahmed et al. 1999). Following the recommendation of Pérez et al. (2008), we use lagged capital levels, including the one-year lag of total equity over total assets.

Next, we introduce the impact of cultural dimensions (model 2) as well as the introduction of new accounting standards and bank capital requirements (model 3):

$$LLP_{it} = \alpha + \beta_1\,\Delta LOAN_{it} + \beta_2\,\Delta NPL_{it} + \beta_3\,NPL_{it-1} + \beta_4\,LCO_{it} + \beta_5\,LLR_{it-1} + \beta_6\,RISK_{it}$$
$$+ \beta_7\,EBP_{it} + \beta_8\,TIER1RATIO_{it} + \beta_9\,GDPGROWTH_{jt} + \beta_{10}\,SIZE_{it} + \beta_{11}\,LO/DE_{it} + \beta_{12}\,EQ/TA_{it}$$
$$+ \beta_{13}\,D\_TYPE_{it} + \beta_{14}\,IND_j + \beta_{15}\,UA_j + \varepsilon_{it}\ (2)$$

$$LLP_{it} = \alpha + \beta_1\,\Delta LOAN_{it} + \beta_2\,\Delta NPL_{it} + \beta_3\,NPL_{it-1} + \beta_4\,LCO_{it} + \beta_5\,LLR_{it-1} + \beta_6\,RISK_{it}$$
$$+ \beta_7\,EBP_{it} + \beta_8\,TIER1RATIO_{it} + \beta_9\,GDPGROWTH_{jt} + \beta_{10}\,SIZE_{it} + \beta_{11}\,LO/DE_{it} + \beta_{12}\,EQ/TA_{it}$$
$$+ \beta_{13}\,D\_TYPE_{it} + \beta_{14\,D}\,D\_IFRS + \beta_{15}\,D\_BASELII + \varepsilon_{it}\ (3)$$

IND and UA control for national culture dimensions; D_IFRS and D_BASELII control the introduction of new accounting standards and bank capital requirements.

Regarding IND, the higher level of overconfidence and risk taking in high individualism societies will, in turn, be reflected in higher levels of income smoothing for firms in such societies. In relation to UA, banks in high uncertainty-avoidance societies are more likely to avoid high risk taking, which leads to higher accounting conservatism (Hofstede, 2001).

The application of IFRS and Basel II might have reduced the amount of the unallocated provisions for loan losses that banks had established in prior years to adequately reflect subjective assessments of credit risk which were not considered on an individual basis.

In order to test the impact of these new explicative factors on earnings smoothing, we interact IND, UA, IFRS and BASELII with EBP in subsequent regressions.

The definition of the potential variable CRISIS coincides with BASEL II since this dummy variable takes value 1 in the same years as CRISIS would do, i.e. from 2008 on. Then, in order to test the impact of recent financial crisis on the use of LLP while avoiding collinearity, the interaction effect EBP*GDPGROWTH is included:

$$LLP_{it} = \alpha + \beta_1 \Delta Loan_{it} + \beta_2 \Delta NPL_{it} + \beta_3 NPL_{it-1} + \beta_4 LCO_{it} + \beta_5 LLR_{it-1} + \beta_6 RISK_{it} + \beta_7 EBP_i +$$
$$\beta_8 I_{it} + \beta_9 GDPGROWTH_{it} + \beta_{10} EBP_{it}*GDPGROWTH_{jt} + \beta_{11} SIZE_{it} + \beta_{12} LO/DE_{it} + \beta_{13}EQ/TA_{it}$$
$$+ \beta_{14} D\_TYPE_{it} + \beta_{15} D\_IFRS + \beta_{16} D\_BASELII + \beta_{17} IND_j + \beta_{18} UA_j + \varepsilon_{it} \ (4)$$

Table 1.3 Variable definitions

Variables	Definition	Sign
LLPit	Provision for loan losses	
Δ LOANit	Change in the total loans outstanding	+
NPLt-1	Beginning balance of non-performing loans	+
Δ NPLit	Change in non-performing loans	+
LCOit	Net loan charge-offs	+
LLRt-1	Beginning balance of the total loan loss reserves	+/-
RISKit	Asset portfolio risk calculated as the ratio between TIER1CAPITAL/TIER1RATIO	+
EBPit	Current earnings before provisions	+
TIER1RATIOit	Ratio of actual regulatory capital (Tier 1 capital)	+/-
GDPgrowth it	Gross Domestic Product growth (%) [5]	-
SIZEit	Log of total assets	+
LO/DEit	Loans to deposits ratio	+
EQ/TAit	Equity to total assets ratio	-
D_TYPEit	Dummy variable (1 = savings bank; 0 = commercial banks)	+
D_IFRS	A dummy variable that equals one after IFRS implementation period (2005-2009) and zero during the previous period (1997-2004)	+
D_BASELII	A dummy variable that equals one after Basel II implementation period (2008-2009) and zero during the previous period (1997-2007)	+
IND	Individualism index [6]	+
UA	Uncertainty avoidance index [7]	+

All variables except ratios, dummys and size are deflated by lagged total assets to mitigate potential estimating problems with endogeneity (see also Laeven and Majnoni, 2003). A number of outliers are eliminated within the sample: the observations smaller than the 2nd percentile of the distribution, are set to the value of the 2nd percentile and the observations larger than the 98th percentile of the distribution are set to the value of the 98th percentile.

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[5] Obtained from the International Monetary Fund, 2010
[6] Obtained from Hofstede, 2001
[7] Obtained from Hofstede, 2001

1.4   RESULTS

1.4.1 Descriptive statistics and univariate analysis

Descriptive statistics on the dependent variable and independent variables for the total sample as well as for sub-samples on the expansion period (1997-2007) and the financial crisis (2008-2009) are provided in table 1.4 and 1.5.

Table 1.4 Descriptive statistics for the period 1997-2009.

Variable	Descriptive statistics				
	Obs	Mean	Std. Dev	Min	Max
llp	24,744	0.0058	0.0095	-0.0037	0.0485
dloan	26,405	0.0649	0.1612	-0.2517	0.7257
dnpl	13,550	0.0004	0.0140	-0.0452	0.0492
npl-1	14,286	0.0235	0.0328	0.0000	0.1613
llr	26,299	0.0113	0.0186	0.0000	0.0900
ebp	23,974	0.0160	0.0198	-0.0133	0.1021
risk	9,690	0.0075	0.0031	0.0018	0.0183
nco	10,490	0.0048	0.0112	-0.0069	0.0588
tier1ratio	12,678	14.6152	12.2496	4.7200	74.0000
size	31,050	6.9819	2.1080	0.0000	14.6051
lo/de	26,155	0.0048	0.0314	0.0000	2.3333
eq_ta	26,787	0.1339	0.1493	0.0147	0.8101
ua	29,773	62.9556	19.7346	8.0000	112.0000
ind	29,773	62.3201	21.8260	8.0000	91.0000
gdpgrowth	29,893	2.6681	2.4652	-17.7000	18.3000

The mean value of LLP is greater than the mean loan charge-off indicating that there is, on average, discretionary addition to the loan loss allowance by charging more than needed for current write-offs.

Table 1.5 Descriptive statistics for the expansion period (1997-2007) and financial crisis (2008-2009)

Variable	Expasion period (1997-2007)			Financial crisis (2008-2009)		
	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
llp	21.624	0,0056	0,0094	3.120	0,0071	0,0101
dloan	23.145	0,0649	0,1631	3.260	0,0656	0,1469
dnpl	11.592	-0,0004	0,0140	1.958	0,0054	0,0130
npl-1	12.260	0,0246	0,0340	2.026	0,0173	0,0238
llr	23.032	0,0117	0,0191	3.267	0,0086	0,0145
ebp	20.920	0,0165	0,0201	3.054	0,0129	0,0175
risk	8.224	0,0075	0,0031	1.466	0,0074	0,0030
nco	8.883	0,0050	0,0115	1.607	0,0035	0,0090
tier1ratio	10.985	14,7409	12,4409	1.693	13,7996	10,8951
size	27.721	6,9365	2,1010	3.329	7,3600	2,1284
lo/de	22.942	0,0051	0,0332	3.233	0,0027	0,0129
eq_ta	23.483	0,1359	0,1516	3.304	0,1201	0,1304
ua	26.572	63,0829	19,8152	3.201	61,8994	19,0223
ind	26.572	62,2094	21,8800	3.201	63,2387	21,3531
gdpgrowth	26.595	2,7938	2,4629	3.298	1,6546	2,2400

The mean value of LLP is greater during the financial crisis, i.e. post Basel II, compared to the expansion period. During the financial crisis, banks have lower earnings before provisions, nonperforming loans, net charge offs and loan loss reserves. However, banks carry almost the same amount of high-risk asset portfolio during the financial crisis.

Table 1.6 provides Spearman correlation matrices. The earnings before provisions' correlation coefficient (EBP) is positive (ρ=0.51) and significant at 1% level of confidence, which is coherent with the hypothesis regarding earnings smoothing using LLP. LLP is negatively associated with the Capital ratio TIER I at a 1% level of significance, which is coherent with capital management through LLP. The interaction between earnings before provisions and GDP growth correlation coefficient is positive and very significant (ρ=0.69), which indicates that countries with higher GDP are more likely to smooth earnings via LLP. The *dummy* Basel II (D_BASELII) correlation coefficient is positive and significant at 1%, which indicates that after Basel II implementation, which is the same as during the crisis period, LLP increases.

Table 1.6 Spearman correlation matrix

	llp_ta1	dloan_~1	dnpl2_~1	npl1_ta1	llr1_ta1	ebp_ta1	risk_ta1	nco_ta1	tier1r~o	size	lo_de~a1	sav_bank	eq_ta1	IFRS	baselii	ua	ind	gdpgro~h	ebpta1~h
llp	1.0000																		
dloan	0.1452***	1.0000																	
dnpl	0.2564***	0.2664***	1.0000																
npl-1	0.2906***	-0.1016***	-0.2791***	1.0000															
llr	0.2812***	0.0005	-0.1828***	0.7121***	1.0000														
ebp	0.5141***	0.2720***	0.1579***	0.0977***	0.2537***	1.0000													
risk	0.3502***	0.6414***	0.2545***	-0.0063	0.1401***	0.4490***	1.0000												
nco	0.5692***	0.0816***	-0.0515***	0.3482***	0.3698***	0.3817***	0.2087***	1.0000											
tier1ratio	-0.0602***	-0.0604***	-0.0236*	-0.0749***	-0.0747***	0.1660***	-0.2217***	-0.0386***	1.0000										
size	-0.0157**	0.0631***	0.0289***	-0.1393***	-0.0283***	-0.0852***	-0.1143***	-0.0039	-0.4213***	1.0000									
lo_de	0.0408***	0.0775***	0.0188***	0.0291***	0.0482***	0.0745***	0.0531***	0.0235**	0.1193***	-0.2241***	1.0000								
d_type	-0.1190***	-0.0704***	0.0146*	-0.1859***	-0.2355***	-0.2203***	-0.0154	-0.149***	0.0061	-0.0926***	-0.0099	1.0000							
eq_ta	0.1756***	0.2774***	0.1200***	0.0310***	0.0720***	0.4997***	0.4375***	0.2371***	0.5553***	-0.3487***	0.2650***	-0.2205***	1.0000						
IFRS	-0.0422***	0.1006***	0.1211***	-0.1409***	-0.1066***	-0.0174***	0.0885***	-0.0911***	-0.0068	0.0682***	-0.0268***	0.0395***	-0.0051	1.0000					
baselii	0.0525***	0.0014	0.1470***	-0.0770***	-0.0552***	-0.0597***	-0.0051	-0.0473***	-0.0261***	0.0622***	-0.0243***	0.0138**	-0.0348***	0.3833***	1.0000				
ua	0.0938***	0.0254***	-0.0146*	0.2425***	0.0918***	0.0283***	-0.1192***	0.1165***	-0.0816***	0.0670***	-0.0132**	-0.1056***	0.0015	-0.0338***	-0.0186***	1.0000			
ind	-0.2043***	-0.0401***	0.0655***	-0.3907***	-0.3328***	-0.2057***	0.0480***	-0.1722***	0.0215**	0.0653***	-0.0417***	0.1976***	-0.1111***	0.0311***	0.0146**	-0.3730***	1.0000		
gdpgrowth	-0.0314***	0.1709***	-0.0717***	0.0806***	0.1678***	0.1439***	0.0548***	0.0170*	0.0314***	0.0111*	0.0147**	-0.1641***	0.0960***	0.1177***	-0.1448***	-0.0335***	-0.2852***	1.0000	
ebp*gdp	0.2660***	0.2417***	0.0554***	0.0986***	0.1974***	0.5756***	0.3449***	0.2002***	0.1494***	-0.0295***	0.0302***	-0.1711***	0.2931***	0.0550***	-0.0652***	0.0421***	-0.2606***	0.6151***	1.0000

Level of significance: *** $p \leq 0.01$; **$0.01 < p \leq 0.05$; *$0.05 < p \leq 0.10$. Variables definition in Table 1

Regarding the variables relative to LLP non-discretionary component, and in a coherent way with the previous literature, the change in total loans (Δ LOAN), the change in non-performing loans (ΔNPL), the initial balance of non-performing loans (NPL), the loans charge-offs (LCO), the initial balance of loans loss reserves (LLR) and the risk of the asset portfolio (RISK) positively affect LLP at a 1% level of significance.

In relation to the control variables, equity to total assets ratio (EQ/TA) and loans to deposits ratio (LO/DE), with correlation coefficients of 0.176 and 0.041 respectively, affect in a positive way at a 1% level of significance. However, the size of the entity (SIZE) and the type of deposit entity (D_TYPE) present a negative sign, and they are significant at a 5% an 1% level of significance, respectively.

Regarding the correlations between the explanatory variables within the model, the *Dummy* Basel II (D_BASELII) is correlated with the change in nonperforming loans (ΔNPL) with a $\rho=0.147$. There are two important correlations which may distort our findings: the change in loans with risk ($\rho=0.64$) and lagged nonperfoming loans with loan los reserves ($\rho=0.71$), as suggested by the previous literature and showed in Lobo and Yang (2001). With the aim to solve this issue, we run regressions of these pairs of variables and calculate the residuals, which are going to be the values taken into account for the variables RISK and LLR, respectively. The correlations are afterwards kept at a minimum: the change in loans with residual risk ($\rho=-0.0001$) and lagged nonperfoming loans with residual loan los reserves ($\rho=-0.0049$).

The rest of correlations between the variables are similar to previous studies. Multicollinearity between the variables is reduced by dropping outliers; the sample encompasses percentiles 2 to 98.

1.4.2 Multivariate model results

Table 1.7 shows the results obtained in the estimation of the loans loss provisions (LLP). In this first section we gradually insert the variables concerning cultural dimensions.

Table 1.7 Regression of Loans Loss Provision (1997-2009) including cultural dimensions

Variables LLP	Pred.	Regressions 1	2	3	4	5
dloan	+/-	0.0011145**	0.001242**	0.0011629**	0.0011991**	0.0012775***
		(2.23)	(2.51)	(2.35)	(2.43)	(2.59)
dnpl	+	0.2141218***	0.2192787***	0.218115***	0.2192188***	0.2230976***
		(34.80)	(34.99)	(34.94)	(35.10)	(35.26)
npl-1	+	0.0486944***	0.0487318***	0.0397159***	0.0413776***	0.0422249***
		(18.36)	(16.31)	(12.59)	(12.98)	(13.21)
llr-1	+/-	0.0459625***	0.0499723***	0.0461361***	0.0447244***	0.0448741***
		(6.89)	(7.35)	(6.77)	(6.55)	(6.57)
ebp	+	0.1214093***	0.1127967***	0.1123471***	0.1113335***	0.0404886
		(23.69)	(22.00)	(21.98)	(21.77)	(1.19)
risk	+	0.390563***	0.3838287***	0.4120663***	0.4041602***	0.4077655***
		(9.97)	(9.79)	(10.52)	(10.31)	(10.36)
nco	+	0.4681638***	0.4776816***	0.4785796***	0.4799438***	0.478286***
		(59.18)	(60.37)	(60.65)	(60.79)	(60.33)
tier1ratio	+/-	0.0000134	0.0000108	0.0000106	0.00000726	0.00000896
		(1.26)	(1.02)	(1.00)	(0.69)	(0.84)
size	+/-	0.0000488	0.0000531	0.00000207	0.0000158	0.000000478
		(1.42)	(1.52)	(0.06)	(0.44)	(0.01)
lo/de	+	0.0014529	0.0009426	0.0009981	0.0011174	0.0010158
		(0.89)	(0.59)	(0.62)	(0.70)	(0.63)
d_type	+	-0.0000434	-0.0000178	0.0000631	0.0001032	0.0001138
		(-0.30)	(-0.13)	(0.45)	(0.73)	(0.80)
eq/ta	-	-0.0060032***	-0.005249***	-0.0052748***	-0.0052709***	-0.0054208***
		(-5.16)	(-4.57)	(-4.60)	(-4.60)	(-4.70)
ua	+		-0.00000215	0	-0.0000133***	-0.0000193***
			(-0.62)	0	(-3.44)	(-3.24)
ind	+			-0.0000161***	-0.0000212***	-0.0000336***
				(-5.51)	(-6.47)	(-6.90)
ebp*ua	+					0.0003776
						(1.10)
ebp*ind	+					0.0007116***
						(3.21)
_cons		0.0002241	0.0003405	0.0019111***	0.0029507***	0.0042772***
		(0.64)	(0.91)	(4.17)	(5.38)	(5.79)
N		6467	6273	6273	6273	6273
R2		0.6486	0.6626	0.6642	0.6647	0.6654

First column corresponds to the basic model or equation (1) previously presented. As a whole, results show how model (1) is globally significant at a 1% level with a Fstatistic of 995.42. Adjusted R_2 indicates that the model explains approximately 64% of the variation of LLP. Hence, its explanatory power is considered to be high.

Amongst the variables employed in order to estimate the LLP non discretionary component, we obtain that the change in non-performing loans (Δ NPL) as well as the initial balance in

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non-performing loans (NPL), affect LLP in a positive and very significant level, coherent with a system based in incurred losses.

The positive influence of the change in non-performing loans (ΔNPL) in LLP, associates an increase in the non-performing loans with an increase in the provision (LLP), in coherence with the previous researches (Alali and Jaggi. 2010; Bushman and Williams, 2009; Kwak et al., 2009; Kanagaretnam et al., 2004; Kanagaretnam et al., 2003; Beatty et al., 2002; Lobo and Yang. 2001; Niswander and Swanson, 2000; Ahmed et al., 1999; Kim and Kross, 1998; Beatty et al., 1995; Collins et al.,1995 and Wahlen et al.,1994).

The previous year non-performing loans (NPL_{t-1}) inform us about future nonperforming loans. It positively affects LLP, which is coherent with Alali and Jaggi (2010), Kanagaretnam et al. (2004), Lobo and Yang (2001), Collins et al. (1995), and Wahlen et al. (1994).

The bigger the charge-offs net of recoveries (LCO) of the current period are, the bigger is LLP, since it is associated with a higher level of future risk (Alali and Jaggi, 2010; Bushman and Williams, 2009; Kanagaretnam *et al.,* 2004; Lobo and Yang, 2001; Kim and Kross, 1998; Beaver and Engel, 1996; Wetmore and Brick, 1994).

Furthermore, we find positive and significant influence of the change in total loans (Δ LOAN) in LLP. The results are coherent with Kim and Kross (1998) and Wetmore and Brick (1994).

Regarding the LLP discretionary variables, the coefficient of the variable earnings before provisions (EBP) is positive and significant at a 1% level, which confirms the earnings smoothing hypothesis proved in earlier researches (Ma, 1988; Greenwalt and Sinkey, 1988; Wahlen, 1994; Collins *et al.,* 1995; Bhat, 1996; Kim and Kross, 1998; Niswander and Swanson, 2000; Lobo and Yang, 2001; Beatty *et al.,* 2002. Kanagaretnam *et al.,* 2003; Rivard *et al.,* 2003; Laeven and Majnoni, 2003; Kanagaretnam *et al.,* 2004; Anandarajan *et al.,* 2007; Fonseca and González, 2008; Bushman *et al.,* 2009; Alali and Jaggi, 2010).

This relation suggests that the managers of the deposit entities delay the acknowledgement of part of the current income through an increase in LLP when the income is high. In the opposite sense, when the financial result is low, they decrease LLP and borrow the income of the next period of that when the income was high. The results are also coherent with Anandarajan *et al.* (2003) and with Pérez *et al.* (2008), who find income smoothing within the Spanish context after the implementation of the statistic provision in the year 2000.

Nevertheless, both studies centered in a period of study previous to the new definition of loans loss provisions with the adaptation of the bank regulation to IFRS.

We find that the coefficient of the capital ratio TIER I is not significant. Hence, the capital management hypothesis is not corroborated; the result is coherent with Anandarajan *et al.* (2003) and Pérez *et al.* (2008) within the Spanish context. Pérez *et al.* (2008), argument that the capital management practices are determined by the credit risk and the income, not by LLP.

Regarding control variables, the size of the deposit entity (SIZE) does no affects LLP. It turns out that the type of deposit entity (D_TYPE) is not significant despite having the negative expected sign by which savings banks have lower provisions. This is a widely discussed topic at a theoretical level which started from the hypothesis regarding that the different configuration of equity widely modulated the incentives to smooth earnings.

Next columns gradually introduce the culture variables. Specifically equation 2 introduces the uncertainty avoidance, and it is significant at a 1% level, F-statistic is 948.30 and adjusted R2 explains a 66% of the variation of LLP. Uncertainty avoidance variable turns out to have a negative value, but it is not significant. Equation 3 introduces the individualism index, being this equation significant at a 1% level, F-statistic is 955.15 and adjusted R2 explains a 66% of the variation of LLP. Individualism has a negative value and it is very significant. When introducing both indexes together in column 4, the regression is significant at 1%, F-statistic is 889.31 and adjusted R2, 66%. Both UA and IND variables are now negative and very significant. Finally, the insertion of interactions between the cultural dimensions and earnings before provisions in equation 5 will give us the most accurate information. The regression is significant at 1% level, F-statistic is 780.70, and adjusted R2 is 66%. Hofstede (2001) states that banks in high uncertainty-avoidance societies are more likely to avoid high risk taking. If higher uncertainty avoidance leads to a preference for less risk and ambiguity, then we are more likely to observe higher smoothing. In line with this, the sign of the interactions have become positive but only individualism interaction is significant at a 1% level of significance, meaning that the higher the index of this cultural dimension, the higher the level of income smoothing through loan loss provisions.

In a second stage, in table 1.8 we introduce the new accounting standards and bank capital requirements, i.e. IFRS and Basel II variables.

Table 1.8 Regression of Loans Loss Provision (1997-2009) including new accounting standards and bank capital requirements

Variables		Regressions				
LLP	Pred.	1	2	3	4	5
dloan	+/-	0.0011145**	0.008253*	0.0007326	0.0008339*	0.0009368*
		(2.23)	(1.64)	(1.50)	(1.70)	(1.91)
dnpl	+	0.2141218***	0.2095058***	0.180547***	0.1812313***	0.1832288***
		(34.80)	(33.64)	(28.80)	(28.85)	(29.19)
npl-1	+	0.0486944***	0.0481505***	0.0454452***	0.0455498***	0.0467498***
		(18.36)	(18.16)	(17.53)	(17.57)	(17.98)
llr-1	+/-	0.0459625***	0.0456822***	0.0441388***	0.0441876***	0.042188***
		(6.89)	(6.86)	(6.79)	(6.80)	(6.48)
ebp	+	0.1214093***	0.1224315***	0.1323582***	0.1323259***	0.1472211***
		(23.69)	(23.90)	(26.30)	(26.30)	(19.99)
risk	+	0.390563***	0.3821571***	0.3706812***	0.3733283***	0.3719483***
		(9.97)	(9.76)	(9.70)	(9.76)	(9.75)
nco	+	0.4681638***	0.4699252***	0.4634518***	0.4625957***	0.460788***
		(59.18)	(59.42)	(60.06)	(59.83)	(59.66)
tier1ratio	+/-	0.0000134	0.0000103	-0.000000473	0.000000281	0.000000448
		(1.26)	(0.97)	(-0.05)	(0.03)	(0.04)
size	+/-	0.0000488	0.000036	0.0000168	0.0000208	0.0000207
		(1.42)	(1.05)	(0.50)	(0.62)	(0.62)
lo/de	+	0.0014529	0.0016641	0.0017559	0.0016827	0.0017067
		(0.89)	(1.02)	(1.10)	(1.05)	(1.07)
d_type	+	-0.0000434	0.0000194	0.0000663	0.0000453	0.0000421
		(-0.30)	(0.13)	(0.47)	(0.32)	(0.30)
eq/ta	-	-0.0060032***	-0.0059393***	-0.0052054***	-0.0052035***	-0.0047418***
		(-5.16)	(-5.11)	(-4.58)	(-4.58)	(-4.17)
IFRS	+		0.0005635***		-0.0002227*	0.0002876
			(4.53)		(-1.72)	(1.64)
baselII	+			0.0029216***	0.0030208***	0.0023208***
				(18.37)	(17.87)	(10.50)
ebp*IFRS	+					-0.0344149***
						(-4.23)
ebp*baselII	+					0.0476593***
						(4.74)
_cons		0.0002241	0.0000182	0.0000025	0.0000792	-0.000188
		(0.64)	(0.05)	(0.02)	(0.23)	(-0.53)
N		6467	6467	6467	6467	6467
R2		0.6486	0.6496	0.6660	0.6661	0.6676

Equation 2 introduces the variable IFRS. This model is significant at a 1% level with a Fstatistic of 923.20. Adjusted R^2 indicates that the model explains approximately 65% of the variation of LLP. IFRS coefficient is also positive at a 1% level of significance, which means that after the implementation of IFRS in 2005, loan loss provisioning increases.

Equation 3 introduces the variable Basel II. This model is significant at a 1% level with a Fstatistic of 992.75. Adjusted R^2 indicates that the model explains approximately 66% of the

variation of LLP. As we were expecting, the *dummy* Basel II, which could be also defined as crisis, has a positive influence in LLP, with a very high level of significance (1%). This fact informs us that during the financial crisis period (2008-2009), LLP significantly increases with respect to the wealthy period (1997-2007), and hence, it shows that LLP is procyclical and worsens the banking system situation as well as the financial crisis. This finding is coherent with Wetmore and Brick (1994), who show that LLP increased in a credit crisis year, as well as it is coherent with the studies by Laeven and Majnoni (2003), Fonseca and González (2008), Bushman and Williams (2009) and Pérez *et al.* (2008), according to whom, during the periods when per capita GDP declines, LLP is increased.

Equation 4 introduces both variables IFRS and Basel II together. This model is also significant at a 1% level with a F-arestatistic of 922.33. Adjusted R_2 indicates that the model explains approximately 66% of the variation of LLP. IFRS coefficient is now negative at a 10% level of significance, while Basel II coefficient keeps its sign and significance.

Finally in the fifth equation of table 1.8, both variables are included as well as their interaction with earnings before provisions. These interactions are the variables which actually give us information about earnings smoothing. The regression is significant at a 1% level with a F-statistic of 812.63. Adjusted R_2 indicates that the model explains approximately 67% of the variation of LLP. Interactions coefficients are both significant at a 1% level, but it is surprising that the interaction with IFRS has a negative sign, while interaction with Basel II has a positive sign. Anyways, these results are coherent with both perspectives of accounting quality regarding accounting regulators and bank regulators. The first focus on the faithful representation of assets and liabilities, which is not compatible with smoothing income accounting after the implementation of IFRS, thus the negative coefficient that the interaction with IFRS shows. On the other hand, bank regulators and supervisors deal with all the issues that might have an impact on bank stability, which legitimises the use of accounting smoothing, as the positive coefficient of the interaction with Basel II shows.

In a third stage, and as an extension of the research, we study the differences between economic cycles. Most of the studies mentioned in this chapter are elaborated within the American context, where the provision is based on realized losses. The relation between the change in total loans and LLP is very conditioned by the economic cycle; Bouvatier and Lepetit (2008) study if the evolution of LLP can explain the changes in the bank credit policy along the economic cycle and they evidence a negative and significant relation between the

LLP non-discretionary component and the increase of total loans in the period, that is, it amplifies the cycle. Bank incentives to raise credit during expansions are reinforced by the undervaluation of the associated costs; on the contrary, loans granting slows down during recessions, especially in undercapitalized banks.

Table 1.9 Regression of Loans Loss Provision (1997-2009) GDP growth.

Variables		Regressions					
LLP	Pred.	1	2	3	4	5	6
dloan	+/-	0.0016079***	0.0016016***	0.0009779**	-0.0012254***	-0.0012556***	0.0013932**
		(3.29)	(3.26)	(2.04)	(2.56)	(2.62)	(2.91)
dnpl	+	0.2205535***	0.2203361***	0.1919692***	0.198817***	0.1996367***	0.2024025***
		(36.03)	(35.78)	(30.99)	(31.60)	(31.66)	(31.69)
npl-1	+	0.0540195***	0.0538622***	0.048638***	0.0486397***	0.0491044***	0.0492836***
		(20.68)	(20.28)	(18.93)	(15.56)	(15.66)	(15.75)
llr-1	+/-	0.063284***	0.0633755***	0.0554828***	0.0602609***	0.0598445***	0.0586863***
		(9.43)	(9.43)	(8.45)	(8.98)	(8.92)	(8.71)
ebp	+	0.1277882***	0.1256599***	0.1328816***	0.1245783***	0.1373093***	0.1328113***
		(25.10)	(15.27)	(26.69)	(25.14)	(16.51)	(3.10)
risk	+	0.3921444***	0.3925589***	0.3760818***	0.3734594***	0.3713169***	0.378925***
		(10.21)	(10.21)	(10.02)	(9.94)	(9.88)	(10.05)
nco	+	0.4387324***	0.4388144***	0.4404818***	0.4482238***	0.4477917***	0.4450537***
		(55.12)	(55.10)	(56.68)	(57.89)	(57.82)	(57.34)
tier1ratio	+/-	0.000023**	0.0000229**	0.00000532	0.00000422	0.00000414	0.00000614
		(2.21)	(2.20)	(0.52)	(0.42)	(0.41)	(0.60)
size	+/-	0.0000504	0.0000507	0.0000233	0.0000266	0.0000207	0.0000188
		(1.51)	(1.52)	(0.72)	(0.79)	(0.61)	(0.55)
lo/de	+	0.001119	0.0011198	0.00162	0.0010235	0.0010245	0.0010092
		(0.70)	(0.71)	(1.04)	(0.68)	(0.68)	(0.67)
d_type	+	0.0000132	0.0000158	0.0001479	0.0001476	0.0001358	0.0001627
		(0.09)	(0.11)	(1.08)	(1.09)	(1.01)	(1.20)
eq/ta	-	-0.0061067***	-0.0061083***	-0.0051162***	-0.0043553***	-0.0043251***	-0.0040998***
		(-5.33)	(-5.33)	(-4.57)	(-3.95)	(-3.93)	(-3.68)
IFRS	+				-0.0002778**	-0.0002741**	0.0001964
					(-2.21)	(-2.18)	(1.14)
baselii	+			0.0029048***	0.0029746***	0.0029929***	0.0021215***
				(17.58)	(16.04)	(16.12)	(8.50)
ua	+				-0.00000385	-0.00000326	-0.000220
					(-0.93)	(-0.79)	(-0.33)
ind	+				-0.00000286	-0.00000357	-0,000622
					(-0.69)	(-0.86)	(-1.02)
gdpgrowth	-	-0.0002184***	-0.0002293***	-0.0000168	-0.0000369	0.0000256	-0,000078
		(-6.38)	(-4.81)	(-0.48)	(-0.80)	(0.45)	(-1.23)
ebp*gdpgrowth	-		0.0006874			-0.0041444*	0.022048
			(0.33)			(-1.91)	(0.75)
*ebp*IFRS*	+						-0.0316271***
							(-3.76)
ebp*baselII	+						0.0568671***
							(5.22)
*ebp*ua*	+						-0,000191
							(-0.55)
ebp*ind	+						0.000119
							(0.44)
_cons		-0.0004537	0.004835	-0.0002089	0.0004153	0.0003005	0.0005043
		(1.30)	(1.34)	(-0.61)	(0.60)	(0.43)	(0.52)
N		6292	6292	6292	6101	6101	6101,00
R2		0.6610	0.6610	0.6769	0.6922	0.6924	0.6940

Model 1 in Table 1.9 shows the estimation of LLP including the effect GDP growth. It has a negative sign and it is very significant, which means that those countries with lower levels of GDP tend to use more LLP. Model 2, which inserts the interaction between GDP growth and EBP is also globally significant at a 1% level, with a F-statistic of 877.13 and an adjusted R_2 with a value of 66.10%. R_2 change in relation to Model 1 without interaction effect is 0.0, which informs us that including the effect interaction EBP*GDPGROWTH does not improve the explanatory power of LLP model. The interaction coefficient is not significant, so we have to look for other factors which explain the impact of EBP on LLP. Only in the model 4, where all the variables are included withouth interactions except by EBP*GDPGROWTH, it is when its coefficient is negative and significant at a 10% level of confidence.

In order to find other associations which explain the effect of EBP on LLP, we divide the sample analysis in two parts, pre 2005 period and post 2005 period, as well as pre and post 2008, as shown in next Table.

Table 1.10 Different sample partitions

PANEL A: By IFRS

Variables	Regressions			
	1997-2005		2006-2009	
LLP	1	2	3	4
dloan	0.0009644	0.0009748	0.0016045**	0.0016653**
	(1.44)	(1.45)	(2.40)	(2.49)
dnpl	0.159071***	0.1565827***	0.2051045***	0.2061656***
	(16.71)	(16.38)	(25.15)	(25.22)
npl-1	0.0455211***	0.043738***	0.0514571***	0.0524854***
	(12.32)	(11.64)	(14.30)	(14.40)
llr-1	0.052954***	0.0528371***	0.0491181***	0.0480314***
	(6.18)	(6.17)	(5.09)	(4.97)
ebp	0.1727298***	0.1477407***	0.1137206***	0.1282814***
	(23.83)	(12.00)	(16.92)	(12.06)
risk	0.2480622***	0.2554211***	0.4354519***	0.432891***
	(4.28)	(4.41)	(8.83)	(8.78)
nco	0.3890272***	0.3886825***	0.4115087***	0.4705373***
	(37.60)	(37.61)	(42.85)	(42.72)
tier1ratio	0.0000033	0.00000442	0.0000103	0.0000109
	(0.23)	(0.31)	(0.73)	(0.78)
size	-0.0000395	-0.000032	0.000897*	0.0000885*
	(-0.91)	(-0.73)	(1.95)	(1.92)
lo/de	0.0026904*	0.002574*	0.0009605	0.0008598
	(1.75)	(1.68)	0.30	0.27
d_type	-0.0001866	-0.000165	0.0002691	0.0002556
	(-1.10)	(-0.97)	(1.32)	(1.26)
eq/ta	-0.0060216***	-0.006021***	-0.0048242***	-0.0048025***
	(-3.57)	(-3.58)	(-3.28)	(-3.26)
basel II	(omitted)	(omitted)	0.0028926***	0.0029293***
			(14.28)	(14.39)
gdpgrowth	-0.0000383	-0.0001669**	-0.0000146	0.0000647
	(-0.79)	(-2.37)	(-0.29)	(0.97)
ebp*gdpgrowth		0.0085559**		-0.0045967*
		(2.51)		(-1.77)
_cons	0.0003525	0.0006443	-0.0009338*	-0.0011707**
	(0.80)	(1.41)	(-1.87)	(-2.27)
N	2510	2510	3782	3782
R2	0.6972	0.6979	0.6694	0.6696

PANEL B: By Basel II

Variables	Regressions			
	1997-2007		2008-2009	
LLP	1	2	3	4
dloan	0.001422***	0.001421***	-0.0006752	-0.000705
	(2.93)	(2.92)	(-0.47)	(-0.49)
dnpl	0.1723451***	0.1723451***	0.2330986***	0.2332042***
	(24.74)	(24.74)	(17.90)	(17.90)
npl-1	0.0513097***	0.051072***	0.0631583***	0.0616464***
	(19.44)	(19.05)	(8.25)	(7.93)
llr-1	0.0621808***	0.0623105***	-0.0095073	-0.006222
	(9.48)	(9.49)	(-0.46)	(-0.30)
ebp	0.14326***	0.1394374***	0.1122333***	0.1004668***
	(27.71)	(15.21)	(8.61)	(5.98)
risk	0.3017728***	0.3026099***	0.396051***	0.3931535***
	(7.64)	(7.65)	(4.19)	(4.16)
nco	0.3764669***	0.3764373***	0.7332393***	0.7356189***
	(46.91)	(46.90)	(33.72)	(33.67)
tier1ratio	-0.000000634	-0.000000562	0.0000105	0.00000833
	(-0.06)	(-0.05)	(0.37)	(0.29)
size	0.0000158	0.0000167	0.0002915***	0.0002883***
	(0.48)	(0.50)	(2.80)	(2.77)
lo/de	0.0010894	0.0010865	0.2814086***	0.2830017***
	(0.76)	(0.76)	(4.95)	(4.97)
d_type	0.0001039	0.0001068	-0.0003422	-0.0003107
	(0.76)	(0.78)	(-0.83)	(-0.75)
eq/ta	-0.0044929***	-0.0044986***	-0.0097843***	-0.0096633***
	(-3.99)	(-3.99)	(-2.98)	(-2.94)
IFRS	-0.0003337***	-0.000335***	(omitted)	(omitted)
	(-2.85)	(-2.86)		
gdpgrowth	-0.0000395	-0.0000594	-0.0001086	-0.0001972
	(-1.02)	(-1.07)	(-1.35)	(-1.74)
ebp*gdpgrowth		0.0011612		0.0054628
		(0.50)		(1.11)
_cons	0.0001111	0.0001655	-0.0005292	-0.0003475
	(0.32)	(0.46)	(-0.48)	(-0.31)
N	5196	5196	1096	1096
R2	0.6711	0.6711	0.7194	0.7195

The variable GDPGROWTH has no significance in any of the partitions, while IFRS, and especially Basel II, are very significant. The interaction GDPGROWTH*EBP is only significant when the sample is divided by IFRS -positive in the first section and negative in the second. That means that the cycle component that affects earnings smoothing via LLP has more to do with the implementation on accounting rules and standards -IFRS, BaselII- than to the GDP evolution along the period. This issue arises from the fact that Basel II and IFRS are dummy variables that better explain the change in LLP than a continuous variable such as GDP GROWTH.

The positive relation between Basel II and LLP evidences that deposits entities managers use more LLP during the recession period, since financial crisis coincides with the years of implementation of Basel II. However, we do not get significance in the interaction between GDP and EBP. This is consistent with Pérez *et al.* (2008) in the period 1986-2002, where there are not significant differences in the smoothing magnitude between expansion and recession periods. On the contrary, this conclusion is incoherent with Alali and Jaggi (2010), who prove that the earnings before provisions coefficient is higher during the financial crisis period in relation to the period previous to the crisis.

In short, our findings confirm that banks smooth their earnings by using LLP after the implementation of both IFRS and more especially, Basel II. Countries with higher indexes of individualism according to their cultural environment, tend to manage more their earnings through the use of LLP than those with a more collectivist approach. However, we do not find evidence that during financial crisis periods, deposit entities smooth more their earnings increasing LLP, which leads us to conclude that the income smoothing increase has more to do with the implementation of Basel II (dummy variable) than the financial crisis effect (measured as GDP growth, a contiunuos variable).

1.5   CONCLUSIONS

The new accounting framework based on IFRS and the implementation of the new capital standards with Basel II has significantly changed the regulatory environment of European banks. These facts lead us to examine some questions about the quality of banks' accounting data after these regulations came into effect. Banks provisioning behaviour is procyclic, they recognize more provisions during recessions or when the GDP growth decreases, which worsens the adverse effects of the crisis. The FSF promotes the creation of buffers during expansion periods in order to reduce provisioning during downturns and avoid procyclicity. This is known as income smoothing, which is considered as a conservative accounting practice in terms of reaching less volatile earnings. This issue is very relevant since the crisis questioned the incurred loss model of provisioning and forced the revision of IFRS 39 to introduce an expected loss model.

We aim to analyze the effectiveness of Basel recommendations in relation to the quality of accounting information. More specifically, we will study the level of income smoothing

before and after the implementation of IFRS and Basel II standards, as well as the cultural and economical factors which may affect the quality of accounting information in different countries.

In fact, we observe, that income smoothing is widely accepted among developed capital markets. The results show that the explanatory power of LLP model is very high since we eliminate any endogeneity problem and even after that it explains almost the 70% of the dependent variable. Using a sample of 31,057 observations for the period 1997-2009, we can confirm that banks aimed an anticyclic effect and managed their earnings through LLP during the period 2005-2009 (post implementation of IFRS) with a negative sign, and especially during 2008-2009 (post Basel II and financial crisis) in a positive way, which is coherent with both accounting teorics and bank regulators view.

Our overall evidence supports the hypothesis of income smoothing but not that of capital management. There is no evidence of the use of LLP to manage the capital regulatory level. We find significant evidence that after 2008 managers increase LLP more than proportionately, so the smoothing is asymmetric. This means a much greater effort during crisis, which is coherent with the effective increase of loans losses. We suggest that there were not enough provisions during wealthy times to face such a great credit risk. Hence, during the financial crisis, LLP increases to a greater extent.

Furthermore, and as one of the main contributions of this work, we document the effect of different cultural dimensions on earnings management practices through LLP. We find that both the specific uncertainty avoidance index and individualism index of countries have a negative and significant effect on the use of LLP, but only individualistic countries use LLP to smooth earnings.

Finally, we do not find significant differences in the behavior of savings banks in comparison to commercial banks. Then, although the motivations are pretty different in the case of the character of social dividend, they do not seem to induce to different behaviors.

We can conclude that despite the recommendations of Basel II aimed at limiting procyclicality of capital requirements, the international prudential framework still lacks clear guidance regarding the phenomenon of persistent income smoothing in banks.

The study has an important limitation. The increase of the amount of mergers and takeovers that have taken place during the last years, has reduced the amount of observations available to do the study. Moreover, we focus on the European Union (EU) adoption of IFRS, i.e. on 2005, because our sample comprises most countries in Europe. However, another limitation consists of the different dates of implementation of IFRS in some emerging countries, despite the fact that in most of the occidental countries the new regulations came into effect in 2005.

Further studies could use a wider sample in terms of post crisis period in order to support and reinforce our findings regarding accounting quality.

CHAPTER 2

Regulation, Supervision and Accounting Conservatism in Banks

Regulation, Supervision and Accounting Conservatism in Banks

2.1 INTRODUCTION

The last financial crisis has pushed to the forefront of the academic debate a number of institutional problems surrounding banking and financial regulation. Financial regulation exists as a complement in financial markets' failure situations. In fact, the Basel III recommendations have supported and reinforced three pillars to reach financial stability: regulation, supervision and market discipline. In this chapter, we evaluate the way in which these pillars affect accounting conservatism as a measure of accounting quality.

Many authors suggest that the last financial crisis was the result of a worldwide systemic failure within the banking sector. On the one hand, an important deregulation process took place in the late 1980's, which generated a significant increase of the value added generated by banks. The liberalization process fostered the consolidation of the industry, removed entry barriers and geographic constraints, and set up incentives that led to a nationwide expansion of banks. On the other hand, the nature of bank accounting systems around the world might have contributed to exacerbate the growth pattern of the financial institutions in the last three decades. In particular, late recognition of loan loss provisions might have contributed to increase the amount of outstanding loans during the expansionary periods, and to dramatically decrease the lending activity in downturns (Beatty and Liao, 2011).

To mitigate the issue of pro-cyclicality, many commentators, academics and practitioners claim for an increase in conditional accounting conservatism of banks; i.e., more timely loan loss recognition. In that vein, the Bank of Spain set up the dynamic loan loss provisioning system in the mid 2000's, under which all banks had to build up loan loss reserves during the good years (Saurina, 2009). In other countries, bank supervisors give banks a wide room of maneuver to recognize loan impairments, exploiting the ex-ante incentives of banks to engage in an early recognition of loan losses. In Germany, for example, banks implement an opaque accounting reserve, which is widely used to smooth earnings (Domikowsky et al., 2014).

This chapter exploits the cross-sectional variation of supervisory regimes across the world, to evaluate the effects of bank supervision and banks' specific characteristics on the level of conditional accounting conservatism of banks. In particular, we use a sample of 14,651 bank-year observations including banks from 54 countries over the period 1997-2009[8]. Only active commercial and savings banks are considered. As a measure of conservatism, we use the ratio of the loan loss reserves to total nonperforming loans developed by Beatty and Liao (2011), which does not require time series data.

This work contributes to the existing literature on accounting conservatism by considering institutional variables which also constitute drivers of financial markets stability, such as country-specific regulation and supervision. Few papers have analyzed accounting conservatism while taking into account the effects of differences in financial regulatory and supervisory systems. Arguably, the banking supervisors may exert an influence on the level of accounting conservatism exhibited by banks, since they are usually involved in the design of specific accounting standards for banks. The stringency of the prudential regulation is expected to increase the degree of timeliness of loan loss recognition. Along with the nature of the banking supervisory regime, this chapter evaluates the impact of market discipline variables on accounting conservatism; i.e. listing status and ownership type, both evaluated at a firm level; and market concentration evaluated at a country level. The interaction of these variables with the prudential regulation as joint determinants of accounting conservatism provides new insights on the determinants of the accounting policy implemented by banks.

Our findings suggest that stronger and more stringent regimes of regulation and supervision, identified as pillars I and II of Basel II, are positively associated with conditional accounting conservatism. Regarding the third pillar, market discipline, the empirical evidence reported in this chapter points out that conditional accounting conservatism is higher for unlisted commercial banks. Moreover, the timeliness of loan loss recognition increases with market competition. We also analyze the indirect effects of regulation and supervision on conditional accounting conservatism by studying their interactions with the determinants of market discipline. According to the empirical evidence provided in this chapter, regulation and supervision mitigate the negative effects of weak market discipline on the degree of accounting conservatism of banks.

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[8] Descriptive statistics by countries and banks are shown in Table 2.2.

The rest of the chapter is organized as follows. Section 2.2 provides the literature and hypothesis. The description of the sample and research design is detailed in Section 2.3. Results are discussed in Section 2.4 and Section 2.5 supplies some Robustness Checks. Section 2.6 concludes.

2.2 PRIOR RESEARCH AND DEVELOPMENT OF HYPOTHESES

One might argue that accounting information has broad implications on financial stability, so that accounting standards for banks should take consideration of any aspects of financial reporting with a direct impact on the risk taking behavior of banks. From this perspective, Fonseca and González (2008) and Bushman and Williams (2012) establish a link between different characteristics of accounting information – i.e., earnings smoothing and conditional accounting conservatism – and the extent and nature of both the market discipline of the local bank supervisory system.

In this vein, this chapter focuses on the determinants of conditional accounting conservatism at the bank level across different countries. Traditionally, the literature in this area has established that provisions mainly rise during downturns, reinforcing the strong cyclical pattern of bank loans (Laeven and Majnoni, 2003; Bikker and Metzemakers, 2005). By engaging in earlier recognition of loan losses, also known as higher conditional accounting conservatism, banks mitigate the impact of non-performing loans during the downturns. In that sense, early loan loss recognition might depend on both bank regulation and supervision, and bank specific incentives related to market discipline.

2.2.1 Regulation and Supervision

Although conditional accounting conservatism is widely perceived as a driver of financial stability, banking and accounting supervisors do not usually share the same views about the objectives of the accounting system. On the one hand, accounting regulators focuses on the faithful representation of assets and liabilities, which is not necessarily compatible with conservative accounting. On the other hand, bank regulators and supervisors deal with all the issues that might have an impact on bank stability, such as capital ratios, risk taking strategies, leverage and others. Whether the views of accounting regulators prevail over those of banking supervisors is an empirical question.

This section encompasses the first two pillars of Basel II: bank regulation and supervision. Previous literature emphasizes that investor protection, legal enforcement, accounting disclosure, restrictions on bank activities and official and private supervision reduce the incentives to smooth earnings in banks (Fonseca and González, 2008; Biurrun and Rudolf, 2010). Although earnings smoothing might be related to conservative accounting, both characteristics of the accounting information differ. Earnings smoothing consists of building a buffer during the good years that might be released in the bad years. Instead, conditional accounting conservatism aims at recognizing loan losses early, therefore increasing incentives of banks to curtail lending to less creditworthy borrowers.

Hence, rather than focusing on earnings smoothing, this chapter identifies the institutional determinants of conditional accounting conservatism of banks. The characteristics of bank regulations in each country are incorporated into the analysis through the measures developed by Barth et al. (2006). These measures are *Overall Activities Restrictiveness (OAR)*, *Official Supervisory Power (OSP)* and *Capital Regulatory Index (CRI)*[9].

Overall Activities Restrictiveness (OAR) is a measure of regulatory restrictions on non-traditional bank activities such as securities, insurance, real estate and bank ownership and control of non-financial firms. It will constitute an indicator of risk aversion. Values of *OAR* range from 4 to 12; higher values indicate more restrictions on bank activities.

Official Supervisory Power index (OSP) captures the effect of direct government supervision, the power of supervisors to take prompt corrective actions to restructure and reorganize troubled banks, and to declare a troubled bank insolvent. It is an index computed from answers to questions related to the body/agency which supervises banks, their responsibility, appointment and removals, differences from what is mandated by law, number of supervisors and examinations, total budget for supervision, frequency of inspections conducted in large and medium size banks, average tenure of current supervisors, frequency of bank supervisors being employed by the banking industry once they quit, reports of infractions, mandatory actions, authorizations, exceptions, supervisors' legally liabilities for their actions, etc. It ranges from 4 to 14, with higher values indicating greater power of supervisors.

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[9] The most recent data available for regulation and supervision variables developed by Barth, Caprio and Levine was published in 2006. The fact that we use these static variables is not considered an issue, because it is the only data available and it is a central value in our period of study, when no substantial changes have occurred in relation to institutional conditions.

Thirdly, *Capital Regulatory Index (CRI),* which measures capital-asset ratio requirements. It is an index computed from answers to questions related to the minimum capital-asset ratio requirement, Basel guidelines, individual bank's credit risk, market risk, actual risk-adjusted capital ratio in banks, subordinated debt, fractions of the banking system's assets and book value of capital. It ranges from 3 to 10, with higher values indicating greater requirements.

Thus, our first hypothesis is that powerful bank regulation and supervision regimes are positively associated to accounting conservatism. We expect all the three measures will have a positive impact on the timeliness of loan loss recognition exhibited by banks.

2.2.2 Market Discipline

In the Basel II framework, Pillar III refers to market discipline, which is theoretically a main driver of banks' stability. In this chapter, we use three different proxies for market discipline, namely listing status, type of ownership and market concentration.

2.2.2.1 Listing status

Arguably, the quality of accounting information, and particularly the degree of conditional accounting conservatism, might depend on the listing status of firms. Public equity banks are likely to have more dispersed equity ownership among greater numbers of shareholders, more information asymmetry and greater potential for moral hazard and adverse selection problems (Jensen and Meckling, 1976). Therefore, listed firms are expected to disclose high quality accounting information to reduce the cost of capital. In this vein, Nichols et al. (2009) and Ball and Shivakumar (2005) hypothesize that shareholders of quoted firms demand more timely loss recognition than those of non-listed firms.

However, because of higher equity dispersion, one might also claim that managers of quoted firms face higher incentives to engage in opportunistic behavior, thereby reducing the quality of reported financial statements. Since the shareholders of private equity banks are usually involved in the management of the firm, they have access to private information, reducing the management's incentives to manipulate earnings. For the US context, Beatty and Harris (1999) suggest that public banks are more likely to engage in earnings management than private banks. And Beatty et al. (2002) provide empirical evidence compatible with the idea that earnings manipulation to avoid small losses and earnings declines is more generalized in listed than in non-listed banks.

Givoly et al.'s (2010) acknowledge that the demand approach and the opportunistic-behavior approach are not mutually exclusive, and devise a research design which encompasses both hypotheses. Using a wide sample of US non-financial firms, they find different results depending on the earnings quality indicator. Although public equity firms report more conservative than closely held firms, earnings management tends to be higher in listed than in non-listed firms.

2.2.2.2 Ownership and Governance

The crisis has emphasized the differences in the risk taking behavior of firms according to their ownership structure and their corporate governance characteristics. Previous literature suggests that a) government owned banks tend to underperform private banks, particularly in underdeveloped countries, and b) they impose a burden to the local economy (La Porta et al, 2002; Barth et al. 2004; Beck et al., 2004; Berger et al., 2004; Clarke and Cull 2002; Berger et al. 2005; Dinç 2005; Hau and Thum 2009; Puri et al. 2011; Shen and Lin, 2012).

In this chapter, we exploit the dichotomy commercial banks vs savings banks. Although some episodes of political influence and rent seeking have recently arisen in some countries included in our sample (Sapienza, 2004; Illueca et al, 2012), savings banks are not necessarily under government control. However, they are expected to exhibit a lower degree of conditional accounting conservatism because of their inability to issue shares and raise capital. For these institutions, annual growth depends on the amount of retained earnings.

2.2.2.3 Market concentration

A number of studies find that the wave of deregulation launched in the eighties has led to an increase in competition (e.g., Stiroh and Strahan 2003; Bertrand, Schoar, and Thesmar 2007; Carbó Valverde et al., 2003; and Salas and Saurina 2003). Intense product market competition improves the flow of firm-specific information, thereby limiting managers' ability to conceal bad news (Nalebuff and Stiglitz, 1983; Holmstrom, 1982; Ball and Shivakumar, 2005). It helps to mitigate agency problems by aligning managerial incentives with those of shareholders, resulting in lower levels of information asymmetry and agency costs (Giroud and Mueller, 2010; Chhaochharia et al., 2009). Moreover, by increasing liquidation risk, product market competition contributes to a firm's demand for accounting conservatism, so to achieve more efficient contracting (Hou and Robinson, 2006; Ahmed et

al., 2007; Watts, 2003). Hence, we expect less concentrated markets to be associated with more conservative earnings.

Hence, our second hypothesis posits that greater market discipline has a positive impact on the timeliness of loan loss recognition of banks. In particular, we expect conditional accounting conservatism to be lower for savings banks than for commercial banks, and to increase with market concentration. Since the empirical results from previous works are mixed, we make no predictions about the effects of listing status on the timeliness of loan loss provisions.

2.2.3 Supervision and regulation vs market discipline: complements or substitutes?

The relative importance of the three pillars of Basel III varies across countries. Although stringent supervisory regimes are expected to increase financial stability, a resilient banking industry may also result from relatively weak regulation and supervision, accompanied with strong market discipline. Arguably, the optimum weights allocated to the three dimensions stated in Basel III might depend on both the nature of the whole local financial system, and the specific characteristics of the local banking system; i.e, percentage of listed versus non-listed banks, government owned vs non-government owned banks.

In this vein, previous literature suggests that the impact of regulation on the risk taking behavior of banks is closely related to their corporate governance structures. Using a wide database of banks across different countries, Laeven and Levine (2009) show that bank regulation mitigates the negative effect of weak corporate governance on risk taking. And Illueca et al (2012) suggest that the deregulation process of the savings banks in Spain had a higher (and negative) impact on banks subject to higher political influence.

In sum, the degree of timeliness of loan loss recognition by banks is expected to be determined by the interaction of the three pillars of Basel III, and not only by the sum of their individual effects. Our third hypothesis states that bank supervisory regime has a stronger effect on conditional accounting under weaker market discipline.

2.3   SAMPLE   SELECTION,   DATA   SOURCES   AND   EMPIRICAL METHODOLOGY

To empirically test our null hypotheses, Bureau Van Dijk's BANKSCOPE database is used. In particular, our dataset comprises the financial statements of active commercial banks and savings banks from 54 countries for the period 1997-2009. Bank-year observations with missing total assets were dropped from the sample. For banks with consolidated and non-consolidated financial statements, only consolidated data are considered. Delisted firms are recoded as unlisted in order to avoid the loss of all these observations. According to these selection criteria, our sample includes 14,651 bank-year observations.

2.3.1 Dependent Variable: Conservatism

Earnings conservatism reflects the differential ability of accounting earnings to reflect economic losses as opposed to economic gains (Basu, 1997). The degree of timeliness of loan loss recognition is a summary indicator of the speed with which adverse economic events are reflected in both income statements and balance sheets (Ball and Shivakumar, 2005). Wang et al. (2010) define financial reporting conservatism as the practice of applying more stringent verifiability requirements to recognizing economic gains than to recognizing losses. Watts (2003) argues that accounting conservatism is a desirable attribute of earnings because it constrains managerial opportunistic behaviour and offsets managerial biases with its asymmetrical verifiability requirement.

There are different approaches to measure accounting conservatism in the banking industry. Nichols et al. (2009) developed a measure based on the incremental explanatory power of future and contemporaneous nonperforming loans, beyond that of past nonperforming loans, in explaining the current loan loss provision. It has the disadvantage of eliminating banks lacking sufficient time-series data. Khan and Watts' (2009) approach, calculates bank-quarter Basu (1997) loss recognition estimates. These approaches are not considered in our study, because a) our sample consists of listed and non-listed banks, and b) quarterly data are not available in our database. Following Beatty and Liao (2011), we decided to use a specific measure of Conditional Accounting Conservatism, which does not require time-series data. In particular, our dependent variable is the ratio of loan loss reserves to non-performing loans.

Interestingly, Beatty and Liao (2011) find similar results using the three aforementioned approaches.

2.3.2 Econometric models

The empirical findings reported in this chapter are based on the following econometric model

$$CAC = \beta_0 + \beta_1\, RS + \beta_2\, MD + \beta_4\, RS{\times}MD + \beta_6\, Controls + \varepsilon$$

where the variables are defined as follows:

- *CAC* is our measure of conditional accounting conservatism measure, defined as the ratio of loan loss reserves to non-performing loans.

- *RS* refers to the Regulation and Supervision indicators developed by Barth, Caprio and Levine (2006): *Overall Activities Restrictiveness (OAR)*, *Official Supervisory Power (OSP) and Capital Regulatory Index (CRI)*, defined in section 2.2.1.

- *MD* encompasses a set of market discipline indicators; namely *UNLISTED, SB and CONC. UNLISTED* is a dummy variable, which equals 1 if the bank is unlisted and zero otherwise. Among the unlisted entities, *SB* is a dummy variable which takes value 1 if the bank is a savings bank. *CONC* refers to market concentration, measured by using the Herfindahl concentration index (H_i) for the loans market per country and year:

$$H_i = \sum_{j=1}^{n_i} S_{ji}{}^2$$

where, S_{ji} is the loans market share of firm j in the country i, and n_i denotes the number of firms within the banking industry in the country i. The higher the number of firms in the industry, the lower the value of the index is, ceteris paribus. The H_i gives much greater weight to firms with large markets shares than firms with small shares as a result of squaring the market shares. This is in line with the economic notion that the higher the concentration (higher H_i), the weaker the competition. Indeed, the H_i is extensively used in empirical research as a measure of bank market power (e.g., Petersen and Rajan 1995; Cetorelli and Gambera 2001; Cetorelli and Strahan 2006).

In addition, our model considers the following *control* variables:

- *EBP/TA* is the ratio of earnings before provisions to total assets. Earnings before provisions are calculated as the sum of profit before tax and loan loss provisions, minus taxes.

- *EQ/TA* is the ratio of equity divided by total assets. Bhat (1996) and Clair (1992) show that banks with higher *EQ/TA* tend to have less credit losses and, hence, less loan loss provisions.

- *SIZE* is the natural logarithm of total assets. Bank profitability is highly positively associated with size, reflecting the importance of economies of scale in banking (Nichols et al., 2009; Watts and Zimmerman, 1986; Moyer, 1990). Alali and Jaggi (2010) and Beatty et al. (2002) find a positive relation between loans loss provisions and size.

- *BANK_CREDIT*, which is the ratio of domestic bank loans to GDP, is used to control for the economic cycle and monetary conditions. This ratio is computed using the World Bank database. To compute total bank loans, all deposit taking institutions as recognized by the International Monetary Fund are considered. The *BANK_CREDIT* ratio excludes loans to the public sector (central and local governments, as well as government owned firms). According to Bikker and Metzemakers (2005), provisioning turns out to be substantially higher when GDP growth is lower, reflecting increased riskiness of the credit portfolio in economic downturns. This effect is mitigated somewhat as provisions rise in times when earnings are higher and loan growth is higher. Our measure is based on purchasing-power-parity (PPP) per capita (international dollars). It is obtained from the International Monetary Fund database for each country and year. The median or percentile 50 is used for the whole period (1997-2009) in order to avoid taking outliers into account.

- Finally, *DIFF* is the difference between the z-score for each bank-year combination, and the mean of z-score by country-year. The z-score measures the distance to insolvency, by combining accounting indicators of profitability, leverage and volatility. Specifically, the z-score indicates the number of standard deviations that a

bank's return on assets has to drop below its expected value before equity is depleted. Hence, the z-score is increasing with bank solvency[10].

Table 2.1 Variables definition

Variables Group	Variables	Description	Expected sign
Dependent Variable	*CAC*	Conditional Accounting Conservatism: ratio of loan loss reserves to non-performing loans.	
Market Discipline (MD)	*SB*	Savings Bank: dummy variable which equals 1 if the bank is a savings bank and 0 if it is a commercial bank	-
	UNLISTED	Unlisted: dummy variable which equals 1 if the bank is unlisted and 0 if it is listed	+
	CONC	Herfindahl Index of the loans market, which measures Market Concentration.	-
Regulation and Supervision (RS)	*OAR*	Overall Activity Restrictiveness	+
	OSP	Official Supervisory Power	+
	CRI	Capital Regulatory Index	+
Interactions	*UNLISTED*OAR, UNLISTED*OSP, UNLISTED*CRI, SB*OAR, SB*OSP, SB*CRI, CONC*OAR, CONC*OSP, CONC*CRI,*	Interaction between MD and RS variables	?
Controls	*EBP/TA*	Ratio of earnings before provisions to total assets	+
	EQ/TA	Ratio of equity to total assets	+
	SIZE	Natural logarithm of total assets	+
	BANK_ CREDIT	Ratio of domestic bank credit to GDP	-
	GDP	Gross Domestic Product	+
	DIFF	Difference between the z-score by bank-year, and the mean of z-score by country-year [10]	-
	YEAR	Year (1997-2009)	+

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[10] A number of outliers are eliminated within our sample: the observations smaller than the 1st percentile of the distribution, are set to the value of the 1st percentile and the observations larger than the 99th percentile of the distribution are set to the value of the 99th percentile. Introducing the variable DIFF in our model slightly improves R^2 in each regression.

2.3.3 Data

Panel A of Table 2.2 provides the mean of different economic indicators by country; i.e. GDP, the ratio of bank loans to GDP, and bank market concentration. Data suggest there is significant heterogeneity across countries, which is in part attributable to the different number of banks considered for each country, with more than 1,000 available observations for Italy, Switzerland and US, and less than 30 observations for Austria, Belgium, Egypt or Finland. Some countries with a considerable amount of financial information available turn out to have few observations which comply with our data requirements, such as Germany. In addition, there is high heterogeneity in terms of financial and economic development in our sample, with high per capita income countries such as Norway, Singapore or USA, and low-income countries, such as Kenya, Nigeria or Zimbabwe. The sample also includes capital markets-oriented and bank-oriented financial systems.

Financial ratios for banks, as well as the main regulation and market discipline indicators are included in Panel B of Table 2.2. Means, standard deviations and percentiles are also provided. Finally, Table 2.3 shows the Spearman correlations coefficients between the variables under scrutiny in this study. There are no relevant correlations other than the obvious one between *Bank Credit* and its component *GDP*.

Table 2.2 Descriptive statistics
PANEL A: By countries

Country	N (total assets)	Mean (GDP)	Mean (Bank credit)	Mean (bank cometition)
ARGENTINA	226	9,326.57	40.06174	0.1038036
AUSTRALIA	183	30,033.29	109.86190	0.1560638
AUSTRIA	29	30,816.10	127.29740	0.2029270
BELGIUM	22	28,987.43	108.89970	0.2633760
BRAZIL	696	7,630.70	80.06957	0.0930037
BULGARIA	58	7,682.99	46.42834	0.0630483
CANADA	204	31,370.41	189.83870	0.1363417
CHILE	145	10,787.12	85.28065	0.1044109
COLOMBIA	99	6,328.83	45.48855	0.0667266
CYPRUS	50	22,091.81	215.63660	0.2186490
CZECH REPUBLIC	86	17,539.30	47.21824	0.1305982
DENMARK	247	29,978.23	155.79480	0.2316663
ECUADOR	274	5,275.87	24.37448	0.1170137
EGYPT	12	4,234.31	97.38739	0.1269206
FINLAND	22	26,867.88	68.05659	0.5741265
FRANCE	343	27,662.02	113.79420	0.0825294
GERMANY	55	27,692.50	132.84820	0.0628155
GREECE	45	21,779.26	110.47780	0.0945825
HONG KONG	117	28,348.30	135.90630	0.1823536
HUNGARY	51	14,032.09	62.66622	0.1158450
INDIA	304	1,735.70	58.82889	0.0677121
INDONESIA	336	2,730.09	46.96527	0.0921260
IRELAND	66	33,903.11	149.13980	0.1550660
ISRAEL	91	21,318.71	81.69991	0.1207028
ITALY	1,213	26,391.21	105.99960	0.1333546
JAPAN	997	27,211.70	304.98120	0.0616179
JORDAN	89	3,622.16	97.59466	0.2676428
KENYA	189	1,287.68	39.14568	0.1299919
KOREA	81	19,277.72	92.67905	0.0951534
MALAYSIA	189	9,766.51	128.30430	0.0905861
MEXICO	219	11,005.70	35.23595	0.1404297
NETHERLANDS	43	31,400.52	178.36780	0.2815486
NEW ZEALAND	54	21,938.80	124.06360	0.1244198
NIGERIA	130	1,527.63	16.16994	0.0374356
NORWAY	529	42,149.62	81.82837	0.2164682
PAKISTAN	158	1,908.77	44.20139	0.0933271
PERU	99	5,500.20	19.77105	0.2444725
PHILIPPINES	244	2,656.20	54.14808	0.0836515
POLAND	178	11,409.78	39.42092	0.0681076
PORTUGAL	120	19,412.83	135.57870	0.2225681
SINGAPORE	51	35,671.78	76.03306	0.2512668
SOUTH AFRICA	101	7,333.07	171.48700	0.1955399
SPAIN	568	24,741.08	145.22240	0.0792361
SRI LANKA	82	2,962.95	43.90271	0.0822282
SWEDEN	198	29,021.55	122.07620	0.3176717
SWITZERLAND	1,127	32,578.22	178.89660	0.3220604
TAIWAN	269	22,179.90	133.43800	0.0343177
THAILAND	140	5,761.87	125.02820	0.0544251
TURKEY	221	8,330.66	45.40011	0.0821886
UNITED KINGDOM	361	28,314.06	158.16770	0.1254763
URUGUAY	77	8,232.47	56.37838	0.2223094
USA	2,887	37,637.27	219.95630	0.0454636
VENEZUELA	246	8,884.60	15.46834	0.0764529
ZIMBABWE	30	452.26	73.94571	0.3194489

PANEL B: By banks

	N	mean	st dev	p25	p50	p75
OAR	14,315	7.048481	1.645134	5	8	8
OSP	14,096	11.17828	2.435161	9	12	13
CRI	12,659	6.316139	1.678515	5	6	7
Comp	14,639	0.1210994	0.0988051	0.0520389	0.0861388	0.144914
ROA	14,644	0.0086994	0.0176954	0.0029319	0.0077994	0.0133333
ROE	14,644	0.0768385	0.7169587	0.0416667	0.0934503	0.1515152
EQ_TA	14,632	10.06696	8.162493	5.895	8.23	11.47
EBP_TA	14,057	0.0150567	0 .017505	0.0064772	0.0114723	0.0182815
Size	14,650	7.632365	2.09599	6.061457	7.539027	9.076923
CAC_1	14,651	1.530975	2.064368	0.5	0.875	1.69708

NOTES: N is the number of observations per country where the ratio LLR/NPL is available; ROA stands for Return on Assets; ROE stands for Return on Equity; EQ/TA is the ratio of equity to total assets; EBP/TA denotes the ratio of earnings before provisions to total assets;SIZE is calculated as the natural logarithm of total assets and CAC denotes the measure of accounting conservatism, which is calculated as the ratio of loan loss reserves to non performing loans.

Table 2.3 Spearman correlation coefficients

	oar	osp	cri	treg	unlisted	sav_bank	comp	dis_req	ebp_ta	eq_ta	size	bank_credit	gdp	dif
oar	1,0000													
osp	0.3149	1,0000												
cri	-0.0771	0.3276	1,0000											
treg	0,5617	0,8638	0,5960	1,0000										
unlisted	-0.1385	-0.0634	-0.0389	-0,1110	1,0000									
sav_bank	-0.1490	-0.1283	0.0169	-0,1297	0.2431	1,0000								
comp	-0.0652	-0.1811	0.0553	-0,1101	-0.1031	-0.0829	1,0000							
dis_req	0.3518	0.1756	-0.4204	0,0658	0.0402	-0.1963	-0.1933	1,0000						
ebp_ta	0.0946	0.1670	0.0869	0,1753	-0.0705	-0.1731	0.0311	-0.0725	1,0000					
eq_ta	0.0517	0.1045	0.0873	0,1209	0.0303	-0.1979	0.0376	0.0132	0.3445	1,0000				
size	0.0115	-0.0449	-0.0855	-0,0590	-0.2036	-0.0687	-0.0689	0.1461	-0.1443	-0.4358	1,0000			
bank_credit	0.1522	0.2554	-0.0337	0,1991	0.2121	0.1345	-0.2235	0.5962	-0.1598	-0.0988	0.1250	1,0000		
gdp	0.0029	-0.0011	-0.1214	-0,0520	0.2747	0.2307	-0.0817	0.4399	-0.2636	-0.1477	0.1282	0.7679	1,0000	
dif	0,0362	0,0185	-0,0031	0,0244	0,0744	-0,0834	-0,0120	0,0297	0,2418	0,9268	-0,3935	0,0398	0,0340	1,0000

2.4 RESULTS

Using the aforementioned model and database, we draw some conclusions on the effects of regulation, supervision and market discipline on the degree of timeliness of loan loss recognition.

2.4.1 Regulation and supervision

Our starting point is hypothesis 1, which states a direct relationship between the stringency of the banking regulation and supervisory regime and accounting conservatism. Table 2.4 provides the results of three different models, which consider alternatively OAR (Overall

Activity Restrictiveness), OSP (Official Supervisory Power), and CRI (Capital Regulatory Index), as determinants of our dependent variable CAC (Conditional Accounting Conservatism), along with a number of control variables. In addition, we estimate a fourth model, which includes these three variables together.

Table 2.4 Regulation and Supervision

Table 2.4 shows the coefficient estimations of the regression of the independent variables (OAR, OSP and CRI) on the dependent variable (CAC). The control variables are EBP/TA, EQ/TA, SIZE, BANK CREDIT, GDP, YEAR and DIF.

Variables		Regressions			
CAC	Pred.	1	2	3	4
OAR	+	0.2043336***			0.0693788***
		(9.83)			(3.14)
OSP	+		0.010957		0.0416782***
			(0.81)		(2.63)
CRI	+			0.1197838***	0.0953762***
				(6.68)	(5.07)
EBP/TA	+	15.79624***	18.44829***	16.09695***	16.14499***
		(5.44)	(6.01)	(5.29)	(5.16)
EQ/TA	+	0.0743133***	0.0479459***	0.0172499**	0.0168856**
		(9.19)	(7.80)	(2.34)	(2.49)
Size	+	0.0803513***	0.0845694***	-0.0030099	0.0092384
		(5.01)	(4.87)	(-0.15)	(0.47)
Bank Credit	-	-0.0018219***	-.0008128	-0.0044433***	-0.0050645***
		(-3.89)	(-1.58)	(-8.93)	(-9.83)
GDP	+	.000064***	0.0000543***	0.0000832***	0.0000859***
		(17.34)	(15.16)	(19.62)	(19.18)
Year		-0.0417763***	-0.0545825***	-0.0185345**	-0.0216004***
		(-5.52)	(-7.15)	(-2.38)	(-2.78)
Dif	-	-.0013517***	-0.0007431***	-0.000262**	-0.0003015**
		(-8.85)	(-6.27)	(-2.05)	(-2.24)
Cons		80.77266***	108.0989***	36.33022**	41.57167***
		(5.31)	(7.05)	(2.32)	(2.66)
N		13735	13528	12165	11958
R2		0.1146	0.0976	0.1220	0.1322

NOTES: OAR denotes overall activity restrictiveness; OSP denotes official supervisory power; CRI denotes capital regulatory index; EBP/TA is the ratio of earnings before provisions to total assets (earnings before provisions are calculated as the sum of profit before tax and loan loss provisions, minus taxes); EQ/TA is the ratio of equity to total assets; SIZE is calculated as the natural logarithm of total assets; BANK CREDIT is the ratio of domestic bank credit to GDP; GDP denotes the Gross Domestic Product based on purchasing-power-parity (PPP) per capita (international dollars); YEAR indicates years between 1997 and 2009;DIF is the difference between the z-score by bank-year, and the mean of z-score by country-year. Standard errors are robust to heteroskedasticity and have been clustered by bank codes. ***, **, and * represent 1%, 5%, and10% significance, respectively.

Taken together, our results are compatible with hypothesis 1. The coefficients for the RS variables are significant at conventional levels and their signs are in accordance with expectations. Though the coefficient of the OSP indicator falls below the significance threshold in the second model, the variable turns out to be significant when the three RS variables are included in the regression model. These results are not only statistically significant, but economically significant. One standard deviation increase in the OAR (CRI) indicator accounts for 17% (10%) of the standard deviation of our dependent variable. Our results are supported by Ahmed et al. (1999) and Alali and Jaggi (2010), who find that banks manage earnings in order to reach certain capital ratios[11].

In sum, banks operating in countries with more stringent regulation and supervisory regimes engage in more conservative accounting practices. However, since the discipline indicators are not considered in the models reported in Table 2.4, our results might be overstating the impact of Regulation and Supervisory indicators on Conditional Accounting conservatism.

2.4.2 Market Discipline: Listing status, Ownership and Concentration

Indeed, our previous results might be driven by some countries with weak market discipline mechanisms, for which regulation and supervision is particularly important. Table 2.5 and 2.6 present the estimation results of a more general model, which combines both set of variables. Furthermore, we estimate the coefficients for the interaction of both types of indicators, in order to better understand the determinants of conditional accounting conservatism in the banking industry.

As market discipline indicators, three different dimensions are considered; namely, listing status, savings banks vs commercial banks, and market concentration. According to the discussion in point 2.2.2, we expect commercial banks and banks operating in a more competitive environment to engage in more prudent accounting practices, while we made no

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[11] Within the institutional context previous to Basel recommendations, one more euro of loan loss provision, generated a reduction on earnings in the amount of 1-t, where t is the effective tax rate. Nevertheless, the previous regulation considered the loan loss reserve as a resource to be included within the capital, in such a way that the net effect of one more euro of provision in the numerator of the capital ratio is positive and equals t: 1-(1-t). In that context, banks had incentives to increase the provisions –conservatism- with the aim to reach the capital ratios. When Basel recommendations were put into effect, incentives to manage provisions decreased. Loan loss reserve is not taken into account in TIER 1, so one more euro of provision makes the earnings and TIER 1 to decrease in an amount of 1-t. However, loan loss reserve is taken into account in TIER 2 - with the limit of 1.25% of risk free assets, so banks still have an incentive to manage provisions upwards. Anyways, incentives are now smaller, being limited to banks which overtake the lower limit of TIER 1, and whose provisions do not reach 1.25% of free risk assets.

prediction for the listing status. Table 2.5 shows evidence which is broadly compatible with these predictions. The positive sign of the coefficient associated with UNLISTED suggests that quoted banks face stronger incentives than unlisted banks to engage in income-increasing accounting policies, as suggested by previous literature (Beatty et al, 2002 and Givoly et al, 2010). As to savings banks, our results show that these financial institutions exhibit a lower degree of timeliness in loan loss recognition, which might be explained by their inability to raise capital to fund any expected increase in lending activity.

Finally, banks operating in less concentrated markets tend to exhibit a higher degree of conditional conservatism. Banks facing higher competition have stronger incentives to produce more conservative accounting because of contracting purposes. These findings are supportive of our hypothesis, in line with the idea that firms in less competitive industries create an opaque information environment due to high proprietary costs of disclosure. Countries with a higher level of concentration, which would have less conservative banks, have now more conservative banks to comply with capital ratios.

Interestingly, the interactions between RS and MD indicators tend to be significant, providing confirmatory evidence to the idea that Conditional Accounting Conservatism is jointly determined by the three pillars of the Basel Agreement, and not only by the sum of their individual effects. The estimated coefficients related to these interaction terms are reported in tables 2.5 and 2.6. The former provides individual estimations for each interaction variable, whereas the latter disclose a joint estimation per group of variables; i.e. RS and MD indicators, and a general model with the whole set of variables.

One interesting aspect of the interaction term analysis is to evaluate whether market discipline variables mitigate or not the effects of a weak supervisory regime on the set up of conservative accounting policies. In that sense, the individual estimations included in Table 2.5 allow us to draw the following conclusions:

- The coefficient of OAR is higher for unlisted firms, suggesting that the impact of activity restrictions on CAC is stronger for non-quoted banks. Interestingly, the effect of OAR becomes less important for quoted banks. In the same vein, the coefficient of OAR is increasing with the degree of loan market concentration. Again, the effect of OAR becomes less relevant for banks subject to higher market discipline; i.e. market competition. In sum, market discipline tends to offset the effect of activity restrictions

on accounting policies. Apparently, the SB dummy variable does not have any significant effect on the OAR coefficient.

- The coefficient of OSP is higher for commercial banks, suggesting that the stringency of the supervisory regime tends to increase the timeliness of loan loss recognition in commercial banks rather than savings banks. This result might be related to the lower size of savings banks relative to commercial banks, which might be considered as proxy for systemic risk. Interestingly, the OSP coefficient is decreasing with market concentration, suggesting that stringent supervisory regimes tend to focus on banks subject to higher competition, with higher liquidity risks.

- Finally, the coefficient associated with CRI has a significant compensating effect in every single case, since the sign of the interactions is opposite to the initial sign of listing status, ownership and market concentration. CRI coefficient is higher for quoted banks, suggesting that the impact of Capital Regulatory Index on CAC is stronger on listed banks. Higher capital requirements force those financial institutions that had less incentives to be conservative to get the incentives for a higher level of conservatism in order to comply with the capital requirements and avoid the possibility of intervention.

Table 2.5 Interaction between regulation and market discipline

Table 2.5 shows the coefficient estimations of the regression of the independent variables (Unlisted, SB, Conc, OAR, OSP, CRI, Unlisted*OAR, Unlisted*OSP, Unlisted*CRI, SB*OAR, SB*OSP, SB*CRI, Conc*OAR, Conc*OSP, Conc*CRI,) on the dependent variable (CAC). The control variables are EBP/TA, EQ/TA, SIZE, BANK CREDIT, GDP, YEAR and DIF.

Variables CAC	Pred.	1	2	3	4	5	6	7	8	9	10
Unlisted	+	0.2314113***	-0.7152417**	-0.1218499	0.5727231**						
		(2.83)	(-2.55)	(-0.39)	(2.38)						
SB	-	-0.3101456***				-0.5449352	0.7428846**	-1.543134***			
		(-3.12)				(-1.59)	(2.36)	(-5.62)			
Conc	-	-3.088759***							-7.660113***	2.336882**	-7.24921***
		(-10.02)							(-5.92)	(2.34)	(-6.39)
OAR	+		0.1052791***			0.1875075***			0.0526484*		
			(3.25)			(7.95)			(1..66)		
OSP	+		-0.0112112				0.033939**			0.0831282***	
			(-0.45)				(2.18)			(4.24)	
CRI	+				0.1672249***			0.0699645***			-0.0029051
					(5.33)			(3.17)			(-0.11)
Unlisted*OAR	?		0.1312336***								
			(3.55)								
Unlisted*OSP	?			0.0296791							
				(1.09)							
Unlisted*CRI	?				-0.0669222*						
					(-1.85)						
SB*OAR	?					0.0432562					
						(0.79)					
SB*OSP	?						-0.0990581***				
							(-3.37)				
SB*CRI	?							0.2098149***			
								(5.47)			
Conc*OAR	?								0.8740285***		
									(4.07)		
Conc*OSP										-0.4765914***	
										(-5.76)	
Conc*CRI											1.01437***
											(4.63)
EBP/TA	+	15.532***	15.53063***	18.42554***	16.12862***	15.57237***	17.71698***	16.26512***	15.66263***	16.76285***	15.92829***
		(5.50)	(5.36)	(6.01)	(5.30)	(5.41)	(5.82)	(5.39)	(5.41)	(5.53)	(5.27)
EQ/TA	+	0.0374303***	0.0649567***	0.0435978***	0.0160489**	0.0701601***	0.0440949***	0.0172805**	0.0581517***	0.0329456***	0.0164298**
		(5.04)	(7.84)	(6.76)	(2.14)	(8.16)	(7.08)	(2.36)	(7.05)	(5.56)	(2.21)
Size	+	0.0391698**	0.0877562***	0.0958883***	0.0084267	0.0645493***	0.0575556***	-0.0238791	0.0453873***	0.0386186**	-0.007534
		(2.15)	(5.01)	(5.10)	(0.40)	(3.69)	(3.07)	(-1.17)	(2.67)	(2.25)	(-0.38)
Bank Credit	-	-0.0026013***	-0.0017304***	-0.0007975	-0.0042194***	-0.0021349***	-0.0009751*	-0.0047041***	-0.0023397***	-0.0024022***	-0.0049929***
		(-5.51)	(-3.79)	(-1.58)	(-8.44)	(-4.40)	(-1.80)	(-9.24)	(-5.14)	(-4.62)	(-10.56)
GDP	+	0.0000599***	0.0000586***	0.0000506***	0.0000797***	0.0000679***	0.0000599***	.0000861***	0.0000669***	0.00006***	0.0000847***
		(14.66)	(15.16)	(13.59)	(17.36)	(16.35)	(14.49)	(18.37)	(18.04)	(16.14)	(19.90)
Year		-0.0476101***	-0.0409434***	-0.0555981***	-0.0207338***	- 0.0410189***	-0.0529704***	-0.0156444**	-0.0360638***	-0.0487337***	-0.0176641**
		(-6.29)	(-5.37)	(-7.26)	(-2.64)	(-5.42)	(-6.95)	(-2.01)	(-4.81)	(-6.43)	(-2.24)
Dif	-	-0.0006604***	-0.0011662***	-0.0006545***	- 0.0002368	-0.0013104***	-0.0007627***	-0.0002654**	-0.00108215***	-0.0005915***	-0.0002601**
		(-5.19)	(-7.57)	(-5.32)	(-1.82)	(-8.36)	(-6.36)	(-2.10)	(-7.25)	(-5.17)	(-2.01)
Cons		95.18374***	79.84273***	110.2839***	40.30049***	79.55656***	104.8365***	31.021264**	71.10323***	96.56***	35.54141**
		(6.27)	(5.23)	(7.19)	(2.57)	(5.24)	(6.85)	(1.99)	(4.73)	(6.34)	(2.25)
N		14,041	13,735	13,528	12,165	13,735	13,528	12,165	13,723	13,516	12,153
R2		0.1120	0.1183	0.0992	0.1232	0.1168	0.1038	0.1277	0.1242	0.1207	0.1284

***, **, and * represent 1%, 5%, and 10% significance, respectively.

NOTES: Unlisted is a dummy variable which equals 1 if the bank is unlisted and 0 if it is listed; SB stands for Savings Bank and it is a dummy variable which equals 1 if the bank is a savings bank and 0 if it is a commercial bank; Conc is the Herfindahl Index of the loans market; OAR denotes overall activity restrictiveness; OSP denotes official supervisory power; CRI denotes capital regulatory index; EBP/TA is the ratio of earnings before provisions to total assets (earnings before provisions are calculated as the sum of profit before tax and loan loss provisions, minus taxes); EQ/TA is the ratio of equity to total assets; SIZE is calculated as the natural logarithm of total assets; BANK CREDIT is the ratio of domestic bank credit to GDP; GDP denotes the Gross Domestic Product based on purchasing-power-parity (PPP) per capita (international dollars); YEAR indicates years between 1997 and 2009; DIF is the difference between the z-score by bank-year, and the mean of z-score by country-year. Standard errors are robust to heteroskedasticity and have been clustered by bank codes.

Table 2.6 supplies a more complex evidence of the impact of each of the variables of market discipline in each column and the interaction with all the regulation and supervision variables. In column 4 all the variables are regressed together.

Table 2.6 Listing Status, Ownership and Concentration

Table 2.6 shows the coefficient estimations of the regression of the independent variables (Unlisted, SB, Conc, OAR, OSP, CRI, Unlisted*OAR, Unlisted*OSP, Unlisted*CRI, SB*OAR, SB*OSP, SB*CRI, Conc*OAR, Conc*OSP, Conc*CRI,) on the dependent variable (CAC). The control variables are EBP/TA, EQ/TA, SIZE, BANK CREDIT, GDP, YEAR and DIF.

NOTES: Unlisted is a dummy variable which equals 1 if the bank is unlisted and 0 if it is listed; SB stands for Savings Bank and it is a dummy variable which equals 1 if the bank is a savings bank and 0 if it is a commercial bank; Conc is the Herfindahl Index of the loans market; OAR denotes overall activity restrictiveness; OSP denotes official supervisory power; CRI denotes capital regulatory index;EBP/TA is the ratio of earnings before provisions to total assets (earnings before provisions are calculated as the sum of profit before tax and loan loss provisions, minus taxes); EQ/TA is the ratio of equity to total assets; SIZE is calculated as the natural logarithm of total assets; BANK CREDIT is the ratio of domestic bank credit to GDP; GDP denotes the Gross Domestic Product based on purchasing-power-parity (PPP) per capita (international dollars); YEAR indicates years between 1997 and 2009;DIF is the difference between the z-score by bank-year, and the mean of z-score by country-year.
Standard errors are robust to heteroskedasticity and have been clustered by bank codes.

Variables CAC	Pred.	1	2	3	4
Unlisted	+	-0.6685086 *			-0.60015
		(-1.76)			(-1.54)
SB	-		-1.80144***		-0.8800841
			(-3.00)		(-1.46)
Conc	-			-6.43538***	-4.758661**
				(-3.09)	(-2.37)
OAR	+	-0.0051389	0.1022682***	0.0290687	-0.0186848
		(-0.15)	(4.23)	(0.84)	(-0.45)
OSP	+	-0.0139739	0.064644***	0.0633638***	0.0328988
		(-0.51)	(3.56)	(2.95)	(1.15)
CRI	+	0.1740253	0.0080266	-0.0280272	0.0104689
		(4.84)	(0.33)	(-0.97)	(0.25)
Unlisted*OAR	?	0.0963965**			0.1190163***
		(2.39)			(2.80)
Unlisted*OSP	?	0.0703581**			0.1172931***
		(2.21)			(3.43)
Unlisted*CRI	?	-0.1037572**			-0.2281073***
		(-2.53)			(-4.97)
SB*OAR	?		0.0759358		-0.0127574
			(1.11)		(-0.19)
SB*OSP	?		-0.0990516**		-0.1425141***
			(-2.33)		(-3.21)
SB*CRI	?		0.3412389***		0.3855386***
			(7.89)		(8.47)
Conc*OAR	?			0.2837752	0.2666823
				(1.06)	(1.01)
Conc*OSP				-0.2567249*	-0.4224928***
				(-1.90)	(-3.39)
Conc*CRI				1.07927***	1.206426***
				(4.39)	(4.96)
EBP/TA	+	15.84766***	16.27182***	16.29172***	16.09948***
		(5.09)	(5.29)	(5.22)	(5.30)
EQ/TA	+	0 .0128651*	0.02131841***	0.0151385**	0.0179918**
		(1.83)	(3.13)	(2.14)	(2.39)
Size	+	0.0189171	-0.0125742	0.0040138	-0.008275
		(0.90)	(-0.63)	(0.21)	(-0.39)
Bank Credit	-	-0.0046631***	-0.0053884***	-0.0052701***	-0.0049119***
		(-8.97)	(-10.27)	(-10.52)	(-9.49)
GDP	+	0.0000797***	0.000089***	0.0000852***	0.0000797***
		(16.62)	(18.04)	(19.15)	(15.59)
Year		-0.0227124***	-0.0159102**	-0.0202231***	-0.0142225*
		(-2.89)	(-2.04)	(-2.56)	(-1.78)
Dif	-	- 0.000218	- 0.000405***	-0.0002812**	-0.0003475**
		(-1.60)	(-2.99)	(-2.01)	(-2.40)
Cons		44.41702***	30.33261*	39.78563**	28.18584*
		(2.82)	(1.94)	(2.52)	(1.76)
N		11.958	11.958	11946	11946
R2		0.1357	0.1432	0.1374	0.1556

***, **, and * represent 1%, 5%, and 10% significance, respectively.

The results confirm that RS role is complementary to MD variables. These findings suggest that only when MD is weak, then robust RS improve accounting conservatism.

Such is the MD relevance that the OAR coefficient becomes no significant when all the market disciplines variables play a role together, except for non-quoted banks, suggesting that the impact of activity restrictions on CAC is stronger for unlisted banks. In other words, the regulator's risk aversion only has a positive impact on accounting conservatism in non-quoted firms. In sum, market discipline tends to offset the effect of activity restrictions on accounting policies.

Concerning OSP, its general effect on MD is that it reduces the differences in accounting conservatism depending on market discipline variables. When the supervisory regime is more stringent, it is worse for the unlisted segment of the market. The supervisor assumes that the capital markets *per se* discipline financial entities. The greater its power, the smaller is the difference between listed and unlisted entities regarding accounting conservatism. When there is a more stringent *OSP*, the risk of intervention is higher; this has a greater impact on commercial banks than on savings banks, whose property rights are not properly defined. The intervention of the supervisor would not expropriate richness to an owner of a *SB*, so it is logical that commercial banks react to *OSP* changes more than savings banks: the interaction between *SB* and *OSP* strengthens *SB* sign because savings banks were per se less conservative. When the banking market is concentrated, firms have a great market share, and they do not have incentives to be conservative. On the contrary, if firms do not have a great power within the market, their intervention risk increases and they tend to be more conservative in order to avoid that possible intervention. If in such situation, there is also a powerful supervisor, then the banks will be even more conservative. When there is a strong *OSP*, the risk of intervention is higher. This makes banks operating in competitive environments to be even more conservative: the interaction between *CONC* and *OSP* strengthens the original sign of *CONC*.

CRI mitigates the effect of market discipline variables on conservatism. We find a positive effect of the variable *CRI* on the bank conservatism. Listed banks are per se less conservative in order to distribute dividends and avoid losses; however, higher capital requirements force banks to get the incentives for a higher level of conservatism,

inhibiting the effect of the market variables on it. Savings banks, which are per se less conservative, are now more conservative, equilibrating the level of conservatism with commercial banks. Countries with a higher level of concentration, which would have less conservative banks, have now more conservative banks to comply with capital ratios. We appreciate that the supervisor role is not necessarily to compensate, but to strengthen the effect of market discipline.

2.5 ROBUSTNESS CHECKS

2.5.1 Disclosure Requirements

It is also interesting to document cross-country differences in legal institutions and transparency culture, as well as their effects on accounting practices. In order to do so, we use the index of disclosure requirements elaborated by La Porta et al., (2006) which constitutes an indicator of transparency and information asymmetries as an intrinsic factor of the country.

The disclosure index measures the extent to which there is required disclosure of information for firms issuing securities through a prospectus, including information on the compensation of executives, shareholder ownership structure, inside ownership, unusual contracts, and related-party transactions (Francis and Wang, 2008). More disclosure creates greater protection for investors by reducing information asymmetry. Thus, we aim to prove that countries with higher levels of disclosure requirements require a lower level of conservatism to their financial entities. In fact, the more powerful the supervisory system is, the lower the level of disclosure would be.

The results of the regression of disclosure requirements variable are presented under Table 2.7. First of all, we must mention that we just analyze the effect of disclosure requirements on listed companies, since it would not make sense on unlisted companies.

It is reasonable that *DIS_REQ* has a negative and very significant coefficient (1%) in column 1, since countries with higher levels of disclosure requirements are supposed to require a lower level of conservatism to their financial entities.

After regressing the new variable together with the rest of regulation and supervision variables, we do not appreciate a different behavior of *OSP* compared to the rest of regulation and supervision variables; they all have the same behavior when interacting with the disclosure index: when there is a powerful regulatory system, more disclosure requirements will derive in less need of conservatism by the financial entities.

The level of disclosure requirements has a positive effect on conservatism when there is also a proper regulation and supervision system.

Table 2.7 Disclosure requirements

Table 2.7 shows the coefficient estimations of the regression of the independent variables (Dis_req, OAR, OSP, CRI, Dis_req *OAR, Dis_req *OSP, Dis_req*CRI) on the dependent variable (CAC). The control variables are EBP/TA, EQ/TA, SIZE, BANK CREDIT, GDP, YEAR and DIF.

NOTES: Dis_req is an indicator of transparency and information asymmetries;OAR denotes overall activity restrictiveness; OSP denotes official supervisory power; CRI denotes capital regulatory index;EBP/TA is the ratio of earnings before provisions to total assets (earnings before provisions are calculated as the sum of profit before tax and loan loss provisions, minus taxes); EQ/TA is the ratio of equity to total assets; SIZE is calculated as the natural logarithm of total assets; BANK CREDIT is the ratio of domestic bank credit to GDP; GDP denotes the Gross Domestic Product based on purchasing-power-parity (PPP) per capita (international dollars); YEAR indicates years between 1997 and 2009;DIF is the difference between the z-score by bank-year, and the mean of z-score by country-year.
Standard errorsare robust to heteroskedasticityandhave been clustered by bank codes.

Variables		Regressions			
CAC	Pred.	1	2	3	4
Dis_req	-	-1.297675***	-4.044124***	-10.09882***	-4.992497***
		(-3.65)	(-2.93)	(-3.90)	(-3.90)
OAR	-		-0.2700888*		
			(-1.77)		
*Disreq*OAR*	?		0.4163508		
			(1.85)		
OSP	-			-0.5943253***	
				(-4.14)	
*Disreq*OSP*	?			0.7558915***	
				(3.41)	
CRI	-				-0.3315987***
					(-2.68)
*Disreq*CRI*	?				0.5691151***
					(3.20)
EBP/TA	+	8.792123*	8.652893	11.70951**	7.930831
		-1.75	(1.63)	(2.20)	(1.49)
EQ/TA	+	0.0207769	0.0298674	0.02773	0.0244332
		(1.09)	(1.39)	(1.38)	(1.10)
Size	+	-0.1008218***	-0.0920279**	-0.0935246**	-0.1218642***
		(-2.92)	(-2.47)	(-2.51)	(-2.99)
Bank Credit	-	0.006995***	0.0069115***	0.0089445***	0.0072777***
		(3.25)	(3.20)	(4.07)	(2.85)
GDP	+	0.0000253***	0.0000284***	9.63e-06	0.0000371***
		(3.77)	(4.01)	(1.29)	(4.02)
Year		-0.0551014***	-0.0548787***	-0.0503003***	-0.0511722***
		(-3.28)	(-3.09)	(-2.92)	(-2.85)
Dif		-0.0000072	-0.0001821	-0.0001733	-0.0000638
		(-0.37)	(-0.89)	(-0.87)	(-0.28)
Cons		112.0009***	113.0601***	109.1146***	106.3307***
		(3.33)	(3.19)	(3.14)	(2.96)
N		2423	2249	2249	2084
R2		0.1086	0.1181	0.1418	0.1500

***, **, and * represent 1%, 5%, and 10% significance, respectively.

2.5.2 Changes in sample

We consider it is also interesting to check the robustness of our analysis by introducing changes in our sample and checking if we get the same conclusions. The first variation in our sample consists of increasing the drop of outliers: our original sample encompasses percentiles 1 to 99, while this second sample includes percentiles 25 to 75. Within this sample, we get very similar results regarding signs and significances but in very specific variables. Obviously, the more significant the results are in the original sample, the more similar the results in the second sample are.

Regarding the second change, it consists of dividing the sample in two parts. The first one encompasses from year 1997 to 2003, and the second half from 2003 to 2009. These two

parts have identical width. In addition, we divide the sample from 1997 to 2005, and from then in advance. This second division responds to the fact that in 2005 all listed EU companies were required to use IFRS. Once more, apart from the obvious variances deriving from changing the width of the sample and the time period, the general conclusions keep being the same. However, we can notice that the second sample (2003/2005 to 2009) gets almost the exact results as the original one, so we can conclude that the second half of the period analyzed is the one which contributes the most to the overall conclusions.

The fact of obtaining very similar results even when changing our original sample, strengthens our previous analysis and completes its backup.

2.6   CONCLUSIONS

This chapter evaluates the effects of the three pillars of Basel II -bank regulation, supervision and market discipline- on the level of bank conservatism, i.e. the timeliness of loan loss provisioning by banks. We confront the third pillar of Basel II -market discipline- measured through three proxies -listing status, ownership and bank concentration- against the two traditional pillars of regulation and conservatism, measured through Barth, Caprio and Levine's (2006) indicators, with the aim of analyzing market discipline's role within the search of the stability of the financial system.

The stricter recommendations of Basel III proposed in 2010 reinforced the first two pillars, which force us to study if Basel II did not work properly, or if its new market discipline pillar was insufficient. We will question if it is reasonable that after the deregulation process that led to Basel II, regulation and supervision become more rigid and stricter in Basel III.

We use a sample comprising 14,651 bank-year observations during the period 1997-2009 and obtain that first, banks under stronger and more stringent regimes of supervision and regulation are associated to higher conservatism levels than banks in countries with less enforcement and second, more robust market discipline variables are also positively associated with higher conservatism. Specifically, unlisted banks and commercial banks are more conservative than listed entities and savings banks, respectively, in consonance

with the insights given by Beatty et al. (2002) and the idea that savings banks exhibit relatively weaker governance than commercial banks. Third, the evidence presented above supports the idea that the more concentrated the market is, the less conservative banks are. This finding is consistent with the intuition that firms in concentrated industries tend to protect their competitive advantage and avoid political and public attention.

Furthermore, and as one of the major contributions of this study, we measure the relative impact of the two first pillars on the third one, finding that regulation and supervision - and the extent on which they are enforced- control and mitigate the impact of market discipline when this is weak. Generally, *OSP* reinforces the effect of listing status, ownership and concentration on conservatism, while *CRI* is the variable which mitigates the effect of market discipline on conservatism.

Finally, as a further analysis, we also take into account the cross-country transparency culture by including the level of disclosure requirements in our analysis. It measures the asymmetries in the information and it has a negative effect on conservatism. This effect is reinforced when there is a strict regulation and supervision system.

As far as we know, all the mechanisms which are able to guarantee accounting quality have been studied. These determinants coincide with Basel II recommendations, with the aim of improving banks quality and guaranteeing solvency. Given the results described in Section 4, we could say that the standards fixed in Basel II worked properly but were insufficient, so it makes sense reinforcing pillars 1 and 2 in Basel III.

To sum up, we have showed that regulation and supervision complement the rest of environmental factors –listing status, ownership and market concentration- in those situations when the market discipline fails.

This study has its limitations. As mentioned along the chapter, we were limited when calculating conservatism in terms of data, so our only alternative was to use the ratio LLR/NPL, developed by Beatty and Liao. Moreover, information on regulations and supervisory practices is available only for one point in time. Although we use instrumental variables to control for simultaneity bias, banking-sector outcomes may influence regulations and supervisory practices. In addition, OAR, OSP and CRI indexes obtained from Barth, Caprio and Levine were last calculated in 2006. Within the context

of the last crisis, they must have been modified because of the increase of intervention risk.

Finally, although this chapter has focused on private and public banks in general, future studies could extend this line of research by examining banks that switch organizational type.

CHAPTER 3

Accounting conservatism in banks and the drop in supply of loans during the financial crisis

Accounting conservatism in banks and the drop in supply of loans during the financial crisis

3.1   INTRODUCTION

The dimension of the financial crisis has given great importance to the study of the banking sector, which is seen as the epicenter of the crisis, especially in Spain. During the crisis, the performance of international accounting systems as well as the supervision of institutions has been questioned. The need to improve recognition of banking risks and the quality of regulatory capital, the introduction of better monitoring systems and the promotion of information transparency are some of the most important aspects of international financial regulation after the adoption of the Basel recommendations.

The main goal of this research is to ascertain whether conservative bank accounting helps to mitigate drops in loan supply of commercial and savings banks during financial downturns. In fact, a key aspect of this work is that it measures the different effect of two types of buffers on bank's risk taking before the crisis: a) equity, b) conditional conservatism. Before the crisis, banks were more conservative in a conditional sense, they analyzed borrowers in detail, and, ex-post, they suffered less loan losses and smaller reductions in their loans supply. Comparing the two types of reserves within a context of extreme crisis, like in Spain, is our main contribution.

It is important to study the Spanish sample because of the deep impact of the economic crisis on its whole banking system. A second reason is that Spain is one of the pioneer countries in the adoption in 2000 of dynamic provisions as a countercyclical instrument, which, by construction, entailed an increase in provision requirements for all banks. These provisions were not related to credit risk –unconditional conservatism-, although they did not prevent the minimum capital requirements for riskier assets –

conditional conservatism. More recently, as explained in previous chapters, the FASB and the IASB have agreed to shift from an incurred-loss to an expected-loss provisioning method. By forcing banks to recognize losses before they occur, accounting standard setters aim to mitigate the pro-cyclical features of the current provisioning system. A third reason for focusing on Spanish banking samples is that nearly 50 percent of financial institutions are savings banks. Due to their institutional regime, savings banks do not have shareholders and, therefore, find it much more difficult to be financed, especially during adverse economic conditions. We expect these financial entities to be sensitive to conditional conservatism during economic downturns, as a measure of compensating the lack of external funding. We distinguish between commercial and savings banks also because savings banks are characterized by strong local and regional influence. Because of the close relationship between loan supply and loan loss provisioning, and also with the economic performance as a whole, it is necessary to investigate how loan loss provisioning may have contributed to the crisis and mark a turning point in the savings banks' performance.

In order to investigate the link between bank conservatism and drop in loan supply we obtain a sample of Spanish savings and commercial banks with the data available from the Bankscope database between 1997 and 2010. Finally, we obtained 1388 bank-year observations.

We use as a proxy of accounting quality the specific measure of conditional conservatism developed by Nichols et al. (2009) based on the analysis of differences in the timeliness of banks' loan loss recognition. Conditional conservatism, defined also as *ex post* conservatism, involves those financial institutions that apply more favorable requirements of verification for bad news than for good news (Basu, 1997). We expect that those banks will forecast their provisioning according to their expected losses. Consequently, more conservative financial entities will be timelier in recognizing provisions, while less conservative banks will provision after their loans become nonperforming. This model may tend to exacerbate the current economic cycle, as during economic boom banks are expected to lower their provisions because the likelihood of loan defaults is also lower, and increase them for the same reason during a downturn. This is the reason for a pro-cyclical performance of loan loss provisions that could be reduced by earlier provisioning.

Accordingly, we include a second measure of conservatism in our analysis. Following Beatty and Liao (2011), we also measure conditional conservatism as the ratio of loan loss reserves to nonperforming loans.

During the last financial crisis, savings banks found it more difficult to meet capital ratio and liquidity requirements. Due to their institutional regime, savings banks do not have shareholders and, therefore, find it much more difficult to be financed, especially during adverse economic conditions. Consequently, we expect a significant effect of conservatism on savings banks' loans supply during a recessionary period. We find that conditional conservatism is especially important during recessions in mitigating drops in loans supply.

On the other hand, commercial banks use deposits to counter a recession period, while conservatism seems not to be significant when funding through shareholders is available.

Our empirical model confirms that on analyzing the three years of the financial crisis included in our sample separately, conditional conservatism of financial institutions during non-recessionary periods has helped to mitigate the drop in loans supply since 2010.

The chapter is organized as follows. In Section 3.2, we analyze the financial sector reform in Spain and the drop in loans supply during the crisis. Section 3.3 reviews the literature on banking conservatism and institutional regimes and develops the hypothesis. Section 3.4 reports the empirical methodology employed. Section 3.5 presents the results of the impact of conservatism and capital ratio on change in loans supply and interprets the findings in view of the results obtained. Section 3.6 concludes.

3.2 DROP IN SUPPLY OF LOANS DURING THE FINANCIAL CRISIS. THE CASE OF SPAIN

Spain is undertaking a major program of financial sector reform with support from the European Stability Mechanism (ESM). On June 25, 2012, Spain requested financial assistance from the European Financial Stability Facility (EFSF) to support the ongoing restructuring and recapitalization of its financial sector. The reform program aims to

capitalize Spain's banking system better and reduce uncertainty regarding the strength of its balance sheets, with a view toward improving its access to funding markets. This in turn should help ease domestic credit conditions and thereby support economic recovery. The capitalization drive also aims to protect taxpayers by requiring weak banks to undertake private capital-raising efforts now before undercapitalization problems expand; and reform the frameworks for financial sector regulation, supervision, and resolution to enhance the sector's resilience and avoid a re-accumulation of risks in the future.

The Eurogroup approved this support, with Spain's commitments under the program outlined in the Memorandum of Understanding on Financial Sector Policy Conditionality (MoU) of July 20, 2012.

Implementation of Spain's financial sector program remains on track. The vast majority of measures specified in the program have now been implemented, as envisaged under its frontloaded timetable. Most notably, actions to recapitalize parts of the banking sector and the asset transfers to SAREB have provided an important boost to the system's liquidity and solvency. Major reforms of Spain's financial sector framework have also been adopted or are in train.

Notwithstanding this progress, risks to the economy and hence to the financial sector remain elevated. Correction of Spain's large external, fiscal, and financial imbalances is well underway, with policy actions at both the European and Spanish levels helping to ease market pressures over the last years. Nonetheless, further adjustment remains, and the process continues to weigh heavily on domestic demand.

Looking forward, growth may remain weak for some time unless further reforms to make the adjustment process less costly are adopted at both the European and Spanish levels. Further financial sector measures can significantly assist this effort, thereby supporting economic recovery and financial stability.

In relation to the Spanish financial sector reform, the IMF (2013) main findings and recommendations in key areas are as follows:

- Bank restructuring and resolution. Much progress has been made in repairing banks' balance sheets. Further near-term priorities in this area include timely completion of

burden-sharing exercises and the choice of strategies to maximize the value out of each state-owned bank under the FROB's control.

- SAREB. Its management is appropriately giving high priority to addressing technical challenges associated with its start-up phase, including the completion of due diligence on SAREB's assets and ensuring that these assets are properly serviced.

  However, SAREB's business plan could usefully be based on more conservative projections for house prices, as these are still falling sharply and further correction is likely. Such a change in assumptions may imply the need to adjust elements of the business strategy once the due diligence exercise has better identified the current market values of each asset. Another priority is to ensure that SAREB's governance arrangements sufficiently mitigate potential conflicts of interest.

- Ensuring adequate provisioning. Accurate loan classification and provisioning for loan losses is key to ensuring balance sheet transparency and restoring full confidence in the system. By recognizing losses on distressed assets whether or not banks sell them, adequate provisioning also ensures that banks have proper incentives to dispose of these assets, which helps free space on their balance sheets to expand lending to the growing parts of the economy. In this context, the BdE's recent initiative to promote more consistent and accurate classification of refinanced loans is welcome. Strong implementation of this exercise will be key to ensuring adequate provisioning.

- Maintaining capital. The program has provided an important boost to the system's capital, such that all banks covered by the stress test exceeded regulatory requirements at end-March 2013 once the estimated effects of pending capital-augmentation measures (e.g., completion of burden-sharing exercises) are included. Nonetheless, with macroeconomic uncertainty still high, risks remain that banks may face pressure to support capital ratios by further accelerating credit contraction, with adverse effects on the economy. In this context, supervisory actions to strengthen solvency and reduce risks should prioritize measures that increase nominal capital over ones that reduce lending. Such measures include, for example, requirements to issue equity, as well as restrictions on cash dividends and bonuses, both of which should be tightly constrained given current risks. Consideration should also be given to increasing the quality of banks' capital via the conversion of banks' deferred tax assets (DTAs) into transferable tax claims, conditional

on banks undertaking actions that have positive externalities in the current environment (e.g., more equity issuance, forgoing dividends for several years, stepping-up provisioning and disposal of distressed assets, and/or easing the pace of credit contraction). Bolstering the quantity and quality of capital through such measures should promote financial stability and help ease credit conditions and macroeconomic adjustment by both reducing banks' funding costs and increasing their capital buffers over regulatory requirements.

- Further measures to ease credit conditions and support recovery. Efforts by the government to clear public sector arrears are welcome and should be furthered, as they promote financial stability by assisting the creditworthiness of suppliers and reducing their non performing loans. Other measures to explore include revenue neutral tax reforms (e.g., less reliance on real estate transaction taxes) to reduce impediments to asset disposal.

- Measures at the European Level. Measures at the European level are also key to supporting growth and financial stability. This includes moving faster to full banking union, which would help break the sovereign/bank loop by allowing Spanish firms to compete for funds on their own merits, independent of their country of residence; continuing monetary support from the European Central Bank (ECB); and keeping state-aided banks' restructuring plans under careful review to ensure they are sufficiently flexible to changing circumstances and avoid any unnecessary constraints on the supply of credit.

- Savings bank reform. The draft law to reform the savings bank system—a welcome reform aimed at enhancing these banks' governance and reducing risks to financial stability—has been transmitted to parliament. The priority now is to ensure timely adoption and strong implementation.

- Bank restructuring and resolution. The aim is deciding on strategies for maximizing the value out of the state-owned banks remaining under the FROB's control and keep restructuring plans under state aid rules under review to provide sufficient flexibility to changing circumstances and to avoid any unnecessary constraints on credit provision.

Financing conditions for Spanish firms and households remain difficult. The bank clean-up and complementary measures at the European level have prevented a disorderly unwinding of a significant part of Spain's financial system. Although this very adverse scenario for credit conditions and the economy has been avoided, credit conditions

nonetheless remain tight with these adverse factors deriving from the unwinding of pre-crisis imbalances and Spain's resultant recession. More specifically, the contraction of bank credit to the private sector accelerated in the first part of 2013, reaching -7 percent in May (year-on-year, adjusted to remove the effects of asset transfers to SAREB), while lending rates to businesses rose further to levels well above those in the euro area core. The picture is similar for total credit to the private sector from all sources, as nonbank financing in Spain is insignificant. The pace of credit contraction in Spain has been one of the fastest among advanced economies.

Credit contraction reflects both supply and demand factors. Weak demand due to the ongoing recession and the desire of households and firms to deliver is undoubtedly a major driver of credit contraction. At the same time, some key indicators suggest that shocks to credit supply have also been important.

Higher lending rates indicate a significant adverse shock to credit supply, as adverse shocks to demand should reduce interest rates. Tight credit supply reflects various interrelated factors, which are difficult to quantify with precision. These include reduced creditworthiness of borrowers. A major factor behind banks' reduced willingness to lend is the lower creditworthiness of borrowers, whose balance sheets have been hit by the recession. That said, this factor cannot completely explain tighter credit supply, as banks indicate in surveys that they continue to tighten lending standards to new highs, even holding the borrower's degree of creditworthiness constant. Although the transmission of lower deposit rates into lower lending rates is not yet evident, this may just reflect transmission lags. Alternatively, banks' decisions to compete less vigorously for deposits may have reduced the importance of deposits as a source of funding for new lending. As a result, the drop of deposit rates may not significantly reduce banks' marginal costs of funding and hence may not significantly affect lending conditions.

Banks' marginal funding cost could instead rise if their marginal funding source switches to more expensive types of financing. Banks' marginal borrowing costs could rise further if ECB term funding facilities are phased-out, so eliminating this relatively cheap source of term financing.

The authorities have significantly stepped-up provisioning requirements over the last years. This has raised the ratio of banks' credit reserves to NPLs from 37 percent at end-

2011 to 43 percent at end-2012. Nonetheless, concerns remain that some banks may still not be fully provisioning for likely losses. Supporting evidence for this concern are recently released data showing that 14 percent of loans have been refinanced and that about half of these loans (with a book value of about 9 percent of GDP) are classified as performing and hence with no specific provisions. Although some of these loans may be correctly classified as performing, the concern is that some of this refinancing may represent "evergreening" of nonperforming loans. There is also significant heterogeneity across banks regarding how refinanced loans are classified.

Strong implementation will be important to ensuring adequate provisions. Reviews should occur quickly, and accurate classifications should be rigorously enforced, which is expected to result in an increase in provisions and reported NPLs. Such an approach will help ensure balance sheet transparency and promote market confidence in reported financial positions. Higher provisioning will also reduce banks' incentives to accumulate assets to avoid losses that may be incurred by selling assets at their true value. In this way, higher provisioning will facilitate asset sales that could free space on banks' balance sheets to increase lending to other parts of the economy. For all of these reasons, it is important that provisions be sufficient to deal with loan losses. While higher provisioning will reduce reported capital, concerns in this regard are best addressed not by light provisioning but rather by measures such as a prudent approach to capital distribution and issuance, as discussed above.

Spain's current situation (European Commission, 2013)

Despite the reassuring return of confidence, the Spanish financial sector and markets remain vulnerable to adverse international and domestic developments. The analysis carried out by the European Commission under the Macroeconomic Imbalances Procedure in April 2013 shows that the levels of domestic and external debt are still high, particularly as public debt has also surged in recent years. The cleaning up of the banks' balance sheets has significantly advanced and banks' exposure to the construction and real estate development (RED) sectors has declined, but at the same time the restructuring process of the savings banks is still on-going and the amount of NPLs continues to rise. The deleveraging of both the financial and non-financial private sectors contributes to a contraction in credit which affects economic recovery and bank profitability. Therefore,

banks should maintain comfortable capital levels that support lending to the real economy and provide a buffer to mitigate the risks of the still weak economic activity.

Non-performing loans (NPLs) have continued to increase in recent years, despite the positive impact of the transfer of RED assets to SAREB. Non-performing loans in the household sector continue to remain significantly below the system level, but edged up to 6% at the end of June 2013. The performance of the residential mortgage portfolio has also deteriorated slightly. A sustained increase in NPLs was recorded in the corporate sector, which displays a relatively high and growing NPL ratio even outside the construction and real estate sector.

The increase in the NPL ratio at system level has been driven by both the deterioration in the quality of assets held by banks and the contraction of the total loan portfolio (denominator effect) due to the on-going deleveraging process. The deterioration in asset quality has been fueled mainly by the increase in impaired assets in the corporate sector and, to a lesser extent, by the quality of loans to private individuals.

3.3   PRIOR RESEARCH AND DEVELOPMENT OF HYPOTHESES

After the financial crisis began in August 2007, financial regulators and supervisors have addressed the debate on macro prudential policies that would be able to monitor the link between financial markets and institutions, with the ultimate goal of preventing the next crisis. Among macro prudential instruments – loan loss provisions and capital are two of the most vital policies developed to cover expected and unexpected losses (BCBS, April 2009)- the counter cyclical tools play an important role.

Less conservative banks during an expansionary period are also less capitalized than more conservative ones. In addition, they have to increase loan loss provisioning during recessions, thus increasing the costs of external equity financing and facing greater regulatory constraints. During recessionary periods, less conservative banks will lower their lending in order to avoid future capital difficulties. Van den Heuvel's (2009) concludes that banks may reject profitable lending opportunities to lower the risk of future capital inadequacy.

Throughout economic downturns banks have to increase the amount of charged provisions at the expense of their profits capital, therefore negatively impacting on lending behavior. This pro-cyclical behavior of loan loss provisions may reinforce the downturn of the business cycle, as provisions built-up during economic booms due to excessive increases in credit lending and a less critical assessment of credit worthiness materializes. Leaven and Majnoni (2003), Bikker and Metzemakers (2005) and Borio and Lowe (2001) found that provisions mainly rise during downturns and, therefore, that loan loss provisioning exhibits strong cyclicality. Laeven and Majnoni (2003) analyze the use of loan loss provisions in banks around the world. Their results suggest that due to the behavior of managers who tend to report less loan loss provisioning during economic upturns and vice versa during economic downturns, "the size of capital shocks" are exacerbated. Wahlen (1994) shows that managers increase discretionary loan loss provisions when expectations of future cash flows improve. Due to the cost of raising external equity, banks will lower their lending more during recessionary periods in order to avoid the risk of future capital inadequacy.

The concept of accounting conservatism has received significant attention over the past decade and constitutes a key element of the quality of accounting information in the banking industry. Loan loss provisions exhibit strong cyclicality: early recognition of loan losses is associated with a lower decrease in lending during recessionary periods compared to expansionary periods.

Conditional conservatism, defined also as *ex post* conservatism, involves firms that apply more favorable requirements of verification for bad news than for good news (Basu,1997). On the other hand, unconditional conservatism, also called *ex ante*, refers to early recognition of losses regardless of the news. Despite our measures having both conditional aspects, the second one plays a more independent role in relation to news. Because the two forms meet different needs (Qiang, 2007), we introduce both in our analysis.

The two forms of conservatism play distinct roles in contracting, regulation, and taxation, as well as a common role in litigation. They also play an interrelated role, as suggested by Qiang's finding that unconditional conservatism reduces conditional conservatism. The combined evidence implies that because the two forms meet distinct

needs, it is necessary to trade them off. In this way we aim to cover all aspects of conservatism in banking systems and also to take a different approach from the research of Beatty and Liao (2011).

In order to include some aspects of *ex ante* conservatism in our study, we follow Beatty and Liao (2011) and our measure is the ratio of the loan loss reserves to nonperforming loans. Financial entities with a high degree of conservatism increase additional reserves based on the current financial situation rather than on past results that do not match exactly the economic reality. We expect financial institutions with a higher ratio of conditional conservatism to suffer fewer drops in loans during the recessionary period.

We also follow Nichols et al. (2009) to measure conditional conservatism, by focusing on the timeliness of loan loss provisions regarding loans becoming nonperforming. We expect entities that advance their loan loss recognition to perform better and, therefore, to reduce less their lending during recessionary periods. The common view is that during an economic boom banks are expected to lower their provisions because the likelihood of loan defaults is also lower, and to increase them for the same reason during a downturn. Consequently, credit losses become under- provisioned.

According to these ideas, we hypothesize that both measures of conditional conservatism have a positive effect on loan supply during recessionary periods. We expect that a more conservative accounting will mitigate banks' capital constraints and thereby their drop in loans during recessions.

After the financial crisis erupted, we encountered banks that found it difficult to meet capital requirements and with cash flow problems in their balances, and also banks unable to cope with loan losses. The Eurozone has a strong interest in the underlying causes of this situation. Despite evidence of the need for countercyclical tools and policies, there are no real examples of any implementation of such strategies in Europe, with the exception of Portugal and Spain. This is the first main reason for us to focus on the Spanish banking system.

In order to anticipate changes in business cycles, Spanish banks had to estimate their expected credit losses and build up statistical provisions during upswing periods. Those statistical provisions are computed as the difference between expected credit losses and

specific provisions. Such a forward-looking approach was intended to smooth pro-cyclical fluctuations of provisions, increasing them during periods of low loans losses. As Fernández de Lis et al. (2001) argues, statistical provisions attempt to fill the gap covering expected losses and correct in this way the disastrous short-sightedness of the banking sector.

Most countries are required to hold specific provisions that are calculated on the basis of losses already identified. The level of such provisions depends on the degree of loan value deterioration during the past periods and they will increase specific loan loss reserves deducted from assets.

On the other hand, we find banks that introduce general provisions in their balance sheets. General (and also statistical in the case of Spain) provisions could be considered as a countercyclical tool as they are based on latent and not yet identified losses. Jiménez et al. (2012) argue that countercyclical capital buffers in Spain reduce credit supply in good times but, in return, bank lending in bad times is supported without the need for costly governmental bail-outs and/or expensive monetary policies. We predict that banks that built up higher levels of loan loss reserves during the economic upturn and compute conservative earnings following the Basu (1997) framework, will perform better during the crisis and thereby experience lower drops in their loan supply.

Therefore, the main difference is that specific provisions depend on already identified losses, while general provisions reflect future expectation of banks' government about business cycles and depend on the level of loans or assets (Cortavarria et al., 2000). Because of the nature of both types of provisions, specific provisions should never be considered bank capital, while general provisions can be considered so, according to methods used by banks to compute them. Thus, expected losses will be covered with reserves, while unexpected losses will be deducted from the capital.

However, a second important modification took place five years later as a consequence of the IFRS implementation in Spain. The financial environment had witnessed a decrease of dynamic provisions requirements in 2005 and this had a direct impact on the financial system performance; in particular, it promoted a notable increase in loan supply and had a direct effect on the housing bubble. From 2005 onwards, general provisions were included as components of Tier 2 capital ratio.

In view of this, in 2008, eight years after statistical provisioning was introduced in July 2000, following the outbreak of the worldwide financial crisis and in the context of the particular problems of the Spanish economy, the authorities significantly reduced the floor of the dynamic provisions. Approving this policy aimed at alleviating the situations of financial institutions, especially the savings banks, and at lowering the impact of the crisis on liquidity and capital ratios and also at stemming the decline in loan supply.

Our second reason for focusing on the Spanish banking system is the large presence of savings banks. Based on the premise that banks with better governance should have higher returns during crisis, we find in the literature a large controversy over the issue in question. We distinguish between commercial and savings banks in order to analyze the two institutional regimes separately.

When analyzing the Spanish banking system, one of the characteristics to be emphasized is that the savings banks account for nearly 50% of all financial institutions. With a centuries-long history, these institutions have evolved over time from local foundations established in order to promote the savings of the working class and lending to small businesses, into financial institutions that have not only crossed the barriers of their home provinces but have also established branches abroad.

There were changes not merely in the geographical limits but also at government level. More specifically, since the eighties, regional governments have been involved in the control of the savings banks, along with local governments, founders, employees and depositors. Such strong state control has attracted great attention. In their worldwide study, La Porta et al. (2002) find that government ownership is associated with lower financial development, growth of per capita income, and also productivity.

The working approach of savings banks is also quite different from that of the commercial banks. An important and distinctive feature of the savings banks is described by Salas and Saurina (2002), Jiménez and Saurina (2004) and Illueca et al. (2011). They find more risk-taking behavior of savings banks in Spain. Savings banks are characterized by the application of less strict solvency requirements on their customers and, therefore, by lending to those that commercial banks would reject, as they would be considered as clients less likely to repay the loan. Consequently, savings banks continued to inject funds into the housing market after 2007. As a result of the

exacerbation of the crisis and the housing market crash, many of the savings banks' debtors fell into bankruptcy and were unable to cope with their debt. Consequently, the financial institutions suffered unexpected increases in their non performing loans and found themselves with significant imbalances in their accounts[12]. By 2009, the savings banks owned more than 50 percent of the nation's mortgages. As a result of these mismatches on the balance sheets the majority of the European stress test failures in Spain were savings banks. Moreover, not having shareholders means the savings banks are less conservative during expansionary periods, which will lead to a bigger drop in their lending during economic downturns.

Furthermore, savings banks had to build more reserves in order to maintain lending during the recession, so we expect a significant effect of conditional conservatism on loans supply. Based on these arguments, we also predict that conditional conservatism helps to mitigate the drop of savings banks loans' supply during recessionary periods.

Given the importance of the savings banks within the Spanish banking system and also because of the interest of the study of savings banks within the context of the last financial crisis for all countries with this type of institutional regime, we develop an analysis for commercial versus savings banks, and concurrently for "big" versus "small" financial entities.

Thirdly, as explained in the previous epigraph, another major reason to analyse the Spanish case is the deep impact of the last credit crunch in our country.

Finally, we analyze more precisely the three years of financial crisis included in our sample, 2008, 2009 and 2010. We expect that as the crisis unfolds, those banks with more conservative accounting practices will suffer fewer drops in their lending during the recessionary period. The importance of conservative accounting increases as the crisis drags on.

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[12] When the borrower defaults, the creditor is allowed to keep the collateral (i.e., a residence) that is worth less than the value of the loan after the price adjustment took place during the recession period. In Spain, unlike in the United States, if the borrower is unable to pay the loan back, the creditor is allowed to keep not only the collateral but can also pursue the borrower's personal assets.

3.4 SAMPLE SELECTION, DATA SOURCES AND EMPIRICAL METHODOLOGY

In order to investigate the link between bank conservatism and a drop in loans supply, we obtained a sample of Spanish savings and commercial banks with data available on the Bankscope database from 1997 until 2010. Within our period of study, the number of savings banks went from 48 to 45 and the number of banks went from 65 to 49. We worked with 1388 bank-year observations.

In Table 3.1 we report the mean values of the variables used to measure conservatism and in the analysis of the drop in loans supply, describing our sample of savings versus commercial banks.

Table 3.1
Comparison of median values of variables for commercial versus savings banks

Variables	Definition	Savings banks	Com banks
Ta	Total assets	8874600	9990500
Eqta	Capital ratio=total equity/total assets	0,06842055	0,0646855
Depta	Deposits/assets at the beginning of the year	0,5978534	0,4591005
ROA	Return on average assets ratio	0,00718945	0,0074947
ROE	Return on average equity ratio	0,099517	0,1258597
LLR/NPL	Loans Loss reserves/ Non performing loans	186,35	171,9
NPL	Nonperforming loans / lagged total loans	0,0130513	0,0115275
LLP	Loan loss provisions / lagged total loans	0,0054454	0,0055998
ΔNPL	Change in nonperforming loans/lagged total loans	0,0009347	0,0006223
N		506	243

Our empirical work is developed in two stages. First, we estimate the value of conditional conservatism before the crisis (during the period 1997-2007) for each observation according to the Beatty and Liao (2011) and the Nichols et al. (2009) models.

The second part of this chapter estimates the relationship between the results of both measures of conditional conservatism obtained before, capital ratio variable and control variables - all of them as independent variables and our dependent variable is defined as change in loan supply.

3.4.1 Nichols' et al. conditional conservatism measuring (1)

Our conditional conservatism estimation is based on the Nichols' et al. (2009) framework. Bank managers will recognize loan loss provisioning and will forecast the

degree of future losses according to past nonperforming loans. Consequently, those banks that recognize nonperforming loans more timelily will be considered as entities with higher degrees of conservatism.

Our measure is the difference in the adjusted R^2 ((2)-(1)) from the following regressions for each bank, using the observations during the pre-crisis period (1997-2007). It represents the incremental explanatory power of future and contemporaneous nonperforming loans in explaining the current loan loss provision (adjusted R2 differences) developed by Nichols et al. (2009). We require 8 observations to run each regression. If the difference for bank-year observation is higher than the median of the whole sample during the year analyzed, we will classify that entity as conservative, i.e., the *(1) conserv* variable will take the value one, and it will be equal to zero otherwise.

Eq (1): $LLP_t = \alpha_1 + \alpha_2\,\Delta NPL_{t-2} + \alpha_3\,\Delta NPL_{t-1} + \alpha_6\,eqta_t + ebpl_t + \varepsilon_t$

Eq (2): $LLP_t = \alpha_1 + \alpha_2\,\Delta NPL_{t-2} + \alpha_3\,\Delta NPL_{t-1} + \alpha_4\,\Delta NPL_t + \alpha_5\,\Delta NPL_{t+1} + \alpha_6\,eqta_t + ebpl_t + \varepsilon_t$

where

LLP	loan loss provisions divided by lagged total loans.
ΔNPL	nonperforming loans divided by lagged total loans.
Eqta	capital ratio measured as total equity divided by total assets.
Ebpl	earnings before provisions defined as return on average assets + loan loss provisions, divided by lagged total loans.

The control variables *eqta* capital ratio and earnings before provisions are included to avoid discretionary components of loan loss provisioning that derives from at least three possible managers' goals (Liu et al.,1997, and Lobo and Yang, 2001). First, managers engage in income smoothing activities in order to avoid excessive earnings volatility, which leads to lower market valuations. When earnings are expected to be unusually high, banks deliberately increase loan loss provisions and understate them if earnings are expected to be low, so minimizing the variance of reported incomes. Secondly, poorly capitalized banks may use LLP to avoid falling below capital ratio requirements. And finally, Beaver et al. (1989) suggest that managers use loan loss provisions to signal their financial strength.

3.4.2 Beatty and Liao's conditional conservatism measuring (2)

Our second measure of conservatism is the ratio of the loan loss reserves (allowance) to total nonperforming loans developed by Beatty and Liao (2011).

Traditionally, the literature on the scope of conservatism has established that provisions mainly rise during downturns and, therefore, that loan loss provisions exhibit a strong cyclicality (Laeven and Majnoni, 2003; Bikker and Metzemakers, 2005). Because of lags in loan loss provisioning, banks do not build up sufficient reserves in the good times to cover loan losses incurred during economic downturns. In fact, there is empirical evidence (Beatty and Liao, 2011) to suggest that early recognition of loan losses is associated with a lower decrease in lending during recessionary periods relative to expansionary periods.

Managers will introduce this type of conservatism according to their view of the current economic framework. Banks with downwards expectations will be more conservative in their loan loss forecasts and will recognize bigger reserves as a consequence. Our lagged *(2) conserv* variable takes the value of one if the loan loss reserves to nonperforming loans ratio is higher than the median during the year analyzed and zero otherwise.

It is essential to make an analysis of the relationship between our two different variables that measure conditional conservatism. It is therefore important and necessary in our view to include them both as independent variables in our study as complementary measures of conservatism. In fact, in Table 3.2 we analyze the effect of the first conditional conservatism variable on the second one.

As Qiang states, both conservatism measures approach the casuistry from different points of view. In fact, although they are interrelated, we do not get a significant relation, which means they meet distinct needs and they constitute different variables. However, we do find a positive effect of capital ratio on conditional conservatism.

Table 3.2 Analysis of the effects of the Nichols et al. conditional conservatism (1) and capital ratio on Beatty and Liao's conditional conservatism (2).

	Coefficients	p-value
(1) conserv	0,2240336	0,573
In_TA	0,0023634	0,985
Eqta	16,97246	0.019**
Depta	0,1144088	0,931
Roa	-28,42142	0,285
comm_bank	0,4327859	0,42
cons	-1,230456	0,622
R2		0,0359
N		636

***,**,and*represent 1%, 5%, and 10% significance, respectively

3.4.3 The econometric model

To test the effect of both conservatism measures and capital ratio during non-recessionary periods and change in loans during recessionary periods we use OLS estimation of the following model.

$$\Delta Loan = \beta_0 + \beta_1 (1)\_conserv + \beta_2 (2)\_conserv + \beta_3 crisis + crisis(\beta_4 (1)\_conserv + \beta_5 (2)\_conserv) + \beta_6 eqta + \beta_7 eqta*crisis + eqta*crisis (\beta_8 (1)\_conserv + \beta_9 (2)\_conserv) + \beta_{10} depta + \beta_{11} ln\_ta + v_t$$

where

$\Delta Loan$	change from the beginning to the end of the year in the natural log of loans.
(1) conserv	variable that measures conditional conservatism and equals one if the difference in adjusted R2 (Eq.(2)-Eq.(1)) is greater than the median during the year, and zero otherwise.
(2) conserv	lagged variable that measures conditional conservatism and equals one if the LLR/NPL ratio is greater than the median and zero otherwise.
eqta	lagged capital ratio measured as total equity divided by total assets.
crisis	variable which equals 1 for the period 2008-2010 and 0 otherwise.
depta	lagged deposits divided by total assets, at the beginning of the year.
ln_ta	lagged natural logarithm of total assets.

We investigate the impact of the different conservatism measures on change in loans during recessionary periods. We will use interactions of our variables in order to check their effect on the different situations. Based on our hypothesis, we expect variables *(1) conserv*crisis* and *(2) conserv*crisis* to be positive, so we predict that more conservative entities during the expansion period will suffer a smaller reduction in their loan supply in the recessionary period.

Following Beatty and Liao (2011) we expect a negative coefficient of *crisis,* as adverse economic environment and the lack of confidence in the financial markets may have detrimental effects on the loan supply. Banks lend more when they are less concerned about capital requirements.

Thus, we expect a positive relationship with the equity ratio (*eqta*) variable during expansionary periods and also during recessionary periods (*crisis*eqta*), which will be more significant during recessionary years, due to the lack of other sources of funding.

We expect that during the crisis more conservative practices (*conserv*crisis*) will help to mitigate drops in loan supply.

In addition, we expect less conservative banks to be more concerned about capital ratio adequacy than those considered conservative (we expect the coefficients on *eqta*crisis*conserv* to be negative). Banks with more conservative practices during expansion are less threatened by the accomplishment of capital requirements and, hence, suffer fewer drops in loan supply during expansion.

Finally, we expect a positive relationship between bank loans fluctuations and *depta* variable, due to the fact that banks use deposits to extend credit (Bouvatier and Lepetit, 2008). We also include *In_ta* as a control variable and do not predict the sign of its coefficient.

We divide our sample in two –savings banks and commercial banks- and run the regression separately for both samples in order to get an individualized analysis of the behavior of commercial banks versus savings banks before and after the beginning of the crisis.

We repeat the same procedure, but distinguishing between big banks and small banks. We define as "big" those entities with total assets greater than the median of the total assets of the whole sample, and "small" otherwise.

Finally, we test how timely the effect of our conservatism variables and capital ratio on change in loans during recessionary periods is. Our aim is to ascertain if the differences in the behavior of lending between conservative and non conservative banks appear early in 2008 or later in 2009 - 2010.

We use the OLS estimation of the following model

$$\Delta Loan = \beta_0 + y2008 \,/\, y2009 \,/\, y2010 \,(\beta_1 + \beta_2 \,(1)\_conserv + \beta_3 \,(2)\_conserv + \beta_4 \,eqta$$
$$+ \beta_5 \,eqta*(1)\_conserv + \beta_6 \,eqta*(2)\_conserv + \beta_7 \,eqta + \beta_8 \,depta + \beta_9 \,ln\_ta + v_t$$

where

$\Delta Loan$	change from the beginning to the end of the year in the natural log of loans.
(1) conserv	variable that measures conditional conservatism and equals one if a difference in adjusted R2 (Eq.(2)-Eq.(1)) from the Beatty and Liao (2011) rolling regressions, requiring 8 observations in each regression, is greater than the median during the year, and zero otherwise.
(2) conserv	lagged variable that measures conditional conservatism and equals one if the LLR/NPL ratio is greater than the median, and zero otherwise.
eqta	lagged capital ratio measured as total equity divided by total assets.
y 2008	indicator variable which equals one for 2008 and zero otherwise.
y2009	indicator variable which equals one for 2009 and zero otherwise.
y2010	indicator variable which equals one for 2010 and zero otherwise.
depta	lagged total deposits divided by total assets, at the beginning of the year.
ln_ta	lagged natural log of total assets.

We expect during 2009 and 2010 conservatism variables to take on particular importance in mitigating the drop in loan supply.

3.5 RESULTS

After verifying that both measures should not be regarded as mutually exclusive alternatives but as complementary tools for conservatism estimation, we analyzed the relationship between equity ratio and loans supply during recessionary versus expansionary periods. We proceeded with the analysis for commercial banks versus savings banks as well as big versus small entities. We report our results in Tables 3.3 and 3.4, respectivel

Table 3.3 Analysis of the effect of capital ratio and recession on change in loans for savings versus commercial banks

Variables	Pred.	Savings banks		Commercial banks	
		Coef.	p-value	Coef.	p-value
Crisis	+	-0,21493	0.000***	-0,24332	0.000***
eqtat-1	+	0,14305	0,379	-0,47784	0,27
eqtat-1*crisis	+	0,57423	0.030**	1,6582	0.021**
deptat-1	+	-0,04595	0,422	0,13288	0,225
In_tat-1	+	0,00402	0,311	0,00611	0,608
_cons	±	0,12363	0,193	0,0145	0,949
R2		0,2699		0,037	
N		583		522	

***,**,and*representing 1%, 5%, and 10% significance, respectively

Variable definition
Crisis indicator variable which equals one for the period 2008-2010, and zero otherwise.
eqta lagged capital ratio measured as total equity divided by total assets
depta lagged total deposits divided by total assets, at the beginning of the year
In_ta lagged natural log of Total Assets

Table 3.4 Analysis of the effect of capital ratio and recession on change in loans for small versus big banks

Variables	Pred.	Small banks		Big banks	
		Coef.	p-value	Coef.	p-value
Crisis	–	-0,27148	0.000***	-0,157845	0.000***
eqtat-1	+	-0,52394	0,25	0,1381968	0,517
eqtat-1*crisis	+	1,83986	0.005***	0,0034128	0,987
Deptat-1	+	0,141884	0,229	-0,0071423	0,886
In_tat-1	+	-0,0012	0,96	0,0026647	0,66
_cons	±	0,11045	0,778	0,1175115	0,267
R		0,048		0,1264	
N		549		556	

***,**,and*represent 1%, 5%, and 10% significance, respectively

We find a lack of significance of the equity ratio during an expansionary period (*eqta* variable) for all four classifications. These results indicate that lending does not differ regarding the equity concern during non-recessionary periods, when financial entities do not usually face problems in finding adequate funding sources.

However, the interpretation of the results changes completely when we analyze the interplay between equity ratio and drop in loans during recessionary periods. We do get significant and positive coefficients in the interactions between crisis and equity ratio in either savings or commercial or small banks.

In the presence of a considerable lack of confidence in the markets, lending between banks becomes less fluent, and in order to mitigate drops in loans, financial institutions have to make use of accumulated capital. This association is especially significant for savings banks and in particular for commercial ones. Also small entities are very sensitive to it, but not the large ones. The analysis of Spanish financial system performed by FSAP concluded that large financial institutions are financially sound and able to cope with recession periods.

According to the previous comments (and contrary to Beatty and Liao, 2011), our results suggest that the effect of capital on lending growth during recessions lacks significance as well as during expansions for large financial institutions. The reason may lie in the fact that big financial institutions usually have a more conservative accounting and therefore are less sensitive to capital ratio requirements. In order to resolve this doubt we now introduce conservatism and proceed to the analysis of our hypothesis.

The results of the analysis including variables the measure conservatism are presented below. Table 3.5 reports the results for savings banks versus commercial banks.

Table 3.5

Analysis of the effect of the different conditional conservatism measures, capital ratio and recession on change in loans for savings versus commercial banks

Variables	Pred.	Savings Banks		Commercial banks	
		Coefficient	p-value	Coefficient	p-value
(1) conserv	±	-0,01098	0,228	0,00028	0,982
(1) conserv	±	0,00532	0,551	-0,00131	0,942
Crisis	–	-0,2711	0.000***	-0,21042	0.007***
(2) conserv*crisis	+	0,10968	0.024**	0,001977	0,738
(1) conserv*crisis	+	0,0632956	0,136	0,03093	0,613
eqta t-1	+	0,2647145	0,185	-0,1091132	0,352
eqta t-1*crisis	+	1,316437	0.024**	1,140528	0,3
eqta*crisis*(2)cons	–	-1,113565	0.060*	-0,3906037	0,62
eqta*crisis*(1)cons	–	-0,7810031	0.076*	-0,6183144	0,496
depta t-1	+	0,0034747	0,956	0,1166872	0.002***
In_ta t-1	±	0,0090452	0.059*	0,007025	0.056*
_cons	±	0,003516	0,974	0,0079224	0,903
R		0,5322		0,2382	
N		0,2382		177	

***,**,and* represent 1%, 5%, and10% significance, respectively

First, we have to note that the results for commercial banks do not vary much regardless we include separately the variables measuring conservatism or together in the same analysis. The insignificance of conservatism variables during recessionary and also non-recessionary periods indicates that for commercial banks the average lending does not differ based on the extent of delays in expected loss recognition or loan loss reserves built so far. However, we get a very significant positive coefficient for *depta*, which means deposits are significant in explaining loan growth for commercial institutions.

On the other hand, we get significant and very interesting coefficients when examining savings banks and discover that on analyzing individually the two measures of conservatism, both significantly mitigate drops in loans during the recessionary period. When we study the two variables jointly, Nichols et al.'s measure (1) becomes insignificant to the changes in loans during recessionary period. Instead, Beatty and

Liao's conservatism measure *((2)_conserv*crisis)* gets a positive and very significant coefficient and it helps to mitigate drop in loans around 11%, so confirming our hypothesis about conditional conservatism mitigating the drop of savings banks' loans supply.

Finally, both *eqta*crisis*(2)_conserv* and *eqta*crisis*(1)_conserv* obtain negative and significant coefficients. This is not a random result because, although both types of conservatism are significant, those savings banks that have built-up reserves above the amount required by law, are also those that suffer fewer drops in loans during the crisis period and thus, become less sensitive to capital accumulation

The different results of saving and commercial banks lie largely in the fact that the savings banks do not have shareholders and are obliged by law to use their profits to strengthen their solvency positions and economic future, i.e., they are obliged to increase their reserves in order to guarantee present and future liquidity. In contrast, commercial banks are for-profit entities and, as such, are able to distribute their profits to shareholders or invest them in what they think fit and obtain funding in the same way. In addition, and accordingly, we find a lack of significance in conservatism variables for the commercial banks sample.

Table 3.6

Analysis of the effect of conservatism, capital ratio and recession on change in loans for small versus big banks

Variables	Pred.	Small banks		Big banks	
		Coefficient	p-value	Coefficient	p-value
(2)_conserv	±	-0,0218437	0.015**	0,00625	0,526
(1)_conserv	±	0,0117141	0,289	-0,00612	0,491
Crisis	–	-0,2553614	0.000***	-0,30483	0.000***
*(2)_conserv*crisis*	+	0,0873236	0.028**	0,09209	0.050**
*(1)_conserv*crisis*	+	0,0227171	0,314	0,11986	0.089*
eqta t-1	+	0,0641865	0,466	0,23238	0,402
*eqta t-1*crisis*	+	1,559919	0.001***	2,002	0.008***
*eqta*crisis*(2)_conserv*	–	-1,171718	0.014**	-0,88997	0,139
*eqta*crisis*(1)_conserv*	–	-0,3666873	0.078*	-1,7471	0.036**
depta t-1	+	0,0422533	0,123	0,00154	0,984
In_ta t-1	±	0,0052838	0,438	0,00381	0,421
_cons	±	0,0512945	0,641	0,09646	0,389
R		0,5021		0,3676	
N		288		348	

***,**, and * represent 1%, 5%, and 10% significance, respectively

When we include both conservatism measures in the analysis for big banks, we observe how both variables head in the same direction. During the period of crisis, they help to mitigate drops in loans by more than 21%. The fact that large financial institutions focus considerable effort on leading a conservative accounting, justifies the lack of banks' concerns about raising equity ratio, which we have observed in the Table 3.4.

Once more, the sign of the coefficients changes when we include *eqta* in the interactions *eqta*crisis*(2)_conserv*. Consequently, this confirms that if a financial institution is able to carry out conservative accounting, it becomes less sensitive to capital accumulation in order to be able to continue lending during economic downturns.

These results suggest that less conservative banks, after raising their provisioning during a recessionary period, may have greater capital adequacy concerns. With the exception of commercial banks, which do not seem to be sensitive to the benefits of conservatism, we find that savings banks, small and also large institutions show evidence consistent with our hypothesis (see Table 3.6). Also we find that lending-equity ratio sensitivity of these financial entities is reduced by the advantages of conservative policies adopted during the expansion period (*conserv*crisis*eqta<0*).

Finally we intend to analyze if the positive effect of conservative accounting on drop in loans during the crisis is constant during the whole period or if, instead, it presents changes in the reference period. The results are reported in Table 3.7.

Table 3.7

Analysis of the effects of conditional conservatism, capital ratio and recession years (2008, 2009 and 2010) on change in loans.

Variables	Pred.	Coefficients	p-value
(2)_conserv	±	-0.0065104	0.368
(1)_conserv	±	0.0043796	0.534
y2008	−	-0.139524	0.000***
y2009	−	-0.2602463	0.000***
y2010	−	-0.3170004	0.000***
y2008_(2)_conserv	+	0.0248554	0.550
y2008_(1)_conserv	+	-0.0130205	0.616
y2009_(2)_conserv	+	0.0623796	0.098*
y2009_(1)_conserv	+	0.0111886	0.684
y2010_(2)_conserv	+	0.1313749	0.026**
y2010_(1)_conserv	+	0.1269519	0.070*
eqtat-1	+	0.0566201	0.505
y2008_eqta	+	0.1730088	0.736
y2009_eqta	+	0.8585594	0.063*
y2010_eqta	+	1,559709	0.158
y2008_eqta_(2)_conserv	−	-0.0732319	0.892
y2008_eqta_(1)_conserv	−	-0.0218643	0.934
y2009_eqta_(2)_conserv	−	-0.6915443	0.245
y2009_eqta_(1)_conserv	−	-0.1501534	0.700
y2010_eqta_(2)_conserv	−	-1,051054	0.194
y2010_eqta_(1)_conserv	−	-1,234935	0.037**
deptat-1	+	0.0317659	0.371
In_tat-1	±	0.0094914	0.001***
_cons	±	-0.0057848	0.920
R			0.4355
N			636

***,**,and * represent 1%, 5%, and 10% significance, respectively

Variable definition
y2008   indicator variable which equals one for 2008, and zero otherwise
y2009 indicator variable which equals one for 2009, and zero otherwise
y2010indicator variable which equals one for 2010, and zero otherwise

When we take into consideration both conservatism variables, the results suggest that the importance of conservative accounting rises with the course of the crisis. In 2008, neither *y2008_(2)_conserv,* nor *y2008_(1)_conserv* get significant coefficients, showing that financial entities did not behave differently depending on their level of conservatism; there were generalized drops in loan supply.

However, in 2009 we appreciate for the first time a pretty significant effect of conservatism on loan supply: *y2009_(2)_conserv* mitigates loan supply with a 90% level of confidence. We observe a different behavior of those entities with a higher level of conservatism, since they suffer a smaller drop of credit than the others.

It is in 2010 when the both measures of conservatism get a significant effect on loans supply. In particular, Beatty and Liao's conservatism is positively associated to the drop of loans with a 95% level of confidence and it increased its positive effect between 2009 and 2010 by nearly 7 percentage points. On the other hand, Nichols et al.'s conservatism becomes significant for the first time in 2010 and helps to mitigate the drop in loans during this year by 13%. This delay in the conditional conservatism effect is logical, due to the maximum level of financial stress and the measure of this type of conservatism, which implies the non performing loans are lagged two years.

It is therefore once again confirmed that both measures of conservatism complement each other.

3.6 CONCLUSION

Since the outbreak of the last financial crisis we have witnessed a great part of financial institutions facing serious liquidity and solvency problems, some of them have merged or received expensive government bailouts. Our aim to ascertain the characteristics that enable banks to continue providing their services even during adverse economic conditions has led us to analyze Spanish banks' conservatism. This analysis aims to shed light on the policies needed to prevent the collapse of the banking system during possible future financial crises. We will study the impact of the quality of accounting information on the drop of loans supply and the procyclicity during downturns.

We focused on a sample of Spanish banks mainly for three reasons. First, because Spain is an important member of the Eurozone and its welfare is essential to achieving favorable performance throughout the EU. Spain has been especially affected by the last financial downturn. Labor market rigidities, the lack of efficient price adjustment and other internal problems made it especially difficult for the country to pull itself out of the economic and financial crisis. Secondly, among all the EU countries, Spain is a pioneer in introducing general provisioning as a countercyclical tool, thereby providing a suitable sample for the analysis of a positive relationship between accounting conservatism during a non-recessionary period and banks' performance during a recessionary one. Banks in Spain had to comply with a dynamic loan loss provisioning rule since 2000, whose aim

is to build up a loan loss reserve buffer in good times as a provision for bad times. Because of this rule, loan loss provisions did not necessarily reflect the real loan values (Illueca et al. 2011). Thirdly, there are two well-defined institutional regimes in the Spanish banking sample: commercial and savings banks. Consequently, we are able to make a parallel analysis and, in this way, come up with separate relevant conclusions for both kinds of regimes.

We use a Spanish sample including 1,388 observations of commercial and savings banks from 1997 to 2010. Our research is based on the Beatty and Liao (2011) investigation of an US banking sample. Following these authors, we introduce two conservatism measures but, unlike them, we include both measures in the same model after ensuring that they are not mutually exclusive but complementary. Our first measure of conditional conservatism is based on a difference in the timeliness of loan loss recognition, while the second is measured as a loan loss reserves to nonperforming loans ratio.

We have observed that lending does not differ regarding the equity concern during a non-recessionary period, while equity ratio mitigates the drop of loans during a recessionary period for both, savings and commercial banks, as well as small banks. There is no effect for large financial institutions, since they usually have a conservative accounting and, therefore, are less sensitive to capital ratio requirements.

The insignificance of conservatism variables during recessionary and also non-recessionary periods indicates that for commercial banks average lending does not differ based on the extent of delays in expected loss recognition or loan loss reserves built up so far. However, deposits are significant in explaining loan growth for commercial institutions.

On the other hand, we get significant and very interesting coefficients when examining savings banks and discover that conditional conservatism significantly mitigates the drop in loans supply during the recessionary period. Savings banks that have built up reserves above the amount required by law are also those entities that suffer a lower drop in loans during the crisis period. Less conservative banks, after rising their provisioning during a recessionary period, may have greater capital adequacy concerns.

With the exception of commercial banks, which seem not to be sensitive to the benefits of conservatism, we find that savings banks, small and also large institutions show evidence consistent with our hypothesis: less conservative entities during expansion periods suffer greater drops of loans supply during recessions. Also, we find that the lending-equity ratio sensitivity of these financial entities is reduced by the advantages of conservative policies adopted during the expansion period.

Finally, we also obtain that the importance of conservative accounting rises as the crisis progresses. In 2008, financial entities did not behave differently depending on their level of conservatism; there were generalized drops in loans supply. However, in 2009 we appreciate for the first time a fairly significant effect of conservatism on loan supply, but it is in 2010 when both measures of conservatism achieve a significant effect by reducing the drop of loans supply.

To sum up, we conclude that both measures of conservatism complement each other and help to mitigate drops in loan supply during recessionary periods. While we find a lack of significance for commercial banks, on the contrary, we provide empirical evidence of a positive effect of conditional conservatism on savings banks' performance. We emphasize that conditional conservatism during expansionary periods has a positive effect on loan supply of savings banks during economic downturns.

As future research, we propose to include the announcements of rating agencies as a dependent variable and so analyze the relationship between banks whose ratings are revised downwards or whose outlook was negative after the financial crisis erupted, and analyze their estimated conservatism and capital ratio.

GENERAL CONCLUSIONS

An important lesson from the crisis is the need to have a global view of the banking systems, in relation to the financial and economic conditions. The work of financial institutions in the areas of liquidity risk, counterparty credit risk, stress testing, and the development of counter-cyclical capital buffers is particularly relevant to ensuring not only the stability of individual banks, but also the financial system.

We need to make sure that banks have capital buffers above the minimum in good economic conditions that could be drawn upon in stress, in order to reduce the cyclicality of loans loss provisioning.

The earnings management hypothesis assumes that banks' managers have incentives to smooth earnings, aimed at reducing the variability of the net profit over time. In particular, the hypothesis suggests that LLPs are deliberately understated to mitigate the adverse effects of other factors on earnings in case of poor performance. This implies that the manipulation of reported earnings aims to hide a bank's real economic results and to improve the perception of its riskiness for investors, regulators and supervisors. One of the most used tools to manage earnings is LLP.

The main objective of the thesis is studying the pillars of Basel II in relation with the quality of the accounting information and the loan loss provisioning. The matter is very relevant since the crisis questioned the incurred loss recognition system, which led to a revision of IFRS 39 in order to introduce a new system based on expected losses.

It turned out that the view of the supervisors has prevailed, since their recommendations have led to Basel III and IFRS 9, showing a wise decision which takes into account the expected losses and promotes an anticyclic effect. In this sense, the new regime (IFRS), would avoid the collapse of banks due to default rates.

Our results in Chapter I confirm that banks smoothed their earnings by reducing LLP during the period 2005-2009, i.e. after the implementation of IFRS. However, this income smoothing was even higher during 2008-2009, i.e. after Basel II implementation and

during the financial crisis by increasing LLP, which is coherent with both accounting standards setters and bank regulators view.

Our overall evidence supports the hypothesis of income smoothing but not that of capital management. There is no evidence of the use of LLP to manage the capital regulatory level. We find significant evidence that after 2008 managers increase LLP more than proportionately, so the provisioning is asymmetric. This means a much greater effort during crisis, which is coherent with the effective increase of loans losses. We also document the effect of different cultural dimensions on earnings management practices through LLP and find that both the specific uncertainty avoidance index and individualism index of countries have a negative and significant effect on the use of LLP, but only individualistic countries use LLP to smooth earnings. In contrast, we do not find significant differences in the behavior of savings banks in comparison to commercial banks.

It is also evidenced that banks smoothed earnings before the changes of regulations and before the crisis, so they were already complying with the recommendations of the bank supervisor in relation to financial stability. Despite the recommendations of Basel II aimed at limiting procyclicality of capital requirements, the international prudential framework still lacks clear guidance regarding the phenomenon of persistent income smoothing in banks.

The financial crisis has also highlighted the importance of not only writing guidance but implementing the guidance in a rigorous and robust fashion, and in an internationally coordinated and consistent manner. Indeed, many of the weaknesses exposed by the financial crisis are the result not only of gaps in the regulatory framework, but also the result of inadequate implementation of existing risk management standards and guidance (for example, pre crisis guidance on liquidity risk management). Addressing deficiencies in implementation is thus just as important as addressing deficiencies in policies.

In this line, we find in Chapter II that banks under stronger and more stringent regimes of supervision and regulation have a more conservative accounting than banks in countries with less enforcement. Second, unlisted banks and commercial banks engage more in conservatism than listed entities and savings banks, respectively. Third, our evidence supports the idea that the more concentrated the market is, the less conservative banks

are. This finding is consistent with the intuition that firms in concentrated industries tend to protect their competitive advantage and avoid political and public attention. As a major contribution, we find that regulation and supervision, and the extent on which they are enforced, control or complement the rest of environmental factors –listing status, ownership and market concentration- in those countries or situations where the market discipline fails. Generally, *the supervisory power* reinforces the effect of listing status, ownership and concentration on conservatism, while *capital regulatory* mitigates the effect of market discipline on conservatism. The level of disclosure requirements has a negative effect on conservatism, which is reinforced when there is a strict regulation and supervision system.

Given these results, we can say that the standards fixed in Basel II are working properly. The fact that Basel III stresses the establishment of higher coefficients is coherent with the results obtained in Chapter II, due to the insufficient power of market discipline. It is necessary to keep on making progresses in greater and more powerful requirements. The unique European supervising organization, the ECB, shares the same idea as the one emerged from our results, showing that, despite Basel II has a worldwide character, there are differentiated institutional factors which may affect the implementation of the regulation and the supervising regimes in each of the countries.

Concerning the specific case of Spain, in Chapter III we have observed that entities with conservative accounting during expansion periods, suffer fewer drops on loans supply during recessions. Specifically, lending does not differ regarding the equity concern during a non-recessionary period, while equity ratio mitigates the drop of loans during a recessionary period for both, savings and commercial banks, as well as small banks. There is no effect for large financial institutions, though. For commercial banks, average lending does not differ based on the extent of delays in expected loss recognition or loan loss reserves built up so far. However, savings banks that have built up reserves above the amount required by law are also those entities that suffer a lower drop in loans during the crisis period. We also obtain that the importance of conservative accounting rises as the crisis progresses, since year by year the positive effect of conservatism on loans supply is more significant.

We have evidenced that a greater level of conservatism implies fewer loans restrictions in times of crisis. This also indicates, once more, that Basel II recommendations have properly worked, since those less conservative banks during expansion periods are those who suffered more loans restrictions during the downturn. However, previous loan loss provisioning has not been enough to avoid procyclicity during the financial crunch, which led to an enhancement of each of the pillars in Basel III, promoting more rigid regulation and supervision systems. Hence, the new stricter accounting standards in Basel III and the implementation of IFRS 9 in banks will imply a greater level of conservatism, i.e. a timelier recognition of loan loss provisions.

In short, according to our results, conservatism constitutes a mechanism with the ability of reducing the loans restrictions as well as avoiding procyclicity.

It is well known that in a few months Basel III will become part of the history of international financial regulation, as it is considered that its stage of implementation must conclude and give way to a new phase. A significant change in solvency standards is under way, and the impact of Basel IV focuses on the ability of financing to maintain growth, a fact that is particularly relevant in Europe given the importance of the banking sector in financing the economy. The objective is to set specific regulations for each bank. The FSB has determined that entities will have as of January 1st, 2019 a capital buffer covering 16% of their risk-weighted assets, a percentage that will rise to 18% as of January 2022.

The essence of the new proposals continues to be the requirements of regulatory capital based on risk, but now in a framework of greater sensitivity, simplicity and comparability between banks, complemented by indicators of indebtedness and liquidity. The goal is to better measure risk and make it more comparable between banks and to have greater simplicity for reading and interpretation.

At this point, we can confirm that this research has deeply contributed to Basel III in some of the most controversial issues and it strongly supports its reaction to Basel II by reinforcing the traditional pillars of regulation and supervision.

However, this study is not exempt of limitations. The increase of the amount of mergers and takeovers that have taken place during the last years, has reduced the amount of

observations available to do the study. Moreover, in the first chapter we focus on the European Union (EU) adoption of IFRS, i.e. on 2005, because our sample comprises most countries in Europe. Hence, another limitation consists of the different dates of implementation of IFRS in some emerging countries, despite the fact that in most of the occidental countries the new regulations came into effect in 2005. We were also limited in the second chapter when calculating conservatism in terms of available data, so our only alternative was to use the ratio LLR/NPL, developed by Beatty and Liao. Moreover, although we use instrumental variables to control for simultaneity bias, banking-sector outcomes may influence regulations and supervisory practices. In addition, information on regulations and supervisory practices is available only for one point in time: OAR, OSP and CRI indexes obtained from Barth, Caprio and Levine were last calculated in 2006. Within the context of the last crisis, they must have been modified because of the increase of intervention risk.

As future research, we propose to include the announcements of rating agencies as a dependent variable and so analyze the relationship between banks whose ratings are revised downwards or whose outlook was negative after the financial crisis erupted, and analyze their estimated conservatism and capital ratio. Although we have focused on private and public banks in general, future studies could also extend this line of research by examining banks that switch organizational type. The work would be completed with the separation of the generic and specific loans loss provision in those countries such as Spain where both provisions were used, with the aim of examining if they have different behaviors. It would be interesting to analyze if capital is managed through LLP after Basel II, taking into account the effects of the new risk definition models based on internal rates.

Finally, future studies with a wide enough sample in terms of post crisis period of time, would be able to support and reinforce our results and statements regarding the quality of accounting information.

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