Open University of Cyprus

Faculty of Economics and Management

Enterprise Risk Management

THESIS

Credit Risk in European Commercial Banks Before, During and After the Global Financial Crisis of 2008

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Summary

This paper examinates the relation of loan loss reserves and credit risk by using bank's specific data from European commercial banks for the period 2005 till 2013. The analysis is done on 85 commercial banks from 12 different European countries for the periods before, during and after the global financial recession. By using panel data regression technique for all the above-mentioned years, the purpose is to present to what extend the European commercial banks were able to withstand and absorb shocks in the periods before, during and after the recent global financial recession. Further to the examination of the bank specific determinants of loan loss reserves, the paper also provides a comparison between the countries most affected by the recession and the Northwest European countries which were less affected by the global financial recession. The results shows that many bank specific variables significantly influence credit risk and demonstrate consistent results. Declines in capital, in combination with increases in net interest margin levels and impaired loans levels, can be early signs of future problem loans.

Contents

Chapter 1

Introduction

1.1 Banks and Credit Risk Background

According to Maudos et al. (2004) the role of banks is fundamental in the economic growth, acting as the link between the lender and the borrower. The first banking services can be detected in the developed ancient civilizations and cultures. According to Kurylowicz (2004) these civilizations were Lydia, Phoenicia, Greece, China and Rome. Ancient Greeks are the first known to invent the coins, which is originated around 635 BC. The banking system of the Ancient Greeks, in the Classical period, contained three sections: the public municipal banks, the temples and the private enterprises. The temples were considered as the most secure credit institutions and they provided loans and accepted deposits. During the Middle Ages in banking were working mostly the Jews, the Italians and the Germans, who offered mainly currency exchange, loans and deposit services. These services were provided later on in other European countries as Amsterdam and England. Several banks were created at that point with the Casa di San Giorgio in Genoa (1586), Banco di Riatto in Venice (1587), as well as the Bank of Amsterdam (1609) and the Bank of Hamburg (1619). These institutions were managed mainly by gold-smiths professionals. The transactions were executed upon a table called banca in Italian, which in combination with the French word banque formed the word bank.

According to Bollard (2011) the role of modern financial systems is very important as they contribute to the economic development by providing various services to the economy and improve as well the living standards. Some of the main services banks provide are the settlement systems in order to support the trades, the creation of the financial resource channels between the depositors and borrowers and provide various products which help to minimize the uncertainty and risk. Banks provide depository for savings which are converted to liquid assets, used for house and business loans. Furthermore, they support the day-to-day settlement and payment transactions which are necessary for the households and businesses. The interest margin between the rates they offer to the savers and the rates offered to the borrowers, is their reward for their services which is the main source of income for banks.

It is very important banks to be strong and stable in downturn times as well in upturn times. In downturn times, their instability, they can threat the financial system and harm the economy. On the other hand, they support the financial enterprises in good times which, in turn, provide employment and support the economic growth.

In European Union the overall number of the banks has decreased to 5.400 in 2020 form 8.500 in 2008. The below chart shows the decrease in the number of commercial bank branches during the period 2008-2020. This decrease is associated with the increased demand for the new banking products such as online and mobile banking, which are showing a growing trend since 2015.

Chart 1 – Number of the commercial bank branches in the European Union from 2008 till 2020

Source: World bank | Trading Economics

In the period 2014 till 2019 the general total assets of the banks in Europe were steady. Some of the strongest banks for 2020 in European Union are presented in the below table:

Table 1. Bank Ranks for 2020

Rank	Bank	Total assets (Bn of US $)	Headquarter city
1	France BNP Paribas	3,080.55	Paris
2	UK HSBC	2,984.16	London
3	France Crédit Agricole	2,741.77	Paris
4	Spain Banco Santander	1,844.95	Madrid (operations)
5	UK Barclays	1,842.49	London
6	France Société Générale	1,788.32	Paris
7	France Groupe BPCE	1,768.51	Paris

8	Germany Deutsche Bank	1,621.11	Frankfurt
9	Italy Intesa Sanpaolo	1,226.44	Turin
10	UK Lloyds Banking Group	1,189.54	London (operations)
11	Netherlands ING Group	1,146.51	Amsterdam
12	Italy UniCredit	1,139.40	Milan
14	UK NatWest Group	1,091.54	Edinburgh
15	France Crédit Mutuel Group	1,044.98	Strasbourg

During 2020, the increase in the provided loans as well the decrease of the non-performing loans helped in the improvement of the loan portfolio. The profitability increased also and the coverage ratio (bank's ability to service its debt and meet its financial obligations) remained in healthy levels reaching 46%.

The charts below present the overall total amount of loans provided to in the Euro area in the last 25 years. As can be seen in the first chart, the loans to non-financial corporation show an ascending trend in the last few years, matching the levels of year 2008 when the global recession started, according to the data of the European Central Bank

In 2021 the loans to households in the Euro area increased 4.2% (chart 2) in comparison with the previous year. This is one of the largest increases since 2008 and is mainly attributed to the low interest rates which in turn gave rise to the demand for mortgages and short-term funding needs according to the data of the European Central Bank.

Chart 2 - Loans to private sector in Euro Area for the last 25 years, measured in million EUR

Source: World bank | Trading Economics

Chart 3 – Household credit growth percentage in Euro Area for the last 25 years

Source: World bank | Trading Economics

The global recession of 2008 highlighted the importance of credit risk for commercial banks in order to be able to withstand instabilities in their environment. The crisis left behind bad debt, materialized investment position and losses on trading. The interest income was shrunken as a consequence of the low interest rates which, furthermore, decreased the volatility in the market and led to lower volumes in trading and less revenues according to Caparusso (2019). In the aftermath of the crisis, the Basel III Accord came to enforce the global capital framework and introduce a stricter regime regarding liquidity management. In order to reduce the probability of future bailouts by governments, regulators established new structures for total loss-absorbing capital. According to Basel III, these new structures requires from a bank to deduct from its own total loss-absorbing capacity or regulatory capital a certain investment in the regulatory capital of other banks, significantly reducing this way the source of contagion in the banking system. If the deduction it's not perform, could mean that failure of one bank can lead to a decrease in the loss absorbency and recapitalization capacity of another bank. Bank supervisors have applied improved stress testing procedure in order to support the durability of banks and to administrate the failed banks. The improved stress testing methodologies include: Scenario design in order to uncover new vulnerabilities or demonstrate known risks, risk coverage as can be considered the covering of credit risk and market risk, methodological considerations such as adjusting pricing or raising

capital and model risk management which defines roles and responsibilities and processes to be implemented in model development. New measures are established by regulators in an effort to regulate more accurately the banks' capital against their risk exposure. With the new measures the risk assets weights for the capital are increased, more simple leverage ratios are introduced and new measures concerning the capital charges of the trading books have been implemented. These regulatory modifications pushed banks to reevaluate their business model, mainly for their operations and investments.

The coronavirus pandemic has had so far a very small impact in the European banking system as most of the banks emerged untouched from one of the worst crises in history. This could be mainly attributed to the Basel III reforms which were implemented after the global financial crisis. After the implementation of these reforms, banks increased liquidity buffers and build up higher capitals. According to the European Central Bank officials, the resent stress test exercise implied that most of the banks would be able to even cope with yet another financial crisis. This couldn't be achieved if European Central Bank hasn't had in place a set of measures regarding banking supervision measures and monetary policy.

The impact loan defaults have on the financial system. depends also on the capital cushion banks build in order to absorb unexpected loan losses which are not covered by the provision levels, as the recent global recession has shown. In addition to this during pandemic period, as well in the resent years, the increased supervisory by European Central Bank and its efforts to have banks minimize their non-performing loans and reinforce their risk management practices has contributed to the stabilization of the banking sector and the maintenance of credit channels open to the real economy.

1.2 Credit Risk in Banking Sector

The Basel Committee on Banking Supervision (2001) defined credit risk as the risk that a counterparty will not be able to fully meet its financial obligations.

According to the Basel Committee on Banking Supervision (2001) credit risk is recognized as one of the leading risks for banks, playing an essential role in their main business activity. Two of the main bank's business activities are to provide loans and to accept deposits from customers. These activities represent the most important assets and liabilities of bank's balance sheet. Loans consists a high percentage of bank's total assets, ranging between 25% and 75%. This claim can be

validated as well from the sample data used in this research. The below table presents per country in detail the average loan percentage of the total assets of the sample for the periods before, during and after the global financial crisis.

Table 2. Loans as a percentage of the total assets per country

Country	Before Recession (2005-2007)	During Recession (2008-2010)	After Recession (2011-2013)
Austria	60%	64%	64%
Belgium	40%	44%	51%
Denmark	63%	60%	55%
Finland	33%	35%	32%
France	46%	48%	46%
Germany	34%	34%	40%
Greece	67%	72%	78%
Ireland	60%	62%	70%
Italy	64%	68%	74%
Luxembourg	28%	39%	52%
Netherlands	62%	66%	68%
Portugal	66%	68%	66%
Spain	56%	58%	54%
Sweden	56%	60%	58%
United Kingdom	51%	53%	48%

A line of credit can be considered a flexible loan from a bank which offers limited amount of funds and can be used according to the customer perforations. Similarly to loans, interest is charged at the time the amount is borrowed. The credit rating of the borrower and the relationship with the bank will determine if they will grant the credit of line. Therefore, the provision of lines of credit is another significant off-balance sheet (assets or liabilities that do not appear on a company's balance sheet) credit risk factor, along with other lending commitments. These loan commitments consist half of the total assets for many banks, which shows once again the significance of the credit risk as the main risk for most of the banks.

Credit risk is evident in all sectors, but it is more significant in banks as providing loans is the core activity of the banks and loans consist most of their assets, therefore credit risk is very important, and banks put considerable efforts to manage it. This is why banks employ credit personnel in order to monitor and assess credit risk, to check the credit limits and the qualifications of the borrower and make use of the proper risk premiums in pricing and formulate the loan loss reserves.

Banks have in place processes in order to evaluate and approve credits for new or existing customers. Specialized credit personnel are used in order to evaluate credits associated with special products and geographic areas. This process includes quantitative measures and techniques, based on statistics for the proper pricing of the products. Usually the process of granting credit approval, involves the authorization of one or two officials and the credit approval of a committee, based on the amount and the purpose of the credit. Threshold credit limits are created for both individuals and groups and are generally based on internal credit range scale. These limits apply as well for particular products, specific economic sectors and geographic regions, and have as a target to diversify sufficiently the credit granting activities of banks. Banks price in a way that will cover all the costs which occur from exposures and the risk concentration rules.

In the previous years, banks developed systemic internal models in order to quantify credit risk, building this way a portfolio approach to credit risk management. These internal models have the capability to measure the probability of default, the exposures at default and losses from a potential default. In order to support their activities regarding credit risk banks use the results from these models to estimate the amount of economic capital they need regarding credit risk activities. The amount of the economic capital concerning credit risk is calculated to not exceed the probability of an unexpected credit loss, remaining below a predetermined confidence level.

1.3 Credit Risk Mitigation Techniques

Banks use a variety of techniques in order to mitigate credit risk. The measurement of the credit risk based on the usage of the systematic approaches and internal models, has promoted significantly the usage of credit transfer method and other instruments. Some of the most important techniques to mitigate credit risk are:

- *Collateralized transactions* represent a credit exposure or a potential credit exposure of the bank. Collateral can be a security such as bonds or cash. With the collateralized transactions the credit exposure is fully or partially hedged by a collateral posted by a counterparty or a third party which represent the counterparty. This technique represents a different way of repayment but cannot take the place of a quality underwriting standard.
- *On-balance sheet netting.* This technique allows banks to reduce the risk from financial contracts between two or more parties by reaching a net settlement on several financial obligations. In the occasion banks have legally established netting agreements for deposits

and loans, their capital requirement can be determined according to the net credit exposure. The benefit of using netting is that decreases the number of the transactions down to one, saving this way a great amount of time in comparison with the time required for multiple transactions.

- *Guarantees and credit derivatives.* Bank guarantee is a form of financial security provided by the bank and aims to guarantee that the bank will cover the debt in case the debtor is unable to pay it. Credit derivatives are financial instruments which give the ability to counterparties to exchange credit risk with each other. This way counterparties avoid the asset movement which will increase the exposure. The use of this financial instrument gives the eligibility to bank to administrate per counterparty, per sector and geographic area the credit risk, no matter which instrument is hedged (i.e. securities, loans). Credit derivatives are considered as one of the leading categories of instruments which allow banks and other financial institutions to exchange risk with each other.

1.4 Loan Loss Reserves

The provisions or loss reserves, usually defined as loan loss reserves, are amounts subtracted from operating income in order to handle expected losses. As per their name, these amounts are reserved usually for loans, or for credit losses. Loan loss reserves can be related to a specific credit exposure and give the ability to banks to reduce the value of specific assets or can be related to general credit exposures.

As a component of bank regulatory capital, loan loss reserves play a distinctive and important role. Laven and Majnoni (2002) relate loan loss reserves to the size of the expected credit losses which are used according to Bikker and Metzemakers (2004) as buffer to preserve banks solvency. This conclusion is aligned as well with the opinion of practitioners and analysts of risk management.

According to The Basel Committee on Banking Supervision (2001) there is always a probability, from statistical point of view, that some loans will not be paid back. Therefore, some loss on the amount of the loan should be expected which is managed by banks through the loan loss reserves. This is why loan loss reserves are considered important as they shield banks against credit losses. Loan loss reserves reflect accrued losses on loan portfolios of the bank; thus, it is expected to be positively related with a downturn in the financial condition of the bank according to Ng and Roychowdhury (2014).

According to Laven and Majnoni (2003) regulatory capital is not the only buffer banks can rely on, even though it is used to provide a sufficient buffer against balance sheet's adverse occurrences. Two are the prevailing categories of the shock absorbers: loan loss reserves and capital. Theoretically, loan loss reserves can be considered as the link between market value accounting and book value accounting. Subsequently, loan loss reserves cover anticipated losses when market value accounting equals book value accounting less reserves and capital absorbs the unexpected losses. Loan loss reserves are presented as a contra-asset in the balance sheet ranging from less than 1% of outstanding loans to much larger amount in other cases.

According to Ng and Roychowdhury (2014) loan loss reserves volatility, influence regulatory capital in two ways. Firstly, increase in loan loss reserves reduce the Tier 1 capital as it lowers the shareholders equity. Secondary, loan loss reserves can be added back as a capital to a maximum of 1.25% of gross risk weighted assets according to regulatory capital guidelines.

As can concluded from the above details, loan loss reserves have close relation with the credit risk of banks.

For decades, the standards of financial reporting for loan loss reserves were administrated by Incurred Credit Loss model (this model assumes that all loans will be repaid until there will be proof of the opposite) which was criticized by politicians and policymakers as one of the causes of the 2007-2009 financial crisis. The main concern with Incurred Credit Loss model was that during the good times was generating insufficient reserves, used to absorb losses from loan impairment in periods of economic recession which could have as consequence the swift accumulation of loan loss allowances at the moment the losses are realized according to Gomaa et al. (2021). This had as result to build up, very little and too late loan loss reserves in recession periods as per Hashim et al. (2019). The response, after the financial crisis of 2008, was the Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) to develop each a new model which will look forward and will overcome the weaknesses of the Incurred Credit Loss model

1.5 The Basel Accord and regulatory capital

The Basel Accord is considered as the basis for banks capital regulation according to The Basel Committee on Banking Supervision (2001). It was created in 1980 in an effort to eliminate the national regulation differences for banks with international activity for the G-10 countries.

The main focus of the Accord initially was on credit risk as a primary risk for the banks. The minimum capital requirements are established by banks supervisors. Basel II Accord requires that banks maintain a regulatory capital as a proportion of their total risk weighted assets.

It is calculated as the ratio of the regulatory capital to "risk weighted assets" requiring a ratio (Total Capital Ratio) of no less than 8%. This means that assets are risk weighted and the capital ratio, which is the nominator, proximate the risk.

According to Estrella et al. (2000) regulatory capital is the metric on which regulators rely the most to monitor the bank solvency. In order to assess the bank's financial condition supervisors, pay a lot of attention on the capital ratios. For banks that are not able to maintain the minimum capital requirements, supervisor have the authority to introduce corrective measures and processes. The regulatory capital is the result of Tier 1 and Tier 2 capital. The Tier 1 capital includes shareholders equity and disclosed reserves. Tier 2 capital includes general loss reserves, subordinated term debt and undisclosed reserves Ng and Roychowdhury (2014). Risk management analysts and practitioners agree that the economic capital should be structured to deal with unexpected losses and on the other side loan loss reserves should buffer the expected losses according to Laven and Majnoni (2003). Considering this, loan loss provisions needed in order to increase the loan loss accumulation should be treated as a cost. This is a cost which its uncertain when it will materialize. Laven and Majnoni (2003) suggests that banks can level their earnings and extract from loan loss reserves if the actual losses are larger than the estimated losses and on the other side by increasing loan loss provisions to loan loss reserves if the realized losses are less than the estimated losses.

All corporate and retail loans receive, according to Accord, 100% risk weight with a charge of 8% on the capital for these assets.

1.6 European banking system, Internal rating based (IRB) and Standard approach (SA) models

Basel Accord II introduced the IRB models in 2004. Europe was allowed, in 2006 by the Capital Requirements Directive, to use the IRB model as an alternative for the standard approach model. Under the standardized approach used till that time, banks were obliged to use risk weights given by the regulators. With the implementation of the IRB model approach banks could use their own internal rating models in order to approximate the elements of expected future losses and the

probability of default. Therefore, bank that use the IRB model approach may benefit from the lower capital charges which come from the lower risk weights, a result of more detailed measurement according to Cucinelli et al (2018).

For the European banks validation of the IRB models is done by the European Central Bank. The model validation is done based on very strict criteria and considers many features of the bank rating system.

Chapter 2

Literature review

According to Louzis et al (2012) the exogenous to banks industry macroeconomic variables, should not be the only determinants of the credit risk (nonperforming loans). The policy and the choices of each bank along with the unique features of the banking sector, which have as a main purpose to increase the efficiency and improve the risk management, are the influential factors expected to affect the credit risk (nonperforming loans).

In their influential study Berger and DeYoung (1997) investigated the relationship between the loan quality, bank capital and cost efficiency. Among all the study hypothesis, 3 are the main hypothesis exanimated in accordance with the above-mentioned relationships:

1). "Bad management" hypothesis: this hypothesis linked the low credit scores of the banks with "bad" management. The study showed that low-cost efficiency is positively related with future nonperforming loans growth (credit risk).

2). "Skimping" hypothesis: According to this hypothesis banks are more cost efficient when they put less effort regarding the quality of loan portfolio, however in the long term this has as a consequence a growing number of nonperforming loans, subsequently higher credit risk.

3). "Moral hazard" hypothesis: Banks with low capitalization tend to have high number of nonperforming loans (increased credit risk). Less capitalized banks take more risk on their loan portfolios which is justified by the moral hazard incentives of the bank's managers.

In this study, there was evidence which supported the "bad management" and the "moral hazard" hypothesis.

Both above-mentioned papers point out the importance of banks internal characteristics and their influence in the bank's strategy, management and performance. Berger and DeYoung (1997) went one step further and categorized their hypothesis according to the internal performance rating. The Louzis et al (2012) model suits and explain better the Greek banking reality where bank's conditions are highly influenced by exogenous variables. On the other hand Berger and DeYoung (1997) model can explain the banks condition for most of the existing banks, as from a quantitative result is able to attribute a qualitative characteristic to the bank.

The loan loss reserve ratio is not only used as a predictor for the condition of the bank but in many cases is used as an indicator of bank's performance. Zaki et al. (2011) identified the main reasons of the financial distress for UAE banks. The loan loss reserve ratio is used to measure the institution condition (vulnerability/credit risk). They found that loan loss reserve ratio, positively impacted the probability of financial distress in the following years. In their paper Agusman et al (2009) uses loan loss reserve ratio as a measure of credit risk in order to examinate the effects of this ratio on the stock returns for Asian banks during the period 1999-2007. By using data panel for the analysis, they show that loan loss reserve ratio has a significant negative relation with banks stock returns, indicating that an increase in credit risk lowers bank stock returns. Similarly, by using as a proxy for credit risk the ratio of loan loss reserves Agusman et al (2008) examinate the relation between accounting and capital market risk measures for Asian banks during the period 1998–2003. They control for country specific factors with the results showing that the ratio of loan loss reserves to gross loans is significantly related to non-systematic risk as well with the total return risk. In all the above studies the ratio of loan loss reserve had a significant impact on the depended variables, underlying this way the importance of credit risk in all aspects of banking.

In order to measure the profitability of domestic UK commercial banks Kosmidou and Pasiouras (2008) use two bank specific variables which are the return on assets and the net interest margin (NIM). Loan loss reserve ratio was used as a determinant of banks asset quality, majority of which comprise the loan portfolio (credit risk). The research showed mixed results, with the effect of loan loss reserves on return on average assets being negative and non-significant. In contrast, the effect of loan loss reserves ratio on net interest margin (profitability) was positive and significant, suggesting higher margins for UK banks which are riskier. This result is partially aligned with the Wasiuzzaman and Gunasegavan (2013) and Akbas (2012) results who found that profitability is negatively related with credit risk. Wasiuzzaman and Gunasegavan (2013) measured the performance between the Islamic and conventional banks in Malaysia and they found that loan loss reserve ratio is negatively and significantly associated with profitability. They suggested that conventional banks are more profitable than the Islamic banks, as they had lower loan loss reserve ratios, therefore better asset quality. Similarly, Akbas (2012) exanimated the determinants of profitability in Turkish banking sectors. He used as profitability measures of banks' the return on assets and the return on equity, with loan loss provision ratio used as proxy for credit risk. The

findings showed that credit risk was negatively related to profitability, implying that bank managers should implement risk-averse strategies in order to maximize their profits.

Ng and Roychowdhury (2010) argue that building up loan loss reserves buffer, reduces the banks risk of failure. This is supported also by findings of the Hassan and Bashir (2003) who exanimated the determinants of Islamic banks profitability worldwide. Ng and Roychowdhury (2010) tested how the regulatory capital instructions for loan loss reserves in 2007 affected the banks' risk of failure in 2008-2009. They hypothesized that as in economic downturns the quality of loans deteriorates, the increases in loan loss reserves can have negative results for the banks. This was supported by the notion that that loan loss reserves are added back on the Tier capital 2, creating a false image that the capital adequacy ratio is not reduced. They documented that bank failures in 2008-2009 were positively associated with the loan loss reserves increases in 2007. Similarly, Hassan and Bashir (2003) based on the assumption that high performance banks tend to restrain their credit risk and therefore they have lower loan provision ratio, they found that Islamic banks have better loan portfolio quality. In their research they used the loan loss reserve ratio as a measure of comparison between commercial banks and Islamic banks.

Both results come in contradiction with Laven and Majnoni (2003) who studied the impact of loan loss provisioning in economic slowdowns. In their research they demonstrated empirically that many banks, in bad times, delay provisioning till is too late and cyclical downturns have already occurred, increasing this way the impact of economic slowdown on the banks' income and capital. They suggest that loan loss provisioning should be an integral part of capital regulation.

Misman et al. (2015) investigated the credit risk performance of Malaysian Islamic banks by using bank specific data for the period 1995 till 2013. There was evidence in the findings which showed that capital ratio is negatively and statistically significant in determining the credit risk levels of Islamic banks. Result which is aligned with the findings of Trad et al. (2017) who investigated the risk and profitability of Islamic banks for period 2004-2013 in 12 different countries. Both results contradict the findings of Ghosh (2015) who studied the specific and regional economic determinants of credit risk (non-performing loans) across United States. He found that greater capitalization significantly increases credit risk (non-performing loans). Result which supports the "too big to fail" hypothesis behavior for banks, as greater capitalization can be beneficial from a capital management point of view because ensures more profits for banks, on the other side although this increases the credit risk (non-performing loans).

Chapter 3

Research Objective and Questions

3.1 Research objectives

One of the main activities of banks is to seek and develop new lending opportunities which will allow them to increase their profitability margins. These opportunities many times may present unfamiliar risks. For this reason, bank regulators try constantly to ensure that bank internal control procedures will be of high quality. The target of these procedures is to ensure sufficient loan loss reserves and provision figures which will result in an accurate risk assessment according to Cho and Chung (2016).

The main purpose of this research is to examinate the credit risk performance of the European commercial banks before, during and after the global financial recession of 2008. The motives behind this research are to investigate why banks of the same Union, which follow the same regulatory rules, failed to have the same response toward the recession.

Many papers in banking literature, investigated the relation between problem loans, microeconomic and macroeconomic country specific determinants. They use as a proxy for credit risk different variables, with the ratio of nonperforming loans being the most frequent. However, few papers focus specifically on the bank's specific determinants by using as a proxy for credit risk the loan loss reserves ratio. Therefore, this paper will examinate the bank specific determinants of credit risk for European commercial banks before, during and after the global financial recession of 2008 by using as a proxy for credit risk the loan loss reserves ratio. The expectation is to find sufficient evidence which will support the notion that differences on the internal characteristics of the banks affect accordingly their performance, their behavior and their vulnerability in upturn and downturn periods.

The contribution of this research is to extend the existing credit risk literature by adding the element of the specific periods which examinate and by making a comparison between two different country groups of Europe.

3.2 The main research hypothesis questions

The specific research questions can be formulated as:

1. What was the credit risk performance of the European commercial banks before, during and after the global financial recession of 2008?
2. Was there a significant credit risk variance before, during and after the global financial recession of 2008 between Central-Northwest European countries and the countries which were affected the most by the recession?

Chapter 4

Research Methodology

4.1 Methodology

To identify the determinants of credit risk of European commercial banks, this study employs panel data regression technique with fixed effect. Observations in this technique, are indexed through N x T dimension, where N is the number of banks and T is the yearly dimension of time. The usage of the data panel technique can reduce the multicollinearity issues and deliver larger degree of freedom. This is achieved due to the fact that panel data technique increases the number of data points according to Baltagi (2005). This model assumes that commercial bank credit risk is explained by bank specific variables.

SPSS statistical software was used for the analysis of the sample data and drawing statistical conclusions. This software allowed me to perform GLM univariate analysis on the data, with the usage of binary variable at the same time.

4.2 Variables

Loan Loss Reserves over the Gross Loans ratio (LLRGL)

The *LLRGL* will be the depended variable in this study. The loan loss reserve over gross loan ratio is an indicator of how much of the total portfolio has been provided for but not charged off. It is a reserve for losses expressed as percentage of gross loans. Given a similar charge-off policy, the higher the ratio the poorer will be the quality of the loan portfolio. This variable is expected to have a positive sign.

For the purpose of this study several control (independent) variables are used.

Explanatory variables of the model include the following: Total Capital Ratio, Impaired Loans over the Gross Loans ratio, Impaired Loans over the Equity ratio, Net Interest Margin, Equity over the Net Loans. The selection of these variables was based on previous studies. These variables are specific determinants and proximate different characteristics of the bank. Some of these characteristics are the capitalization level of the bank (Total Capital Ratio), the profitability of the

bank based on its operations (Net Interest Margin), the asset quality and the overall financial condition of the bank (Impaired Loans over the Gross Loans ratio).

Total Capital Ratio (TCR).

Total capital ratio is the total capital adequacy ratio under the Basel rules. It measures Tier 1 and Tier 2 capital which includes subordinated debt, hybrid capital, loan loss reserves and the valuation reserves as a percentage of risk weighted assets and off-balance sheet risks. This ratio should be at least 8%. This ratio can't be calculated just by looking at the balance sheet but has to be calculated internally by the bank. At their option, banks may publish this number in their annual report. This ratio is a standardized requirement for banks and other depository institutions. The index determines how much capital is required to be held for a certain level of assets through regulatory agencies, such as the Bank for International Settlements or the Basel Committee. These requirements are put into place to ensure that these institutions are not participating or holding investments that increase risk of default and that they have enough capital to sustain operating losses while still honoring withdrawals. This variable is expected to have negative sign in relation with credit risk.

Impaired Loans over the Gross Loans ratio (ILGL)

According to *Shehzad et al. (2009)* the impaired loans to gross loans ratio is a standard proxy for a bank's asset risk. The lower this figure is the better the assets quality. Asset quality is an important determinant of the overall financial condition of a bank. The asset quality rating of a bank reflects its existing and potential credit risk associated with its loan and investment portfolios, other real estate owned, and other assets, as well as off-balance sheet transactions. This variable is expected to have positive sign in relation with credit risk.

Impaired Loans over the Equity ratio (ILE)

Impaired loans over the equity ratio is a proxy set for measuring the asset quality of the bank, is calculated as impaired loans divided by equity. Loans and receivables are assessed for the impairment at the end of each reporting period. When there is objective evidence that one or more events that occurred after the initial recognition of the loans and receivables and estimated future cash flows of the assets will be potentially affected. Changes in the international or local economic conditions may also correlate with the defaults on loan and receivables. When not performing for

certain, the carrying amount of loans and receivables are reduced through the use of bad loans allowance account. Once written off, banks will have to make forgoing provisions for the credits deemed uncollectable in order to replenish the allowance accounts, therefore decreasing the net income, or even the retained earnings of the bank. Impairment losses could also occur, if the difference between the asset carrying the amount and the present value of estimated future cash flows less related collaterals and guarantees is negative. The trend of this ratio is important to evaluate the effectiveness of management in identifying specific impaired loans or non-performing loans as a percentage of equity that should be available to absorb losses. This variable is expected to have positive/negative sign in relation with credit risk.

Net Interest Margin (NIM)

This ratio is the net interest income expressed as a percentage of earning assets. The higher this ratio, the cheaper the funding or the higher the margin the bank is commanding. Higher margins and profitability are desirable as long as the asset quality is being maintained. Research by *Shingjergj (2013)* shows that net interest margin (NIM) has a significant positive impact on non-performing loans (credit risk) which proves that when banks tend to have high NIMs, it will cause a decrease in asset quality. This variable is expected to have positive sign in relation with credit risk.

Equity over the Net Loans (EQL)

This ratio shows the total equity capital as a percentage of total net loans. EQL provides equity as a cushion to take in or adjust loan losses faced by a bank. The higher the ratio of EQL, the higher is the capacity for a bank in absorbing loan losses. This variable is expected to have positive sign in relation with credit risk.

Binary variable "South Countries and Ireland" (SCI).

The default position of this variable represents the Northwest European countries or the countries which were affected the less by the recession. The position 1 refers to the European countries which were affected the most by the global recession and includes Spain, Portugal, Italy, Greece and Ireland. This variable is expected to have positive/negative sign in relation with credit risk.

4.3 Data and Sample

For the purposes of this study, 85 commercial banks from Europe are selected and included in the research. The data are collected and extracted from Bankscope database.

The analysis is done for the period 2005-2013 and the data refer to the financial variables for each of the 85 banks, presenting banks specific details for the periods before crisis, during and after the crisis by year. This is done in order to show the variability and the impact the determinants have on the loan loss reserve ratio for the exanimated periods. Even though the initial number of the banks included in the sample was higher, due to the lack of sufficient data for all banks, the sample was limited to 85 banks in order to avoid estimation bias. In the research are included 15 countries (Austria, Belgium, France, Denmark, Finland, Germany, Greece, Ireland, Italy, Luxemburg, The Netherlands, Portugal, Spain, Sweden and the UK). Four of these countries are from the South Europe and the rest eleven are from Northwest Europe.

The observations per country are presented in the below table.

Table 3. Observations per country

Country	Number of Observations
Austria	3
Belgium	3
Denmark	7
Finland	1
France	11
Germany	3
Greece	5
Ireland	3
Italy	17
Luxembourg	2
Netherlands	6
Portugal	4
Spain	6
Sweden	2
United Kingdom	12
Total	**85**

4.4 Empirical model

The first hypothesis examinates the credit risk performance of the EU commercial banks before, during and after the global financial recession of 2008. In order to test this hypothesis, the following regression model is used:

$$LLRGL_{i,t} = \beta o + \beta_1 TCR_{i,t} + \beta_2 ILGL_{i,t} + \beta_3 ILE_{i,t} + \beta_4 NIM_{i,t} + \beta_5 EQL_{i,t} + \varepsilon_{i,t}$$

This model estimates that the behavior of loan loss reserves ratio is explained by bank specific variables.

The second hypothesis examinates the credit risk performance of the EU commercial banks before, during and after the global financial recession of 2008 by taking also into account the contribution of the binary variable "countries affected the most by the recession" (SCI).

$$LLRGL_{i,t} = \beta o + \beta_1 TCR_{i,t} + \beta_2 ILGL_{i,t} + \beta_3 ILE_{i,t} + \beta_4 NIM_{i,t} + \beta_5 EQL_{i,t} + \beta_6 \mathrm{SCI}_{\iota,t} + \varepsilon_{i,t}$$

This model estimates that the behavior of loan loss reserves ratio is explained by bank specific variables. Also provides estimates regarding the contribution of the binary variable on the depended variable. The position 1 of the binary variable SCI provides estimates regarding the impact that the countries which were affected the most by the recession has of the dependent variable loan loss reserve ratio. Therefore, this position includes the countries: Portugal, Spain, Italy, Greece and Ireland.

The default position of the binary variable which is redundant and is set to zero, includes the countries: Austria, Belgium, France, Denmark, Finland, Germany, Luxemburg, The Netherlands, Portugal, Sweden and the UK).

LLRGL is the loan loss reserves ratio and is used as proxy for credit risk

TCR is the total capital ratio and is used as proxy for capitalization

ILGL is the impaired loans over the gross loan's ratio and is used as proxy for asset quality

ILE is the impaired loans over the equity ratio and is used as proxy for asset quality

NIM is net interest margin and is used as proxy for operations efficiency

EQL is the equity over the net loan's ratio used as proxy for capitalization

SCI is the binary variable “South countries and Ireland”

βo is the intercept term.

β_1, ..., β_6 are the coefficients of the variables.

$\varepsilon_{i,t}$ is the idiosyncratic error term

$i = 1, \ldots \ldots, N$ where N is the number of banks in the sample

$t = 1, \ldots \ldots \ldots, T_i$where T_i is the number of years in the sample of banks i

Chapter 5

Analysis Results

Table 4 presents the empirical results for the regression models by investigating the commercial banks specific data. The analysis begins with the results of the period before recession and continues with the periods during and after the recession. In addition, the effect of the binary variable (South countries and Ireland) in the model is exanimated.

Before running the models, data were tested for multicollinearity in order to avoid high correlation between independent variables which can lead to uncertain result. The two tests deployed for this purpose are the correlation test between the independent variables and the Variance Inflation Factor (VIF). The data set is clear from multicollinearity problems as the correlation between any two variables is below the usual multicollinearity threshold of 80%. This conclusion is also backed up from the Variance Inflation Factor results, where none of the variables presented VIF more than 3 and the tolerance level remained below 1.

Furthermore, the models for all years are statistically significant and present high adjusted R squared (average for all years around 75%).

The data panel present the regression results for the selected variables. The table is split in three different sections in order to present the periods before, during and after the recession. Each section is subdivided per year and presents analytical details for all variables. Under each coefficient, in parenthesis, is presented the significance level of each variable. All tests are performed at significance level 5% , although some of these variables are statistically significant at both 5% and 1% significance level.

Table 4. Commercial banks for the period 2005-2013

		Before Recession			During Recession			After Recession		
		Model 2005	**Model 2006**	**Model 2007**	**Model 2008**	**Model 2009**	**Model 2010**	**Model 2011**	**Model 2012**	**Model 2013**
		R^2= 0.696	*R^2 = 0.688*	*R^2 = 0.715*	*R^2 = 0.687*	*R^2 = 0.786*	*R^2 = 0.786*	*R^2 = 0.843*	*R^2 = 0.845*	*R^2 = 0.892*
		S.E.= 0.863	*S.E.= 0.798*	*S.E.= 0.717*	*S.E.= 0.781*	*S.E.= 0.965*	*S.E.= 0.953*	*S.E.=1.186*	*S.E.=1.538*	*S.E.= 1.572*
		F= 29.735	*F= 28.720*	*F = 32.544*	*F= 25.580*	*F= 47.843*	*F= 47.867*	*F= 69.778*	*F=71.080*	*F=107.735*
Variable	**Coefficients**	*Sig. F=0.000*	*Sig. F=0.000*	*Sig. F =0.000*	*Sig. F= 0.000*	*Sig. F=0.000*	*Sig. F= 0.000*	*Sig. F=0.000*	*Sig. F=0.000*	*Sig. F=0.000*
LLR_GL		0.304	0.365	0.224	0.649	0.800	0.583	0.615	0.452	2.212
		(0.583)	(0.448)	(0.621)	(0.097)	(0.165)	(0.189)	(0.210)	(0.516)	(0.011)*
TCR	β_1	-0.024	-0.023	-0.008	-0.052	-0.060	-0.054	-0.023	-0.007	-0.052
		(0.572)	(0.536)	(0.822)	(0.041)*	(0.049)*	(0.043)*	(0.389)	(0.868)	(0.161)
IL_GR	β_2	49.747	48.077	48.094	37.008	46.891	38.645	42.496	45.496	43.248
		(0.000)*	(0.000)*	(0.000)*	(0.000)*	(0.000)*	(0.000)*	(0.000)*	(0.000)*	(0.000)*
IL_EQ	β_3	13.100	6.830	-25.143	5.299	-11.265	5.827	-2.980	-0.504	64.014
		(0.741)	(0.843)	(0.500)	(0.834)	(0.653)	(0.777)	(0.056)	(0.924)	(0.001)*
NIM	β_4	0.337	0.233	0.163	0.258	0.081	0.291	-0.049	-0.025	-0.017
		(0.000)*	(0.006)*	(0.041)*	(0.001)*	(0.025)*	(0.023)*	(0.746)	(0.895)	(0.069)
EQ_NL	β_5	0.005	0.004	0.009	0.026	0.026	0.033	0.020	0.023	-0.003
		(0.454)	(0.417)	(0.136)	(0.014)*	(0.007)*	(0.000)*	(0.086)	(0.097)	(0.823)
DUMMY SCI	β_6	0.133	0.006	0.108	-0.067	-0.416	-0.055	0.154	-0.096	0.441
		(0.528)	(0.977)	(0.562)	(0.733)	(0.114)	(0.808)	(0.591)	(0.794)	(0.306)

Notes: The table shows the fixed effect of the regression Models of commercial banks for the period 2005-2013. The dependent variable is the Loan Loss Reserves ratio (LLR_GL) of bank i in year t and the regressors are the TCR, denotes the Total Capital Ratio of the current period, the IL_GR denotes the Impaired Loans to Gross Loans ratio, IL_EQ denotes the Impaired Loans over the Equity ratio, NIM denotes the Net Interest Margin of the period, EQ_NL denotes the ratio of Equity to Net Loans and SCI denotes the DUMMY variable "South countries and Ireland. Significance level of each coefficient in parenthesis. * indicates significance at 5% level.

Chapter 6

Findings

Before Recession

As can be seen from the data panel in table 4, in the period before the recession the banks' net interest margin (NIM) and the ratio of impaired loans over the gross loans (ILGL) has a significant positive effect on the depended variable loan loss reserve ratio (LLRGL) checked on significance level 5%. This suggests that an increase in the impaired loans ratio will also increase the banks reserves in order to cover the loan losses. Loan loss reserves ratio (LLRGL) increases as net interest margin (NIM) increases which according to Maudos and Guevara (2004) the higher the uncertainty of the expected return on the granted loans the higher will be the margin on which the banks are operating.. Aligned with previous studies Waqas et al., (2017) the total capital ratio (TCR), which in this period is not significant, is negatively related with credit risk (loan loss reserve ratio). Decrease in the capital ratio will increase the credit risk, as banks with lower capital ratios, according to Berger & DeYoung (1997), will take more risks in their portfolios as a response to the moral hazard motivation. We can see from the data panel results that the binary variable (SCI) has a positive effect on the loan loss reserves (LLRGL) ratio. This indicates that before the recession period the south countries and Ireland are increasing the ratio of the loan loss reserve (LLRGL). The impaired loans over equity (IL_EQ) and equity over net loans (EQ_NL) variables present mixed and non-significant results in this period.

During Recession

We can see in table 2 that variables TCR, ILGL, NIM and EQ_NL has significant effect on LLRGL ratio during the recession period. Total capital ratio (TCR) as it was expected has a negative significant effect on the depended variable, being one of the four determinants of the credit risk in this period. This as per Laxmi et al (2018) implies that the banks are less capitalized during this period and approve riskier loans which can lead to higher credit risk and according to the moral hazard hypothesis of Berger & DeYoung (1997) bank supervisors should take actions in order to increase the low capital ratios. The impaired loans over gross loans (ILGL) ratio continues to have

a high positive significant role in credit risk for European commercial banks. Increase in this variable is highly affecting the ratio of loan loss reserves (LLRGL), as banks in an effort to cover the losses from the non-performing loans are increasing accordingly they reserves. Net interest margin (NIM), is also in this period, positively associated with credit risk. Zheng et al. (2018) found that higher net interest margin (NIM) causes higher credit risk and creates a burden for the borrower. The borrower is struggling with the extra interest burden which can put him in a defaulter position. Equity over the net loans (EQL) ratio is another significant factor of credit risk in this period. This ratio according to Hanif et al (2012) provides equity as a protection in order to absorb or adjust the loan losses faced by bank and it is positively associated with the loan loss reserve (LLRGL) ratio meaning that during the crisis period banks increased the ratio capacity in order to absorb the loan losses. During this period the binary variable (SCI) has negative effect on credit risk without being statistically significant. This suggest that the during the recession period the south countries and Ireland contribute to the decrease of the loan loss reserve (LLRGL) ratio. Impaired loans over equity variable present mixed results in this period without being statistically significant.

After Recession

In the period after recession the credit risk of commercial banks is significantly affected by the ratio of the impaired loans over the gross loans. This variable also in this period is highly and positively associated with the loan loss reserve (LLRGL) ratio. The Statement of Financial Accounting Standards (SFAS) requires from banks to decide the loans which are impaired and evaluate the level of impairment. This evaluation will determine the reported loan loss reserves. Total capital ratio (TCR) continues to have negative effect on credit risk, without being a significant determinant of it. The net interest margin (NIM) is negatively associated with credit risk, which is consistent with Salas and Saurina (2002), Hanifa et al (2015) without being statistically significant. The negative sing implies investment inefficiency, and the banks may need to take corrective action by seeking funds from outstanding debts or opt to direct assets to more profitable investments as the received interest from lending is less than the interest paid to the depositors. According to Salas and Saurina (2002) decrease in interest margin, as a result of increased competition, can lead managers to riskier policies. The impaired loans over equity (ILEQ) which has presented mixed results for all periods has positive significant impact on credit

risk for year 2013. According to Reda et al (2016) the tendency of this ratio is considered essential in the evaluation of management effectiveness in order to be able to identify impaired loans as a proportion of equity that can be used to absorb losses. In this period the binary variable (SCI) and equity over the net loans ratio present mixed results without being statistically significant.

Chapter 7

Conclusion

This study examines the effect of internal bank characteristic in the predictability of credit risk for European commercial banks in the period before, during and after the global financial recession. Credit risk is reflected by the ratio of loan loss reserves, which has been a much less examined measure of credit risk in European commercial banks. The knowledge gained from the understanding of what determines the loan loss reserve ratio, can be used to assess the probability of default of commercial banks. In addition, this knowledge can help commercial banks to forecast bank failures, which can have as consequence a generalized distress for the economy.

The contribution of this study is that provides relevant insights on banks' internal controls effectiveness and shows that microeconomic individual bank level variables significantly determine the credit risk exposure of commercial banks.

In accordance with my expectation, the study shows that the levels of loan loss reserve ratio increased during the recession period and remained high in the post-recession period in comparison with the levels before the recession. This indicates that during and after the recession periods commercial banks had poorer loan portfolio quality.

As it was expected, the impaired loan ratio, which is used to proximate the asset quality of the banks, has a significant and positive relation with loan loss reserves ratio, in all periods of the study. The results suggest that the deterioration in the asset quality forced commercial banks to allocate higher loss reserves, which subsequently implies higher credit risk levels. The opposite holds true as well for this variable.

There is evidence that banks were less capitalized during the recession period and therefore more vulnerable and prone to credit risk, result which is aligned with the findings of Berger & DeYoung (1997) and the moral hazard hypothesis of their study. Appears also from the findings that, during the recession period banks increased the ratio capacity of equity in an effort to absorb or adjust the loan loses they faced. In addition, before and during recession banks faced higher uncertainty on the granted loans, therefore they were operating with higher interest margin returns, results which are aligned as well with the empirical results of Laxmi et al.(2018). The situation changes in the

period after the recession, with interest margin being negatively related with credit risk, implying investment inefficiency and that banks need to take corrective action. Furthermore, there is no clear indication that banks from a specific group of countries (countries which were affected the most by the recession) had a significant effect in the levels of loan loss reserves ratio.

Finally the results show that only in year 2013 the banks' management is effective to identify impaired loans as a proportion of equity that can be used to absorb losses, ability which is considered essential in order to evaluate banks' management according to Reda et al (2016). This result indicate also that the regulatory requirements implemented in the post-recession period, begins to have a positive impact on the internal control procedures among banks.

In conclusion, the study shows that many bank specific variables significantly influence credit risk and demonstrate consistent results. Declines in capital, in combination with increases in net interest margin levels and impaired loans levels, can be early signs of future problem loans.

These indicators can support regulators to make the necessary interventions and take prompt corrective action in order to avoid future distress for banks.

Chapter 8

Limitation and Future Research

There are several limitations of this research that should be a future focus for studies. This study uses only commercial banks as a sample. A future research that will add value to the study, could be a comparison of commercial banks and other financial institutions. Another limitation is that the sample used in this study can be considered relatively small, as it consist only 85 commercial banks. The number of the banks included in the sample, for future studies, can be higher and equally balanced for each country. Furthermore, future studies can include also macroeconomic variables and other bank specific variables in order to examinate the causes of credit risk. This will give more insights on the credit risk management, as it will provide estimation from both macroeconomic and microeconomic variables. Finally, it will be useful to expand the research and examine other regions of the world, in order to generalize the empirical result found in this study.

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Appendix

Data used in this Thesis

Country	Bank	DUMMY 0$1	Loan Loss Res / Gross Loans % 2013	Total Capital Ratio % 2013	Impaired Loans / Gross Loans % 2013	Impaired Loans / Equity % 2013	Net Interest Margin % 2013	Equity / Net Loans % 2013
Austria	AT1	West&North	3.716	17.000	0.026	0.012	75.483	12.600
Austria	AT2	West&North	6.805	15.900	0.107	0.000	66.114	13.791
Austria	AT3	West&North	5.435	13.500	0.090	0.002	75.547	13.262
Belgium	BE1	West&North	1.711	16.500	0.024	0.007	55.505	7.703
Belgium	BE2	West&North	4.497	18.040	0.112	0.005	65.048	10.390
Belgium	BE3	West&North	2.249	17.400	0.045	0.030	74.703	14.714
Denmark	DK1	West&North	11.472	17.300	0.136	0.034	77.453	12.596
Denmark	DK2	West&North	7.684	16.100	0.091	0.036	74.539	13.304
Denmark	DK3	West&North	6.249	16.800	0.160	0.027	83.347	15.733
Denmark	DK4	West&North	16.456	18.400	0.238	0.028	54.190	23.106
Denmark	DK5	West&North	6.067	15.700	0.097	0.001	52.428	15.373
Denmark	DK6	West&North	7.794	16.800	0.112	0.012	23.220	30.510
Denmark	DK7	West&North	3.133	16.000	0.057	0.005	56.242	13.304
Finland	FI1	West&North	1.754	12.700	0.020	0.007	42.067	21.709
France	FR1	West&North	3.209	9.540	0.067	0.006	58.316	10.779
France	FR2	West&North	2.696	14.250	0.035	0.002	107.577	11.021
France	FR3	West&North	3.790	11.000	0.068	0.002	77.131	7.926
France	FR4	West&North	1.946	10.260	0.028	0.004	78.712	5.361
France	FR5	West&North	2.003	13.700	0.046	0.000	18.964	15.760
France	FR6	West&North	2.015	11.900	0.039	0.018	64.485	8.242
France	FR7	West&North	0.733	19.000	0.011	0.009	59.061	1.974
France	FR8	West&North	3.499	7.630	0.061	0.003	17.367	24.993
France	FR9	West&North	2.723	15.100	0.034	0.011	20.860	13.889
France	FR10	West&North	4.617	13.400	0.076	0.003	34.448	15.632
France	FR11	West&North	3.978	12.500	0.068	0.001	41.938	14.874
Germany	DE1	West&North	1.928	24.100	0.059	0.004	24.902	32.333
Germany	DE2	West&North	1.457	15.700	0.024	0.012	67.307	6.157

Germany	DE3	West&North	2.968	19.200	0.069	0.004	43.646	12.386
Greece	GR1	South + Ir	11.678	12.000	0.330	0.000	94.470	12.413
Greece	GR2	South + Ir	17.871	16.400	0.449	0.000	81.305	16.192
Greece	GR3	South + Ir	14.744	11.100	0.307	0.033	64.444	9.917
Greece	GR4	South + Ir	18.062	14.000	0.307	0.020	76.815	13.698
Greece	GR5	South + Ir	11.633	11.200	0.286	0.028	68.910	11.709
Ireland	IE1	South + Ir	12.111	15.300	0.237	0.001	84.403	8.152
Ireland	IE2	South + Ir	20.626	16.600	0.349	0.014	65.848	15.963
Ireland	IE3	South + Ir	8.885	14.100	0.170	0.008	80.693	9.327
Italy	IT1	South + Ir	2.056	25.500	0.032	0.002	19.941	49.445
Italy	IT2	South + Ir	7.693	18.460	0.166	0.002	91.708	18.932
Italy	IT3	South + Ir	3.480	10.890	0.110	0.001	101.661	6.220
Italy	IT4	South + Ir	13.108	12.480	0.272	0.006	103.788	9.197
Italy	IT5	South + Ir	7.507	13.220	0.165	0.031	101.657	6.751
Italy	IT6	South + Ir	5.436	10.700	0.099	0.002	90.715	10.975
Italy	IT7	South + Ir	3.907	38.950	0.117	0.002	72.820	33.050
Italy	IT8	South + Ir	3.510	24.940	0.093	0.031	102.357	14.387
Italy	IT9	South + Ir	3.753	26.100	0.111	0.010	106.499	15.327
Italy	IT10	South + Ir	3.210	17.890	0.101	0.002	100.522	11.096
Italy	IT11	South + Ir	0.773	18.020	0.011	0.000	29.825	20.857
Italy	IT12	South + Ir	2.837	23.680	0.086	0.008	100.829	12.322
Italy	IT13	South + Ir	11.076	22.600	0.188	0.009	73.043	9.285
Italy	IT14	South + Ir	5.261	10.990	0.088	0.001	89.057	7.033
Italy	IT15	South + Ir	2.710	11.920	0.056	0.004	78.260	10.813
Italy	IT16	South + Ir	8.795	9.200	0.183	0.004	69.355	7.207
Italy	IT17	South + Ir	10.907	15.190	0.215	0.001	72.066	4.797
Luxembourg	LU1	West&North	2.434	20.770	0.028	0.004	56.599	11.550
Luxembourg	LU2	West&North	2.761	25.700	0.056	0.002	80.119	27.946
Netherlands	NL1	West&North	0.273	16.720	0.014	0.001	68.533	6.190
Netherlands	NL2	West&North	3.680	13.470	0.061	0.001	75.557	9.639
Netherlands	NL3	West&North	0.607	16.900	0.006	0.002	109.161	16.857
Netherlands	NL4	West&North	0.760	22.300	0.028	0.001	70.874	12.574
Netherlands	NL5	West&North	0.841	15.100	0.031	0.002	75.784	4.835
Netherlands	NL6	West&North	1.193	15.050	0.031	0.001	70.474	6.641
Portugal	PT1	South + Ir	15.528	15.360	0.380	0.003	36.418	53.583
Portugal	PT2	South + Ir	5.251	10.390	0.049	0.017	99.900	5.727

Portugal	PT3	South + Ir	6.813	11.800	0.060	0.001	71.451	15.214
Portugal	PT4	South + Ir	5.679	14.600	0.073	0.002	77.837	5.767
Spain	ES1	South + Ir	3.977	22.300	0.051	0.007	68.990	48.017
Spain	ES2	South + Ir	5.399	16.200	0.013	0.004	2.651	56.149
Spain	ES3	South + Ir	2.249	13.310	0.053	0.004	84.507	8.137
Spain	ES4	South + Ir	9.930	12.100	0.196	0.003	77.096	9.102
Spain	ES5	South + Ir	4.486	14.900	0.076	0.002	64.258	14.000
Spain	ES6	South + Ir	3.760	14.590	0.061	0.009	65.510	12.496
Sweden	SE1	West&North	0.232	9.900	0.004	0.000	75.302	6.625
Sweden	SE2	West&North	0.534	11.700	0.008	0.007	62.503	10.107
United Kingdom	GB1	West&North	12.062	16.700	0.228	0.019	46.483	115.799
United Kingdom	GB2	West&North	1.751	20.000	0.025	0.001	45.346	38.384
United Kingdom	GB3	West&North	2.154	21.700	0.073	0.007	7.471	116.202
United Kingdom	GB4	West&North	6.707	19.100	0.120	0.008	51.260	24.630
United Kingdom	GB5	West&North	2.438	15.700	0.046	0.013	59.449	19.663
United Kingdom	GB6	West&North	5.663	15.440	0.079	0.013	62.475	24.114
United Kingdom	GB7	West&North	1.038	18.300	0.013	0.023	91.092	8.748
United Kingdom	GB8	West&North	3.049	9.000	0.108	0.000	74.771	5.839
United Kingdom	GB9	West&North	0.826	19.400	0.020	0.002	74.639	6.702
United Kingdom	GB10	West&North	4.343	25.300	0.084	0.003	53.607	6.479
United Kingdom	GB11	West&North	1.204	18.000	0.028	0.001	37.240	12.026
United Kingdom	GB12	West&North	1.642	19.900	0.057	0.009	35.081	14.559

Loan Loss Res / Gross Loans % 2012	Total Capital Ratio % 2012	Impaired Loans / Gross Loans % 2012	Impaired Loans / Equity % 2012	Net Interest Margin % 2012	Equity / Net Loans % 2012
3.279	16.810	0.014	0.025	1.861	12.342
6.580	15.600	0.098	0.000	2.716	13.965
4.926	12.500	0.092	0.002	2.161	13.799
1.895	13.800	0.027	0.005	1.003	6.171
3.633	16.200	0.082	0.004	1.775	9.457
2.377	18.500	0.046	0.106	1.578	15.563
15.668	17.600	0.257	0.161	3.191	12.167

6.545	14.000	0.119	-0.168	4.010	12.124
6.329	19.600	0.166	-0.047	3.173	15.635
15.581	18.500	0.225	-0.119	1.522	13.919
4.240	15.900	0.076	0.000	2.235	14.719
7.532	21.300	0.112	0.012	1.036	28.651
3.362	17.300	0.054	0.006	1.939	13.194
1.740	13.100	0.021	0.007	0.788	20.009
2.807	10.120	0.068	0.005	1.643	10.992
2.964	14.160	0.034	0.002	3.734	10.225
3.557	11.100	0.060	0.002	2.141	7.603
1.893	9.460	0.027	0.005	1.957	5.294
2.174	12.600	0.042	0.000	0.474	15.546
2.054	12.100	0.038	0.015	0.885	7.925
0.537	18.250	0.009	0.007	-0.287	1.272
3.332	9.430	0.068	0.004	0.440	26.202
3.135	14.900	0.036	0.009	0.432	14.510
4.257	12.700	0.072	0.003	1.082	15.025
4.050	15.500	0.065	0.001	1.298	14.963
2.170	23.900	0.082	0.004	0.678	35.889
1.630	15.900	0.028	0.019	1.477	5.721
3.034	17.800	0.075	0.003	1.039	10.731
10.042	4.800	0.285	0.000	1.150	2.971
10.194	5.410	0.266	0.000	2.606	1.842
9.762	11.600	0.230	0.023	2.265	-1.517
11.786	9.700	0.215	0.019	2.027	-5.210
10.103	9.200	0.316	0.026	3.614	-2.954
9.024	20.500	0.178	0.001	0.327	8.354
18.394	17.800	0.327	0.020	0.924	15.486
7.532	15.300	0.163	0.006	1.053	9.345
3.622	22.800	0.055	0.002	2.113	83.769
6.028	16.180	0.129	0.002	3.196	16.829
3.061	12.010	0.091	0.001	1.922	6.249
9.501	10.580	0.183	0.007	1.849	9.892
4.752	12.720	0.113	0.010	2.200	6.331
4.682	9.400	0.082	0.001	2.359	10.441
3.137	32.520	0.092	0.001	2.540	32.498
3.445	24.940	0.086	0.010	2.035	14.190
3.255	24.320	0.092	0.010	2.181	14.395

2.496	17.600	0.071	0.001	1.884	10.730
0.723	13.840	0.011	0.001	2.014	21.892
2.688	20.500	0.084	0.006	2.179	12.207
8.709	19.100	0.145	0.007	3.716	11.451
4.709	10.490	0.073	0.000	2.144	6.648
2.157	13.640	0.047	0.003	1.882	9.951
4.504	10.500	0.087	0.003	1.871	11.292
8.410	13.710	0.164	0.001	1.514	4.616
2.462	19.490	0.027	0.004	1.203	11.591
2.910	22.800	0.062	0.003	2.844	24.933
0.044	16.060	0.011	0.001	0.482	6.768
3.023	13.400	0.049	0.000	4.855	10.895
0.551	15.600	0.005	0.002	2.080	15.171
0.822	19.100	0.026	0.002	0.533	10.957
2.483	9.300	0.076	0.003	0.962	2.165
1.006	16.960	0.027	0.002	1.502	6.612
11.145	11.160	0.234	0.004	1.387	45.128
3.917	10.400	0.043	0.013	0.915	6.275
5.342	11.300	0.043	0.001	1.656	16.209
6.346	12.700	0.065	0.002	1.230	6.388
4.078	27.100	0.050	0.010	1.367	43.103
1.862	12.900	0.002	0.004	0.301	27.276
2.228	13.000	0.045	0.004	1.182	7.682
10.389	11.400	0.164	0.002	1.595	8.618
4.063	10.800	0.056	0.003	2.835	12.513
3.506	13.090	0.049	0.008	2.818	11.615
0.250	10.000	0.004	0.000	1.226	6.307
0.756	11.500	0.012	0.006	0.823	9.438
12.264	22.300	0.238	0.020	1.729	84.621
0.467	16.500	0.004	0.001	1.346	25.841
7.060	20.500	0.087	0.006	0.026	44.684
7.140	17.800	0.116	0.007	0.677	21.650
2.317	16.100	0.049	0.011	1.675	18.810
6.364	13.870	0.090	0.011	2.486	20.905

1.028	14.900	0.012	0.014	2.298	9.171
1.892	12.800	0.110	0.002	1.326	5.550
0.920	18.200	0.027	0.002	1.043	6.674
5.562	17.400	0.115	0.003	1.232	5.973
1.135	17.300	0.024	0.001	0.929	11.391
1.797	17.000	0.057	0.008	0.831	14.136

Loan Loss Res / Gross Loans % 2011	Total Capital Ratio % 2011	Impaired Loans / Gross Loans % 2011	Impaired Loans / Equity % 2011	Net Interest Margin % 2011	Equity / Net Loans % 2011
3.210	16.490	0.011	0.014	2.089	11.568
5.915	13.500	0.086	0.000	2.903	14.248
5.417	12.700	0.105	0.001	2.345	13.113
1.590	15.100	0.027	0.004	0.942	3.688
3.631	15.400	0.079	0.004	1.986	8.871
2.455	21.600	0.048	0.022	1.297	13.326
7.834	14.800	0.152	0.054	3.200	11.887
5.149	15.600	0.074	0.090	3.620	10.212
7.591	15.800	0.168	-0.033	3.258	10.795
13.631	16.830	0.242	-0.822	1.699	12.075
2.344	16.100	0.040	0.003	2.337	12.542
7.133	19.300	0.105	0.011	1.291	25.406
2.722	14.700	0.054	0.004	1.910	11.122
1.725	10.600	0.020	0.005	0.859	18.156
2.838	10.000	0.065	0.004	1.928	11.473
3.349	13.910	0.034	0.003	3.985	10.302
3.349	9.200	0.058	0.003	2.353	7.655
1.916	9.640	0.028	0.007	1.848	6.286
2.268	10.700	0.044	0.000	0.416	14.966
2.041	10.800	0.036	0.013	1.232	7.226
0.420	19.400	0.007	0.005	-0.002	0.755
3.855	15.110	0.056	0.007	0.702	23.597
3.290	11.800	0.030	0.009	0.369	13.636
4.198	11.900	0.069	0.004	1.207	13.362
4.038	14.000	0.063	0.001	1.357	12.887

1.812	21.600	0.091	0.004	0.556	30.039
1.649	14.900	0.034	0.023	1.489	5.242
2.842	15.500	0.071	0.002	0.981	9.168
6.893	10.700	0.153	0.000	2.367	7.469
9.793	9.500	0.212	0.000	3.149	4.381
6.597	12.000	0.153	0.011	2.746	1.819
8.237	-5.100	0.171	0.013	2.514	-5.704
9.056	-2.600	0.265	0.017	3.848	-0.354
6.388	17.900	0.112	0.002	0.443	10.443
15.319	20.500	0.254	0.027	1.082	17.522
6.004	14.700	0.128	0.006	1.012	10.323
4.103	21.900	0.084	0.003	2.299	66.684
5.462	15.310	0.114	0.003	3.262	16.968
2.407	9.150	0.075	0.003	2.227	5.916
6.871	11.010	0.128	0.008	1.603	9.231
4.084	13.670	0.097	0.007	2.201	6.355
3.944	9.350	0.069	0.003	2.424	9.847
2.256	31.630	0.069	0.003	2.909	32.767
3.372	20.740	0.084	0.007	2.376	14.126
2.358	28.520	0.064	0.010	2.239	21.256
1.931	15.750	0.057	0.001	2.123	10.832
2.624	12.060	0.039	0.001	1.691	13.140
2.168	18.480	0.062	0.007	2.153	11.675
9.316	17.400	0.138	0.005	3.617	11.826
4.704	10.480	0.068	0.000	2.444	6.398
1.866	11.550	0.041	0.002	1.845	8.261
2.951	8.000	0.076	0.002	2.075	11.308
6.581	14.920	0.129	0.001	1.561	6.944
2.340	-1.710	0.026	0.003	1.034	7.782
1.783	30.680	0.036	0.003	1.836	40.024
0.045	24.970	0.007	0.001	0.559	8.267
2.720	12.730	0.048	0.000	4.634	11.266
0.491	14.900	0.005	0.000	2.157	14.031
0.723	17.500	0.020	0.004	0.647	10.134
1.376	14.400	0.057	0.003	1.091	2.901
0.849	14.260	0.023	0.003	1.573	6.070

8.888	11.200	0.193	0.002	1.523	30.582
2.340	10.500	0.027	0.012	1.166	5.428
4.232	10.700	0.030	0.001	1.781	12.627
4.875	9.500	0.049	0.002	1.764	6.428
3.497	26.700	0.042	0.012	1.090	42.536
3.435	14.690	0.003	0.005	0.331	70.614
1.702	11.670	0.032	0.005	1.014	6.801
3.198	11.020	0.065	0.003	1.689	8.315
2.719	10.890	0.044	0.001	2.640	11.542
2.523	13.560	0.042	0.007	2.909	11.325
0.263	10.700	0.004	0.000	1.138	5.992
0.937	12.500	0.015	0.005	0.828	9.223
8.410	20.300	0.176	0.012	1.160	60.157
0.770	16.700	0.005	0.001	1.000	25.828
4.062	16.940	0.127	0.006	0.839	30.296
5.374	21.700	0.071	0.003	0.383	16.848
1.991	16.800	0.048	0.011	1.599	17.651
6.545	14.100	0.096	0.011	2.857	21.013
0.974	15.300	0.023	0.013	2.501	7.570
1.998	14.700	0.080	0.004	1.486	6.732
0.755	20.600	0.011	0.001	1.352	6.165
5.842	14.900	0.123	0.003	1.419	4.892
1.149	14.400	0.026	0.001	0.967	10.973
2.385	16.350	0.067	0.008	0.881	15.088

Loan Loss Res / Gross Loans % 2010	Total Capital Ratio % 2010	Impaired Loans / Gross Loans % 2010	Impaired Loans / Equity % 2010	Net Interest Margin % 2010	Equity / Net Loans % 2010
2.994	16.690	0.012	0.002	2.027	11.460
5.949	13.300	0.084	0.000	3.751	14.621
5.062	12.130	0.091	0.001	2.600	13.433
0.978	15.700	0.010	0.004	0.895	5.481
3.296	16.600	0.073	0.004	1.948	9.817

2.371	22.600	0.049	0.007	1.178	13.749
2.527	17.800	0.033	0.009	3.233	16.657
4.575	16.500	0.058	0.010	3.860	10.464
7.119	16.300	0.172	0.009	3.284	10.623
9.345	18.830	0.232	0.008	2.284	14.092
2.062	15.400	0.035	0.001	2.301	11.407
7.862	15.900	0.104	0.007	1.605	19.126
3.090	15.800	0.064	0.004	2.085	11.710
1.645	13.300	0.025	0.004	0.836	19.118
2.611	10.280	0.070	0.004	1.815	11.391
4.131	13.780	0.047	0.007	4.189	11.170
3.471	6.900	0.061	0.007	2.262	7.602
2.054	10.120	0.030	0.010	2.120	6.713
2.297	12.000	0.041	0.000	0.423	14.506
2.110	10.760	0.036	0.009	1.418	7.751
1.041	14.970	0.014	0.005	0.186	0.118
3.759	15.750	0.055	0.002	0.800	22.504
2.399	11.600	0.025	0.008	0.379	9.710
3.791	12.090	0.065	0.004	1.238	13.135
3.838	14.700	0.061	0.002	1.327	12.816
1.554	16.900	0.033	0.006	0.794	32.716
1.578	11.310	0.050	0.018	1.288	5.115
2.971	15.300	0.071	0.001	0.913	9.623
4.684	19.000	0.093	0.000	2.484	14.079
4.309	13.500	0.104	0.000	2.916	11.731
3.975	11.700	0.105	0.010	2.860	10.830
3.668	9.600	0.076	0.015	2.427	8.698
4.407	13.700	0.105	0.028	4.004	14.115
2.357	10.600	0.041	0.002	0.409	4.418
7.782	9.200	0.129	0.026	1.272	5.036
4.166	11.000	0.092	0.006	1.320	6.471
5.481	25.330	0.061	0.001	1.996	85.628
5.123	15.610	0.100	0.001	2.920	16.148
2.021	8.990	0.055	0.003	1.986	5.966
4.697	4.970	0.079	0.008	1.606	3.943
3.424	13.310	0.086	0.005	2.048	7.508
3.711	8.920	0.066	0.003	2.258	10.357
1.961	29.820	0.048	0.003	2.704	33.352
3.392	19.810	0.082	0.005	2.118	13.295

2.399	27.690	0.056	0.010	1.772	21.351
1.801	13.280	0.045	0.001	1.735	9.684
0.733	14.200	0.014	0.001	1.365	16.212
1.849	18.380	0.049	0.004	1.820	11.099
9.351	14.900	0.136	0.004	3.375	12.511
4.039	9.250	0.059	0.000	2.375	5.605
1.839	11.280	0.037	0.002	1.961	9.551
2.330	9.100	0.066	0.002	2.118	15.609
5.455	12.950	0.106	0.001	1.940	11.154
1.580	26.370	0.018	0.008	0.756	16.064
1.395	23.130	0.034	0.002	1.648	39.650
0.035	32.490	0.001	0.001	0.575	14.757
2.737	13.260	0.045	0.000	3.898	12.521
0.548	16.700	0.006	0.002	1.860	13.498
0.822	15.800	0.019	0.005	0.526	9.767
1.470	16.700	0.054	0.004	1.168	2.824
0.873	13.170	0.023	0.005	1.589	5.970
5.494	10.290	0.136	0.002	1.792	34.966
1.592	8.800	0.015	0.011	1.040	4.165
3.378	11.300	0.021	0.001	1.779	13.475
3.279	10.300	0.033	0.002	1.718	7.593
3.238	22.400	0.040	0.014	1.186	43.142
2.507	15.300	0.001	0.006	0.301	75.287
2.035	9.590	0.030	0.006	1.074	6.066
3.017	11.180	0.052	0.001	1.766	7.689
2.810	13.700	0.045	0.001	2.768	11.217
2.670	13.100	0.038	0.007	2.853	11.270
0.376	11.600	0.006	0.000	1.071	5.966
1.352	12.400	0.021	0.005	0.775	9.261
7.262	20.700	0.107	0.014	0.997	64.079
0.844	16.900	0.005	0.001	0.909	27.251
1.997	14.000	0.079	0.006	1.120	16.209
2.575	18.500	0.033	0.003	0.977	8.638
2.222	16.100	0.065	0.011	1.641	17.615
6.650	14.810	0.102	0.011	2.981	19.083

1.028	14.100	0.021	0.012	2.495	7.309
1.964	14.000	0.084	0.004	1.389	5.927
0.818	20.600	0.011	0.000	1.394	6.119
5.876	13.900	0.121	0.004	1.468	4.942
1.223	16.100	0.023	0.001	1.055	11.345
2.812	16.910	0.091	0.008	0.958	14.638

Loan Loss Res / Gross Loans % 2009	Total Capital Ratio % 2009	Impaired Loans / Gross Loans % 2009	Impaired Loans / Equity % 2009	Net Interest Margin % 2009	Equity / Net Loans % 2009
2.531	15.390	0.023	0.002	6.459	10.801
6.105	13.000	0.097	0.001	9.177	14.758
4.402	10.920	0.073	0.001	7.399	11.641
0.956	15.500	0.012	0.004	2.236	5.509
2.553	14.430	0.058	0.004	4.623	8.899
2.072	19.000	0.050	0.005	4.242	11.079
3.226	18.300	0.034	0.006	10.426	15.939
4.246	16.800	0.049	0.007	7.551	10.802
7.125	15.600	0.161	0.005	7.486	10.155
10.811	16.000	0.216	0.005	5.989	10.723
1.992	15.200	0.035	0.001	5.777	10.424
9.681	12.300	0.106	0.006	5.750	16.978
2.610	15.300	0.018	0.006	5.576	11.323
1.273	13.500	0.018	0.004	6.384	20.021
2.496	9.460	0.070	0.005	6.641	11.542
4.653	12.410	0.059	0.016	9.420	10.939
3.325	8.900	0.063	0.016	5.621	8.563
2.193	10.450	0.032	0.010	5.287	7.135
2.328	12.200	0.039	0.000	2.393	15.770
2.181	10.100	0.038	0.006	3.818	7.452
0.883	14.900	0.010	0.004	0.354	0.533
3.329	11.600	0.060	0.002	4.766	23.131
2.375	11.700	0.025	0.007	2.023	9.668
3.330	12.960	0.063	0.005	4.575	12.781
3.740	14.190	0.057	0.003	3.905	12.306

2.237	16.100	0.045	0.007	3.492	31.792
1.478	9.150	0.047	0.023	2.317	4.800
2.739	14.800	0.064	0.001	3.148	8.058
3.724	16.500	0.067	0.000	11.085	14.858
3.097	13.300	0.067	0.000	8.583	11.621
3.025	12.700	0.073	0.004	7.493	11.308
2.572	9.800	0.051	0.011	6.658	9.590
3.435	11.300	0.069	0.006	8.667	14.216
1.221	9.200	0.021	0.003	2.507	5.198
2.809	10.200	0.061	0.021	6.503	10.969
2.448	13.400	0.055	0.005	3.554	5.389
5.404	27.220	0.065	0.001	11.064	121.439
5.551	16.590	0.098	0.001	10.468	16.972
1.518	7.770	0.039	0.002	5.311	6.529
3.447	9.260	0.076	0.008	5.451	6.120
4.112	10.090	0.107	0.003	5.708	6.297
3.148	8.480	0.060	0.002	7.959	10.698
1.673	20.310	0.037	0.002	16.035	35.725
3.933	13.940	0.078	0.003	8.060	9.943
2.242	17.980	0.049	0.010	10.092	13.459
1.570	11.420	0.038	0.002	5.673	9.075
0.934	14.530	0.016	0.000	7.465	19.815
1.569	13.170	0.040	0.002	7.169	9.521
9.071	13.300	0.134	0.002	8.031	13.009
3.241	9.540	0.045	0.000	4.169	5.564
1.781	11.090	0.034	0.001	6.997	10.550
2.270	10.030	0.055	0.001	10.614	16.909
4.845	11.890	0.095	0.001	7.765	11.453
1.590	20.960	0.018	0.004	4.386	14.219
2.557	27.200	0.025	0.002	14.249	28.169
0.085	25.170	0.011	0.003	6.271	16.226
3.509	12.570	0.046	0.000	6.409	12.227
0.629	14.900	0.009	0.004	9.449	11.297
0.749	18.400	0.016	0.005	5.810	8.949
0.641	13.900	0.052	0.004	3.032	3.607
0.783	12.460	0.022	0.008	3.539	5.658

4.146	8.850	0.062	0.003	13.395	29.433
1.403	8.900	0.009	0.008	3.514	4.258
3.072	11.140	0.018	0.001	8.432	14.167
2.789	11.470	0.026	0.002	7.557	9.603
2.962	19.750	0.030	0.009	25.890	40.131
1.034	14.380	0.002	0.004	2.365	40.589
1.999	10.390	0.027	0.004	4.742	6.476
2.859	10.670	0.042	0.001	6.396	8.378
2.696	13.550	0.046	0.001	5.749	9.511
2.604	14.200	0.035	0.009	6.652	11.049
0.362	12.900	0.006	0.000	3.914	5.625
1.486	13.500	0.017	0.004	4.318	8.391
7.657	18.500	0.100	0.013	16.610	49.338
0.612	18.000	0.006	0.001	11.529	26.387
1.336	17.700	0.077	0.008	5.327	15.981
2.543	15.800	0.053	0.004	4.657	9.557
1.523	16.900	0.052	0.008	6.959	12.641
6.057	13.780	0.073	0.008	8.822	17.378
0.966	13.100	0.014	0.011	5.310	6.532
2.207	13.500	0.071	0.000	4.066	5.506
0.668	17.600	0.012	0.001	2.531	3.738
4.616	12.000	0.102	0.006	3.380	5.086
1.291	15.700	0.023	0.001	3.781	10.350
2.491	16.600	0.052	0.008	4.256	13.969

Loan Loss Res / Gross Loans % 2008	Total Capital Ratio % 2008	Impaired Loans / Gross Loans % 2008	Impaired Loans / Equity % 2008	Net Interest Margin % 2008	Equity / Net Loans % 2008
2.288	12.900	0.027	0.002	2.123	9.672
2.835	9.700	0.031	0.001	4.586	11.586
2.853	9.190	0.048	0.001	2.851	10.788
0.821	14.700	0.007	0.003	1.169	3.393
1.774	13.200	0.030	0.004	1.375	7.901

1.096	18.700	0.024	0.007	0.746	7.023
4.731	12.400	0.025	0.006	3.673	16.511
3.525	14.100	0.016	0.005	4.794	11.508
3.677	12.400	0.086	0.005	3.157	12.299
2.459	12.560	0.114	0.004	1.895	7.151
1.142	13.200	0.020	0.001	2.087	7.402
0.938	10.200	0.002	0.004	1.035	9.423
1.041	12.700	0.005	0.004	1.654	8.304
0.260	11.300	0.005	0.003	0.710	13.364
2.315	9.820	0.037	0.003	1.297	9.926
4.165	10.020	0.053	0.009	3.698	10.460
2.908	8.320	0.052	0.009	2.173	7.470
2.332	9.860	0.032	0.006	2.197	7.459
1.962	9.540	0.027	0.000	-0.076	15.348
1.835	9.600	0.030	0.003	0.561	6.051
0.761	12.480	0.009	0.003	0.498	-0.767
2.233	10.200	0.019	0.002	0.465	15.788
1.828	10.700	0.027	0.004	0.076	6.487
2.371	11.190	0.038	0.003	0.825	10.783
2.811	11.100	0.037	0.004	0.806	11.927
1.440	13.400	0.023	0.000	0.658	24.692
1.256	10.600	0.028	0.016	1.181	4.762
1.838	13.900	0.044	0.001	0.788	6.967
3.747	11.190	0.066	0.000	2.674	9.581
2.455	10.100	0.045	0.000	3.303	7.772
2.461	10.400	0.039	0.001	3.478	8.273
1.802	9.900	0.036	0.008	2.684	7.896
2.338	10.300	0.043	0.003	4.313	12.216
0.346	9.200	0.005	0.003	0.643	5.859
1.739	10.500	0.023	0.020	2.233	7.964
1.314	15.200	0.039	0.003	1.933	5.169
4.245	6.120	0.049	0.001	2.142	30.336
5.516	12.370	0.101	0.001	3.802	17.403
1.215	7.800	0.023	0.001	3.137	7.130
2.369	9.950	0.030	0.006	3.010	7.733
3.369	8.680	0.074	0.003	2.934	6.326
2.451	8.150	0.044	0.001	3.132	10.865
1.373	20.070	0.026	0.001	3.918	39.514
2.943	12.110	0.053	0.003	3.196	9.561

1.919	13.010	0.039	0.010	3.250	13.593
1.487	10.600	0.023	0.003	2.762	8.388
0.706	9.000	0.009	0.000	1.838	17.098
1.149	11.520	0.024	0.002	3.129	9.189
8.461	9.900	0.119	0.002	3.778	13.234
2.436	10.030	0.033	0.000	2.446	6.074
1.258	9.620	0.019	0.001	2.276	9.924
2.145	10.560	0.048	0.001	3.216	17.098
4.358	9.320	0.077	0.001	2.565	10.391
1.230	15.980	0.016	0.006	1.038	7.258
1.003	22.200	0.017	0.003	1.396	22.644
0.047	34.860	0.001	0.001	1.462	4.968
2.890	12.410	0.032	0.000	7.085	12.498
0.382	13.200	0.005	0.005	1.681	9.255
0.408	18.900	0.007	0.002	0.883	8.391
0.371	12.400	0.028	0.004	1.103	3.654
0.420	10.200	0.014	0.004	1.182	4.031
1.637	8.670	0.043	0.002	1.399	22.013
1.075	8.700	0.006	0.005	1.338	4.161
2.382	10.500	0.013	0.001	1.771	9.889
1.932	10.500	0.011	0.002	2.097	8.313
2.455	17.100	0.018	0.009	1.321	36.900
1.045	16.160	0.000	0.004	0.285	62.528
1.755	10.130	0.014	0.004	1.359	4.805
2.803	9.570	0.025	0.002	1.995	7.060
2.288	12.200	0.025	0.001	2.536	7.965
1.966	13.300	0.022	0.007	2.124	9.652
0.185	10.600	0.004	0.000	1.009	5.060
0.694	10.620	0.009	0.003	0.829	6.457
4.592	15.200	0.061	0.005	1.322	21.554
0.367	15.000	0.001	0.002	1.548	22.771
0.875	14.000	0.029	0.006	0.636	14.668
1.482	13.020	0.026	0.003	1.818	7.547
1.049	15.900	0.050	0.006	2.034	11.426
1.574	12.150	0.013	0.006	3.617	14.065

0.856	11.340	0.006	0.010	2.667	6.673
1.813	11.200	0.035	0.002	2.960	7.674
0.533	14.000	0.006	0.000	0.731	3.584
2.143	9.700	0.047	0.005	1.367	2.443
0.832	10.500	0.012	0.000	0.785	6.926
1.393	13.500	0.034	0.007	0.725	9.435

Loan Loss Res / Gross Loans % 2007	Total Capital Ratio % 2007	Impaired Loans / Gross Loans % 2007	Impaired Loans / Equity % 2007	Net Interest Margin % 2007	Equity / Net Loans % 2007
2.278	12.830	0.011	0.000	2.090	10.466
2.257	12.400	0.006	0.000	4.217	13.861
3.002	11.160	0.045	0.000	2.217	13.294
0.707	9.400	0.008	0.002	0.919	6.715
1.355	10.500	0.022	0.002	1.168	8.811
0.631	10.100	0.017	0.006	0.887	10.741
1.500	12.300	0.002	0.004	3.306	15.747
2.992	12.800	0.010	0.003	4.576	12.787
2.064	13.500	0.005	0.003	3.133	13.687
0.754	11.750	0.032	0.003	1.867	11.200
1.066	11.900	0.008	0.000	1.824	8.066
0.210	11.700	0.001	0.000	0.928	13.491
0.598	9.520	0.011	0.002	1.758	7.243
0.215	12.200	0.003	0.002	0.554	20.134
2.213	9.180	0.037	0.001	1.385	11.075
3.146	9.160	0.043	0.001	3.624	10.319
2.558	9.030	0.046	0.001	2.394	7.856
2.680	9.270	0.036	0.004	2.220	7.380
1.319	9.800	0.023	0.004	0.123	9.231
1.868	9.490	0.028	0.003	-0.005	8.144
0.186	11.180	0.001	0.002	0.423	4.289
1.760	10.300	0.013	0.001	0.309	20.626
2.151	10.500	0.021	0.003	-0.362	8.943
2.249	8.870	0.035	0.002	0.306	9.812
2.731	10.000	0.040	0.003	0.706	13.344

1.550	12.300	0.012	0.000	0.785	24.291
1.253	9.200	0.024	0.003	1.197	5.747
2.058	10.800	0.039	0.000	0.678	5.691
3.817	12.600	0.064	0.000	2.894	10.956
1.959	12.500	0.039	0.000	3.400	10.200
2.209	12.230	0.032	0.000	3.591	11.742
1.355	12.260	0.034	0.002	2.753	10.927
2.771	10.200	0.042	0.001	4.281	15.618
0.191	10.400	0.003	0.002	0.629	6.756
0.578	10.100	0.008	0.005	2.114	8.700
0.437	11.100	0.008	0.001	1.746	4.805
2.042	10.200	0.023	0.001	3.292	98.511
6.041	9.840	0.103	0.001	3.531	19.287
1.125	6.930	0.021	0.000	3.407	7.371
2.555	10.500	0.033	0.007	3.133	9.596
2.688	9.110	0.062	0.003	2.635	7.231
2.453	9.980	0.041	0.000	3.280	12.367
1.187	19.890	0.020	0.000	3.652	40.574
2.287	9.520	0.037	0.003	3.298	9.368
1.628	10.910	0.035	0.010	3.307	13.407
1.291	7.660	0.020	0.001	2.917	8.133
1.002	10.220	0.011	0.000	1.811	32.859
0.924	7.740	0.018	0.000	3.071	8.227
8.906	10.100	0.107	0.001	3.688	13.326
2.280	8.670	0.030	0.000	2.238	7.205
1.002	9.250	0.012	0.001	2.090	9.786
2.674	9.190	0.048	0.001	2.970	16.821
2.938	8.880	0.052	0.000	2.397	8.367
0.784	12.560	0.012	0.007	0.670	25.886
0.711	12.400	0.002	0.000	1.253	15.377
0.038	21.290	0.001	0.002	1.487	10.802
1.840	12.460	0.024	0.000	4.499	11.201
0.433	11.500	0.003	0.000	1.894	9.701
0.325	13.400	0.022	0.000	1.032	7.400
0.342	11.500	0.025	0.002	1.212	3.671
0.376	10.320	0.010	0.003	1.008	5.167

0.909	9.640	0.001	0.001	1.237	24.525
0.873	8.600	0.004	0.003	1.428	4.398
2.295	11.500	0.012	0.001	1.680	12.838
1.828	9.560	0.008	0.001	2.050	7.463
2.202	16.810	0.005	0.004	1.424	42.253
1.319	14.810	0.000	0.003	0.251	75.827
1.499	9.550	0.004	0.003	1.272	4.621
2.068	10.870	0.005	0.000	1.906	7.427
2.238	10.700	0.011	0.000	2.353	8.988
1.514	12.660	0.011	0.007	1.932	10.179
0.144	10.400	0.002	0.000	0.893	5.761
0.592	11.040	0.008	0.001	0.795	7.188
0.743	13.300	0.009	0.004	1.472	22.829
0.325	15.800	0.004	0.000	1.613	29.685
0.378	16.940	0.004	0.004	0.357	9.680
0.570	12.200	0.011	0.003	2.158	7.381
0.406	14.600	0.021	0.004	2.013	12.346
1.195	11.350	0.015	0.004	3.269	12.711
0.855	12.630	0.002	0.009	2.958	7.624
1.753	13.500	0.033	0.004	2.668	7.958
0.489	11.400	0.003	0.000	0.786	3.069
0.728	10.900	0.022	0.004	1.530	4.746
0.781	10.880	0.013	0.000	0.775	10.980
1.079	11.000	0.025	0.006	0.885	9.213

Loan Loss Res / Gross Loans % 2006	Total Capital Ratio % 2006	Impaired Loans / Gross Loans % 2006	Impaired Loans / Equity % 2006	Net Interest Margin % 2006	Equity / Net Loans % 2006
2.337	12.740	0.016	0.000	1.969	10.439
2.489	11.000	0.005	0.000	4.176	13.431
3.208	14.730	0.050	0.000	1.712	13.158
0.702	10.200	0.008	0.002	0.876	8.220
1.577	11.150	0.025	0.003	1.272	8.597

0.764	11.100	0.020	0.013	0.948	5.911
2.154	11.900	0.003	0.005	3.912	16.445
4.434	11.400	0.015	0.003	4.894	15.867
2.032	11.200	0.006	0.006	4.078	13.468
1.367	12.140	0.034	0.003	1.987	13.599
1.953	11.800	0.031	0.000	1.906	8.676
0.271	10.600	0.001	0.000	0.885	13.083
0.593	11.310	0.011	0.001	2.110	8.991
0.228	12.900	0.004	0.002	0.613	25.203
2.392	9.520	0.038	0.001	1.871	11.363
3.052	9.500	0.041	0.001	3.672	10.325
2.850	9.310	0.050	0.001	2.536	8.098
3.143	11.450	0.041	0.004	2.557	8.882
1.804	9.610	0.027	0.004	0.457	12.911
2.398	10.920	0.036	0.003	0.331	8.716
0.205	11.540	0.002	0.003	0.491	6.183
1.865	10.600	0.016	0.001	0.361	25.325
1.961	11.400	0.017	0.003	-0.357	11.621
2.606	11.100	0.038	0.003	0.403	12.350
3.326	10.500	0.042	0.003	0.764	13.945
1.489	11.800	0.012	0.000	0.737	28.715
1.325	8.100	0.025	0.003	1.359	6.053
2.503	11.100	0.050	0.000	0.771	5.333
4.731	8.800	0.084	0.000	3.206	6.637
2.944	12.900	0.051	0.000	3.335	11.215
2.467	10.400	0.035	0.001	3.550	10.644
1.816	11.000	0.050	0.001	3.066	8.970
3.383	15.600	0.053	0.001	3.553	20.723
0.169	10.400	0.011	0.002	0.610	7.106
0.654	11.100	0.009	0.004	2.139	9.200
0.341	11.800	0.005	0.002	1.650	5.634
1.092	10.730	0.012	0.002	2.909	151.411
6.427	9.670	0.106	0.002	3.386	18.969
1.443	7.680	0.022	0.000	3.442	7.764
2.952	13.190	0.040	0.010	3.140	9.808
2.412	10.160	0.057	0.003	2.554	7.849
2.208	10.650	0.033	0.000	3.147	12.040
0.977	19.030	0.020	0.000	3.290	45.017
1.807	9.220	0.035	0.003	3.362	8.822

1.772	11.010	0.033	0.010	3.341	13.764
1.277	7.850	0.022	0.002	2.880	7.864
1.090	10.850	0.018	0.002	1.468	42.355
0.876	7.370	0.017	0.000	2.743	7.694
9.032	9.400	0.103	0.001	3.286	12.353
2.287	8.360	0.030	0.000	2.418	8.177
0.782	9.560	0.009	0.001	1.978	9.740
2.542	10.670	0.051	0.001	2.815	17.391
3.121	9.480	0.053	0.001	2.266	9.074
0.897	13.700	0.011	0.008	0.631	26.091
0.992	13.800	0.036	0.000	1.398	18.164
0.140	18.900	0.009	0.001	1.483	35.500
2.024	11.150	0.027	0.000	4.170	11.150
0.512	12.200	0.003	0.006	2.142	10.096
0.425	13.300	0.021	0.001	0.874	8.825
0.372	11.200	0.011	0.001	0.989	3.728
0.599	11.020	0.014	0.002	1.137	5.140
0.946	12.090	0.002	0.003	0.925	34.411
0.869	8.570	0.006	0.003	1.466	4.522
2.431	13.100	0.013	0.000	1.698	13.825
2.162	11.050	0.009	0.001	2.069	8.944
2.241	16.610	0.003	0.004	1.448	42.124
1.620	13.670	0.004	0.002	0.245	81.285
1.553	10.030	0.003	0.002	1.129	5.006
1.934	11.420	0.004	0.000	1.931	7.690
2.214	12.000	0.009	0.002	2.264	8.699
1.536	12.490	0.009	0.009	1.657	8.994
0.181	9.500	0.003	0.000	0.912	6.018
0.665	11.470	0.009	0.001	0.783	7.074
0.680	12.300	0.007	0.003	1.365	18.170
0.949	16.230	0.007	0.000	1.419	39.270
1.115	13.700	0.012	0.004	0.498	11.230
0.656	14.030	0.009	0.002	2.307	7.013
0.382	24.200	0.011	0.004	2.035	18.322
1.604	12.150	0.024	0.004	3.395	12.496

1.015	12.970	0.003	0.009	3.348	6.904
1.870	15.300	0.026	0.004	2.694	8.582
0.517	12.550	0.008	0.000	0.642	3.021
0.713	10.700	0.021	0.004	1.020	5.708
0.872	11.190	0.014	0.000	1.090	10.447
1.166	11.500	0.016	0.006	0.975	9.602

Loan Loss Res / Gross Loans % 2005	Total Capital Ratio % 2005	Impaired Loans / Gross Loans % 2005	Impaired Loans / Equity % 2005	Net Interest Margin % 2005	Equity / Net Loans % 2005
2.446	12.590	0.018	0.000	1.880	9.597
2.629	9.800	0.011	0.000	3.895	13.615
3.711	12.160	0.056	0.000	1.688	9.039
0.972	11.600	0.011	0.001	0.873	10.033
2.181	12.350	0.033	0.003	1.349	9.519
0.846	10.500	0.023	0.012	0.884	5.506
3.101	11.900	0.003	0.005	4.893	18.187
4.805	12.200	0.011	0.003	4.944	17.196
2.862	12.500	0.010	0.003	4.021	18.270
1.936	11.520	0.002	0.003	1.912	14.976
2.519	11.100	0.049	0.001	2.109	8.213
0.684	10.300	0.000	0.001	1.098	13.680
1.387	11.660	0.012	0.001	2.293	10.428
0.280	12.800	0.006	0.003	0.899	31.262
2.497	10.010	0.040	0.001	1.776	8.384
2.949	9.210	0.041	0.003	3.766	8.686
3.034	9.010	0.051	0.003	2.626	7.603
3.868	12.420	0.050	0.004	2.755	10.321
2.419	10.100	0.035	0.004	0.644	14.337
3.004	10.000	0.044	0.004	0.390	8.570
0.238	12.600	0.003	0.004	0.547	6.567
1.464	11.500	0.016	0.001	0.333	20.991
2.822	9.400	0.021	0.003	0.032	13.272
2.853	11.310	0.042	0.004	0.592	11.214
3.356	11.000	0.045	0.004	0.835	15.270

1.309	17.000	0.011	0.000	0.798	31.653
1.468	10.700	0.035	0.000	1.286	9.715
3.371	12.500	0.037	0.000	0.759	9.192
5.448	9.700	0.095	0.000	3.449	8.570
3.664	13.500	0.043	0.000	3.496	11.415
2.779	13.540	0.033	0.001	3.852	12.767
2.726	11.000	0.034	0.001	3.333	11.707
3.547	15.190	0.047	0.001	3.096	14.618
0.197	12.600	0.010	0.002	0.676	7.908
0.785	10.700	0.010	0.004	2.247	9.875
0.353	11.400	0.008	0.002	1.696	5.399
0.800	11.650	0.009	0.002	2.744	108.871
6.783	10.090	0.113	0.002	3.050	19.928
1.686	8.840	0.030	0.001	3.221	7.976
2.742	12.910	0.048	0.004	2.909	10.033
2.295	9.330	0.055	0.003	2.529	8.343
2.014	12.180	0.030	0.000	2.977	12.855
0.953	22.030	0.022	0.001	3.126	48.260
2.280	9.300	0.042	0.004	3.329	9.390
1.802	14.600	0.033	0.010	2.978	13.479
1.468	8.920	0.027	0.002	2.639	7.742
1.170	11.800	0.027	0.003	1.214	52.550
1.180	8.250	0.026	0.000	2.442	8.112
10.042	10.000	0.119	0.001	2.912	13.098
2.477	9.970	0.031	0.000	2.652	8.813
0.754	9.940	0.009	0.002	2.883	10.276
2.451	8.330	0.046	0.002	2.588	16.800
3.141	9.160	0.055	0.001	2.121	9.356
1.442	11.510	0.020	0.010	0.549	22.769
1.166	15.800	0.039	0.000	1.489	23.173
0.454	20.400	0.011	0.001	1.495	15.682
2.398	11.930	0.032	0.001	2.885	14.270
0.506	10.000	0.004	0.000	2.410	9.351
0.877	13.600	0.034	0.001	1.039	14.317
0.368	11.900	0.013	0.000	1.217	3.184
0.814	10.860	0.016	0.002	1.154	5.412

1.449	15.590	0.007	0.003	0.843	38.664
0.949	8.430	0.007	0.003	1.355	4.520
2.621	12.300	0.015	0.001	1.653	9.826
2.478	12.900	0.009	0.001	2.202	8.698
1.975	16.720	0.004	0.005	1.348	48.653
1.653	13.710	0.004	0.002	0.244	74.277
1.552	10.250	0.003	0.002	1.235	5.539
1.955	11.490	0.005	0.001	2.163	9.201
2.317	12.000	0.011	0.002	2.158	9.882
1.716	12.940	0.010	0.007	1.573	9.781
0.247	11.600	0.004	0.000	0.992	6.685
0.773	10.830	0.010	0.000	0.802	6.302
0.622	12.300	0.008	0.002	1.508	14.150
0.910	15.690	0.021	0.000	1.384	33.682
1.720	13.600	0.016	0.005	0.349	13.305
0.682	13.470	0.006	0.003	2.219	5.701
0.283	19.000	0.006	0.004	1.871	16.541
2.222	10.760	0.025	0.004	2.913	11.030
1.035	12.440	0.002	0.010	2.962	5.691
1.936	14.800	0.017	0.004	2.927	8.665
0.411	12.470	0.009	0.000	0.618	3.258
0.903	10.800	0.023	0.005	1.042	5.275
1.019	10.780	0.015	0.000	1.285	10.751
1.265	11.200	0.017	0.007	1.009	9.016