ERASMUS UNIVERSITY ROTTERDAM

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Bachelor Thesis [Economics & Business Economics]

IFRS 9 *Financial Instruments* and Accounting Conservatism in European Listed Banks

Abstract

As of the 1st of January 2018, the International Financial Reporting Standard 9 (IFRS 9) has been the new loan loss accounting standard in the European banking industry. The new forward-looking approach to credit losses aims to improve timely loss recognition. However, the increase in management discretion could simultaneously encourage income-smoothing. Consequently, IFRS 9 could undermine the purpose of accounting conservatism, which is to report verifiable accounting numbers. Therefore, this paper studies the effect of IFRS 9 on accounting conservatism in European listed banks. Multiple linear regressions capture both the relation between loan loss provisions and accounting conservatism and the change in accounting conservatism over time. The data for these regressions are from European commercial banks and non-banks over the time period 2014 to 2019. The results indicate a positive, but nonsignificant, relation between loan loss provisions under IFRS 9 and accounting conservatism in European banks. Lastly, the results show a significant difference between accounting conservatism in European banks and non-banks in 2018 and 2019, which is not observed in the time period before 2018. Therefore, this paper concludes that there is an indication for a change in accounting conservatism in European listed banks after the introduction of IFRS 9.

Key words: accounting conservatism, IFRS 9, loan loss provisions, information asymmetry, banks, Europe

Name student: Nardalinne Carmelia

Student ID number: 446341

Supervisor: dr. Y. Gan

Second assessor: dr. M.H.R. Erkens

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1. Introduction

As of the 1st of January 2018, the banking industry has been faced with a new loan loss accounting standard: the International Financial Reporting Standard 9 (IFRS 9) *Financial Instruments*. IFRS 9 replaces the International Accounting Standard 39 (IAS 39) *Financial Instruments: Recognition and Measurement*, which was based on a backward-looking approach to the recognition of credit losses. By relying on a higher level of judgement in the recognition of loan loss provisions, IFRS 9 aims to encourage timely recognition of non-performing loans (Bholat, Lastra, Markose, Miglionico & Sen, 2018). Specifically, IFRS 9 implements a forward-looking model, which requires banks to report significant increases in credit risk, before loss events have actually occurred. As a result, the new standard should enhance the financial reporting quality in banks.

An extensively researched concept regarding financial reporting quality is accounting conservatism. In particular, conditional accounting conservatism imposes stricter verification requirements for the recognition of economics gains in earnings compared to the recognition of economic losses (Basu, 1997). However, prior literature shows ambiguity about the expected efficacy of IFRS 9 regarding earnings accounting. On the one hand, a higher degree of management discretion under IFRS 9 might incline bank managers to engage in income-smoothing (Bholat et al., 2018). As income-smoothing undermines the verifiability of earnings, it conflicts with the purpose of accounting conservatism. On the other hand, larger and timelier loan loss provisions demonstrate a higher degree of accounting conservatism in banks (Craig Nichols, Whalen & Wieland, 2009). As the purpose of IFRS 9 is to improve timely loss recognition, the relation between the standard and accounting conservatism is worth further research. Therefore, I derive the following research question:

> *What is the effect of IFRS 9 on the level of accounting conservatism in European listed banks?*

Prior studies provide insight into the effect of mandatory IFRS adoption in Europe. For example, empirical findings demonstrate a negative effect of mandatory IFRS adoption on conditional accounting conservatism in European countries (André, Filip & Paugam, 2015). However, these findings point to the overall difference between accounting conservatism under IFRS and under pre-existing local accounting rules. This study is therefore scientifically relevant, as it aims to empirically clarify the particular effect of IFRS 9 on conditional accounting conservatism in European banks. Importantly, the effect of IFRS 9 on the accounting practices of banks is not sufficiently researched yet, as the standard is relatively new. Moreover, prior studies emphasize the relevance of IFRS 9 to the improvement of

financial stability in European countries. In particular, timely loan loss recognition under IFRS 9 could correct for the lack of required regulatory capital for sovereign exposures in European banks (Novotny-Farkas, 2016). This theoretical implication supports the point of view that the effect of IFRS 9 requires empirical testing. Therefore, this paper aims to test whether the application of IFRS 9 properly motivates banks to recognize credit losses timely. Furthermore, conditional accounting conservatism in banks is relevant for stakeholders, such as for investors or the government, because it results in more reliable accounting numbers. Thus, the results in this paper are also socially relevant.

The remainder of this paper is organized in the following way. First of all, Chapter 2 provides a review of the existing literature regarding accounting conservatism. This chapter discusses the relation between information asymmetry and accounting conservatism in the banking industry. Moreover, the literature review explains the forward-looking approach to credit losses under IFRS 9 and ends with a development of a testable hypothesis. Subsequently, Chapter 3 discusses which data and samples are used in this paper. Specifically, this paper uses data from European commercial banks and non-banks over the time period 2014 to 2019. Chapter 4 explains the methodology in this study, which consists of multiple linear regressions. In the first set of tests, the multiple linear regression captures the relation between the level of loan loss provisions and the level of accounting conservatism in European commercial banks after the introduction of IFRS 9. In the second set of tests, the multiple linear regression captures the change in accounting conservatism in European commercial banks. Subsequently, Chapter 5 provides the results for the regressions. Finally, Chapter 6 presents a discussion and conclusion of the findings and provides suggestions for further research.

2. Literature Review

2.1 Accounting conservatism defined

In general, accounting conservatism is defined as the on average understatement of the book value of net assets compared to their market value (Beaver & Ryan, 2005). Furthermore, accounting conservatism is either unconditional or conditional. Under unconditional accounting conservatism, the book value of net assets is understated because of the characteristics of the accounting process. Hence, unconditional accounting conservatism is determined as soon as assets and liabilities are recorded. Therefore, the concept of conditional accounting conservatism is of more interest. Under conditional accounting conservatism, specific unfavorable circumstances induce a downward adjustment of the book value of net assets. Consequently, in the literature the term 'accounting conservatism' generally refers to conditional accounting conservatism.

Overall, the purpose of conditional accounting conservatism is to report verifiable accounting numbers (Basu, 1997). Hence, under conditional accounting conservatism firms need to substantiate the recognition of good news in the financial statements more than the recognition of bad news. As a result of the difference in the verification requirements for economic gains and losses, there is asymmetry in the timeliness of gain and loss recognition. Conditional conservatism also results in asymmetric persistence of earnings. Negative earnings changes are less persistent than positive earnings changes, because bad news is often capitalized as a current loss, which leaves future earnings unaffected.

As shown in prior literature, accounting conservatism is explained by contracting, litigation, taxation and accounting regulation (Watts, 2003). First of all, various parties engage in contracts with a firm. However, contracts are only effective if they contain timely and verifiable measures of net asset values and performance. Therefore, debt holders, for example, ensure that a conservative measure of earnings in debt contracts determines whether or not a firm is allowed to pay dividend. However, in contrast to prior studies, Watts (2003) emphasizes the general role of accounting conservatism in contracting. According to this point of view, besides debt holders, almost all parties which contract with a firm utilize accounting conservatism to establish verifiable performance measures. A second motivation for firms to apply accounting conservatism in their financial statements is the reduction of expected litigation costs if the book value of net assets is understated instead of overstated (Watts, 2003). Moreover, accounting conservatism enables firms to defer tax payments, since expenses are recognized earlier than revenues. Also, standard setters and regulators prefer the understatement of net asset values and earnings, because this results in lower political costs. Based on these four

explanations, Watts (2003) concludes that accounting conservatism is critical to prevent managers from reducing the payoffs available to the various claimants on a firm.

2.2 Accounting conservatism and information asymmetry

Conceptually, accounting conservatism corrects for information asymmetry between managers and claimholders by reducing uncertainty about reported earnings (Basu, 1997). Information asymmetry typically exists in the case of agency relationships. An agency relationship exists when an individual, the principal, appoints another individual, the agent, to act on his behalf (Jensen & Meckling, 1976). Since the principal has to monitor and pay the agent to realize convergence of the agent's decisions and the principal's interest, the agency relationship leads to agency costs. Besides monitoring and payments, the principal incurs a residual loss as part of the agency costs, since the agent's interest is at no time fully in line with the principal's interest. For instance, the relationship between stockholders or investors and managers can be defined an agency relationship (Jensen & Meckling, 1976). Stockholders, as principals, delegate decision-making authority to managers, who are the agents. Similarly, investors' return on investment depends on firm performance. However, the decisions of managers, which determine firm performance, are not directly observable by investors.

Therefore, contracts are written in order to align the conflicting interests in these agency relationships (Watts, 2003). However, contracts are incomplete in nature, which leaves the related parties unable to reduce all agency costs (Shleifer & Vishny, 1997). This is where the contracting explanation of accounting conservatism comes into play. According to this explanation, conservative accounting numbers in contracts constrain the opportunity for managers to opportunistically influence accounting performance measures (Watts, 2003). Accordingly, LaFond and Watts (2008) confirm that accounting conservatism is a response to information asymmetry in a firm.

Moreover, Watts (2003) confirms that accounting conservatism enhances the verifiability of earnings, which in turn improves the quality of other sources of information. For example, conservative earnings could function as a verifiable benchmark for analysts' firm performance estimates. Moreover, empirical research shows that managers of firms with greater information asymmetry among market participants are more likely to choose more informative accounting methods in order to increase firm value (Bartov & Bodnar, 1996). The direction of the relation between information asymmetry and the implementation of informative accounting

methods in Bartov and Bodnar (1996) is therefore consistent with the response of accounting conservatism to information asymmetry as observed by LaFond and Watts (2008).

These empirical results confirm the theory of the corporate governance role of accounting conservatism. Accounting conservatism motivates managers to engage in positive net present value projects (Ball, 2001). Although negative net present value projects might lead to short-term gains and therefore higher bonuses, managers are aware that unrealized losses from these projects are charged against reported income. For a similar reason, managers are less likely to continue with losing investments. Hence, accounting conservatism deters managers from engaging in self-serving behavior. As such, the implementation of accounting conservatism in the financial statements reduces the monitoring costs in the agency relationship, as described in Jensen and Meckling (1976).

Accordingly, the concept of information asymmetry is particularly important in public firms. The choice of a firm to be public transfers ownership to outside shareholders, which results in an increase in information asymmetry between managers and owners (Craig Nichols et al., 2009). On the one hand, the increase in information asymmetry between managers and owners creates the opportunity for managers to engage in anti-conservative accounting in order to increase reported earnings. On the other hand, since stakeholders are aware of their lack of information, they require a higher level of verifiability of the accounting numbers. Consequently, the demand for accounting conservatism from stakeholders increases when a firm decides to be public. Consistent with the conclusions in LaFond and Watts (2008), the demand for accounting conservatism is a response to information asymmetry.

Besides a firm's ownership structure, other relevant firm-specific factors are related to information asymmetry. Specifically, Khan and Watts (2009) confirm that information asymmetry between investors and the firm increases with the firm's investment cycle, which represents the firm's investment uncertainty and its firm-specific uncertainty. Therefore, the higher these types of uncertainty, the more conservative the firm's financial reporting. In turn, particularly among firms with higher information asymmetries, conservatism leads to more efficient investments (García Lara, García Osma & Penalva, 2016).

2.3 Accounting conservatism in the banking industry

2.3.1 Information asymmetry in banks

Information asymmetry is particularly common in the public banking industry. Banks are characterized by the financial nature of their assets, which are primarily smaller loans to more opaque borrowers (Morgan, 2002). Therefore, large information asymmetries in banks

stem from the uncertainty with respect to loan quality. Moreover, banks are almost entirely financed with debt in the form of liquid deposits (Macey & O'Hara, 2003). The high leverage creates the opportunity for banks to shift risk from shareholders to debt holders. Hence, controlling shareholders have incentives to increase the bank's risk profile, since any increase in risk increases their wealth (Levine, 2004).

On the contrary, debt holders do not benefit from the risk-taking of banks, since they are fixed claimants on the firm (Laeven, 2013). Moreover, risk-shifting could even reduce the wealth of shareholders if managers only consider their private benefits. For instance, when executive compensation is tied to short-term firm performance, bank managers might use risk-shifting to boost the realization of short-term gains instead of long-term firm value. Despite the desire of both shareholders and debt holders to prevent managers from making decisions that conflict with their interest, the large information asymmetries in banking impede effective monitoring of bank managers.

2.3.2 Loan loss accounting: IFRS 9 Financial Instruments

Evident from a bank's business activities, the accounting for credit losses is of great importance. A bank recognizes a loan loss provision on its balance sheet if it expects that a borrower will fail to repay the contracted value of his loan (Bholat et al., 2018). Until the 1st of January 2018, loan loss accounting in banks was based on a backward-looking approach to the recognition of credit losses under IAS 39 *Financial Instruments: Recognition and Measurement*. Under IAS 39 loan loss provisions were recognized in response to loss events which had occurred to date. Consequently, the recognition of loan loss provisions was limited to loans that could be classified as non-performing.

Prior studies show that conservative accounting is revealed by the recognition of larger and timelier loan loss provisions. Public banks, compared to private banks, record timelier and larger loan loss provisions relative to changes in non-performing loans (Craig Nichols et al., 2009). Moreover, public banks, compared to private banks, recognize earnings decreases more timely, whereas they recognize earnings increases less timely. Moreover, earnings increases demonstrate a higher degree of persistence in public banks compared to earnings increases in private banks. Focusing on public banks in the United States, Leventis, Dimitropoulos and Owusu-Ansah (2013) add that public banks with more effective governance structures recognize larger and timelier loan loss provisions, compared to public banks with less effective governance structures. However, these studies do not consider the potential subsequent effects of accounting conservatism. Extending on these results, Lim, Lee, Kausar and Walker (2014) report that timelier loss recognition is associated with a higher level of

prudence in loan pricing by banks. Specifically, banks with timelier loss recognition show safer lending behavior, as they charge borrowers higher spreads.

However, the implementation of IFRS 9 *Financial Instruments* changed the rules for loan loss accounting in banks. IFRS 9 aims to encourage timely recognition of non-performing loans (Bholat et al., 2018). Therefore, the standard is based on a forward-looking three-stage model. Under this model, the expectation of future credit losses solely determines the recognition of loan loss provisions. Banks are therefore required to use a higher degree of judgement with respect to increases in credit risk. Loans are considered to be in 'stage 1', when there is no evidence for a significant increase in credit risk yet. In this case, banks are required to recognize a loan loss provision based on the expected losses in the next 12 months. An increase in the risk of default moves a loan to 'stage 2'. At this stage banks are required to determine the expected losses over the lifetime of the loan. When there is evidence for a credit loss event a loan becomes impaired and the loan moves to 'stage 3'. At this stage the loan is considered to be non-performing or credit-impaired. Importantly, losses on impairment of debt investments due to credit risk are recognized in net income.

Consequently, as all stages of loan loss accounting under IFRS 9 require forward-looking decisions, the model allows bank managers a relatively high level of discretion in the determination of credit quality (Bushman & Williams, 2012). Bholat et al. (2018) therefore state that the discretion in loan loss accounting might incline managers to engage in income-smoothing. However, bank managers might be able to charge higher spreads in lending to customers in order to diminish the negative effect of loan loss provisions on current earnings (Lim et al, 2014). Therefore, bank managers may still be motivated to use their management discretion under IFRS 9 to effectively anticipate losses. Moreover, Bushman and Williams (2012) show that forward-looking loan loss provisioning to reflect timelier loss recognition is associated with stronger market discipline of banks' risk taking. In other words, stakeholders' monitoring of banks is expected to be facilitated by accounting conservatism under IFRS 9.

However, Laux and Leuz (2010) state that fair value accounting also increases bank managers' discretion. As this method of accounting is applied in IFRS 9, it forms another source of management discretion in the new standard. The discretion stems from bank managers' decision-making power in the classification of assets at their initial recognition and therefore in the effect of fair value changes in the financial statements. On the contrary, fair value accounting also enhances timely loss recognition, as it forces banks to record reductions in the fair value of assets as losses at the moment that they occur. Therefore, management discretion does not necessarily have to be an objectionable feature of IFRS 9.

Furthermore, loan loss provisions are important accruals in the financial statements of banks (Craig Nichols et al., 2009). As shown in Ball and Shivakumar (2005), timely loss recognition requires the use of unrealized accruals for losses. Moreover, Craig Nichols et al. (2009) find that larger and timelier loan loss provisions demonstrate a higher degree of accounting conservatism in banks. Importantly, the implementation of IFRS 9 influences the relation between loan loss provisions and non-performing loans (Bholat et al., 2018). Since deterioration of loans based on past loss events is no longer required to recognize provisions, provisions are recognized both for non-performing loans and for loans which are not yet in this category. As a result, provisions under IFRS 9 are expected to be higher than under the previous loan loss accounting standard. Together with the expectation of timelier loss recognition under the forward-looking model, it is expected that banks apply a higher level of accounting conservatism under IFRS 9. In this sense, the accounting regulation explanation, as described by Watts (2003), would be the main driver of accounting conservatism. Therefore, I derive the following hypothesis:

> **Hypothesis.** *The recognition of loan loss provisions under IFRS 9 increases the level of accounting conservatism in European listed banks.*

Based on the prior literature, I expect that loan loss accounting under the expected loss model of IFRS 9 results in a better representation of a bank's credit risk. The standard achieves this by encouraging banks to record timelier loan loss provisions, which causes timelier economic loss recognition. This relation is expected to be observed in European listed banks, as listed companies are required to report according to the International Financial Reporting Standards. Therefore, these banks have been applying IFRS 9 in their loan loss accounting as of its effective date of the 1st of January 2018.

3. Data

3.1 Sample selection

This research uses data from the database *WRDS – Compustat Global*. This database mainly consists of financial report data of listed non-American and non-Canadian firms. Data from European commercial banks over the years 2018 and 2019 are used to examine the association between the recognition of loan loss provisions under IFRS 9 and accounting conservatism. The period of interest is limited to these years, as IFRS 9 has just been effective as of the 1st of January 2018. The sample of European banks consists of commercial banks only. The reason for this is that this study focuses on loan loss accounting in banks with many small borrowers. In general, the customers of commercial banks are small borrowers, which makes commercial banks the appropriate type of bank for this study. The sample consists of 215 European commercial banks.

In addition, a second sample of both commercial banks and non-banks is used to test whether accounting conservatism changes in banks. In order to be able to obtain valid results, the period of interest runs from the year 2014 up to and including the year 2019. Similar to the first sample, the banks in this second sample are European commercial banks. The non-banks in this second sample are insurance carriers, real estate firms and firms which do not provide financial services, such as manufacturers. The sample consists of 191 European commercial banks and 3790 European non-banks.

4. Methodology

4.1 Regressions

As emphasized in Khan and Watts (2009), accounting conservatism varies across firms in an industry. In addition, firm-specific characteristics, which affect accounting conservatism, change over time. This makes it necessary to account for the timing of changes in accounting conservatism. Therefore, I use the firm-year measure of accounting conservatism developed by Khan and Watts (2009). In addition, a firm's level of accounting conservatism consists of both the timeliness of good news recognition in earnings (*G_Score*) and the incremental timeliness of bad news recognition in earnings (*C_Score*). Therefore, in this paper, the sum of the *G_Score* and *C_Score* is used as a firm-year proxy for accounting conservatism.

4.1.1 Accounting conservatism and loan loss provisions in European banks

To analyze the relation between the level of loan loss provisions and the level of accounting conservatism, the following three steps are executed:

Step 1. First, annual regressions are estimated over the years 2018 and 2019 to measure the timeliness of both good and bad news recognition in earnings. The applicable annual regression equation is specified by Khan and Watts (2009) as follows:

$$X_{i,t} = \beta_{1,t} + \beta_{2,t}D_{i,t} + R_{i,t}(\mu_{1,t} + \mu_{2,t}Size_{i,t} + \mu_{3,t}M/B_{i,t} + \mu_{4,t}Lev_{i,t}) + D_{i,t} * R_{i,t}(\lambda_{1,t} + \lambda_{2,t}Size_{i,t} + \lambda_{3,t}M/B_{i,t} + \lambda_{4,t}Lev_{i,t}) + (\delta_{1,t}Size_{i,t} + \delta_{2,t}M/B_{i,t} + \delta_{3,t}Lev_{i,t} + \delta_{4,t}D_{i,t} * Size_{i,t} + \delta_{5,t}D_{i,t} * M/B_{i,t} + \delta_{6,t}D_{i,t} * Lev_{i,t}) + \varepsilon_{i,t} \quad (1)$$

where *i* indicates the firm and *t* indicates the year:

Earnings (X): the dependent variable *X* measures earnings as net income before extraordinary items deflated by the market value of equity at the end of the year.

Negative returns (D): this variable is a dummy variable, which is equal to 1 when returns are negative and equal to 0 otherwise.

Returns (R): this variable measures annual returns. Annual returns are proxied by the yearly percentage change in the firm's closing stock price on the 31st of December.

Firm size (Size): this variable is the natural logarithm of the market value of equity at the end of the year.

Market-to-Book value (M/B): this variable measures the ratio of the market value of equity to the book value of equity at the end of the year.

Leverage (Lev): this variable measures the debt ratio of a firm as the summation of long-term debt and short-term debt deflated by the market value of equity at the end of the year.

Error term (ε).

All variables are winsorized at the 1% and 99% level.

Step 2. As a firm's accounting conservatism captures both the *G_Score* and the *C_Score,* the following linear functions satisfy Eq. (1):

$$G\_Score_{i,t} = \mu_{1,t} + \mu_{2,t}Size_{i,t} + \mu_{3,t}M/B_{i,t} + \mu_{4,t}Lev_{i,t} \quad (2)$$

$$C\_Score_{i,t} = \lambda_{1,t} + \lambda_{2,t}Size_{i,t} + \lambda_{3,t}M/B_{i,t} + \lambda_{4,t}Lev_{i,t} \quad (3)$$

Therefore, in Step (2) I collect the yearly μ-coefficients and λ-coefficients which are generated in Eq. (1). Subsequently, I derive the *G_Score* and *C_Score* for each firm. Khan and Watts (2009) define the total bad news timeliness as the sum of the *G_Score* and *C_Score*. Subsequently, the proxy for the level of accounting conservatism (CONS) in this research is formulated as follows:

$$CONS_{i,t} = G\_Score_{i,t} + C\_Score_{i,t} \quad (4)$$

Step 3. Finally, a regression of accounting conservatism (CONS) on a loan loss provision variable and control variables is estimated to test the hypothesis:

$$CONS_{i,t} = \alpha_0 + \beta_1 LLP_{i,t} + \beta_2 Size_{i,t} + \beta_3 M/B_{i,t} + \beta_4 Lev_{i,t} + \beta_5 ROA_{i,t} + \varepsilon_{i,t} \quad (5)$$

where *i* indicates the firm and *t* indicates the year:

Loan loss provisions (LLP): this variable measures the net amount of provisions reported to maintain adequate reserves for the recognition of future loan losses. The net amount of provisions are scaled by total assets. Total assets are appropriate to scale the net amount of provisions, because loans to smaller, more opaque borrowers make up the biggest fraction of a bank's total assets (Morgan, 2002). The coefficient of interest in this regression equation, β_1, is expected to be positive, as the hypothesis presumes a positive association between loan loss provisions under IFRS 9 and accounting conservatism.

Control variables (Size, M/B, Lev, ROA): Khan and Watts (2009) emphasize that a regression of the *C_Score* on a relevant independent variable of interest is prone to result in a biased association if the regression does not control for the inputs to the *C_Score*. As the *G_Score* contains the same inputs, it is reasonable to expect the same biased result for this variable as a dependent variable. Because both the *C_Score* and the *G_Score* are part of the dependent variable in this study, I incorporate the inputs to these variables as control variables in Eq. (5).

In addition, Khan and Watts (2009) show that firms with a higher *C_Score* have a lower return on assets (ROA). Therefore, I add the variable return on assets (ROA) as another control variable. ROA is calculated by dividing earnings by total assets. Earnings is measured as net income before extraordinary items.

Error term (ε).

All variables are winsorized at the 1% and 99% level.

4.1.2 Changes in accounting conservatism in European banks

To test whether the level of accounting conservatism changes in European listed banks, a second test is executed. The sample for this second test consists of both commercial banks and non-banks. To obtain the proxy for the level of accounting conservatism (CONS) in each firm, Step (1) and Step (2) from § *4.1.1* are executed over the time period 2014 to 2019. In Step (3) the following regression is estimated:

$$CONS_{i,t} = \alpha_0 + \beta_1 Bank_{i,t} + \beta_2 Year\_2018_{i,t} + \beta_3 Bank_{i,t} * Year\_2018_{i,t} + \beta_4 Size_{i,t} + \beta_5 M/B_{i,t} + \beta_6 Lev_{i,t} + \beta_7 ROA_{i,t} + \varepsilon_{i,t} \quad (6)$$

Where *i* indicates the firm and *t* indicates the year:

Firm type (Bank): this variable is a dummy variable, which is equal to 1 if the firm is a commercial bank and equal to 0 otherwise.

Year (Year_2018): this variable is a dummy variable, which is equal to 1 if the year is 2018 or 2019 and equal to 0 otherwise. The years 2018 and 2019 indicate that IFRS 9 *Financial Instruments* is the required loan loss accounting standard in the financial statements of European listed banks.

The interaction-effect of firm type and year (Bank * Year_2018): this variable measures whether the difference in the level of accounting conservatism for commercial banks and non-banks depends on whether it is also the year 2018 or 2019. As the hypothesis presumes a positive relation between the application of IFRS 9 and the level of accounting conservatism in banks, the coefficient of interest, β_3, is expected to be positive.

Error term (ε).

All variables are winsorized at the 1% and 99% level.

4.2 Descriptive statistics

Table 1 shows descriptive statistics for each relevant variable in the sample of European banks over the years 2018 and 2019. The earnings (X) measure shows that, on average, the banks generate positive earnings in 2018 and 2019. On the contrary, annual stock returns (R) are negative on average. The standard deviation of firm size (Size) is relatively small as compared to the mean firm size. Hence, the banks are quite similar in size. On average, the market-to-book value (M/B) is less than one. However, as the ratio is close to 1, it follows that,

on average, the banks' book values are comparable to their market values. Furthermore, from the interquartile range of the leverage (Lev) measure it is clear that the banks are relatively different in their leverage ratio. Furthermore, in absolute terms, the average *G_Score* is more than five times the size of the *C_Score*. As a result, the accounting conservatism (CONS) measure mostly consists of the *G_Score*. Moreover, from the loan loss provisions (LLP) measure it follows that the banks' loan loss provision ratios are quite low on average. In addition, the mean return on assets (ROA) is fairly low.

Table 1

Descriptive Statistics for European Banks over the Time Period 2018-2019

Variable	N	Mean	Std. Dev.	Min.	Q1	Median	Q3	Max.
Earnings (X)	410	0.224	0.674	-1.216	0.072	0.108	0.160	4.939
Returns (R)	423	-0.001	0.332	-0.772	-0.194	-0.003	0.120	1.745
Firm size (Size)	423	21.253	2.218	16.446	19.574	21.095	22.805	26.448
Market-to-Book value (M/B)	422	0.752	0.754	0.010	0.352	0.599	0.940	5.474
Leverage (Lev)	390	7.655	20.636	0.045	0.801	3.052	6.609	189.660
G_Score	390	0.275	1.476	-6.560	-0.250	0.326	0.720	7.675
C_Score	390	-0.052	0.706	-3.870	-0.199	0.045	0.210	2.652
Accounting conservatism (CONS)	390	0.222	0.930	-3.909	-0.140	0.284	0.673	3.805
Loan loss provisions (LLP)	414	0.004	0.007	-0.002	0.000	0.001	0.004	0.043
Return on assets (ROA)	409	0.008	0.010	-0.027	0.003	0.006	0.010	0.057

This table shows descriptive statistics for 215 European commercial banks over the years 2018 and 2019; the total number of observations (N), mean, standard deviation (Std. Dev.), minimum (Min.), maximum (Max.), median and first (Q1) and third (Q3) quartiles are reported; the variable names as presented in the regression equations are reported between parentheses.

As explained in § *3.1*, the sample in the second set of tests consists of both European commercial banks and non-banks. Table 2 shows descriptive statistics for the banks in this sample. In general, the mean values are quite similar to the values over 2018 and 2019 in Table 1. However, on average, annual stock returns (R) are positive over the time period 2014 to 2019 in Table 2. Similar to the results in Table 1, the *G_Score* is the biggest part of the accounting conservatism (CONS) measure.

Table 2

Descriptive Statistics for European Banks over the Time Period 2014-2019

Variable	N	Mean	Std. Dev.	Min.	Q1	Median	Q3	Max.
Earnings (X)	1081	0.102	0.594	-4.619	0.055	0.090	0.148	1.369
Returns (R)	1116	0.177	1.340	-0.836	-0.112	0.028	0.167	13.467
Firm size (Size)	1116	21.176	2.356	15.162	19.397	20.950	23.022	26.167
Market-to-Book value (M/B)	1115	0.843	1.492	-7.362	0.327	0.600	0.969	22.894
Leverage (Lev)	1011	7.276	12.679	0.007	1.113	3.247	7.094	70.280
G_Score	1011	0.548	0.941	-1.413	0.013	0.455	1.009	4.014
C_Score	1011	-0.039	0.167	-0.784	-0.063	-0.014	0.026	0.264
Accounting conservatism (CONS)	1011	0.497	0.859	-1.364	-0.012	0.427	0.940	3.733
Return on assets (ROA)	1080	0.004	0.038	-0.954	0.003	0.005	0.009	0.303

This table shows descriptive statistics for 191 European commercial banks over the time period 2014 to 2019; the total number of observations (N), mean, standard deviation (Std. Dev.), minimum (Min.), maximum (Max.), median and first (Q1) and third (Q3) quartiles are reported; the variable names as presented in the regression equations are reported between parentheses.

Table 3 shows descriptive statistics for the non-banks in the sample.

Table 3

Descriptive Statistics for European Non-banks over the Time Period 2014-2019

Variable	N	Mean	Std. Dev.	Min.	Q1	Median	Q3	Max.
Earnings (X)	20548	-0.083	0.641	-4.619	-0.030	0.042	0.081	1.369
Returns (R)	21286	0.268	1.582	-0.836	-0.188	0.019	0.265	13.467
Firm size (Size)	21283	19.326	2.721	13.608	17.348	19.170	21.194	26.167
Market-to-Book-value (M/B)	21197	2.857	6.298	-7.362	0.728	1.356	2.779	49.191
Leverage (Lev)	2012	2.151	6.807	0.007	0.292	0.773	1.434	70.280
G_Score	2012	0.699	0.874	-1.413	0.137	0.534	1.212	4.014
C_Score	2012	-0.020	0.108	-0.784	-0.054	-0.009	0.022	0.264
Accounting conservatism (CONS)	2012	0.677	0.818	-1.364	0.147	0.526	1.168	3.733
Return on assets (ROA)	20542	-0.018	0.207	-1.217	-0.017	0.027	0.063	0.303

This table shows descriptive statistics for 3790 European non-banks over the time period 2014 to 2019; the total number of observations (N), mean, standard deviation (Std. Dev.), minimum (Min.), maximum (Max.), median and first (Q1) and third (Q3) quartiles are reported; the variable names as presented in the regression equations are reported between parentheses.

Furthermore, Table A in Appendix A shows the results from Levene's Test for equality of variances between the banks and non-banks. To account for asymmetry in the data, the Levene's test statistic is evaluated centered at the median, instead of centered at the mean. The *p*-values for earnings (X), *G_Score* and accounting conservatism (CONS) are not less than 5%. Therefore, there is not a statistically significant difference in the variance of these three variables between banks and non-banks. Consequently, the appropriate *t*-test for differences in the mean values of these variables is the two sample t-test with equal variances. For all other variables in Table A the *p*-values are less than 1%. Therefore, there is a statistically significant difference in the variance of these variables between banks and non-banks. As a result, the appropriate *t*-test for differences in the mean values of these variables is the *t*-test with unequal variances (Welch's *t*-test).

Table 4 provides the results from the appropriate *t*-tests for differences in the mean values for the European banks and non-banks. All reported *p*-values are significant. This indicates that there is sufficient evidence to conclude that the mean values of all reported variables are different between banks and non-banks. The results in Table 4 show that European non-banks generate significantly lower mean earnings (X) and return on assets (ROA) over the time period 2014 to 2019 compared to European banks. Moreover, the firm size (Size) measure shows that the non-banks are on average significantly smaller than banks. The mean leverage (Lev) ratio is also significantly lower in non-banks. A higher leverage ratio in banks is consistent with the high level of liquid deposits in banks, as explained in Macey and O'Hara (2003). In contrast, the mean annual stock returns (R) and mean market-to-book value (M/B) are significantly higher in non-banks. Moreover, the *C_Score* and *G_Score* are significantly higher in non-banks. As the *G_Score* forms the biggest part of the accounting conservatism measure (CONS), this measure is also significantly higher in non-banks as compared to the measure in banks. The lower *G_Score* in banks is consistent with the results in LaFond and Watts (2008), which show a negative relation between accounting conservatism and good news timeliness in firms. As explained in § *2.2*, a higher level of information asymmetry in banks requires a higher level of accounting conservatism. As a result, the *G_Score* in banks would be lower. Furthermore, Khan and Watts (2009) obtain a higher *C_Score* in firms with a higher level of information asymmetry. The lower *C_Score* in banks is therefore unsound with respect to a higher level of information asymmetry in banks.

Table 4

Differences in Means between European banks and Non-banks (t-tests)

Variable	Non-banks (N)	Mean non-banks	Banks (N)	Mean banks	Mean difference	*T*	Sig. *(p)*
Earnings (X)	20548	-0.083	1081	0.102	-0.184***	-9.252	0.000
Returns (R)	21286	0.268	1116	0.177	0.091**	2.193	0.029
Firm size (Size)	21283	19.326	1116	21.176	-1.850***	-25.352	0.000
Market-to-book value (M/B)	21197	2.857	1115	0.843	2.015***	32.403	0.000
Leverage (Lev)	2012	2.151	1011	7.276	-5.126***	-12.013	0.000
G_Score	2012	0.699	1011	0.548	0.151***	4.366	0.000
C_Score	2012	-0.020	1011	-0.039	0.019***	3.294	0.001
Accounting conservatism (CONS)	2012	0.677	1011	0.497	0.180***	5.610	0.000
Return on assets (ROA)	20542	-0.018	1080	0.004	-0.022***	-12.083	0.000

*This table shows the results of the t-tests for a difference in the mean value of each variable over the time period 2014 to 2019; the total number of observations (N), means, mean difference, test statistic (t) and corresponding significance, indicated by the p-value (Sig. (p)), are reported; the mean difference for each variable is calculated by subtracting the mean for banks (not rounded) from the mean for non-banks (not rounded); ** p < 0.05, *** p < 0.01.*

4.3 Correlation coefficients

Table 5 shows Pearson correlation coefficients *(r)* to test the correlation between variables in the sample of European banks over the years 2018 and 2019. The results in Table 5 do not show any significant moderate ($0.3 < |r| < 0.5$) or strong ($|r| > 0.5$) correlations between two independent variables. Therefore, there is no indication of multicollinearity in the regressions for banks only.

Table 5

Pearson Correlation Coefficients for European Banks over the Time Period 2018-2019

Variable	*X*	*R*	*Size*	*M/B*	*Lev*	*G_Score*	*C_Score*	*CONS*	*LLP*	*ROA*
Earnings (X)	1									
Returns (R)	0.086	1								
Firm size (Size)	-0.080	0.001	1							
Market-to-Book value (M/B)	-0.200***	0.045	0.278***	1						
Leverage (Lev)	0.636***	-0.041	-0.163***	-0.228***	1					
G_Score	0.107**	-0.174***	-0.321***	-0.244***	0.062	1				
C_Score	-0.106**	0.170***	0.222***	-0.189***	-0.117**	-0.871***	1			
Accounting conservatism (CONS)	0.090	-0.146***	-0.340***	-0.535***	0.009	0.925***	-0.620***	1		
Loan loss provisions (LLP)	-0.141***	-0.093	0.020	0.040	-0.069	0.010	-0.004	0.014	1	
Return on assets (ROA)	0.271***	0.145***	0.150***	0.251***	-0.149***	-0.125**	0.015	-0.185***	-0.035	1

*This table shows Pearson correlation coefficients (r) for the variables in the regressions for 215 European commercial banks over the years 2018 and 2019; ** p < 0.05, *** p < 0.01.*

Table 6 shows Pearson correlation coefficients (*r*) for European banks over the time period 2014 to 2019. For this sample there are also no significant moderate or strong correlations between two independent variables.

Table 6

Pearson Correlation Coefficients for European Banks over the Time Period 2014-2019

Variable	*X*	*R*	*Size*	*M/B*	*Lev*	*G_Score*	*C_Score*	*CONS*	*ROA*
Earnings (X)	1								
Returns (R)	-0.060**	1							
Firm size (Size)	-0.013	0.047	1						
Market-to-Book value (M/B)	-0.017	-0.017	0.144***	1					
Leverage (Lev)	-0.034	0.031	-0.208***	-0.182***	1				
G_Score	0.066**	-0.045	-0.663***	-0.146***	0.629***	1			
C_Score	-0.010	0.012	0.212***	0.067**	-0.403***	-0.391***	1		
Accounting conservatism (CONS)	0.059	-0.045	-0.673***	-0.139***	0.559***	0.974***	-0.196***	1	
Return on assets (ROA)	0.368***	-0.008	-0.001	0.095***	-0.021	0.040	0.004	0.046	1

*This table shows Pearson correlation coefficients (r) for the variables in the regression equations for 191 European commercial banks over the time period 2014 to 2019; ** p < 0.05, *** p < 0.01.*

Finally, Table 7 shows Pearson correlation coefficients (*r*) for the non-banks in the second sample. The Pearson correlation coefficient between firm size (Size) and return on assets (ROA) (r = 0.301) suggest a significant moderate correlation between these two variables. However, this value is close to 0.3 and it is the only significant moderate correlation coefficient between two independent variables in Table 7. In addition, the results in Table 7 do not include any strong correlations between two independent variables. Therefore, there is also no indication of multicollinearity in the second set of multiple linear regressions.

Table 7

Pearson Correlation Coefficients for European Non-banks over the Time Period 2014-2019

Variable	*X*	*R*	*Size*	*M/B*	*Lev*	*G_Score*	*C_Score*	*CONS*	*ROA*
Earnings (X)	1								
Returns (R)	0.007	1							
Firm size (Size)	0.262***	0.039***	1						
Market-to-Book value (M/B)	0.047***	0.049***	0.173***	1					
Leverage (Lev)	-0.187***	0.000	-0.211***	-0.078***	1				
G_Score	-0.257***	0.038	-0.736***	-0.102***	0.408***	1			
C_Score	0.234***	-0.010	0.285***	-0.105***	-0.453***	-0.514***	1		
Accounting conservatism (CONS)	-0.247***	0.038	-0.748***	-0.112***	0.359***	0.992***	-0.413***	1	
Return on assets (ROA)	0.485***	0.000	0.301***	-0.026***	-0.100***	-0.260***	0.127***	-0.260***	1

*This table shows Pearson correlation coefficients (r) for the variables in the regressions for 3790 European non-banks over the time period 2014 to 2019; *** p < 0.01.*

5. Results

5.1 Accounting conservatism and loan loss provisions after the introduction of IFRS 9

First of all, to obtain the proxy for the level of accounting conservatism in European banks, the timeliness of good and bad news recognition in earnings has to be estimated. Eq. (1) describes the relevant multiple linear regression. Table 8 shows the coefficients from estimation of this multiple linear regression on earnings over the years 2018 and 2019.

Table 8

Multiple Linear Regression Results for Good and Bad News Recognition in Earnings in 2018 and 2019

	2018	2019
Variable	*Earnings (X)*	
Negative returns (D)	-1.708	0.005
	(2.201)	(0.687)
G_Score		
Returns (R)	-2.290	-0.890
	(3.083)	(3.794)
*R * Firm size (Size)*	0.135	0.045
	(0.190)	(0.180)
*R * Market-to-Book value*	-0.726	-0.051
(M/B)	(0.859)	(0.162)
*R * Leverage (Lev)*	-0.067	0.040
	(0.080)	(0.077)
C_Score		
*D * R (DR)*	3.360	5.137
	(6.606)	(4.515)
*DR * Size*	-0.156	-0.203
	(0.374)	(0.225)
*DR * M/B*	0.179	-0.661
	(1.843)	(0.768)
*DR * Lev*	0.121	-0.116
	(0.105)	(0.084)
Size	-0.042	-0.006
	(0.023)	(0.026)
M/B	-0.153**	-0.055
	(0.072)	(0.054)
Lev	0.025***	0.026***
	(0.000)	(0.001)
*D * Size*	0.078	0.007
	(0.119)	(0.034)
*D * M/B*	-0.038	-0.071
	(0.506)	(0.124)
*D * Lev*	0.021	-0.052***
	(0.030)	(0.013)
Constant	1.117**	0.235
	(0.479)	(0.546)
Observations	**189**	**190**
R^2	**0.479**	**0.565**

*Robust standard errors between parentheses; the dependent variable is earnings (X); the independent variables are listed in the first column; ** p < 0.05, *** p < 0.01.*

In 2018, 47.9% of the variance in earnings (X) is explained by the independent variables (R^2 = 0.479). The market-to-book value (M/B) and the leverage ratio (Lev) are the only independent variables with statistically significant coefficients. Thus, if the market-to-book value increases by 1, there is a decrease of 0.153 in predicted earnings, holding all other variables constant. If the leverage ratio increases by 1, there is an increase of 0.025 in predicted earnings, holding all other variables constant. Furthermore, in 2019, 56.5% of the variance in earnings (X) is explained by the independent variables (R^2 = 0.565). In 2019, only the leverage ratio (Lev) and the interaction-effect of the dummy for negative returns (D) and the leverage ratio (Lev) show statistically significant coefficients. Hence, if the leverage ratio increases by 1, there is an increase of 0.026 in predicted earnings, holding all other variables constant. Lastly, if bank *i* also generates negative returns, there is an additional decrease of 0.052 in predicted earnings if the leverage ratio increases by 1, holding all other variables constant.

However, both in 2018 (F = 858.48, p-value = 0.000) and in 2019 (F = 72.87, p-value = 0.000) the combination of independent variables reliably predict the dependent variable earnings (X). Hence, the lack of individual statistical significance of the majority of the listed independent variables do not preclude the usefulness of the estimated coefficients. Therefore, the *G_Score* and *C_Score* are still derived from the estimated coefficients in Table 8, according to Eq. (2) and (3) in § *4.1.1*. Subsequently, the sum of these scores serves as the proxy for the level of accounting conservatism (CONS) in this study. The descriptive statistics for the level of accounting conservatism (CONS), the *G_Score* and the *C_Score* are reported in Table 1 in § *4.2*.

The hypothesis in this paper states that the recognition of loan loss provisions under IFRS 9 increases the level of accounting conservatism in European listed banks. Therefore, the last step is to estimate the final multiple linear regression in this test. The multiple linear regression in Eq. (5) captures the relation between the level of loan loss provisions and the level of accounting conservatism (CONS). Table 9 shows the coefficients from estimation of this multiple linear regression on accounting conservatism in European banks over the years 2018 and 2019.

Table 9

Multiple Linear Regression Results for the Relation between Accounting Conservatism and Loan Loss Provisions in 2018 and 2019

Variable	*Accounting conservatism (CONS)*
Loan loss provisions (LLP)	3.110
	(5.240)
Firm size (Size)	-0.093***
	(0.017)
Market-to-Book value (M/B)	-0.663***
	(0.061)
Leverage (Lev)	-0.007***
	(0.002)
Return on assets (ROA)	2.080
	(4.650)
Constant	2.722***
	(0.356)
Observations	**377**
R^2	**0.382**

*Robust standard errors between parentheses; the dependent variable is accounting conservatism (CONS); the independent variables are listed in the first column; the coefficients are estimated over the years 2018 and 2019; *** p < 0.01.*

I obtain the following regression coefficients from the multiple linear regression on accounting conservatism:

$$CONS_{i,t} = 2.722 + 3.110 * LLP_{i,t} - 0.093 * Size_{i,t} - 0.663 * M/B_{i,t} - 0.007 * Lev_{i,t} + 2.080 * ROA_{i,t} \quad (7)$$

where *i* indicates the bank and *t* indicates the year.

From the results in Table 9 it follows that 38.2% of the variance in accounting conservatism (CONS) is explained by the independent variables (R^2 = 0.382). Moreover, the combination of independent variables shows a statistically significant relationship with accounting conservatism (CONS) (F = 45.89, p-value = 0.000). This means that the combination of independent variables in Eq. (5) reliably predicts the level of accounting conservatism in European listed banks.

The coefficient of interest in Eq. (7) is the coefficient for loan loss provisions (LLP). As the hypothesis presumes a positive association between loan loss provisions under IFRS 9 and accounting conservatism, the coefficient was expected to be positive. Although the results in Table 9 show a positive coefficient for loan loss provisions, the *p*-value corresponding to the *t*-statistic for this coefficient is not less than 5%. Therefore, there is not sufficient evidence to conclude that the level of loan loss provisions affects the level of accounting conservatism in European listed banks over the years 2018 and 2019, although IFRS 9 is in place at this time period.

Furthermore, the results in Table 9 show that the coefficients for firm size (Size), the market-to-book value (M/B) and leverage (Lev) are statistically significant. Hence, approximately, for a 1% increase in firm size, there is a decrease of 0.001 in the predicted score for the level of accounting conservatism, holding all other variables constant. Moreover, if the market-to-book value increases by 1, there is a decrease of 0.663 in the predicted score for the level of accounting conservatism, holding all other variables constant. Lastly, if the leverage ratio increases by 1, there is a decrease of 0.007 in the predicted score for the level of accounting conservatism, holding all other variables constant.

5.2 Changes in accounting conservatism

The second test in this research does not directly analyze the relation between loan loss provisions under IFRS 9 and accounting conservatism. Instead, the second test serves to assess whether the level of accounting conservatism changes in European banks over the time period 2014 to 2019. Again, the first step is to estimate the timeliness of good and bad news recognition in earnings. Table 10 shows the coefficients from estimation of the regression in Eq. (1) for European banks and non-banks over the time period 2014 to 2019.

Table 10

Multiple Linear Regression Results for Good and Bad News Recognition in Earnings over the Time Period 2014-2019

	2014	2015	2016	2017	2018	2019
Variable			*Earnings (X)*			
Negative returns (D)	0.462 (0.566)	0.073 (0.492)	0.306 (0.894)	0.367 (0.517)	0.037 (0.629)	0.176 (0.669)
G_Score						
Returns (R)	-0.336 (0.285)	0.197 (0.224)	-0.719** (0.293)	-0.033 (0.137)	-0.152 (0.332)	0.069 (0.109)
*R * Firm size (Size)*	0.016 (0.012)	-0.010 (0.009)	0.039** (0.016)	0.003 (0.007)	0.009 0.012	-0.008 (0.006)
*R * Market-to-book value (M/B)*	-0.010 (0.043)	-0.010 (0.017)	-0.001 (0.014)	-0.003 (0.004)	-0.006 (0.073)	0.008 (0.007)
*R * Leverage (Lev)*	-0.005 (0.008)	0.004 (0.009)	-0.008*** (0.001)	-0.012 (0.008)	-0.044 (0.053)	0.018 (0.010)
C_Score						
*D * R (DR)*	9.064*** (2.883)	1.852 (2.842)	7.230** (3.581)	2.459 (2.052)	6.421** (2.970)	4.795 (3.005)
*DR * Size*	-0.456*** (0.148)	-0.068 (0.130)	-0.329** (0.154)	-0.115 (0.098)	-0.278** (0.139)	-0.190 (0.130)
*DR * M/B*	0.581 (0.436)	-0.220 (0.165)	-0.018 (0.310)	-0.005 (0.083)	-0.004 (0.083)	-0.082 (0.060)
*DR * Lev*	0.058 (0.039)	0.044 (0.056)	0.021 (0.072)	0.019 (0.067)	0.057 (0.074)	0.065 (0.078)
Size	0.003 (0.016)	0.008 (0.008)	0.008 (0.011)	-0.002 (0.005)	0.005 (0.012)	-0.002 (0.008)
M/B	-0.001 (0.020)	-0.002 (0.006)	-0.005 (0.004)	-0.002 (0.004)	-0.063** (0.027)	-0.008 (0.005)
Lev	0.007 (0.006)	-0.009 (0.025)	0.008 (0.011)	0.014*** (0.005)	0.007 (0.011)	0.016*** (0.002)
*D * Size*	-0.032 (0.027)	-0.004 (0.022)	-0.015 (0.035)	-0.018 (0.027)	-0.007 (0.030)	-0.011 (0.031)
*D * M/B*	0.155 (0.115)	-0.037 (0.070)	0.068 (0.150)	0.021 (0.032)	0.066** (0.028)	0.000 (0.008)
*D * Lev*	0.006 (0.010)	0.018 (0.027)	-0.018 (0.034)	-0.055 (0.029)	0.008 (0.016)	0.011 (0.022)
Constant	0.009 (0.347)	-0.045 (0.179)	-0.083 0.231	0.134 (0.114)	0.133 (0.233)	0.160 (0.168)
Observations	**476**	**481**	**499**	**492**	**498**	**488**
R^2	**0.255**	**0.113**	**0.361**	**0.282**	**0.228**	**0.233**

*Robust standard errors between parentheses; the dependent variable is earnings (X); the independent variables are listed in the first column; ** p < 0.05, *** p < 0.01.*

The results in Table 10 show that the majority of the independent variables are not significant individually. The results in Table B in Appendix B show the *p*-values corresponding to the *F*-statistics for the combination of independent variables in each year. From the results in Table B it follows that the combination of independent variables show a statistically significant relation with earnings (X) in each year. Therefore, the coefficients for the *C_Score* and *G_Score* are still used to obtain the proxy for the level of accounting conservatism in this sample. The descriptive statistics for the level of accounting conservatism (CONS), the *G_Score* and the *C_Score* are reported in Table 2 for banks and in Table 3 for non-banks in § *4.2*. The last step in this second test is to obtain the coefficients for Eq. (6) in order to determine whether the level of accounting conservatism changes over time. Table 11 shows the coefficients from estimation of Eq. (6) for European banks and non-banks over the time period 2014-2019.

Table 11

Multiple Linear Regression Results for the Relation between Accounting Conservatism and Firm Type over the Time Period 2014-2019

Variable	*Accounting conservatism (CONS)*
Firm type (Bank)	-0.022
	(0.023)
Year_2018	0.433***
	(0.022)
*Bank * Year_2018*	0.087**
	(0.037)
Firm size (Size)	-0.225***
	(0.004)
Market-to-Book value (M/B)	0.003
	(0.003)
Leverage (Lev)	0.028***
	(0.001)
Return on assets (ROA)	-0.323***
	(0.095)
Constant	4.936***
	(0.071)
Observations	**2934**
R^2	**0.698**

*Robust standard errors between parentheses; the dependent variable is accounting conservatism (CONS); the independent variables are listed in the first column; the coefficients are estimated over the time period 2014-2019; ** p < 0.05, *** p < 0.01.*

I obtain the following regression coefficients from the multiple linear regression on accounting conservatism:

$$CONS_{i,t} = 4.936 - 0.022 * Bank_{i,t} + 0.433 * Year\_2018_{i,t} + 0.087 * Bank_{i,t} * Year\_2018_{i,t} - 0.225 * Size_{i,t} + 0.003 * M/B_{i,t} + 0.028 \times Lev_{i,t} - 0.323 * ROA_{i,t} \quad (8)$$

where *i* indicates the firm and *t* indicates the year.

The coefficient of interest in Eq. (8) is the coefficient for the interaction-effect of firm type (Bank) and year (Year_2018). The results in Table 11 show a statistically significant coefficient for the variable year (Year_2018). Hence, for both European banks and non-banks the predicted score for the level of accounting conservatism is 0.433 higher in 2018 and 2019 as compared to the predicted score in 2014, 2015, 2016 or 2017, holding all other variables constant. Moreover, consistent with the expectation, the interaction-effect of firm type and year (Bank * Year_2018) shows a positive statistically significant coefficient. Therefore, in 2018 and 2019 the predicted score for the level of accounting conservatism is 0.087 higher in banks as compared to the predicted score in non-banks in both years, holding all other variables constant. Thus, there is sufficient evidence to conclude that the difference in the level of accounting conservatism between banks and non-banks depends on whether it is also the year 2018 or 2019.

Furthermore, the results in Table 11 show that the coefficients for firm size (Size), leverage (Lev) and return on assets (ROA) are statistically significant. Hence, approximately, for a 1 percent increase in firm size, there is a decrease of 0.002 in the predicted score for the level of accounting conservatism, holding all other variables constant. Moreover, if the leverage ratio increases by 1, there is an increase of 0.028 in the predicted score for the level of accounting conservatism, holding all other variables constant. Lastly, if the return on assets increases by 1 percentage point, there is a decrease of 0.323 in the predicted score for the level of accounting conservatism, holding all other variables constant.

6. Discussion & Conclusion

6.1 Discussion

The aim of this study is to determine whether the introduction of IFRS 9 *Financial Instruments* is associated with a higher level of accounting conservatism in European listed banks. The results suggest a positive relation between the level of loan loss provisions under IFRS 9 and the level of accounting conservatism in European banks. However, the estimated coefficient for loan loss provisions is statistically nonsignificant. Nevertheless, the results also show that the years 2018 and 2019 are associated with a higher level of accounting conservatism than the years before 2018. Moreover, the difference in the level of accounting conservatism between banks and non-banks is significant in 2018 and 2019. As IFRS 9 has just been effective as of the 1st of January 2018, this indicates a change in the level of accounting conservatism in European banks, after the introduction of the standard. However, the estimated regression from which this indication is derived (Eq. (8)), does not contain a variable that directly accounts for IFRS 9. Therefore, it is noteworthy that this study only provides weak evidence for the association between the introduction of IFRS 9 and the change in the level of accounting conservatism in European listed banks.

The hypothesis in this study states that the recognition of loan loss provisions under IFRS 9 increases the level of accounting conservatism in European listed banks. On the one hand, the results do not provide sufficient evidence for a direct positive relation between the level of loan loss provisions and the level of accounting conservatism in European banks in the time period in which IFRS 9 is in place. As such, the results in this study are not in line with the results in Craig Nichols et al. (2009), which demonstrate that larger loan loss provisions are associated with a higher degree of accounting conservatism in banks. On the other hand, it is remarkable that after the introduction of IFRS 9 the level of accounting conservatism significantly differs between banks and non-banks. Therefore, the results weakly confirm the expectation of Bholat et al. (2018), which states that there will be a higher level of accounting conservatism under the forward-looking model of IFRS 9 compared to the level of accounting conservatism under IAS 39.

6.2 Conclusion

This study aims to answer the following research question:

What is the effect of IFRS 9 on the level of accounting conservatism in European listed banks?

First of all, the results show a positive association between the level of loan loss provisions and the level of accounting conservatism in European listed banks in the time period in which IFRS 9 is in place. However, this association is statistically nonsignificant. Moreover, the results suggest a change in the level of accounting conservatism after the introduction of IFRS 9 as the required loan loss accounting standard in banks. *Ceteris paribus*, the level of accounting conservatism is higher in banks as compared to the level in non-banks as of the 1st of January 2018. The hypothesis states that the recognition of loan loss provisions under IFRS 9 increases the level of accounting conservatism in European listed banks. Strictly speaking, the hypothesis is rejected, since there is not sufficient evidence to conclude that the level of loan loss provisions affects the level of accounting conservatism in European listed banks in 2018 and 2019, although IFRS 9 is in place in these years.

In conclusion, the introduction of IFRS 9 has nevertheless created a significant difference in the level of accounting conservatism between European listed banks and European non-banks. However, it is clear that this answer to the research question does not account for the particular relation between loan loss provisions under IFRS 9 and the level of accounting conservatism in European listed banks. This highlights the limitations of this research. First of all, the second set of tests, which captures the change in the level of accounting conservatism, does not directly include the effect of IFRS 9. The second test merely uses a year dummy variable. Only the first set of tests directly analyzes the association between loan loss provisions and the level of accounting conservatism over the years 2018 and 2019. Consequently, the results from the second set of tests are relatively vague as compared to the results from the first set of tests. Moreover, the results in this paper do not allow to define the relation between the level of loan loss provisions and the level of accounting conservatism in the time period in which IFRS 9 was not yet in place. Secondly, the sample in this study exclusively consists of European firms. However, in general, not all European countries are equally developed. As a result, the monitoring of compliance with IFRS 9 might differ between countries in the sample. Consequently, the variable loan loss provisions (LLP) might not accurately capture the implications of IFRS 9 for all banks. Consequently, the relevance of the estimated relation between loan loss provisions and accounting conservatism could be undermined. The same argument emphasizes that the focus on European firms could hinder the generalizability of the conclusions in this paper to firms in non-European countries.

Based on these limitations, there are several suggestions for further research. Further research could aim to quantify the change in accounting conservatism over the years in order to assess the economic relevance of this change. Another suggestion for further research would be to construct a concrete measure of the timeliness of loan loss recognition, as this study merely considers the level of loan loss provisions. Lastly, the results in this study suggest that the existing theory about accounting conservatism and loan loss provisions is not conclusive in the case of European firms. Hence, the theory about the relation between forward-looking loan loss accounting and accounting conservatism could be extended, at least for European firms.

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Appendix A

Table A

Results from Levene's Test for Equality of Variances between European Banks and Non-banks over the Time Period 2014-2019

Variable	Banks (N)	Non-banks (N)	*F*	Sig. (*p*)
Earnings (X)	1081	20548	0.033	0.856
Returns (R)	1116	21286	11.576***	0.001
Firm size (Size)	1116	21283	35.470***	0.000
Market-to-Book value (M/B)	1115	21197	106.258***	0.000
Leverage (Lev)	1011	2012	149.751***	0.000
G_Score	1011	2012	1.076	0.300
C_Score	1011	2012	65.289***	0.000
Accounting conservatism (CONS)	1011	2012	0.165	0.684
Return on assets (ROA)	1080	20542	263.085***	0.000

*This table shows the results from Levene's Test for equality of variances between 191 European banks and 3790 non-banks over the time period 2014 to 2019; the total number of observations (N), the test statistic centered at the median (F) and significance, indicated by the p-value (Sig. (p)), are reported; *** $p < 0.01$.*

Appendix B

Table B

F-statistics for the Combination of Independent Variables in the Regressions with Dependent Variable Earnings (X) over the Time Period 2014-2019

Year	N	*F*	Sig. (*p*)
2014	476	2.64***	0.001
2015	481	2.64***	0.001
2016	499	11.56***	0.000
2017	492	2.96***	0.000
2018	498	3.58***	0.000
2019	488	7.50***	0.000

*This table shows the statistical significance for the combination of independent variables in the regressions in table 10; the total number of observations (N), the test statistic (F) and significance, indicated by the p-value (Sig. (p)), are reported; *** p < 0.01.*