Abnormal loan growth and bank profitability. Some evidences from the recent crisis

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Abstract

During healthy times, credit growth often happens without proper provisioning. This is due to a managerial myopia that underestimates the risks underlying the expansive lending policy, leading to lower profitability in the following years. However, given the countercyclicality of credit standards, this effect shouldn't occur during harsh times. In this paper, we analyse the relationship between abnormal credit growth and bank profitability during a crisis period. In particular, we test the hypothesis that, during the crisis, abnormal credit growth improves bank profitability, given the need for higher or at least stable credit standards. We find support for this assumption using a sample of 101 large European banks during the recent crisis period. Results are robust to different robustness checks.

Keywords

Financial crisis; Bank profitability; Loan growth; Loan loss provisions

JEL Classification

G01; G21; L25

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During healthy times, credit growth often happens without proper provisioning. This is due to a managerial myopia that underestimates the risks underlying the expansive lending policy, leading to lower profitability in the following years. However, given the countercyclicality of credit standards, this effect shouldn't occur during harsh times. In this paper, we analyse the relationship between abnormal credit growth and bank profitability during a crisis period. In particular, we test the hypothesis that, during the crisis, abnormal credit growth improves bank profitability, given the need for higher or at least stable credit standards. We find support for this assumption using a sample of 101 large European banks during the recent crisis period. Results are robust to different robustness checks.

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1. Introduction

The recent crisis has once more proved that irrational exuberance can lead to financial catastrophes. The abnormal credit growth (i.e. the positive difference between the loans growth experimented by several aggressive banks and the corresponding whole market figures) observed before the collapse of Lehman Brothers can be described as a typical example of Minsky (1992) financial instability framework. Financial units, observing neighbour catching "big preys", were switching to aggressive behaviours – from hedging units to speculative units, and from speculative units to Ponzi units, using Minsky words. But famine arrived, and the financial system collapsed. The overestimation of the persistence of asset growth and the underestimation of the risks linked to fast credit expansion were the springs that created and enlarged the bubble: the growing spread between risk appetite and risk consciousness led to a financial meltdown.

Literature has observed that during wealthy times, abnormal credit expansion typically leads to higher loan loss provisions in the following years (Foos, Norden and Weber, 2010); this produces adverse effect on bank profitability (Fahlenbrach, Prilmeier and Stulz, 2016). The reasons of the negative outcome rely on a managerial myopia that reflects short-termism, adverse incentives and underestimation of risks. But managers can learn from experience, and their behaviour is likely to be different during famine: in harsh times, only skilled and well equipped people will take the risk to hunt big preys. Under these assumptions, during a severe period of financial distress, abnormal credit growth should be seen as a signal of health and not as a pathological strategy undertaken by a bank. Bankers that are expanding credit above the average (or reducing it less than the average) during a crisis period should be conscious of the risks involved in their choices and have a strong incentive to act prudently, also in provisioning for credit losses. This different approach during market booms and crashes is coherent with the countercyclical shape of credit standards introduced by Ruckes (2004): the final outcome of this process is that abnormal credit growth during the crisis should have a beneficial effect on bank profitability over time.

The aim of this paper is to test the relationship between abnormal credit growth and bank profitability during a crisis period. In particular, we test the hypothesis that, during a crisis period, abnormal credit growth improves bank profitability, given the need for higher or at least stable credit standards. To do this, we use a wide set of bank-level data for a sample of 101 European banks during the period 2006-2014. In particular, we examine the effect of abnormal credit growth on bank profitability, controlling for lending quality through the use of coincident and lagged loan loss provisions. Abnormal credit growth, being built as a "more-than-average" measure of variation, has a straightforward interpretation and allows us to explore the phenomenon without introducing arbitrary thresholds in our econometric analysis. Moreover, it can be used both in healthy (indicating a fast credit growth) and in distressed periods (measuring smaller contractions in credit supply by the banking system). In effect, positive figures of abnormal loan growth indicate an expansion in banks' credit market share, independently by the economic cycle conditions.

Existing literature (above all, Foos, Norden and Weber, 2010 and Fahlenbrach, Prilmeier and Stulz, 2016) focuses on the role of abnormal lending expansion during good times in explaining higher loan loss provisions (and a lower profitability levels) in the following years; in this sense, fast credit growth can be seen as an explanatory variable of crisis periods at micro and macro level. On the contrary, our work analyses the effects of fast credit growth on bank profitability during the crisis, and in this we contribute to literature. Empirical findings confirm the hypothesis under investigation and provide several policy implications for bankers and regulators. Among them, we demonstrate that during crisis periods the traditional "curse of the winner" linked to credit expansion is not likely to happen. In this sense, aggressive strategies – when coupled with adequate provisioning and credit standards – can improve bank profitability: hence, the attention should be switched from the raw pace of credit growth to the risk attitude of the banking system. This is true both from a managerial and macro-prudential point of view. The paper is organized as follows: Section 2 provides a brief literature review; Section 3 describes the hypothesis and the econometric model

used to test it; Section 4 includes empirical estimations. In Section 5, we draw conclusions and policy implications.

2. Literature review

Since the seminal works of Short (1979) and Bourke (1989), academic literature has widely investigated the sources of bank profitability. Competitive dynamics, continuously changing regulation, introduction of new accounting standards have contributed in subsequent years to make challenging the research activity. However, literature converges in identifying two main sets of factors that affect bank profitability (Athanasoglou, Brissimis and Delis 2008): firm-specific features and macroeconomic environment (including competitive conditions).

The recent crisis period has given evidence to the close relationship between micro and macroeconomic factors in determining bank profitability and overall system stability. In particular, the crisis has proven that a wide number of microeconomic imbalances can result in a severe macroeconomic downturn. The (individual) fast credit growth undertaken by part of the banks has been the trigger for the following crisis period; more relaxed credit standards have generated huge amounts of loan losses in the following years, giving birth to one of the most severe recession ever seen in modern times.

A recent stream of literature has studied the link between loans growth and credit quality. The underlying assumption is that fast credit growth is associated with a relaxation of lending standards, leading to a soaring level of loan loss provisions (LLP) in the following years. Studying more than 16,000 banks during the period 1997-2007, Foos, Norden and Weber (2010) find that an abnormal credit growth generates greater LLP. This relationship traditionally occur with a lag of some years. A recent paper by Fahlenbrach, Prilmeier and Stulz (2016) generalize this analysis to the link between loans growth and bank profitability; findings indicate that fast credit growth is usually coupled by low contemporaneous loan loss provisioning, leading to high profitability in the (coincident) year of fast growth, but weaker performances in the following times. This myopic

approach undertaken by the banking system can be explained by the underestimation of the risks related with a fast expansion of lending. The expected (short term) growth in interest income hides a (medium term) deterioration effect in credit quality, but the managers are paying more attention to the immediate positive results.

This behaviour is less likely to occur during a crisis period: in harsh times, the pressure on bank profitability pushes the managers to employ flight to quality strategies and a wiser lending policy (Ruckes 2004). In this context, a fast credit growth should better indicate a sound financial position of the bank that allows an expansive strategy to improve its market share. Briefly said, the crisis tends to reduce the moral hazard in credit management. The outcome of a fast credit growth, under these assumptions, should be an increase in bank profitability.

Besides lending management, other bank-specific features affect profitability; in particular, efficiency and leverage are usually found in empirical works in literature.

The most important measure of efficiency (or, in this case, inefficiency) is the 'cost-to-income' ratio: wide empirical evidence supports a negative relationship between this indicator and bank profits.

With regard to the leverage, several works (among the others, Bourke 1989; Demirguc-Kunt and Huizinga 1999; Goddard, Molyneux and Wilson 2004a; Pasiouras and Kosmidou 2007) find a significant relation between 'equity-to-total-asset' ratio and bank performance. However, results may change using different profitability measures. In effect, on the one side, a lower leverage reduces the riskiness of the bank financial structure, lowering the risk premium required by the bondholders and stockholders; on the other side, a higher level of capitalization may improve ROAA (return on average assets), but reduces ROAE (return on average equity), being the equity the denominator of this latter ratio (Dietrich and Wanzenried 2014).

Literature recognizes also the importance of market characteristics from a macroeconomic and competitive point of view. There is wide consensus about the expected positive relation between

economic growth and bank profits. However, across the recent crisis period, Saeed (2014) finds a negative impact of GDP growth on ROA and ROE for 73 UK commercial banks.

Market concentration and competition have been identified by literature as important factors in bank profits generation. Demirguc-Kunt and Huizinga (1999), using a wide cross-country panel in the years 1988-1995, find that a larger 'bank-assets-to-GDP' ratio and lower market concentration lead to lower bank profits. Beckmann (2007), analysing 16 Western European countries during the period 1979-2003, shows that capital market orientation has a relevant impact on bank profitability, while industry concentration does not display a crucial role in profit making. Economic growth can also affect bank competition, reducing the persistence of bank profits (Goddard et al. 2011). An interesting insight on the role of market concentration in determining bank profitability is developed in Dietrich and Wanzenried (2014): results on a large sample of 10,165 commercial banks across 118 countries for the period 1998-2012, show positive effect of concentration on ROAE and ROAA in low-income countries, but negative in high-income countries. These latter results suggest that the development of the financial system lowers the oligopolistic rents associated to more concentrated markets by the traditional Structure-Conduct-Performance theoretical framework.

Finally, inflation can play a role in influencing banks profitability, since it affects interest rates and asset values; however literature finds mixed effects in exploring this causal nexus (Demirguc-Kunt and Huizinga 2000; Pasiouras and Kosmidu 2007; Beltratti and Stulz 2012; Trujillo-Ponce 2013).

3. Hypothesis and model

To test the hypothesis of a positive relationship between abnormal loan growth and bank profitability during the crisis, we employ two sets of explanatory variables (firm-specific information and macroeconomic data, including competitive condition figures) for a sample of 101 European banks during the period 2006-2014. Our dataset covers the eleven 'first entrant' countries of Euro-area (Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain). However, two of them (Ireland and Netherlands) are not included

in the final sample given the widespread presence of missing values in domestic banks balance sheets. The time span under investigation is set to fully capture the effect of the recent financial crisis on banks profitability; since 2015, in effect, macroeconomic conditions have started to improve in different European countries.

Our dataset includes bank-level data derived from individual bank balance sheets and income statements, as available from BvD Bankscope database. We consider only commercial, cooperative and saving banks that showed total assets higher than 10 billion Euros in 2014 and with a complete set of information over time. Given the widespread presence of small credit institution in the countries included in the dataset (e.g. Italian Banche di Credito Cooperativo or German Raiffeisenbanken), we use this threshold to obtain a more homogeneous sample and avoid problems of over-representation of these banks in our econometric estimation. Moreover, during the crisis, the extreme macroeconomic conditions have impacted on small banks' financial reports, producing a huge variance in several balance sheet items. In order to prevent mistakes in sample selection, we have crosschecked Bankscope classification and borderline values with banks annual reports. Banks involved in M&A activity during the period under observation – which naturally show high level of loan growth – are excluded from the final sample. For macroeconomic and competitive conditions we use data from European Central Bank and Eurostat.

We consider two dependent variables to explain bank profitability: ROAA and ROAE. ROAA explains bank capacity to generate profits from the managed assets and it is considered the key ratio to evaluate bank profitability (Golin 2013); ROAE reveals how much profit a company generates with the shareholders' capital.

Following the empirical literature on the determinants of bank profitability presented in the previous section, we consider different bank-specific characteristics as explanatory variables.

Since aim of this paper is to explore the relationship between abnormal loans growth (ALG) and bank profitability, the former variable is the most crucial for our econometric estimations. Abnormal loan growth indicates the positive difference between the annual growth rate of gross

loans of a bank and the corresponding average growth rate of gross loans in the country in which the bank is located (Foos, Norden and Weber 2010). By construction, the variable assumes positive sign when bank specific percentage change in loans is greater than market average one: this is true both when a bank is increasing loans more that than the market and when the bank is reducing credit to customers less than competitors. Being a way to expand business opportunities, abnormal loans growth may promote bank profitability: this naturally occurs when growth is not coupled with lower quality standards. This latter factor is an element of concern widely recognised in the existing literature and usually indicated as the main reason for the negative relationship between ALG and bank profitability (Fahlenbrach, Prilmeier and Stulz 2016). Since loans typically produce effects on banks income statement over time – and adverse effects are usually observed with a lag of some years (Foos, Norden and Weber 2010), we introduce both coincident and lagged version of this variable. Coherently with the preceding notes, we expect a positive sign for the coefficient associated to abnormal loan growth during the time span under examination.

The hypothesis that we want to test states that during crisis credit growth occurs without relaxing credit standards. We cannot directly observe this latter item, but we can extract a proxy from income statements, using loan loss provisions (LLP) figures. Loan loss provisions to average gross loans are part of the overall cost of lending activity. In this sense they have a negative impact on bank profitability (Chronopoulos et al. 2015) as measured by ROAA and ROAE. In our econometric estimation we use LLP to indirectly control the credit risk assessment process. If a bank is wisely measuring the risk of its credit portfolio, its provisioning should be properly set in order to prevent future losses; in an econometric test this means a negative sign of the coefficient associated to coincident LLP, while lagged versions of the variable should be associated to non-significant coefficients.

We include Total assets in our set of explanatory variable to account for bank size. An increase in the bank dimension brings two opposite effects: on the one hand, the opportunity to exploit scale and scope economies (Pasiouras and Kosmidou 2007) and, on the other hand, the costs associated

with bureaucracy and complexity (Stiroh and Rumble 2006). Hence, the expected sign is undetermined.

The ratio of Equity to Total Assets is introduced as a measure of capital strength. High ratios indicate a low level of leverage, and therefore low riskiness: consequently, on the basis of the conventional risk-return hypothesis, they are associated with lower expected profitability. However, as noted in Dietrich and Wanzenried (2014), lower levels of risk strengthen bank soundness and reduce funding costs, with a positive effect on its profitability. Given these opposite effects, the impact of bank's capitalization on profitability is not theoretically determinate.

Since we explore loans dynamics, we use the Net Loans to Total Assets ratio to measures the weight of loans (net of reserves) on total assets. It shows bank's traditional approach towards lending activities and, indirectly, it's experience/specialization in granting credit, leading to a deeper consciousness in credit risk evaluation. In this sense, we expect a positive effect of this variable on profitability (in line with Demirguc-Kunt and Huizinga 2000; Abreu-Mendes 2001; Goddard et al. 2013).

Finally, we employ Cost income figures to account for bank efficiency. Calculated as ratio between operating costs (which include administrative costs, staff expenses, and property costs) and gross revenues, this indicator is particularly important during troubled period, when traditional margins are put under pressure: naturally, a lower level of this ratio has an expected positive effect on bank profitability (among others, Molyneux and Thorton 1992; Goddard et al. 2013; Dietrich and Wanzenried 2014).

Turning to the macroeconomic dimension, our set of external indicators includes different country-specific variables that are likely to influence the bank profitability. Undoubtedly, the soundness of the surrounding economic environment, the strength of competition in the banking sector, and other external factor impact on the costs and revenues of a bank, on the quality of its assets and hence on its financial stability.

To capture the fluctuations of the economic cycle we use the real GDP growth for each country under investigation. Previous studies have found a positive relationship between this variable and the profitability of the banking sector (Athanasoglou, Delis and Staikouras 2006; Beckmann 2007; Albertazzi and Gambacorta 2009; Goddard et al. 2011; Kanas, Vasiliou and Eriotis 2012). Improved market conditions are associated with a better quality of the loans portfolio and with an increase of net interest margin. The growth of credit demand raises interest rates, while liquidity abundance on the market reduces funding costs for banks. Naturally, the worsening of economic conditions brings to an opposite result, compressing the banks' profit margins.

Looking at the geographical area covered, the choice to select countries that are part of the Euro Area allows us to have a homogeneous environment with regard to monetary policy. Nevertheless, there are still differences in the level of inflation and interest rates. To deal with this source of heterogeneity we use the national HICP (Harmonised Index of Consumer Prices) index observed in each country, as inflation influences different items in the bank balance sheets, like assets value, funding costs and interest rates on loans. However, in existing literature there is no clear evidence about the final effect of inflation on bank profitability (Demirguc-Kunt and Huizinga 2000; Pasiouras and Kosmidu 2007; Beltratti and Stulz 2012; Trujillo-Ponce 2013); the expected sign of the coefficient in our regressions is therefore indeterminate.

Considering more in detail the competitive dimension of the banking system, the traditional theories about the effect of competition on firm profitability have been applied to the banking sector leading to different approaches. Among them we find the Structure - Conduct - Performance hypotheses, the Efficient - Structure hypotheses, the Expense Preference hypotheses, the Galbraith - Caves Risk-avoidance hypotheses (for a review of literature about these topics see Rasiah 2010). Usually, a higher degree of market concentration is associated with the opportunity of extracting oligopolistic rents through collusive behaviours. However, a concentrated banking market can be the result of a fierce competition between intermediaries: this could lead to compress their profit margins, for example in the traditional activity of borrowing and lending, reducing bank

profitability. As a result, the expected effect of concentration on profitability is uncertain. It is also worth observing that is difficult to find an uncontroversial measure of market concentration; previous studies have used a wide set of indicators (i.e. the market share of the first 3-5 players, the Lerner Index, etc.). We use the Herfindahl Hirschman Index (HHI) of total assets for each country, as it is the measure of market concentration commonly used by the European Central Bank.

In order to explore the link between abnormal credit growth and bank profitability, we run the following dynamic panel model (dynamic specification is in line with the results of Goddard et al. 2011):

$$\Pi_{it} = \alpha\Pi_{it-1} + \beta_1 \mathrm{ALG}_{it} + \beta_2 \mathrm{ALG}_{it-1} + \beta_3 \mathrm{ALG}_{it-2} + \beta_4 \mathrm{LLP}_{it} + \beta_5 \mathrm{LLP}_{it-1} + \beta_6 \mathrm{LLP}_{it-2} + \sum_{j=1}^{J} \beta_j X_{it}^{j} + \sum_{m=1}^{M} \beta_m X_{it}^{m} + \beta_d D_t + \varepsilon_{it}$$

where Π_{it} is the profitability of bank *i* at time *t* and ε_{it} the disturbance term. Our explanatory variables are grouped into bank-specific (X_{it}^{j}) and macroeconomic ones (X_{it}^{m}); moreover, a dummy (D_t) captures the effects of the sovereign debt crisis (years 2011-2014). We include coincident and lagged ALG and LLP (up to 2 lags) in order to control for the effect of credit growth and credit quality on profitability over time. Table 1 lists and describes the variables used in this study and indicates the expected effect of them on bank profitability.

(INSERT TABLE 1, TABLE 2 AND TABLE 3 HERE)

4. Data and econometric estimations

Overall, the sample includes 101 banks for a 7-year period (in effect years 2006 and 2007 are used only to calculate the lagged values of ALG, LLP and dependent variables).

Panel composition is outlined in Table 2. The three most important countries for the Euro area banking system (France, Germany and Italy) dominate the sample. Data availability and our research strategy, that filters out small institutions in order to compare banks with similar size, conduce to a relative over-representation of France in our panel. However this result is consistent with the specific features of French cooperative banking system that is characterized by bigger players than Italian and German mutual banks.

Table 3 summarizes the descriptive statistics of the variables used in the econometric estimation. Maximum and minimum values reported in Table 3 give evidence to the presence of sporadic borderline observations. This occurs in particular for abnormal loans growth and cost income. However, being these figures referred to different banks in different years and countries, they do not identify specific outliers.

(INSERT TABLE 2 AND TABLE 3 HERE)

To properly estimate the dynamic panel model, as dynamic specification gives rise to some econometric problems of consistency, we rely on instrumental variable techniques such as the appropriate GMM estimators (Arellano and Bond 1991; Blundell and Bond 1998). In particular, we use the GMM-DIF estimator as, under the assumption of no serial correlation of the error term in levels, it is possible to use values in level of the dependent variable and endogenous regressors lagged two periods back and more as instruments[1].

Estimation results are presented in Tables 4 and 5; GMM-DIF model results are compared with a

[1] GMM-DIF estimator is preferred to GMM-SYS, another well-known and used estimator (Blundell and Bond 1998), when the magnitude of the coefficient of the lagged dependent variable is not close to 1 (i.e., there is not a significant autoregressive process) as in the case of our dependent variables ROAA and ROAE.

fixed-effect specification. Moreover, since autoregressive process is weak for our dependent variables, we include the results of a fixed-effect static specification.

(INSERT TABLES 4 AND 5 HERE)

Given the (expected) high correlation between ROAA and ROAE (equal to 0.87 over the whole sample), regressions show similar results.

Abnormal loans growth has a positive sign over all our regressions: this confirms our hypothesis of a direct link between ALG and profitability during crisis period. In effect, the attitude to increase credit is usually considered a good health indicator of a bank and one of the most crucial driver to boost profitability; this is particularly true for banks belonging to the traditional "commercial banking" paradigm, where borrowing and lending money is the core business of each player. Results indicates positive coefficients both in coincident and lagged versions of ALG: this mean that the positive effects of lending growth are exerted across the following years on bank profits and they are not just a temporary accounting outcome.

As expected, coincident loan loss provisions are associated with negative and significant coefficients. Naturally this is not surprising, since LLP is a traditional source of costs in bank income statement. However, coherently with our research hypothesis, lagged LLPs do not show statistically significant coefficients; this result suggests that a wise provisioning prevents banks profitability from concerns in the following years[2]. Econometric outcomes draw a picture in which loan growth happens in a prudent framework, where provisions are adequate and there is not a roll-over of credit risks across the years: this perfectly fits the assumptions of our test.

With regard to the other explanatory variables, total assets and net loans to total assets are associated with negative (when significant) coefficients: this result can be explained by the pressure experimented during the crisis by several big banks more exposed to the lending sector. At the same

[2] In a separate estimation, we regress LLPs against coincident and lagged ALG; we find negative and significant coefficients for all the three explanatory variables. Results are available on request.

time, specialization in lending can exert a twofold effect on bank profitability in our dataset. On the hand it can improve it through a better knowledge in credit sector; on the other a greater exposure in granting money to customer is an element of strong concern during a severe credit crisis like the recent one. Results suggests that between the two elements, the latter has dominated in econometric estimations.

We find weakly significant coefficients on equity to total assets in fixed-effect ROAA regressions: greater levels of regulatory capital seem to have only played a limited role in promoting profitability.

Cost Income ratio, as expected, presents steadily negative and significant sign. Banks effort to improve their efficiency has granted a higher level of profitability during the whole period under investigation. The high statistical significance of all the coefficients across different econometric estimations suggests the relevance of cost income in explaining bank profitability during a crisis period, when traditional revenue margins tend to decrease; hence, it is not surprising that during recent years regulators have continuously suggested the banking system to reduce its level of operating costs.

With regard to macroeconomic conditions, we find positive and (weakly) significant coefficients for GDP growth and HICP in ROAA regression. Considering the concentration issue, HHI shows a negative and significant coefficient in the regressions. Estimation results appear coherent with a market framework in which concentration leads to tougher competition between banks, reducing profitability. This is likely to be true particularly in troubled periods, when rivalries are fiercer.

4.1 Robustness checks

To run robustness checks, we used different sample selection strategies and time-span specification. First of all (see Tables 6 and 7), our model focuses on the crisis period; however, we use data coming from pre-crisis period in lagged variables, at least for years 2008 and 2009. Then, we run

the model using only data for the period 2010-2014 (in this specification, also lagged variables are measured during the crisis). Main results are unaffected by this test.

(INSERT TABLES 6 AND 7 HERE)

Secondly (see Tables 8 and 9), since French banks dominate our panel numerically, we run the three regressions excluding these latter intermediaries. Moreover, we test other sample selections excluding some borderline observations (e.g. banks with extreme low values in ROAE and Loans to total assets). Once more, main results are unaffected.

(INSERT TABLES 8 AND 9 HERE)

Finally (see Tables 10 and 11), the use of ALG may produce some (apparent) misunderstandings; the most important one is that we can obtain a positive ALG from a negative loan growth rate. During the crisis, a widespread credit rationing has been observed in the countries under examination. If a bank is reducing the amount of credit granted to the economy less than the banking sector (on average) in the same country, we obtain a positive ALG. It should be argued that this lower reduction, from a competitive point of view, can be seen as an expanding strategy; anyway, we re-estimate our model using only banks that experimented a positive loan growth in the period under analysis. Results for ROAA remain still unchanged, while in ROAE we experiment a reduction in the significance of the coefficients; it must be noted that these robustness checks greatly reduces the number of observations and this lead to several drawbacks in estimations.

(INSERT TABLES 10 AND 11 HERE)

5. Conclusions and policy implications

In recent years, lending policies have been taken to the forefront of academic and political debate, due to the primary role that credit expansion has played in the crisis. Our results show that expansive credit strategies can improve bank profitability when combined with wise provisioning and a stable quality in lending standards. The hypothesis about the role of the crisis in reducing agency problems and moral hazard issues finds support in the empirical results previously shown and discussed. This outcome seems to contrast a widespread literature about the negative relationship between loans growth and bank profitability, given the attitude of the banking system to relax lending access rules and underestimate the loan impairment charges during sound periods. However, our empirical results tends to complement this same literature; it emerges that the main issue is not credit growth *per se*, but the perverse combination between high credit growth, low provisioning and looser lending standards.

These outcomes have relevant policy implications. Firstly, we demonstrate that ALG can be consistent with an increment in bank profitability; the "curse of the winner" is an outcome due to underestimation of risks and managerial myopia that can be eliminated through a wise provisioning and credit risks assessment. From a regulatory point of view, results indicate that the correct balance between growth and provisioning should be the key element to be monitored; this has implications also on the ongoing debate on the revision of internal rating based models. Moreover, the ability to gain market shares in credit market during a crisis signals the bank health and hence is to be considered a positive element when evaluating the perspectives of profit generation.

Overall, the recent crisis has played a dual role in the last years. Undoubtedly it has led to a dramatic fall in bank profitability, leading to a severe economic downturn. However, under a different perspective, it has also renewed the importance of the traditional drivers of bank management after a period dominated by more speculative business strategies. In this sense coming back to the basics of bank management – improving efficiency, credit policies and finding a sound

competitive positioning – will be fundamental to generate a proper profitability in order to meet capital requirements and to be attractive on capital markets.

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TABLES

Table 1: Variables definition and expected effect

Type	Variable	Description	Expected effect
Dependent variable	ROAA	Return on average assets	
	ROAE	Return on average equity	
	Abnormal Loans growth	Positive difference between bank's Loans growth and country loan growth	+
	Loan Loss Provisions	Loan loss provisions to average gross loans	-
Bank-specific variables	Total assets	Natural Logarithm of total assets	+/-
	Equity_assets	Equity over total assets	+/-
	Loans_assets	Net Loans over total assets	+
	Cost Income	Cost income ratio	-
Macroeconomic and competitive variables	GDP growth rate	Annual real GDP growth	+
	HICP	Harmonized index of consumer prices – Euro Area	+/-
	HHI	Herfindahl Hirschman index for credit institutions Total Assets	+/-

Table 2: Sample composition

Country	N° of observations	N° of banks
Austria	28	4
Belgium	21	3
Germany	147	21
Spain	35	5
Finland	21	3
France	322	46
Italy	112	16
Luxemburg	7	1
Portugal	14	2
Total	707	101
of which		
Commercial	280	40
Saving	168	24
Cooperative	259	37

Table 3: Descriptive statistics

Variable	Notation	No. of Obs.	Mean	Std. Dev.	Min	Max
Return on Average Assets	**ROAA**	707	0.310	0.605	-5.882	2.333
Return on Average Assets	**ROAE**	707	3.999	11.638	-119.859	46.751
Abnormal Loans growth	**ALG**	707	4.708	8.605	0.000	88.460
Loan loss provisions	**LLP**	707	0.535	0.733	-6.080	5.210
Total assets	**Total assets**	707	17.210	1.325	14.124	21.533
Equity over total assets	**Equity_assets**	707	7.265	2.954	0.932	15.852
Net Loans over total assets	**Loans_assets**	707	59.987	19.451	8.776	93.155
Cost Income ratio	**Cost Income**	707	63.221	15.985	24.184	148.458
Annual real GDP growth	**GDP growth rate**	707	0.092	2.273	-8.300	5.700
HICP index – Euro Area	**HICP**	707	1.722	1.098	-0.900	4.500
Herfindahl Hirschman index for Total Assets	**HHI**	707	0.060	0.052	0.019	0.370

Table 4: Estimation results for Return on Average Assets

Dep. var.: ROAA	(1)	FE_stat	(2)	FE_dyn	(3)	GMM
Explanatory var.	Coeff.	St.Err.	Coeff.	St.Err.	Coeff.	St.Err.
ROAA $_{i, t-1}$			0.07	0.078	0.01	0.043
ALG $_{i, t}$	0.01***	0.002	0.01***	0.002	0.01**	0.003
ALG $_{i, t-1}$	0.01***	0.002	0.01***	0.002	0.01***	0.002
ALG $_{i, t-2}$	0.00	0.002	0.00	0.002	0.00*	0.002
LLP $_{i, t}$	-0.28***	0.082	-0.28***	0.084	-0.35***	0.041
LLP $_{i, t-1}$	-0.01	0.026	0.00	0.026	-0.03	0.035
LLP $_{i, t-2}$	0.04	0.037	0.04	0.036	-0.02	0.032
Total Assets	-0.09	0.374	-0.09	0.351	-0.58***	0.224
Equity_assets	0.07*	0.038	0.06*	0.037	0.02	0.025
Loans_assets	0.00	0.007	0.00	0.006	-0.01**	0.006
Cost Income ratio	-0.02***	0.003	-0.02***	0.003	-0.02***	0.002
GDP growth rate	0.01	0.010	0.01	0.010	0.01*	0.007
HICP	0.05**	0.022	0.05**	0.024	0.03**	0.015
HHI	-5.50*	2.838	-4.92*	2.811	-6.61***	1.923
D_sovereign_crisis	-0.17***	0.053	-0.15***	0.056	-0.12***	0.036
Constant	2.94	6.962	2.95	6.523		
No. of Observations	707		707		606	
No. of banks	101		101		101	
R-squared	0.49		0.49			
AR(1)					0.000	
AR(2)					0.390	

Robust standard errors. *** p<0.01, ** p<0.05, * p<0.10

Table 5: Estimation results for Return on Average Equity

Dep. var.: ROAE	(1)	FE_stat	(2)	FE_dyn	(3)	GMM
Explanatory var.	Coeff.	St.Err.	Coeff.	St.Err.	Coeff.	St.Err.
ROAE $_{i, t-1}$			0.21**	0.084)	0.14***	0.040
ALG $_{i, t}$	0.14**	0.055	0.11**	0.047	0.13**	0.063
ALG $_{i, t-1}$	0.17***	0.040	0.15***	0.034	0.15***	0.035
ALG $_{i, t-2}$	0.11**	0.043	0.09**	0.036	0.08**	0.034
LLP $_{i, t}$	-5.82***	1.838	-5.61***	1.833	-7.25***	0.750
LLP $_{i, t-1}$	0.06	0.510	0.84	0.534	-0.24	0.652
LLP $_{i, t-2}$	0.73	0.727	0.71	0.688	-0.41	0.604
Total Assets	-1.97	8.129	-2.50	6.557	-8.62**	4.383
Equity_assets	0.68	0.543	0.66	0.431	-0.15	0.475
Loans_assets	0.02	0.156	0.01	0.119	-0.33***	0.125
Cost Income ratio	-0.44***	0.059	-0.43***	0.061	-0.41***	0.034
GDP growth rate	0.10	0.176	0.10	0.170	0.22	0.140
HICP	0.98**	0.413	0.59	0.383	0.33	0.285
HHI	-98.45	72.048	-68.63	60.663	-87.66**	35.675
D_sovereign_crisis	-2.44**	0.933	-1.79**	0.692	-1.57**	0.666
Constant	65.67	150.194	72.86	121.784		
No. of Observations	707		707		606	
No. of banks	101		101		101	
R-squared	0.48		0.51			
AR(1)					0.000	
AR(2)					0.866	

Robust standard errors. *** p<0.01, ** p<0.05, * p<0.10

Table 6: Reduced period (2008-2014): regression results for Return on Average Assets

Dep. var.: ROAA	(1)	FE_stat	(2)	FE_dyn	(3)	GMM
Explanatory var.	Coeff.	St.Err.	Coeff.	St.Err.	Coeff.	St.Err.
ROAA $_{i, t-1}$			-0.03	0.095	-0.03	0.044
ALG $_{i, t}$	0.00	0.003	0.00	0.003	0.00	0.004
ALG $_{i, t-1}$	0.01***	0.003	0.01***	0.003	0.01***	0.002
ALG $_{i, t-2}$	0.01**	0.002	0.01***	0.002	0.00**	0.002
LLP $_{i, t}$	-0.28***	0.091	-0.28***	0.091	-0.36***	0.045
LLP $_{i, t-1}$	-0.05	0.033	-0.06	0.037	-0.04	0.036
LLP $_{i, t-2}$	0.06	0.038	0.05	0.038	0.01	0.033
Total Assets	0.44	0.332	0.46	0.375	-0.27	0.254
Equity_assets	0.07*	0.042	0.07	0.044	0.02	0.026
Loans_assets	0.01	0.006	0.01	0.007	-0.00	0.008
Cost Income ratio	-0.02***	0.004	-0.02***	0.004	-0.02***	0.002
GDP growth rate	-0.00	0.016	0.00	0.017	0.01	0.008
HICP	0.04	0.028	0.04	0.030	0.02	0.018
HHI	0.67	1.887	0.61	1.939	-3.99*	2.320
D_sovereign_crisis	-0.13***	0.044	-0.13***	0.045	-0.12***	0.038
Constant	-6.88	6.209	-7.28	6.959		
No. of Observations	505		505		505	
No. of banks	101		101		101	
R-squared	0.49		0.49			
AR(1)					0.000	
AR(2)					0.052	

Robust standard errors. *** p<0.01, ** p<0.05, * p<0.10

Table 7: Reduced period (2008-2014): regression results for Return on Average Equity

Dep. var.: ROAE	(1)	FE_stat	(2)	FE_dyn	(3)	GMM
Explanatory var.	Coeff.	St.Err.	Coeff.	St.Err.	Coeff.	St.Err.
ROAE $_{i, t-1}$			0.13	0.115	0.12***	0.039
ALG $_{i, t}$	0.05	0.041	0.06	0.044	0.08	0.070
ALG $_{i, t-1}$	0.18**	0.070	0.18***	0.062	0.15***	0.035
ALG $_{i, t-2}$	0.14***	0.045	0.12***	0.035	0.08***	0.031
LLP $_{i, t}$	-5.42***	2.031	-5.30**	2.064	-6.72***	0.769
LLP $_{i, t-1}$	-0.64	0.515	-0.15	0.596	-0.10	0.638
LLP $_{i, t-2}$	0.86	0.711	0.91	0.678	0.11	0.581
Total Assets	14.19***	5.292	12.15**	4.691	3.28	4.691
Equity_assets	1.09**	0.483	1.08**	0.463	-0.01	0.462
Loans_assets	0.14	0.131	0.09	0.100	-0.05	0.140
Cost Income ratio	-0.40***	0.052	-0.41***	0.055	-0.37***	0.038
GDP growth rate	0.03	0.233	0.00	0.242	0.07	0.133
HICP	0.94**	0.450	0.75*	0.411	0.41	0.311
HHI	-7.32	35.075	-3.87	33.534	-34.39	40.194
D_sovereign_crisis	-2.61***	0.699	-2.34***	0.720	-2.27***	0.658
Constant	-229.87**	99.067	-192.59**	86.948		
No. of Observations	505		505		505	
No. of banks	101		101		101	
R-squared	0.53		0.55			
AR(1)					0.000	
AR(2)					0.175	

Robust standard errors. *** p<0.01, ** p<0.05, * p<0.10

Table 8: Reduced sample (excluding French banks): regression results for Return on Average Assets

Dep. var.: ROAA	(1)	FE_stat	(2)	FE_dyn	(3)	GMM
Explanatory var.	Coeff.	St.Err.	Coeff.	St.Err.	Coeff.	St.Err.
ROAA $_{i, t-1}$			0.04	(0.085)	-0.01	(0.050)
ALG $_{i, t}$	0.01*	(0.003)	0.00*	(0.003)	0.00	(0.004)
ALG $_{i, t-1}$	0.01***	(0.003)	0.01***	(0.003)	0.01***	(0.003)
ALG $_{i, t-2}$	0.00	(0.004)	0.00	(0.004)	0.00	(0.003)
LLP $_{i, t}$	-0.27***	(0.086)	-0.27***	(0.087)	-0.31***	(0.046)
LLP $_{i, t-1}$	0.01	(0.027)	0.02	(0.026)	-0.00	(0.042)
LLP $_{i, t-2}$	0.06	(0.043)	0.06	(0.042)	0.03	(0.041)
Total Assets	0.01	(0.444)	0.01	(0.427)	-0.47*	(0.274)
Equity_assets	0.09*	(0.048)	0.09*	(0.050)	0.07**	(0.032)
Loans_assets	0.01	(0.011)	0.01	(0.011)	-0.00	(0.009)
Cost Income ratio	-0.02***	(0.004)	-0.02***	(0.004)	-0.02***	(0.002)
GDP growth rate	0.01	(0.012)	0.01	(0.012)	0.01	(0.010)
HICP	0.07**	(0.032)	0.06*	(0.034)	0.06**	(0.024)
HHI	-6.07*	(3.115)	-5.75*	(3.219)	-4.92**	(2.456)
D_sovereign_crisis	-0.20***	(0.070)	-0.19**	(0.075)	-0.17***	(0.054)
Constant	0.98	(8.358)	0.98	(8.027)		
No. of Observations	385		385		330	
No. of banks	55		55		55	
R-squared	0.54		0.54			
AR(1)					0.000	
AR(2)					0.705	

Robust standard errors. *** p<0.01, ** p<0.05, * p<0.10

Table 9: Reduced sample (excluding French banks): regression results for Return on Average Equity

Dep. var.: ROAE	(1)	FE_stat	(2)	FE_dyn	(3)	GMM
Explanatory var.	Coeff.	St.Err.	Coeff.	St.Err.	Coeff.	St.Err.
ROAE $_{i, t-1}$			0.20*	0.099	0.14***	0.048
ALG $_{i, t}$	0.15*	0.073	0.11*	0.065	0.01	0.077
ALG $_{i, t-1}$	0.20***	0.045	0.18***	0.041	0.16***	0.053
ALG $_{i, t-2}$	0.15**	0.055	0.12**	0.049	0.10*	0.052
LLP $_{i, t}$	-5.69***	1.957	-5.55***	1.973	-6.80***	0.832
LLP $_{i, t-1}$	0.45	0.545	1.16*	0.612	0.32	0.759
LLP $_{i, t-2}$	1.10	0.819	1.05	0.765	0.51	0.757
Total Assets	-1.71	9.002	-1.94	7.228	-7.75	5.039
Equity_assets	0.96	0.757	0.90	0.608	0.60	0.598
Loans_assets	0.06	0.261	0.05	0.205	-0.13	0.159
Cost Income ratio	-0.50***	0.072	-0.50***	0.072	-0.50***	0.042
GDP growth rate	0.20	0.206	0.19	0.194	0.16	0.184
HICP	0.98	0.592	0.47	0.543	0.43	0.430
HHI	-126.82	79.165	-98.86	67.156	-79.24*	44.770
D_sovereign_crisis	-2.13	1.349	-1.39	0.955	-1.46	0.978
Constant	61.54	168.080	64.01	135.421		
No. of Observations	385		385		330	
No. of banks	55		55		55	
R-squared	0.53		0.55			
AR(1)					0.000	
AR(2)					0.617	

Robust standard errors. *** p<0.01, ** p<0.05, * p<0.10

Table 10: Reduced sample (only banks with positive loan growth): regression results for Return on Average Assets

Dep. var.: ROAA	(1)	FE_stat	(2)	FE_dyn	(3)	GMM
Explanatory var.	Coeff.	St.Err.	Coeff.	St.Err.	Coeff.	St.Err.
ROAA $_{i, t-1}$			0.19***	(0.048)	-0.24***	(0.041)
ALG $_{i, t}$	0.01***	(0.003)	0.01**	(0.002)	0.00**	(0.002)
ALG $_{i, t-1}$	0.01***	(0.002)	0.00**	(0.002)	0.00**	(0.002)
ALG $_{i, t-2}$	0.00**	(0.002)	0.00*	(0.002)	0.00	(0.001)
LLP $_{i, t}$	-0.18**	(0.074)	-0.17**	(0.073)	-0.23***	(0.025)
LLP $_{i, t-1}$	-0.01	(0.017)	0.00	(0.017)	-0.04*	(0.024)
LLP $_{i, t-2}$	0.04	(0.033)	0.05	(0.031)	-0.01	(0.024)
Total Assets	-0.89**	(0.382)	-0.83**	(0.369)	-0.95***	(0.209)
Equity_assets	0.01	(0.015)	0.00	(0.014)	-0.06***	(0.018)
Loans_assets	-0.01	(0.005)	-0.01	(0.004)	-0.01**	(0.004)
Cost Income ratio	-0.02***	(0.004)	-0.02***	(0.004)	-0.01***	(0.002)
GDP growth rate	0.01	(0.008)	0.01	(0.008)	0.01	(0.006)
HICP	0.02	(0.017)	-0.00	(0.017)	0.01	(0.013)
HHI	-5.19*	(2.649)	-4.06	(2.559)	-1.34	(1.589)
D_sovereign_crisis	-0.02	(0.050)	0.02	(0.048)	-0.00	(0.039)
Constant	17.29**	(6.921)	16.13**	(6.692)		
No. of Observations	510		510		418	
No. of banks	101		101		100	
R-squared	0.51		0.54			
AR(1)					0.011	
AR(2)					0.915	

Robust standard errors. *** p<0.01, ** p<0.05, * p<0.10

Table 11: Reduced sample (only banks with positive loan growth): regression results for Return on Average Equity

Dep. var.: ROAE	(1)	FE_stat	(2)	FE_dyn	(3)	GMM
Explanatory var.	Coeff.	St.Err.	Coeff.	St.Err.	Coeff.	St.Err.
ROAE $_{i, t-1}$			0.29***	0.092	-0.03	0.051
ALG $_{i, t}$	0.16**	0.071	0.12**	0.060	0.06	0.046
ALG $_{i, t-1}$	0.15***	0.056	0.11**	0.044	0.04	0.033
ALG $_{i, t-2}$	0.11**	0.051	0.09**	0.042	0.02	0.029
LLP $_{i, t}$	-3.12**	1.276	-2.92**	1.242	-4.11***	0.522
LLP $_{i, t-1}$	0.02	0.500	0.32	0.489	-0.86*	0.498
LLP $_{i, t-2}$	1.15	0.723	1.18*	0.702	-0.41	0.496
Total Assets	-15.78	10.932	-15.72	10.003	-8.46*	4.386
Equity_assets	0.10	0.510	-0.13	0.374	-1.14***	0.392
Loans_assets	-0.18	0.137	-0.16	0.114	-0.26***	0.094
Cost Income ratio	-0.39***	0.098	-0.36***	0.091	-0.24***	0.034
GDP growth rate	0.24	0.178	0.23	0.174	0.18	0.117
HICP	0.19	0.461	-0.27	0.390	-0.07	0.279
HHI	-109.99	71.776	-84.38	67.266	-22.91	33.262
D_sovereign_crisis	0.05	1.455	0.93	1.320	-0.53	0.816
Constant	313.43	198.433	307.96*	181.509		
No. of Observations	510		510		418	
No. of banks	101		101		100	
R-squared	0.38		0.43			
AR(1)					0.024	
AR(2)					0.862	

Robust standard errors. *** p<0.01, ** p<0.05, * p<0.10