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The Effects of the Financial Crisis on Cooperative Banks in Europe – A Critical Comparison –

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The Effects of the Financial Crisis on Cooperative Banks in Europe – A Critical Comparison –



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Auditing
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Analysis

The Effects of the Financial Crisis on Cooperative Banks in Europe

– A Critical Comparison*

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ABSTRACT

The financial crisis has highlighted the necessity of discussions on the adequacy of banking regulation and accounting standard-setting for financial institutions. We compare the development of several variables in this context between commercial banks, cooperative banks and savings banks from 2005 through 2013, in order to investigate whether smaller banks such as cooperative banks or savings banks tended to be more robust to the financial crisis. We find that the volume of lending (loan loss provisioning) remained stable or increased (decreased) for smaller financial institutions. Furthermore, there is no significant increase in loss avoidance behavior specifically for cooperative banks. Cooperative banks are also the group of banks that showed the least pro-cyclical effects and the most income smoothing behavior. Our results suggest that cooperative banks were the group of banks being most stable during the years surrounding the financial crisis in 2007/2008. This demonstrates the importance that policy makers consider the broad range of financial institutions for discussions on policy adjustments.

Die Finanzkrise hat gezeigt, dass die Adäquanz der aufsichtsrechtlichen Regeln und der Rechnungslegung von Banken diskutiert werden muss. Wir untersuchen die Entwicklung von Genossenschaftsbanken, Sparkassen und (anderen) Geschäftsbanken von 2005 bis 2013 um herauszufinden, ob kleinere Institute wie Genossenschaftsbanken und Sparkassen in der Krise robuster waren. Es zeigt sich, dass das Kreditvergabevolumen der kleineren Banken stabil blieb oder anstieg. Die Kreditwertberichtigungen sanken. Genossenschaftsbanken zeigten das am wenigsten prozyklische Verhalten und die stärkste Gewinnglättung. Unsere Ergebnisse legen nahe, dass die Genossenschaften die stabilste Bankengruppe in der Finanzkrise 2007/2008 bildeten. Dies sollte bei einer Veränderung aufsichtsrechtlicher Rahmenbedingungen beachtet werden.

Keywords: Cooperative Banks, Financial Crisis, Loan Loss Provisioning, IFRS

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1. Introduction

The most recent financial crisis and its near systematic collapse resulted in the greatest economic recession in Europe since the end of World War II (Barth and Landsman 2010, 399). This event demonstrated the importance of banks for countries' financial infrastructure. The importance of banks in financial systems, as well as their opacity, and the potential of negative effects on the economy caused by bank failures make banks special compared to non-financial firms (Bushman 2014, 385). Hence, a debate about necessary changes in bank regulation and financial reporting standards for financial institutions arose. While the existing literature discusses these issues primarily in the context of public companies, this study focuses on a comparison between commercial banks, cooperative banks and savings banks. Regarding a comparison between business models, commercial banks and cooperative banks are considered as being very different. Savings banks, however, are somewhere in between. We address the question, whether these differences between the types of banks also reflected in different developments of banks' performance and financial reporting behavior.

Our study is based on a sample of about 4,000 banks situated within one of the 28 EU member states, for which variables are collected from Bankscope for the years 2005-2013. The first set of tests examines changes in specific bank characteristics during this time period. First, it seems interesting to have a closer look at the volume of granted loans and whether there has been a considerable reduction following the financial crisis. Second, loan loss provisions (LLPs) shall reflect banks' risk conditions and it is further deemed important to investigate whether there have been changes in LLPs over time. Third, the study seeks to find an answer to the question whether one of the banking groups (i.e., commercial banks, cooperative banks or savings banks) has a greater propensity to losses following the financial crisis.

The second set of tests further investigates LLPs. Due to its large latitude of discretionary accounting choices and resultant direct effects on volatility and cyclicity of banks' earnings, loan loss provisioning is in the center of the earnings management research literature (Bushman and Williams 2012, 1f.). By using discretionary loan loss provisioning, banks may be inclined to pursue additional goals, such as income smoothing. Since the financial information in this case does no longer reflect banks'

actual risk conditions, the altering of earnings deteriorates the ability of stakeholders to properly monitor banks. The most recent financial crisis made clear that bank insiders exploiting banks for selfish reasons may lead to higher probability of bank failures, with dramatic consequences for the economy (Bouvatier et al. 2014, 254). The study examines if there are any differences in the engagement in earnings management between the three different bank types. Furthermore, we are analyzing whether the empirical results depend on the accounting standard used to create the financial reports (i.e., whether the financial institutions use local GAAP or IFRS). For example, there may be differences in the extent of income-smoothing and pro-cyclicality.

The remainder of this paper is organized as follows. Section 2 gives a brief overview of the institutional background in terms of financial reporting standards and regulation. Section 3 describes the sample selection, research design, and the empirical results and section 4 concludes.

2. Theoretical Background

2.1 The European banking system

In the European banking system three basic bank types exist, namely commercial banks, savings banks, and cooperative banks (Kontolaimou and Tsekouras 2010, 1946; Deutsche Bundesbank 2015, 111).

Cooperative banks, which are mutual organizations, form the largest category in terms of numbers. By April 2015, there were 1,047 cooperative banks in Germany which held cumulative total assets of €789,192 million, representing 9.7% of aggregated total assets of all German banks (Deutsche Bundesbank 2015, 6ff.). Cooperative banks are mostly small, locally operating banks, which primarily obtain their equity capital from issued cooperative shares held by their members (Pollmann 2013, 8ff.). These shares, in contrast to shares of listed commercial banks, are not traded on stock exchanges. The only way to sell cooperative shares is to return them to the bank in exchange for their face value. Consequently, there is no direct participation of shareholders in an increase in firm value. Moreover, most of debt capital stems from depositors. Therefore, cooperative banks generally are not active on capital markets (Bornemann et al. 2012, 2404; Bornemann et al. 2015, 189).

In terms of numbers, the smallest group of banks in the sample used in this study is represented by savings banks. By the end of April 2015, the 416 German savings banks held cumulative total assets of approximately €1,126,748 million, accounting for 13.8% of total assets of the German banking sector (Deutsche Bundesbank 2015, 12ff.). The primary business of savings banks is the lending and borrowing in their home region, without the primary purpose of realizing profits (Bornemann et al. 2012, 2404).

The group of commercial banks contains publicly held and manager-owned banks as well as regional banks. Most of the commercial banks are of rather small size. However, the biggest European banks in terms of total assets are included in this category, too (Bornemann et al. 2012, 2404). In Germany cumulative total assets of €3,233,668 million (i.e., 39.8% of aggregated total assets) are held by 273 registered commercial banks (Deutsche Bundesbank 2015, 12ff.).

Considering the topic of this study, there are important characteristics in which cooperative banks and savings banks differ from commercial banks. Savings banks and cooperative banks in general do not announce information regarding their future performance. Furthermore, managers of these bank types normally do not rely on performance-based reimbursements. Finally, cooperative banks and savings banks are not listed on stock exchanges (Bornemann et al. 2012, 2404). These differences in mind the prevalence of earnings management across savings banks and cooperative banks may seem questionable compared to commercial banks. However, there are studies showing that smaller banks have higher incentives to manage earnings (Burgstahler et al. 2006; Bouvatier et al. 2014).

2.2 LLPs within Basel I and Basel II regulatory framework

With the publication of the Basel Accord in 1988¹ (Basel I) by the Basel Committee on Bank Supervision, risk-based capital adequacy requirements were introduced. Henceforth, all banks were required to hold a minimum qualifying total capital to risk-weighted assets (e.g., loans and securities) ratio of at least 8% (Federal Reserve Bulletin 2003, 396). Out of this regulatory capital at least one half had to be in form of so called Tier 1 capital (also referred to as core capital) (Jablecki 2009, 18). Tier 1 capital

¹ International Convergence of Capital Measurement and Capital Standards; published by the Bank for International Settlement in July, 1988, in force in 1992.

in terms of Basel I consisted of common stockholders' equity, qualifying preferred stocks, and the minority interests in equity accounts. In other words, core capital contained equity items with lower priority of repayment, which were considered to exhibit a better ability to absorb losses (Gebhardt and Novotny-Farkas 2011, 294; Beatty and Liao 2014, 350). Tier 2 capital, as the remainder of the required regulatory capital, according to the Basel I regime was formed of the remaining capital (i.e., assets revaluation reserves, undisclosed reserves, hybrid capital instruments, subordinated debt, general provisions, and loan loss provisions) and was limited to 100% of Tier 1 capital (Jablecki 2009, 18; Curcio and Hasan 2015, 28).

Due to changes in definitions of assets and financial innovation, risk-weights and actual economic risk diverged over time. For instance, risk exposure was increased by credit derivatives and securitizations while Basel I risk-weights decreased (Beatty and Liao 2014, 350). Therefore, Basel I outlived its usefulness (Federal Reserve Bulletin 2003, 396). As a reaction, the Basel Committee on Bank Supervision in 2004 published Basel II², to adjust regulatory risk-weighted assets, to reduce the potential of regulatory capital arbitrage, and to make the required regulatory capital more cyclical by enhancing sensitivity to credit risk (Heid 2007, 3886). The objective was to adjust risk-weighted assets, such that they actually reflect economic risk (Heid 2007, 3886; Ruthenberg and Landskroner 2008, 2725; Beatty and Liao 2014, 350).

With the adoption of Basel II only unexpected losses are covered by regulatory capital. Expected losses, however, must be covered by loan loss provisions (LLPs) (Gebhardt and Novotny-Farkas 2011, 295). To calculate their capital requirements, banks can choose between two approaches. According to the standardized approach, credit risk primarily is measured based on risk assessments of rating agencies. If banks decide to choose the internal ratings-based approach, they are able to use their internal rating system for credit risk measurement (Ruthenberg and Landskroner 2008, 2726). Using the standardized approach, loan loss reserves still can be included in forming Tier 2 capital up to 1.25% of banks' risk-weighted assets (Ng and Roychowdhury 2014, 1238). Following the internal ratings-based approach, banks must compare the expected credit losses with total eligible provisions. If expected credit losses exceed eligible provisions, the difference must be deducted, such that 50% are subtracted from

² International Convergence of Capital Measurement and Capital Standards: A Revised Framework; published by the Bank for International Settlement in June, 2004, in force by the end of 2006.

Tier 1 capital. The remaining 50% are deducted from Tier 2 capital. In the opposite case, the difference can be included in order to form Tier 2 capital up to a limit of 0.6% of risk-weighted assets (Curcio and Hasan 2015, 28).

2.3 Loan loss provisioning under IFRS

Loan loss provisioning recently became one of the most discussed subjects in accounting. The adoption of International Financial Reporting Standards (IFRS) in 2005 was supposed to increase financial disclosure quality. Compared to local Generally Accepted Accounting Principles (local GAAP), the principle-based IFRS are more market-oriented. By reducing options for discretionary accounting and the prohibition of hidden reserves, IFRS were intended to lead to a higher reliability of financial reporting in terms of a better reflection of economic state and performance (Barth et al. 2008, 468; Leventis et al. 2011, 104).

According to International Accounting Standard (IAS) 39, the valuation of loans is based on the current value of the corresponding cash flows. If the borrower faces financial problems those cash flows are expected to decrease. Further, in contrast to some local-GAAP of EU member states, general provisions are prohibited to a wide degree. Finally, according to IFRS the valuation of loans is based on the so called incurred loss model. Accordingly, loan loss provisions are calculated based on losses that already occurred rather than on expected losses occurring from future events (Gebhardt and Novotny-Farkas 2011, 290; Cantrell et al. 2014, 150; Henselmann et al. 2014, 355; Curcio and Hasan 2015, 28).³ Since the incurred loss model disregards expected losses, it is in conflict with the goal of bank supervision to reach financial stability and the resultant preference for a more forward-looking provisioning (Gebhardt and Novotny-Farkas 2011, 295).

During the most recent financial crisis critique on the incurred loss model arose (Henselmann et al. 2014, 355), such that banks have been precluded from capturing all aspects of credit risk, adequately. Consequently, International Accounting Standards Board (IASB) in cooperation with Financial Accounting Standards Board (FASB) developed the new IFRS 9, which will, by replacing the currently applicable IAS 39, rely more on an expected loss model of loan loss provisioning (Gebhardt and Novotny-

³ For a more detailed synopsis of expected loss model and incurred loss model and further information on loan loss accounting prior to IAS 39, see Gebhardt and Novotny-Farkas (2011, 295ff.).

Farkas 2011, 291; Henselmann et al. 2014, 355; Curcio and Hasan 2015, 29). However, whether the valuation of loans at fair value according to the expected loss model or at historical costs following the incurred loss model is better in predicting loan losses, is discussed rather controversially (Barth and Landsman 2010, 403; Blankespoor et al. 2013, 1146ff.; Cantrell et al. 2014, 151).⁴ Consistently, empirical research regarding this question shows rather mixed results.⁵

2.4 The impact of Basel III on loan loss provisioning and capital requirement

The regulatory sets described above indeed are a step forward to a higher standard of accounting transparency. Nevertheless, Basel II was subject to criticism in terms of making bank returns more volatile and the enhancement of pro-cyclicality of banks' lending policies. In consideration of the most recent financial crisis, the Basel Committee on Bank Supervision developed new capital requirement regulations to enhance the quality of bank capital that resulted in Basel III⁶. These intentions were supported by the European Commission and its directive proposal for the Capital Requirements Directive IV (CRD IV⁷) from July 2011 (Grosse and Schumann 2014, S40; Curcio and Hasan 2015, 29). One of the main goals of Basel III was to reduce pro-cyclicality and to promote countercyclical buffers of capital in periods of unduly credit growth, in order to protect banks from future potential losses (Braslins and Arefjevs 2013, 6f.). This capital buffer, should only become noticeable in periods of excessive credit growth which leads to systems of high risk-buildups and should vary within 0%-2.5% of common equity. Additionally, the Basel Committee on Bank Supervision supports the intentions of IASB to implement standards for loan loss provisioning that rely on a more forward-looking expected loss model. Furthermore, the Committee proposed a deduction of any given shortfall in loan loss provision from regulatory capital in order to prevent incentives for under-provisioning (Braslins and Arefjevs 2013, 6f.; Curcio and Hasan 2015, 29).

⁴ For further references and a summary of the controversial debate on fair value accounting, see Laux and Leuz (2009).

⁵ For a preference for the incurred loss model, see Gebhardt and Novotny-Farkas (2011, 330) and Cantrell et al. (2014, 172). For the support of fair value accounting, see Blankespoor et al. (2013, 1170ff.).

⁶ Basel III: A global regulatory framework for more resilient banks and banking systems; published by the Bank for International Settlement in December 2010, in force in 2014.

⁷ Proposal for a Directive of the European Parliament and of the Council of July 20th, 2011, implemented with the Directive 2013/36/EU of the Parliament and of the Council of June 26th, 2013.

3. Empirical Analysis

3.1 Sample selection

Motivated by the discussion on accounting standards and bank regulation following the financial crisis described above, this study investigates the lending, loan loss provisioning and loss avoidance behavior as well as the economic pro-cyclicality and anti-cyclical income smoothing behavior for financial institutions located in one of the EU member states between 2005 and 2013. Specifically, we aim at comparing commercial banks, savings banks, and cooperative banks. This is in contrast to, for example, Curcio and Hasan (2015, 33), who explicitly omit savings banks and cooperative banks from their sample based on the argument that these groups of banks differ from commercial banks in the way these two bank types manage their business. For us, this difference makes it especially interesting to question whether there have been differences in the development of banks' performance and financial reporting behavior between commercial banks, cooperative banks or savings banks.

Data source for the sample used in this paper is BvD Bankscope⁸, which provides detailed financial information on the vast majority of banks located in member states of the EU. That applies for countries that joined the European Union at some point during this period, too. Since the objective of this study is to specifically examine commercial banks, savings banks, and cooperative banks, in a first step all other specializations are omitted from the sample.

Given that BvD Bankscope provides both consolidated and unconsolidated information on banks' financial statements, the problem of double counting arises. BvD Bankscope database contains information on eight different consolidation statuses.⁹

⁸ The financial data in BvD Bankscope is provided by Fitch Solutions, a distribution channel for Fitch Ratings content, and is predominantly compiled using filed balance sheets, income statements, and the notes of audited annual reports.

⁹ C1: statement of a mother bank integrating the statements of its controlled subsidiaries or branches with no unconsolidated companion; C2: statement of a mother bank integrating the statements of its controlled subsidiaries or branches with an unconsolidated companion; C*: additional consolidated statement; U1: statement not integrating the statements of the possible controlled subsidiaries or branches of the concerned bank with no consolidated companion; U2: statement not integrating the statements of the possible controlled subsidiaries or branches of the concerned bank with a consolidated companion; U*: additional unconsolidated statement; A1: aggregated statement with no companion; A2: aggregated statement with one companion; NA: bank with no statement; only the name and address are available (Duprey and Lè 2015, 7).

In order to maximize the length of the examined time series, we use the Bankscope consolidation code seniority rule (C1/C2>C*>U1/U2>U*) as suggested by Duprey and Lé (2015). Our final sample comprises 29,996 firm-year observations from about 4,000 financial institutions located in 21 out of 28 EU member states with available data for the empirical tests in later sections.

Table 1 gives a breakdown of the distribution of banks years by country and specialization. Since the universal banking system probably is most common in Germany, not very surprisingly, one can see that the majority of savings banks (63.8%) and cooperative banks (61.3%) within the EU are located in Germany.

– *TABLE 1* –

3.2 Lending, loan loss provisioning and loss avoidance behavior

Table 2 shows the distribution of the median change in volume of yearly granted loans between 2005 and 2013 for commercial banks, cooperative banks and savings banks, respectively. In this case, the volume of loans is measured as a gross value, which means the volume of loans before loan loss provisions. While the overall volume of lending decreased for commercial banks over the time period, the time-series development in the volume of yearly granted loans remained relatively stable for cooperative banks and even tended to slightly increase for savings banks. If we break down the volume of loans by the accounting standard, the results remain qualitatively unchanged for commercial banks. However, there is an increasing volume of yearly granted loans for both cooperative banks and savings banks following local GAAP. Interestingly, these financial institutions mainly are located in Germany. In contrast, the volume of granted loans decreases for both cooperative banks and savings banks following IFRS. These granted loans are mainly related to financial institutions that are based in Italy.

– *TABLE 2* –

Directly related to the estimation of loans are loan loss provisions. Table 3 reports the median loan loss provisions scaled by total assets between 2005 and 2013. The median value increased for commercial banks, whereas it decreased for both cooperative and

savings banks. This means that commercial banks expect increasing loan losses than cooperative or savings banks. Again, the results differ between loan loss reserves made by financial institutions following local GAAP and those following IFRS. Overall, the loan loss provisions decreased over time for financial institutions following local GAAP and increased for financial institutions following IFRS.

– *TABLE 3* –

In order to investigate the prevalence of loss avoidance behavior before and after the financial crisis in 2007/2008, we compare the earnings distribution of commercial banks, cooperative banks and savings banks for the years 2005/2006, 2007/2008, and 2009/2010. Following the literature on earnings management surrounding earnings benchmarks (Burgstahler/Dichev 1997; Beatty/Ke/Petroni 2002), we assume that the probability of loss avoidance behavior through earnings management rises with an increasing percentage of financial institutions with earnings just exceeding a value of zero. Earnings are measured as the return on assets and we use 0.001 as the interval width. The earnings distributions are shown in Table 4.

Commercial banks show a continuously high percentage of financial institutions with earnings just exceeding the zero for all years. This reflects a common firm behavior to use accounting flexibility to avoid passing a specific threshold (for size management Bernard/Burgstahler/Kaya 2015), in this case negative earnings. The frequency in bins with small profits is much higher than the normal shape of the distribution curve would suggest. On the other hands, there are much less banks with small losses than we would expect without earnings management. In addition, there seems to be a shift in the earnings distribution to the left, which indicates that the profitability of commercial banks has decreased over the years.

For savings banks, the percentage of financial institutions with earnings just above zero is low before the financial crisis, but increases to a very high level during 2007/2008 and 2009/2010.

In contrast, the earnings distribution of cooperative banks remains relatively stable for all years. There also seems to be much less loss avoidance behavior. At least the percentage of financial institutions with earnings just exceeding zero earnings is relatively

low. Thus, it seems that the profitability of cooperative banks has been least affected by the financial crisis.

– *TABLE 4* –

3.3 Economic pro-cyclicality and anti-cyclical income smoothing

In the aftermath of the financial crisis, the question arose, whether the existing accounting rules for loan loss provisioning (e.g., IAS 39) have led to increased pro-cyclicality in the financial system. The remaining empirical tests shed some light on whether there have been differences in the pro-cyclical effects between commercial banks, cooperative banks and savings banks. Furthermore, we analyze the extent to which financial institutions used discretionary choices in loan loss provisioning for income smoothing purposes.

The remaining empirical tests are primarily based on a sample of 6,187 firm-years from commercial banks (22.92 percent of total), 14,300 firm-years from cooperative banks (52.97 percent of total) and 6,509 firm-years from savings banks (24.11 percent of total) located in one of the EU member states. In total, we are analyzing almost 27,000 firm-year observations from European financial institutions. Summary statistics for the main variables used in the later tests between 2005 and 2013 are provided in Table 5. Overall, the mean (median) bank size measured as the total assets seems to be greater for commercial banks than that of cooperative banks or savings banks. The mean (median) profitability of commercial banks over the time period 2005-2013 also seems to be slightly larger as compared to cooperative banks or savings banks. However, it has to be noted that almost half of the commercial banks are following IFRS, whereas the majority of cooperative banks and savings banks are following local GAAP.

– *TABLE 5* –

Table 6 displays the Pearson correlations between macro-economic variables (i.e., GDP and the unemployment rate) and accounting-based variables (i.e., LLP and earnings before LLP). The sign of the correlation between the LLP and the macro-economic variables is similar for the three different groups of financial institutions. In particular, commercial banks, savings banks and cooperative banks exhibit the same

negative correlation between the LLP and the GDP as well as the same positive correlation between the LLP and the unemployment rate. Hence, the volume of loan loss provisions decreases with an improving economic performance of a country as measured by an increasing GDP or a lower unemployment rate.

Regarding the correlation between the LLP and banks' earnings before LLP (EBTLLP), a comparison reveals that there is a greater correlation for cooperative banks and savings banks than for commercial banks. This might indicate that income smoothing is greater for cooperative banks and savings banks than for commercial banks and we address this issue further in the following empirical tests.

– TABLE 6 –

Adapting prior literature (Bikke and Metzmakers 2005; Fonseca and Gonzales 2008; Gebhard and Novotny-Farkas 2011), our analyses of the economic pro-cyclicality and anti-cyclical income smoothing behavior are based on the following country and year fixed-effect regression.

$$\begin{aligned}
 LLP = & \beta_0 + \beta_1 GDP + \beta_2 Unemployment + \beta_3 EBTLLP + \sum_k \beta_{4,k} Control_k \\
 & + \sum_l \beta_{5,l} Country_l + \sum_m \beta_{6,m} Year_{m+\varepsilon}
 \end{aligned} \tag{1}$$

We define *LLP* as the loan loss provision scaled by average total assets; *GDP* as the country-specific percentage change in GDP from the prior year (Eurostat code: *nama_gdp_k*); *Unemployment* as the country-specific unemployment rate (Eurostat code: *lfsa_urgan*); *EBTLLP* as the sum of the pre-tax profit and the loan loss provision (LLP) scaled by total assets at the beginning of the year. As control variables we include the logarithm of total assets (*LogAssets*), gross loans scaled by total assets (*Gross Loans*), the change in gross loans scaled by total assets at the beginning of the year (*ChangeGrossLoans*), total equity scaled by total assets (*Equity*), and a dummy variable that takes a value of one if the firm-year observation is based on IFRS, and zero otherwise (*IFRS*). The regressions are estimated separately for firm-years from commercial banks, cooperative banks and savings banks.

Table 7 provides the estimated coefficients from the OLS regression. Our main variables of interest are GDP, Unemployment and EBTLLP, which we regress on LLP to test for economic pro-cyclicality and anti-cyclical income smoothing. Analyses based on the full sample are shown in columns (1), (4) and (7). Consistent with our expectations, the correlation coefficient between GDP and LLP is negative for commercial banks and savings banks. Following prior research we interpret firm-years exhibiting a negative correlation between GDP and LLP as making loan loss provisions pro-cyclical. In contrast, the correlation coefficient is positive for cooperative banks suggesting that cooperative banks tend to make loan loss provisions to a greater extent when the country's economic performance is growing and thus counter-cyclical. The coefficient on EBTLLP from equation (1) is significantly positive for all regression variants based on the full sample. However, it is much lower for firm-years from commercial banks than from cooperative banks or savings banks. This suggests that commercial banks smooth earnings less than cooperative banks or savings banks. The coefficient on the interaction term between EBTLLP and IFRS captures the difference in the effect of income smoothing between financial institutions following IFRS and those following local GAAP. Significantly negative coefficients on the interaction term indicates that financial institutions following IFRS engage less in income smoothing behavior as compared to financial institutions following local GAAP. Interestingly, the effect is more pronounced for cooperative banks and savings banks than for commercial banks.

Finally, we conduct additional tests based on sub-samples comprising firm-years of financial institutions following IFRS and local GAAP, respectively. Table 7 provides the results for commercial banks in columns (2) and (3), for cooperative banks in columns (5) and (6), and for savings banks in columns (8) and (9). The empirical results are generally similar to the tests based on the full sample. In contrast to the expectations, the coefficient on GDP is positive for cooperative banks using local GAAP. This also holds true for commercial banks, but only for those firm-years that are based on local GAAP as well. Given that these financial institutions are primarily based in Germany and Austria, we could conclude that the German and Austrian financial system has proven to be relatively robust to the financial crisis. We further find that income smoothing behavior is more pronounced for firm-years of financial institutions applying local GAAP.

In summary, our results suggest that IFRSs tend to be more pro-cyclical and provide less opportunity for income smoothing than local GAAP. Further, the problem with pro-cyclicality seems to be less pronounced for cooperative banks (specifically for German cooperative banks). Cooperative banks also seem to engage most in income smoothing behavior as compared to commercial banks or savings banks. Thus, cooperative banks seem to have been most robust to the financial crisis.

– *TABLE 7* –

4. Conclusions

This study examines the development of several variables characteristic for financial institutions located in the 28 member states of the European Union during a period of 9 years (i.e., from 2005-2013). In particular, the study aims at comparing the development of commercial banks, savings banks, and cooperative banks. First, our interest focuses on firms' lending behavior, the volume of loan loss provisions, and firm's profitability. Second, we investigate the extent to which the volume of loan loss provisions depends on macro-economic factors in the firm's home country (i.e., pro-cyclicality).

The results show that cooperative banks allocated considerably greater volumes of loan loss provisions before the financial crisis than savings banks or commercial banks. Interestingly, the allocation rates were almost twice as high as those of other banks. While the volume of allocations to loan loss provisions slightly decreased during the years 2007/2008 for cooperative banks (and savings banks), there was a strong increase after the financial crisis for commercial banks. We further find that there are only very few cooperative banks (and savings banks) with losses. This is in contrast to commercial banks, where the analyses show a strong increase in financial institutions showing losses after the financial crisis. Furthermore, the allocation of loan loss provisions is strongly pro-cyclical, especially for commercial banks. This is probably due to the influence of the special accounting treatment in IAS 39. There is also indication that financial institutions engage in income smoothing, whereas IAS 39 limits income smoothing behavior.

The financial crisis has demonstrated the importance of cooperative banks and savings banks for the stability of the European financial system. However, given that the vast

majority of cooperative banks in Europe are located in only three member states (i.e., Germany, Italy or Austria), it remains an open question whether it is possible to draw European-wide inferences. It also will be interesting to further investigate, whether the adoption of IFRS (and other regulatory actions) is a necessary regulatory change for smaller (German) cooperative banks and savings banks.

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Tables and Figures

Table 1

CTRYCODE	Commercial Banks				Cooperative Banks				Savings Banks			
	Total		Thereoff: IFRS		Total		Thereoff: IFRS		Total		Thereoff: IFRS	
		(in %)		(in %)		(in %)		(in %)		(in %)		(in %)
AT	497	8.0%	82	2.7%	789	5.5%	41	0.9%	642	9.9%	19	2.4%
BE	166	2.7%	63	2.0%	41	0.3%	7	0.2%	49	0.8%	16	2.0%
CZ	113	1.8%	79	2.6%	15	0.1%	15	0.3%	0	0.0%		0.0%
DE	896	14.5%	83	2.7%	8,765	61.3%	14	0.3%	4,155	63.8%	3	0.4%
DK	362	5.9%	144	4.7%	44	0.3%		0.0%	272	4.2%	1	0.1%
EE	48	0.8%	48	1.6%	0	0.0%		0.0%	0	0.0%		0.0%
ES	239	3.9%	236	7.7%	514	3.6%	514	11.2%	295	4.5%	295	36.6%
FI	77	1.2%	53	1.7%	10	0.1%	10	0.2%	16	0.2%		0.0%
FR	828	13.4%	179	5.8%	532	3.7%	437	9.5%	203	3.1%	44	5.5%
GB	607	9.8%	346	11.2%	1	0.0%	1	0.0%	6	0.1%	6	0.7%
GR	122	2.0%	122	4.0%	0	0.0%		0.0%	6	0.1%	6	0.7%
HU	128	2.1%	65	2.1%	5	0.0%		0.0%	0	0.0%		0.0%
IE	83	1.3%	77	2.5%	0	0.0%		0.0%	0	0.0%		0.0%
IT	703	11.4%	701	22.7%	3,525	24.7%	3,521	76.5%	323	5.0%	322	40.0%
LU	393	6.4%	92	3.0%	16	0.1%		0.0%	13	0.2%	6	0.7%
NL	159	2.6%	127	4.1%	9	0.1%	9	0.2%	5	0.1%		0.0%
PL	254	4.1%	205	6.6%	9	0.1%	9	0.2%	9	0.1%	9	1.1%
PT	142	2.3%	119	3.9%	9	0.1%	7	0.2%	22	0.3%	17	2.1%
SE	153	2.5%	47	1.5%	0	0.0%		0.0%	479	7.4%	47	5.8%
SI	126	2.0%	126	4.1%	16	0.1%	16	0.3%	4	0.1%	4	0.5%
SK	91	1.5%	90	2.9%	0	0.0%		0.0%	10	0.2%	10	1.2%
Total	6,187	100%	3,084	100%	14,300	100%	4,601	100%	6,509	100%	805	100%

Table 2

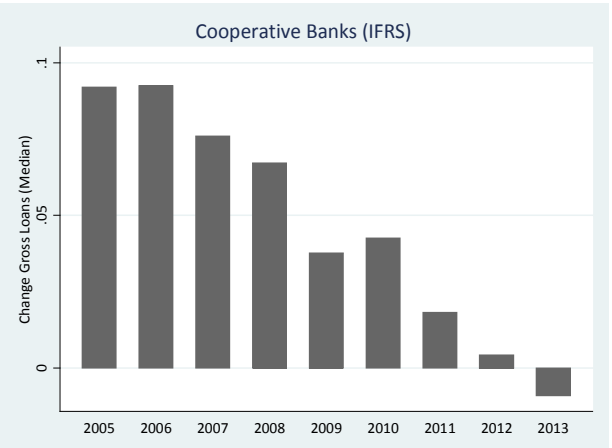
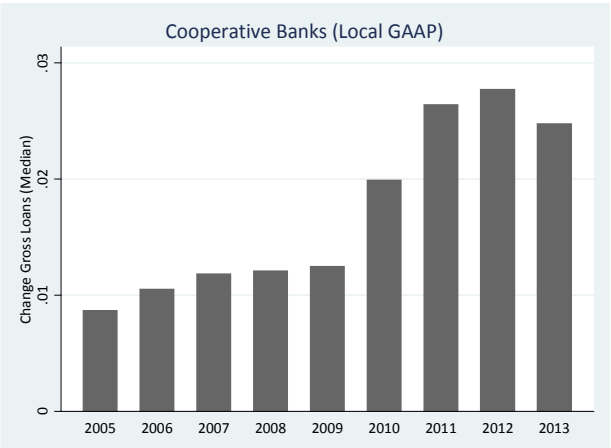
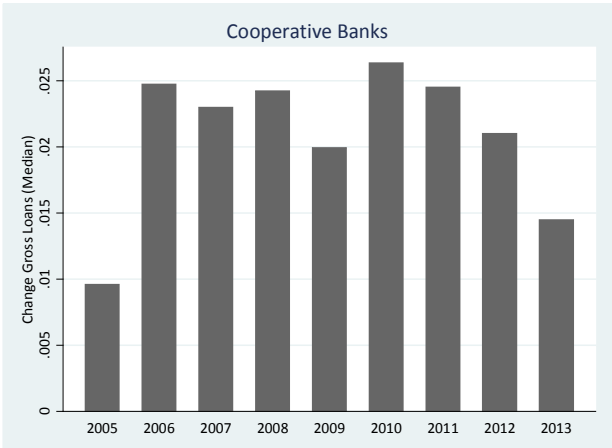
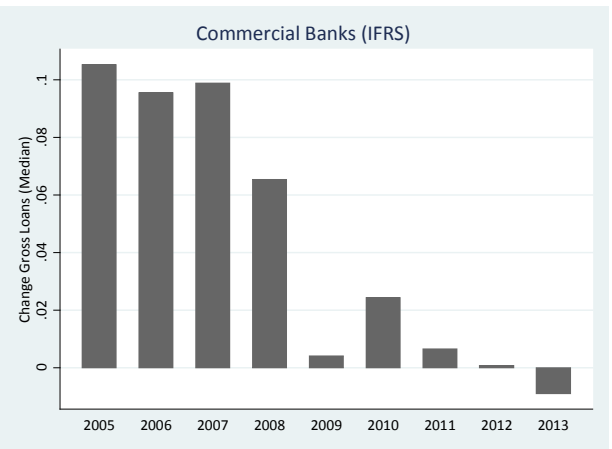
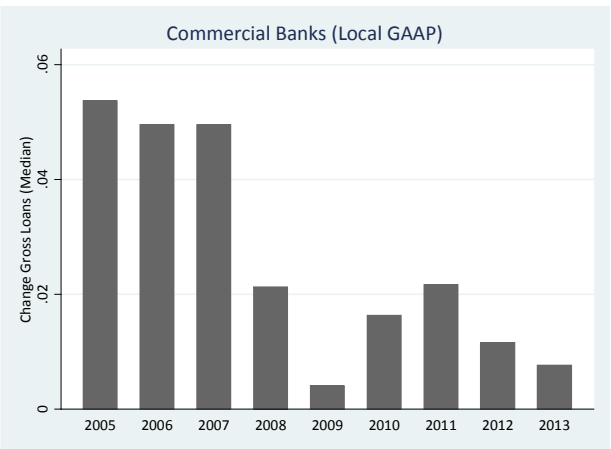
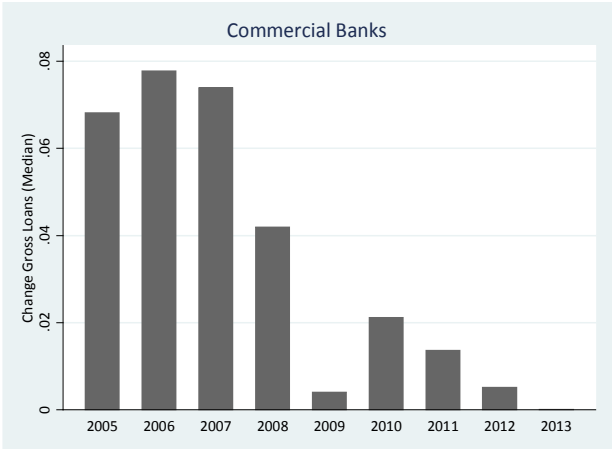


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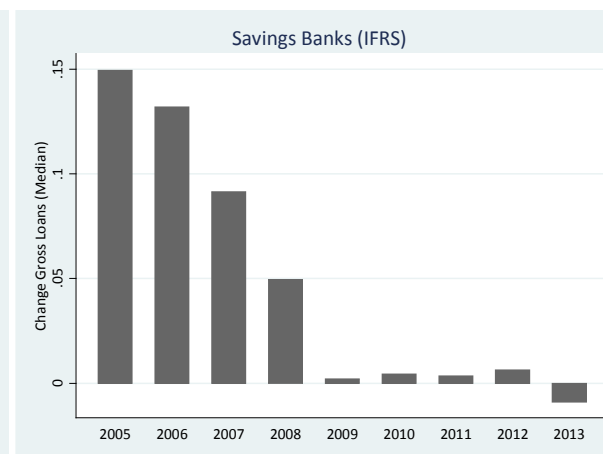
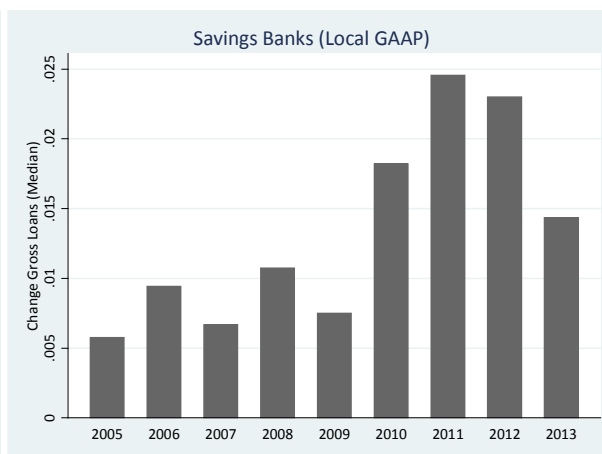
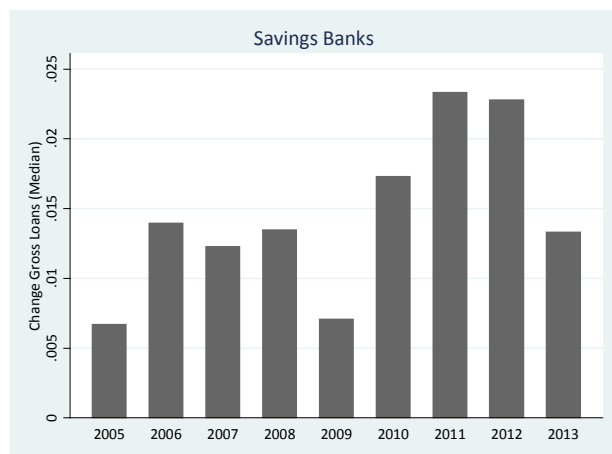


Table 3

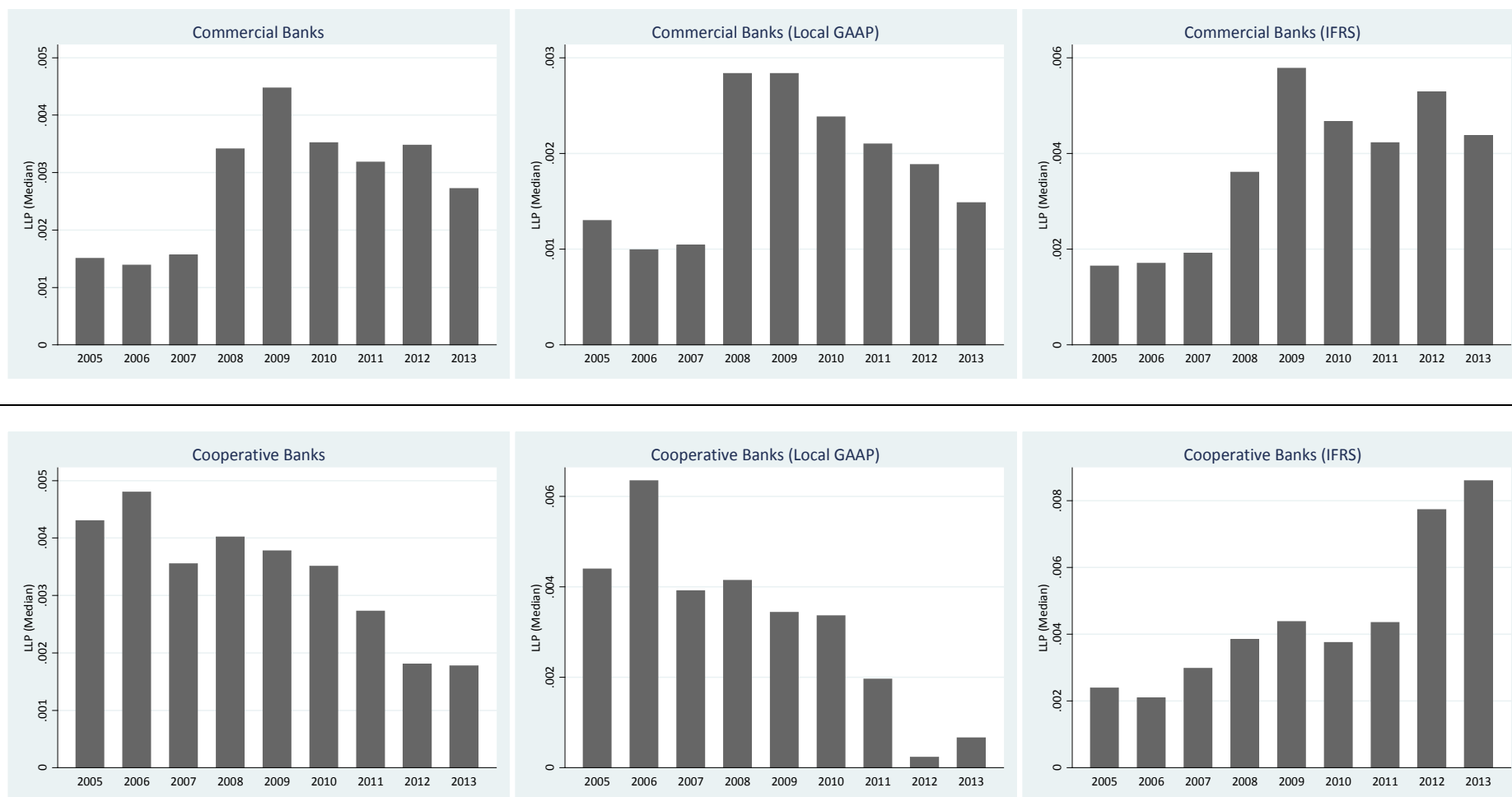


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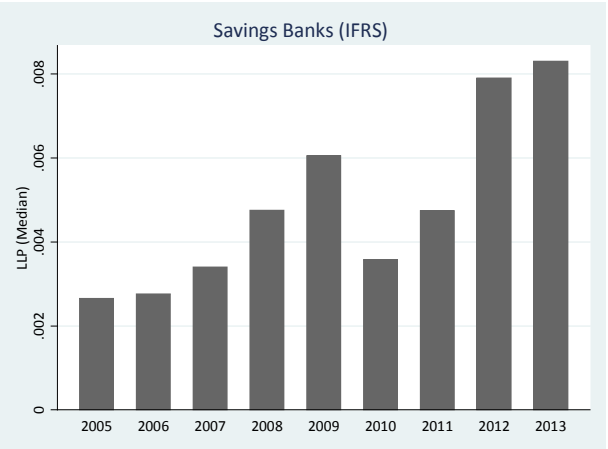
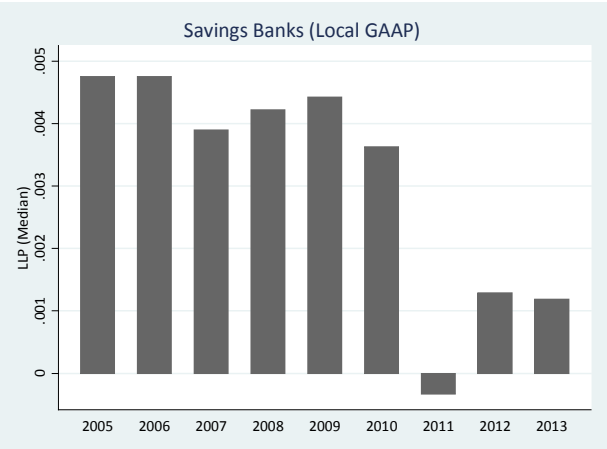
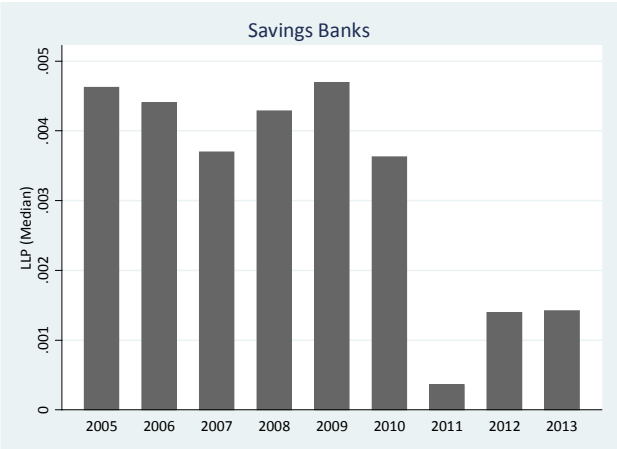


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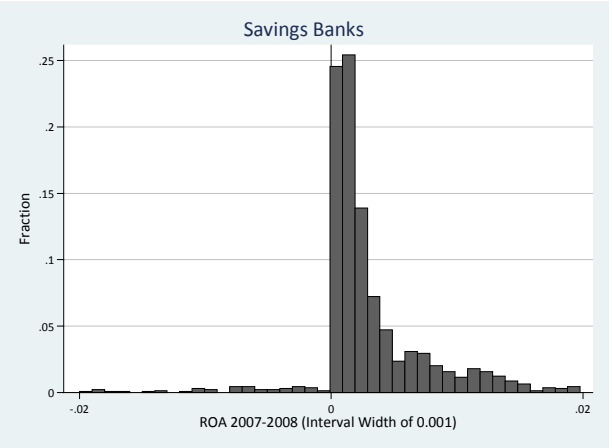
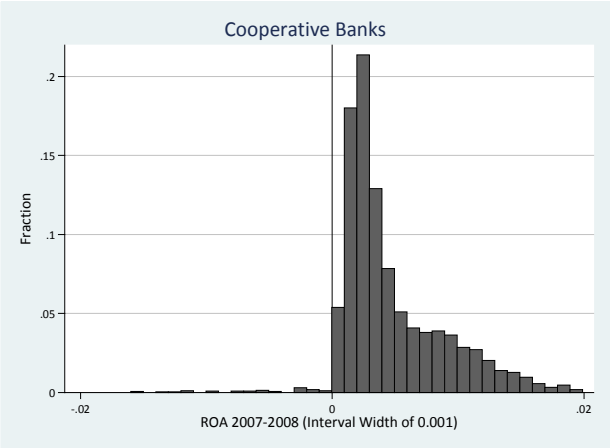
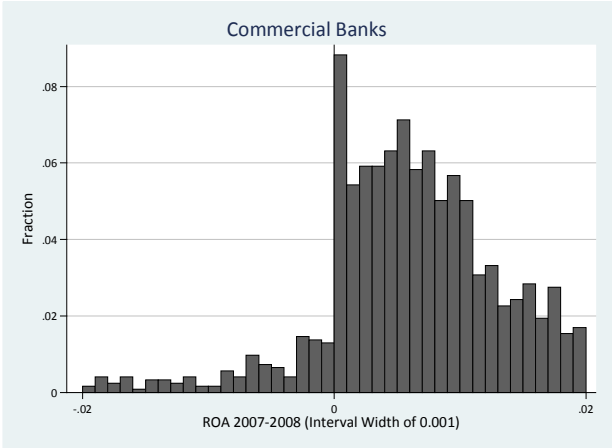
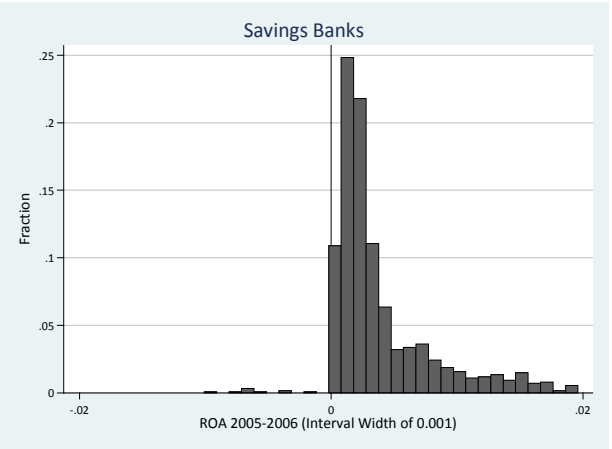
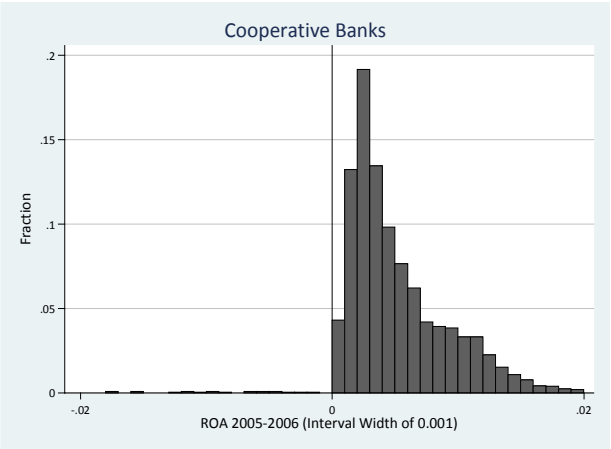
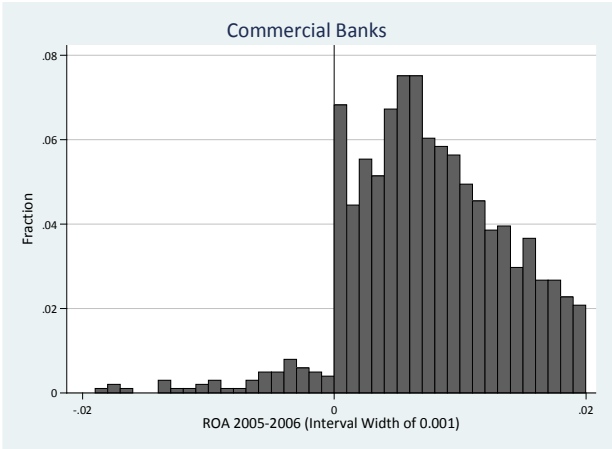


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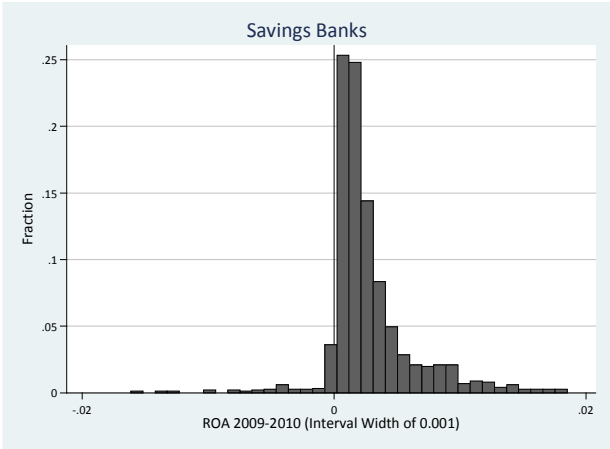
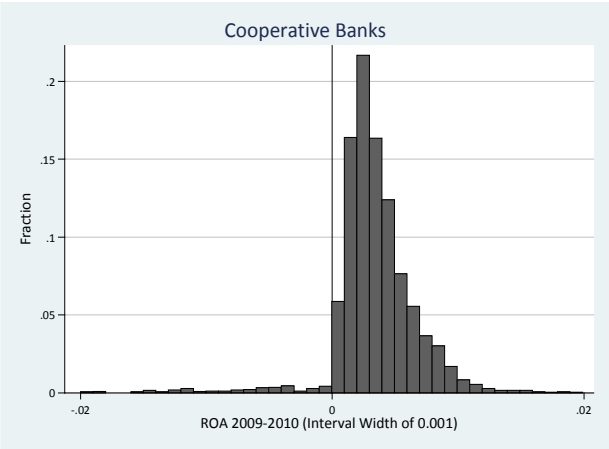
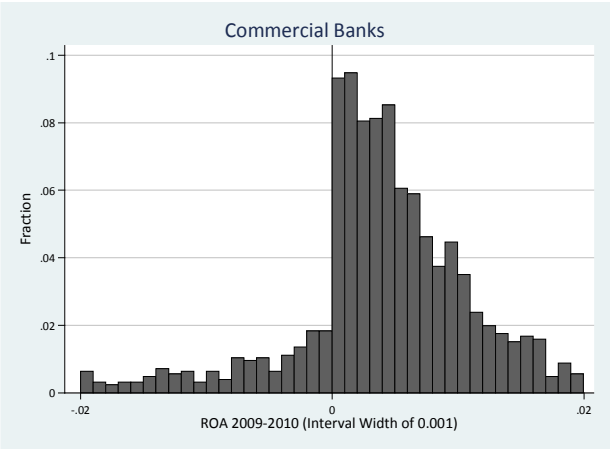


Table 5

Panel A: Summary Statistics (Commercial Banks, N = 6,187)

stats	LLP	EBTLLP	IFRS	ROA	GrossLoans	ΔGrossLoans	Equity	Assets (EUR tsd.)
mean	0.006	0.013	0.498	0.005	0.563	0.053	0.100	23,400,000
p10	0.000	0.000	0.000	-0.008	0.134	-0.064	0.033	178,892
p50	0.003	0.011	0.000	0.005	0.627	0.028	0.078	1,895,245
p90	0.017	0.031	1.000	0.019	0.887	0.190	0.195	45,900,000
sd	0.009	0.014	0.500	0.012	0.268	0.116	0.077	65,300,000

Panel B: Summary Statistics (Cooperative Banks, N = 14,300)

stats	LLP	EBTLLP	IFRS	ROA	GrossLoans	ΔGrossLoans	Equity	Assets (EUR tsd.)
mean	0.004	0.010	0.322	0.004	0.613	0.033	0.084	2,811,704
p10	0.000	0.004	0.000	0.001	0.428	-0.015	0.051	74,350
p50	0.003	0.010	0.000	0.003	0.621	0.022	0.077	337,100
p90	0.009	0.017	1.000	0.009	0.792	0.088	0.128	1,961,150
sd	0.005	0.006	0.467	0.005	0.141	0.060	0.034	20,300,000

Panel C: Summary Statistics (Savings Banks, N = 6,509)

stats	LLP	EBTLLP	IFRS	ROA	GrossLoans	ΔGrossLoans	Equity	Assets (EUR tsd.)
mean	0.003	0.009	0.124	0.003	0.615	0.026	0.079	4,619,559
p10	-0.001	0.002	0.000	0.000	0.422	-0.019	0.045	133,400
p50	0.003	0.008	0.000	0.002	0.625	0.015	0.068	1,205,400
p90	0.008	0.016	1.000	0.009	0.795	0.078	0.130	8,210,100
sd	0.006	0.008	0.329	0.006	0.147	0.061	0.043	19,100,000

Table 6

Panel A: Pearson Correlations (Commercial Banks)

	LLP	GDP	Unemployment
GDP	-0.2157 (0.00)		
Unemployment	0.1871 (0.00)	-0.1899 (0.00)	
EBTLLP	0.2467 (0.00)	0.116 (0.00)	-0.0533 (0.00)

Panel B: Pearson Correlations (Cooperative Banks)

	LLP	GDP	Unemployment
GDP	-0.0801 (0.00)		
Unemployment	0.3072 (0.00)	-0.1431 (0.00)	
EBTLLP	0.5288 (0.00)	-0.012 (0.15)	0.1435 (0.00)

Panel C: Pearson Correlations (Savings Banks)

	LLP	GDP	Unemployment
GDP	-0.2041 (0.00)		
Unemployment	0.3133 (0.00)	-0.0907 (0.00)	
EBTLLP	0.5102 (0.00)	-0.0348 (0.01)	0.1188 (0.00)

Table 7

VARIABLES	(1) Commercial Banks	(2) Commercial Banks Non- IFRS	(3) Commercial Banks IFRS	(4) Cooperative Banks	(5) Cooperative Banks Non- IFRS	(6) Cooperative Banks IFRS	(7) Savings Banks	(8) Savings Banks Non- IFRS	(9) Savings Banks IFRS
GDP	-0.0003*** (-3.75)	0.0003* (1.87)	-0.0006*** (-5.53)	0.0004*** (6.99)	0.0002** (2.16)	-0.0000 (-0.13)	-0.0004*** (-4.08)	-0.0008*** (-7.77)	0.0003 (1.61)
Unemployment	0.0006*** (8.25)	0.0010*** (6.72)	0.0004*** (4.79)	0.0007*** (15.71)	0.0012*** (9.31)	0.0001 (1.58)	0.0006*** (10.57)	0.0011*** (12.11)	0.0003*** (3.13)
EBTLLP	0.2214*** (7.75)	0.2204*** (7.54)	0.1055*** (3.35)	0.5703*** (18.46)	0.5610*** (17.06)	0.2053*** (6.77)	0.4422*** (16.07)	0.4477*** (16.45)	-0.1092 (-1.36)
LogAssets	-0.0004*** (-3.43)	-0.0003 (-1.42)	-0.0005*** (-3.65)	-0.0001** (-2.39)	-0.0001* (-1.94)	-0.0001* (-1.72)	-0.0001 (-1.06)	-0.0001* (-1.79)	0.0004** (2.01)
GrossLoans	0.0086*** (9.63)	0.0071*** (5.67)	0.0108*** (9.26)	0.0021*** (4.49)	0.0007 (1.14)	0.0043*** (4.73)	0.0040*** (5.86)	0.0035*** (5.36)	0.0115*** (5.44)
ChangeGrossLoans	-0.0092*** (-5.81)	-0.0091*** (-3.89)	-0.0084*** (-3.83)	-0.0103*** (-7.12)	-0.0099*** (-5.34)	-0.0088*** (-4.07)	-0.0123*** (-6.15)	-0.0159*** (-8.62)	-0.0018 (-0.35)
Equity	-0.0008 (-0.22)	0.0036 (0.85)	-0.0114** (-2.11)	-0.0423*** (-8.91)	-0.0353*** (-4.25)	-0.0422*** (-10.09)	-0.0389*** (-7.02)	-0.0398*** (-6.49)	-0.0013 (-0.11)

Table 7 (Continued)

IFRS	0.0022*** (3.28)			0.0023*** (4.20)			0.0032*** (3.42)		
EBTLLP * IFRS	-0.1173*** (-2.88)			-0.3493*** (-8.86)			-0.3648*** (-4.91)		
Constant	0.0000 (0.02)	-0.0043 (-1.25)	0.0035 (1.40)	-0.0024*** (-2.90)	-0.0061*** (-4.42)	0.0036* (1.94)	-0.0028** (-2.56)	-0.0047*** (-3.82)	-0.0136*** (-3.11)
Observations	6,187	3,103	3,084	14,300	9,699	4,601	6,509	5,704	805
Adjusted R-squared	0.292	0.269	0.331	0.511	0.625	0.300	0.563	0.625	0.371
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CTRYCODE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1



Working Papers in Accounting Valuation Auditing Nr. 2016-1

Klaus Henselmann / Dominik Ditter / Philipp Lupp

The Effects of the Financial Crisis on Cooperative Banks in Europe – A Critical Comparison –

Abstract: The financial crisis has highlighted the necessity of discussions on the adequacy of banking regulation and accounting standard-setting for financial institutions. We compare the development of several variables in this context between commercial banks, cooperative banks and savings banks from 2005 through 2013, in order to investigate whether smaller banks such as cooperative banks or savings banks tended to be more robust to the financial crisis. We find that the volume of lending (loan loss provisioning) remained stable or increased (decreased) for smaller financial institutions. Furthermore, there is no significant increase in loss avoidance behavior specifically for cooperative banks. Cooperative banks are also the group of banks that showed the least pro-cyclical effects and the most income smoothing behavior. Our results suggest that cooperative banks were the group of banks being most stable during the years surrounding the financial crisis in 2007/2008. This demonstrates the importance that policy makers consider the broad range of financial institutions for discussions on policy adjustments.

Keywords: Cooperative Banks, Financial Crisis, Loan Loss Provisioning, IFRS

JEL: G18, G21, M41, M48

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