

The Spillover Effects of Prudential Regulation on Banking Competition

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Abstract

European supervisors' mandate was lately enlarged to make it more effective especially on systemically important banks. So, the stiff requests for more capital to banks in general became aggressive on large banks. Those surging requirements may lead to a reduction of credit available to the economy. Also, adverse effects – we label them “spillover effects” – could hit less significant banks, if they try to fill the loans gap left by the large banks during the prolonged economic crisis. Studying different-size sub-groups of European banks we confirm that during the last years especially larger banks raised capital levels and cut loans. We also find that the other banks partly offset the credit drop at larger banks. Moreover, looking for the potential spillovers from that interaction between large banks and other banks, we show how nasty that phenomenon can be. Specifically, we find evidence that the deleveraging originated by larger banks associated with, among other factors, a significant worsening of portfolio activity for mid-sized banks. We conjecture that while the loan expansion was somewhat shielded by superior soft-information-based lending technologies at small banks, medium-sized banks were fully exposed to lending to bad borrowers. Indeed, the latter banks boosted their loans by relying more and more on credit scoring and Internal Rating Based models. That is proving tricky through the prolonged European dip.

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1. Introduction

Promoting the safety and soundness of individual banking institutions and the stability of the whole banking system is the primary objective for banking supervision. That task, in many countries attributed to a unique supervisor, can be associated with other responsibilities, such as depositor protection, financial stability, consumer protection, financial inclusion, if those latter are not conflicting with the former one (BCBS, 2012).

To achieve that goal supervisors can refer to a broad set of instruments, which are generally defined in line with the institutional framework characterizing their scope and mandate, which in a number of jurisdictions have been recently expanded in response to the global financial crisis (FSB, 2015). By this meaning, in different contexts the scope of supervisors has been recently enlarged in order to realize a more effective supervision, especially by encompassing the objective to achieve a sounder and more effective supervision of systemically important financial institutions (SIFIs), and particularly of global systemically important financial institutions (G-SIFIs). That awareness eventually led authorities to review their supervisory approach, which has become more tailored and risk-based, with more time and resources bestowed to larger, more complex and riskier banks.

The belief arising in the aftermath of the financial crisis that safety and stability of the financial system should be achieved via more effective supervision of SIFIs, can be interpreted as a further episode of a longer series which, during the last decade, has created a more sophisticated and tailored risk-based approach (BCBS, 1988, 1996 and 1999). Despite this thought could be considered as a core principles since the naissance of prudential supervision, during the last decades the necessity to develop a more tailored approach in order to achieve a sounder banking system has gained attention, eventually leading to a “jeopardized” capital regulation framework.

A key step along this process is the proposition cued by the capital framework of Basel II (BCBS, 2006), when for the first time banks were authorized to consider alternative methodologies in order to estimate their capital requirements within the Risk Weighted Assets (RWAs) formula for credit risk. By this manner, if on one side supervision aims to stimulate the more sophisticated and relevant banks to invest in more sophisticated methodologies of risk evaluation (BCBS, 2005), on the other side the less sophisticated banks are relieved from a binding regulatory framework by an increasingly significant statement of proportionality.

That criterion of proportionality has gained importance in recent years also when considering other subjects, not directly related to capital adequacy, which have gained attention within the overall prudential framework, such as the quality of organization, the adequacy of risk management practices, the effectiveness of internal governance and internal control system. To regulate those issues, supervision generally refers to core basic principles each bank must comply to, by the realization of an optimal calibration between the objectives of regulators and the characteristics of each organization. On the opposite, when referring to any measure which can be objective of a more precise accountability, supervisors have often come to the necessity to distinguish between different requirements to be achieved by each institution (BCBS, 2011).

As mentioned, the necessity to distinguish between different needs around the whole banking system has become particularly evident in the aftermath of the crisis. At that time, supervisors

moved to the belief that global financial stability of financial systems needs to encounter a more effective response to the “too-big-to-fail” concerns related to the proper supervision of SIFIs. Hence, supervisors realized that more intense supervision and greater resources, should be applied to those banks, in a commensurate way to their risk profile and systemic importance (FSB, 2015).

To achieve those objectives, substantial changes materialized in terms of both prudential regulation and organization of supervisory structure. Specifically, in defining the new Basel III capital framework, great attention was paid to the statement of increasing level of capital and liquidity to be achieved especially by larger institutions. Moreover, other goals related to the effectiveness of governance mechanisms, quality of risk management practices and appropriateness of internal control systems were also undertaken. Likewise, in some jurisdictions the scope of supervision was redefined, together with enlarged methods and instruments used to achieve those objectives. In Europe, that approach led to launching the Single Supervisory Mechanism (SSM), which from November 2014 entrusted prudential supervision in the euro area to the European Central Bank (ECB), throughout its direct scrutiny upon more relevant banks versus the indirect approach exercised by the support of each national authority for the less significant institutions.

The overall framework above seems to be a reasonable effort that could contribute to the stability of the global financial system, even if the potential costs arising from that more prudent environment should also be evaluated.

From this perspective, despite a general consensus about the necessity of providing more effective supervision for more sophisticated and relevant banks, further concerns could arise from this incoming new framework. Against this binding prudential framework, the more relevant institutions could be induced not only to increase their levels of capital and liquidity, but also to limit their risk undertaking, for instance by reducing their total assets or via a more prudent scrutiny for lending activity. Thus, the substantial increase of capital they are supposed to achieve, may lead to a potential reduction of credit available to the economy. In turn, this could cause potential adverse effects – which here we label “spillover effects” – upon less significant banks. Suffering a lower intensification of regulatory requirements, less significant banks might be allowed to take more risk by replacing the lending gap left by the significant banks. The consequence of that could be particularly nasty for supervisors because some of the non-significant banks might be unprepared to the undertaking. In particular, while the loan expansion could be somewhat shielded by superior soft-information-based lending technologies at small banks, medium-sized banks might be hurt by the economic recession and by making loans to bad borrowers. Indeed, medium-sized banks could expand their loans while going through a change in their bank business model, relying more and more on credit scoring and Internal Rating Based models.

The objective of this paper is to shed light on those potential spillover effects of prudential regulation, a phenomenon so far largely neglected in the literature. Specifically, we focus on a large sample of European banks during the period 2008-2013, so that we are able to consider the period not only encountering the euro sovereign crisis, but also the one anticipating the arrival of Basel III, with especially larger banks supposed to reinforce their position to reach the new regulatory requirements. By looking upon different-size sub-groups of banks, we find evidence that during the last two sample years especially larger banks increased their capital level while cutting loans to the

economy. We also find that despite an increase of capital – though smaller than at bigger banks – non-significant banks increased notably the amount of loans to the economy. Moreover, when looking for the potential spillover effects which may arise from the interaction of different sub-sample of banks, we show how nasty that phenomenon can be, finding evidence that the deleveraging originated by the more significant banks has already started to generate, among other factors, a significant worsening of portfolio activity for less significant banks. Besides, we find that loan impairment dynamics is most intense for the mid-sized banks. In line with our expectations, this seems to suggest that lending expansion by smaller-sized banks was supported by better lending technologies while mid-sized banks might have been unprepared to replace the lending gap left by the significant banks.

The remainder of the paper is structured as follows. Section 2 aims to give a synthetic frame of the very broad existing literature on desired and undesired effects of prudential regulation on banking behavior, so to underline how the spillover effects arising from the banking competition has not been adequately investigated by the economic literature. Section 3 presents the dataset we created to realize our analysis, together with the segmentation we perform in line with the dimension of each bank. In section 4 we report and comment the results of our econometric estimations. Finally, Section 5 concludes summarizing our main findings and discussing policy implications.

2. The effects of prudential regulation on banking competition in the economics literature

The economics literature during years has extensively investigated the potential – desired and undesired – effects of prudential regulation and supervision on banking activity from different perspectives (for a more extensive literature review it is possible so see Berger, Herring and Szegö, 1995; Jackson et al, 1999; Santos, 2001; Stolz, 2002; Wang, 2005; Van Hoose, 2007). By this meaning, it can be possible to distinguish a first strand of literature considering the effects of prudential regulation on banks' behavior, in particular the risk-taking appetite of bank management (Avery and Berger, 1991; Hancock and Wilcox 1994; Thakor, 1996; Estrella et al., 2000; Gambacorta and Mistrulli, 2004). By this perspective, it is possible to distinguish between a first view in the literature, as the seminal works of Furlong and Keely (1987, 1989), and Keely and Furlong (1990), arguing for the capability of capital requirement to reduce the risk undertaking by supervised institutions. On the opposite, Kahane (1977), Koehn and Santomero (1980), Kim and Santomero (1988), Genotte and Pyle (1991), Shrieves and Dahl (1992) and Blum (1999) suggest that capital requirements could increase risk-taking. Finally, other authors accounts for mixed implications according to the different characteristics of the model considered, Rochet (1992), Jeitschko and Jeung (2005), Demirgüç-Kunt et al., (2010), Cathcart et al., (2015). Finally, Calem and Rob (1999) argue for the existence of a U-shape between capital and risk.

A second strand of literature focuses attention upon the potential – undesired – effects that capital requirements may generate, especially in term on lending contraction. By this perspective, Bernanke and Lown (1991), Berger and Udell (1994), Brinkmann and Horvitz (1995), Furfine (2000) and Peek and Rosengren (1992, 1994, 1995a,b) argue for a negative impact of capital

requirement on lending after the introduction of Basel I, although a more recent literature, such as Aiyar, Calomiris and Wieladek (2012), Ongena et al. (2012), Osborne et al. (2012), suggests a smoother evidence upon this facets.

All the studies we already mentioned generally focus attention on the two fundamental shocks which may have potentially influence the capital requirement for banks, eventually through different perspectives, respectively the Basel I and Basel II capital accord. However, a more recent literature has focused attention on the effects that capital requirements can determine during financial crises (Kashyap, Rajan and Stein, 2008; Acharya, Mehran and Thakor, 2011; Hellwig et al., 2011; Calomiris and Herring, 2011; Hart and Zingales, 2011; Berger and Bouwman, 2013). More in particular, Berger and Bouwman (2013) examine how capital requirements – both during financial crises and normal period – can positively affect the probability of survival and the market share of financial institutions, confirming the hypothesis that capital can play a positive influence upon banks' performance (Holmstrom and Tirole, 1997; Calomiris and Powell, 2001; Calomiris and Mason, 2003; Calomiris and Wilson, 2004; Kim, Kristiansen and Vale, 2005; Acharya, Mehran and Thakor, 2011; Allen, Carletti and Marquez, 2011; Mehran and Thakor, 2011; Thakor, 2012).

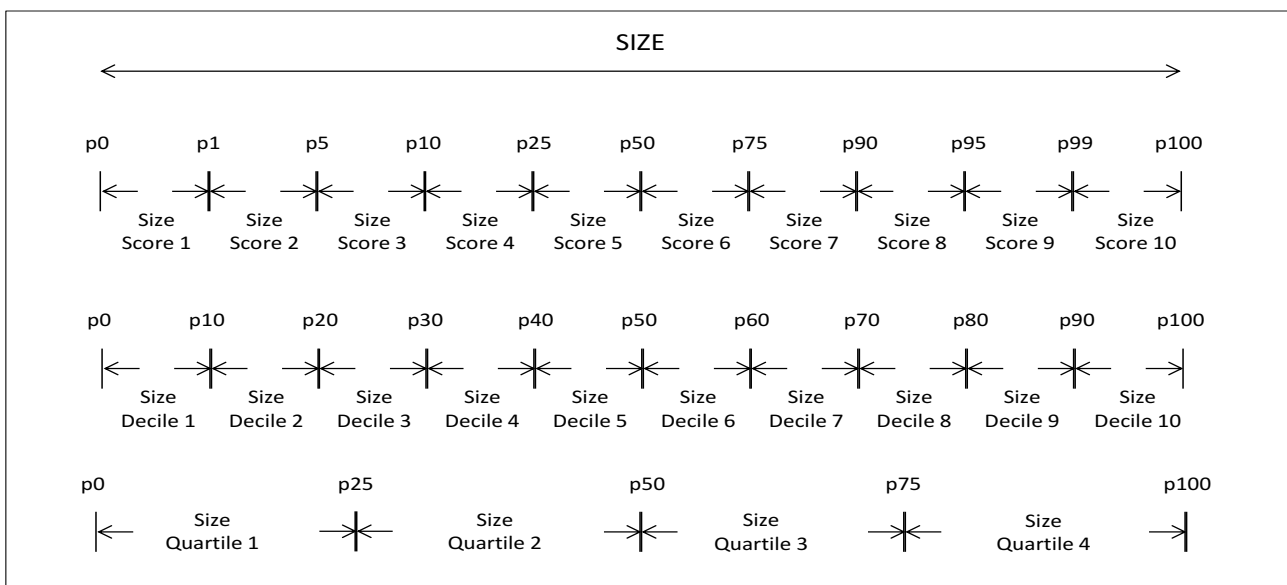
Finally, more recently an increasing interest has developed around the possibility to assess the potential impacts that the whole prudential supervision can determine of banks' behavior. This last area of interest must be basically related to the upturn of prudential supervision which took place after the global financial crisis, so that among standard-setting bodies and national authorities emerged the necessity to estimate how their activities can contribute to a sound and stable financial system (BCBS, 2015). In order to achieve that goal, the BCBS set up a Task Force on Impact and Accountability (TFIA) which, coherently with other initiatives promoted by the IMF and the World Bank, aims to develop international experience with regard the impact and accountability of banking supervision. The BCBS (2015) in his report highlights how challenging can be the objective to come to any unique measurement of supervision effectiveness, because of different biases related to heterogeneity between different jurisdictions, methodological challenges, variety between objectives and instruments utilized by different supervisors. For that reasons, in this version of the paper – but we aim to do it in the final version of the paper – we do not consider how the supervision enforcement eventually generated by national authorities could have influenced differently the banks' behavior in different European countries (Kamada and Nasu, 2000; Gilbert, 2006; Kiema and Jokivuolle, 2010; Bludell-Wignall and Atkinson, 2010).

Despite this broad literature, to our knowledge, there is still a lack of adequate evidence – for which we aim to make a contribution of knowledge – about the potential biases arising from spillover effects, which we define as the – undesired and potentially disruptive – effects which derive from the application of different regulatory regimes upon different intermediaries. By this meaning, we consider the last amendments to the prudential supervision scheme and its increasing objectives of capital for SIFIs as a potential factor of adverse selection for smaller banks, especially if acting in closer area of competition with the largest one, because of the different changes in behavior determined by the different requirements they will be finally undergone, potentially violating the basic principle of realizing the same level playing field across the whole banking system.

3. Description of the database

Our database comprises a very large number of individual banks (4580) and total bank-year observations (27843) from 29 European countries, for which we collected all the data available from the Bankscope (Bureau van Dijk) database along the period from 2008 to 2013. By this meaning, we have been able to analyze the banking system in Europe, an area where regulatory cross-country differences exist but are certainly smaller than when comparing Europe with other world areas. Secondly, we have been able to hold a very significant and large sample of individuals, representing nearly the entirety of the total assets of European banks, allowing us for the possibility to perform various robust checks. Finally, the period we consider is of a particular interest, thus going well into the euro sovereign crisis, as well as anticipating the arrival of Basel III, when especially larger banks should strive to save capital in achieving the new regulatory requirements, possibly reducing their offer of loans.

Figure 1 – Segmentation of the sample by dimension percentiles



As already discussed in section 1, since the aftermath of the crisis supervision has focused attention on the relevance of size, among other factors, as a fundamental discriminant in order to better define a proper approach to supervised entities, so to overcome the issues in the past hindered the former prudential supervision regime. Therefore, when looking for the more effective approach to conduct our analysis we consider the size, measured by the logarithm of total assets, as the main feature to control for potential differences among the performance achieved by European banks encompassed in our database. More in particular, we defined different alternative sub-groups of banks by taking into account different percentiles segmentation over the sample – which we report for simplicity in Figure 1. Through this approach, we have been able to research for any similarities/differences in performance achieved by banks with similar/different size across Europe, but also to investigate for

the possible interaction existing by different strategies push through by each individual sub-group in each country.

Our econometric estimates aim to document whether and the extent to which, controlling for the bank business specialization, the “new” regulatory framework had produced any desired – or undesired – effects upon different categories of European banks. For that purpose, we consider the increase of *capital* level like the most important objective pursued by supervisors, as well as we consider the *loans* contraction and the variation of *loan impairments* as the main undesired effects which could be generated by the regulatory framework. By this meaning, we focus on the most significant variables, which can be viewed as potential predictors of the business specialization of each bank, as well as on an adequate measure of the risk level to which each bank can be exposed. Then, we consider some macro variables able to control for the level of competition exhibited by each banking system as well as for the potential other macroeconomic factors influencing the banks’ behavior.

The bank level variables we consider are:

- SIZE – the logarithm of total assets. We consider this variable to control for possible systematic differences across banks of different dimension;
- EQUITY – the ratio between equity and total assets, which we defined similarly to the *leverage ratio* of the new Basel III capital framework, which is considered as a more effective safeguard against model risk and measurement error than other ratios controlling for the level of bank capitalization – i.e. the Total-Capital ratio, the Core-Capital ratio. We consider this variable both as dependent variable and independent variable among different model specifications;
- LOANS – ratio between net loans and total assets. We consider also this variable both as dependent variable and independent variable among different model specifications;
- LOAN IMPAIRMENT – cost of credit losses to economic account. We consider also this variable both as dependent variable and independent variable among different model specifications;
- NET INCOME – ratio between net income and total assets. We consider it to control for the level of profitability of each bank;
- ASSETS GROWTH – the variation of Total Assets from t-1 to t. We consider this variable to control for the growth realized by each bank;
- LOANS GROWTH – the variation of LOANS (Loans/Total Assets) from t-1 to t. We consider this variable as the measure of reduction of credit upon the total activity of each banks;
- LOANSP GROWTH – the variation of Loans (Amount of Loans) from t-1 to t. We consider this variable like a measure of credit available to customers.

We also include some macro level variables:

- GOVERNMENT DEBT, since various years in the period under observation were affected by the euro sovereign crisis we need to control for this macro variable;
- GOVERNMENT DEFICIT, this is also included as a potential control for the euro sovereign crisis as markets might judge sustainability not only on a government’s debt but also on its deficit;
- GDP GROWTH, as a further macro control on debt sustainability;

- NPL SYSTEM, the country level ratio of non-performing loans to total loans;
- CAPITAL SYSTEM, the ratio between Capital to Total Assets of each country banking system.

– **Table 1a about here** –

Table 1a reports the basic descriptive statistics for the main variables utilized in our analysis, throughout it is possible to appreciate the quite significant heterogeneity characterizing our database.

– **Table 1b about here** –

The same breakdown is offered in Table 1b – reporting the evolution of the variables by year average – and in Table 1c – reporting the averages of the variables by country.

– **Table 1c about here** –

Table 2a reports the average value of each variables reported by each sub-group defined by different size percentiles.

– **Table 2a about here** –

The same breakdown is offered in Table 2b reporting the evolution of the more relevant variables by year average.

– **Table 2b about here** –

Table 3 presents the Correlation Matrix among the variables. Because LOANS GROWTH and LOANSP GROWTH are by definition highly correlated, they are considered as alternative in different model specifications.

– **Table 3 about here** –

4. Empirical analysis

4.1. Methodology of analysis

Several studies similarly to ours have experimented like bank's asset portfolio shows high persistence during time, so that changes from one period to the next tend to be small relative to the

variable's levels. This is a noteworthy property of our dataset we must consider to adopt an econometric approach able to address the issues arising from high persistence and autocorrelation of the series, with the potential endogeneity problems coming from reciprocal causality links among different variables. In these situations, the literature generally points to the dynamic regression model as the most effective approach, using a time lag of the dependent variable as an additional regressor on the right-hand-side of the regression. In particular, that approach becomes nearly a compelled when a database, like the ours, as stated by Arellano & Bond (1991), Arellano & Bover (1995), and Blundell & Bond (1998) is characterized as a "small T, large N" panel.

After some initial tests among alternative models, we consider Sys-GMM specifications, as the most appropriateness to perform our analysis. For all the specifications, we included time dummies and applied the Windmeijer correction to reported standard errors, reporting the results for the Sargan/Hansen test of overidentifying restrictions and Arellano-Bond test for autocorrelation of second-order.

From this perspective, the analysis can be divided in two parts. A first one, dedicated to the analysis of the existence of desired and undesired effects of regulation upon the whole sample and its different sub-groups of banks. The second part, dedicated to the analysis of the potential "spillover effects" arising from the interaction between the different sub-groups of banks. In the first part of analysis, for each dependent variable we report the results obtained by using alternative model specifications, in order to test for robustness of the significance of the independent variables. Then, we apply the same analysis to all the relevant sub-groups of banks defined above (see section 2), in order to research for any difference between various sub-groups of banks. Finally, in the second part of analysis, we focused attention on two sub-groups of banks, for which we research for the potential "spillover effects" generated by other banks.

4.2. Results of the econometric analysis

4.2.1. Evidence of desired effects of prudential regulation

We consider as a first fundamental desired effect of prudential regulation the increase on the level of capitalization achieved by each bank. We consider it as the main objective researched by supervisors, especially in the case of the most significant banks. Therefore, in Table 4a we report the results obtained by using alternative model specifications, researching for the determinants of the capitalization of each bank. It is possible to appreciate a noticeable stability of the estimations upon different model specifications, with a general increase of the level of capital achieved during last years.

– **Table 4a about here** –

In table 4b, we aim to perform a more comprehensive analysis of the effects of switching from the different size of banks, by presenting the regressions results for different sub-sample of banks. This contribution of our analysis allows us to speculate on the potential effects generated by the new

regulation framework upon the whole sample and different sub-groups of banks. In order to obtain that goal, for each sub-group of banks we present the regression encapsulating the most enriched version of the model, which we consider as the most explicative of our dependent variable. As it is possible to see from table 4b, among other factors, there is a significant difference between larger banks – sub-groups from SZ6 to SZ10 and SQ3 e SQ4 – and the others, especially if considering the last time dummy variables. That evidence seems to be interpreted, as a confirmation of the effectiveness of the action experimented by regulators in order to pursuit the most significant banks, among other factors, to increase their level of capital.

– **Table 4b about here** –

4.2.2. *Evidence of undesired effects of prudential regulation*

We consider the variation of Loans and the level of Loan impairments as two potential undesired effects of prudential regulation. Similarly to previous analysis, we firstly tested alternative specification of regression upon the whole sample and secondly we investigated for the potential differences existing between the different sub-groups of banks. More in particular, in Table 5a we report the results obtained by using alternative model specifications, researching for the determinants of the variation of Loans. It is possible to appreciate a noticeable stability of the estimations upon different model specifications, with a general increase of the level of loans available during last years.

– **Table 5a about here** –

Nevertheless, if we conduct a similar analysis considering different sub-groups of banks (Table 5b), we discover very significant effects of prudential regulation on credit availability to economic activity. More in particular, we find that larger banks (sub-groups from SZ8 to SZ10) reduced significantly the percentage of their loans to total assets, probably in order to save capital and achieve the higher capital ratio recently requested by supervisors. On the opposite, medium banks (SZ5 and SZ6) experimented a slight increase in their loans' level. From this perspective, it is possible to presume that prudential regulation, through its different enforcements requested to different sized banks could have started to generate some distortion upon banking competition.

– **Table 5b about here** –

Similarly to the above variables, in Table 5c we report the results obtained by using alternative model specifications, researching for the determinants of the variation of the Level of Impairments. In this case, it appears more difficult to capture for the determinants of this variable, even if all the model specifications lead to similar results.

– **Table 5c about here** –

Even if considering the different sub-groups of banks (Table 5d), the results seem to be less evident, without significant differences between different sub-groups of banks, making exception for the sub-group SQ2, which exhibits a very high level for its constant. Furthermore, the evidence we obtained from this part of analysis have been considered as predictive of any potential spillover effects against the medium and smaller banks in our sample. For that reasons, in the next section we focused our attention on sub-groups SQ2 and SQ3 in order to investigate for any potential adverse effect caused by the strategy achieved by larger banks.

– **Table 5d about here** –

4.2.3. *Evidence of spillover effects of prudential regulation*

The evidence we obtained in previous sections suggests that a potential “adverse” interaction could have already started between European banks, because of the different behavior highlighted by various sub-groups of banks upon our sample. In particular, we hypothesize that a more pronounced effect could be discovered if considering the performance achieved by banks hypothetically operating with similar categories of customer. Without any reliable data about the effective segmentation of market in each country, we consider the market share of each bank and of each sub-group of banks as predictive of their market power, supposing that the dimension should be a quite reasonable reason for similarities and common behaviors.

More in particular, in this stage of our analysis we consider the effects that the sub-groups SQ3 and SQ2 may have suffered because of the strategy defined by bigger banks, generally in term of reduction of their total assets and loans available for customer. We consider market share of the biggest banks as a proxy for their capacity to impose their choice to other banks (Goddard et al., 2007), so that we hypothesized – at least at this stage of the analysis – a causal direction from larger banks to smaller ones.

In table 6a and 6b we report the evidence we obtained about the spillover effects experimented by respectively SQ3 and SQ2 banks in terms on variation of loans. In particular, when considering the SQ3 banks it is possible to notice a potential spillover effect, especially when considering the reduction in term of total assets of the whole banking system in each country. On the opposite, the performance achieved by SQ4 banks do not seem to generate a particular effects – except in some specifications when considering the reduction of Loans of larger banks (Table 6a). Similarly, even if considering the performance achieved by SQ2 banks, it is not possible to appreciate any particular effects deriving from the SQ4 banks, whilst it is possible to comment for a common feature – instead of a spillover effects – if considering the performance achieved by SQ3 banks. Against, if considering the overall banking system is possible to consider a little spillover effects when considering the reduction in term of total assets, even if mitigated by the increase of loans. The

overall results emerging from this two tables induces to comment about the circumstance that the hypothesized spillover effects in term of transferring of market share do not seem be noticeable.

– **Table 6a about here** –

– **Table 6b about here** –

In table 6c and 6d we report the evidence we obtained about the deterioration of asset quality for SQ3 and SQ2 banks respectively. In order to perform this analysis, we consider that a potential deterioration of credit quality which could be ascribed to the reduction of loans from larger banks needs a proper temporal lag to materialize. More in particular, in this case we consider a lag of two years as an adequate compromise between the period that a potential bad loan in average needs to deteriorate and the length of our dataset.

In table 6c we report the estimates for the loan impairments of SQ3 banks, for which it is possible to consider the effect that both the SQ4 banks and the whole sample can determine upon the assets quality of SQ3 banks. More in particular, by considering the lag 2 variation of credit available from larger banks and the whole system, we can argue that the medium sized banks suffer in term of increase of their assets quality.

Similarly, the SQ2 banks highlight a very strong evidence confirming our hypothesis (Table 6d). More in particular, we find that SQ2 banks suffer in term of deterioration of loans quality, when bigger banks – SQ4, SQ3, but also the whole sample – reduce the loans available to customers. Because this evidence seems to be significant when considering the reduction in term of loans, rather than total assets, we consider it as a possible confirmation for our hypothesis about the adverse selection generated by bigger banks versus the smallest ones.

– **Table 6c about here** –

– **Table 6d about here** –

4.3. Robustness checks

We performed some alternative robustness checks to confirm the consistency of our main estimates, by the following alternative controls. By this perspective, we considered further alternative specifications considering different measures of competition in each financial system, which we differently controlled for the market share of each bank and sub-group. That overall evidence confirmed our hypothesis that medium banks are exposed to those “spillover effects”, because of the reduction of total assets and loans achieved by larger banks, with this evidence becomes particularly significant when considering the deterioration of loans. Moreover, we considered performance achieved by different sub-group of banks defined by alternative classification of our sample, both taking into account dimension and/or other meaningful variables.

As of a particular interest, we consider the analysis we perform for the above-mentioned spillover effects, upon a different group of banks – the Medium Sized Banks – which we obtained like the sum of Size Q3 and Size Q2 Banks. By this manner, we have been able to confirm the hypothesized effects that the behavior of larger banks can determine in terms of undesired spillover effects (Tab. 6a and Table 6b), respectively on Loans and Loan Impairments.

– **Table 6a about here** –

– **Table 6b about here** –

5. Conclusions

Since the aftermath of the crisis, in different jurisdictions the mandate and powers of supervisors has been recently enlarged in order to realize a more effective supervision, especially by encompassing the objective to achieve a sounder and more effective supervision of systemically important financial institutions (SIFIs), and particularly of global systemically important financial institutions (G-SIFIs). That awareness led authorities to review their supervisory approach, by making it more tailored and risk-based, with more time and resources bestowed to larger, more complex and riskier banks, eventually leading to a “jeopardized” capital regulation framework.

From this perspective, despite a general consensus should arise about the necessity of providing a more effective supervision for more sophisticated and relevant banks, a further concern could arise from this incoming new framework. When considering the potential effects that the more binding prudential framework may determine for the more relevant institutions, one could argue that the significant increase of capital they are supposed to achieve, may lead to a potential reduction of credit available for economic activity, which we hypothesize could materialize in some potential adverse effects – which here we defined as “spillover effects” – upon the less significant banks, which are not significantly hindered by the last recent framework. The potential consequences of that phenomenon could be particularly nasty for supervisors, not only because of the very high level of capital that the biggest banks are supposed to achieve when the capital framework of Basel III will become completely effective, but also because of the generally significant market share held by more relevant banks versus the smallest ones.

By looking at different sub-groups of banks that we distinguished by their dimension, we found evidence that during the last two years especially larger banks have increased their level of capital, even if they reduce also the availability of loans to the economy. On the other side, we found that despite an increase of capital which does not appear of a particular magnitude, smaller banks seem to have increased significantly the amount of loans available for the economy. Moreover, when looking for the potential spillover effects which may arise from the interaction of different sub-sample of banks, we show how nasty that phenomenon can be, finding evidence that the deleveraging originated by the more significant banks has already started to generate, among other factors, a significant worsening of portfolio activity for less significant banks. Finally, we showed

that the most notable worsening of portfolio activity materialized for mid-sized banks. We conjectured that while the loan expansion was somewhat shielded by superior soft-information-based lending technologies at small banks, medium-sized banks were fully exposed to the economic recession and to making loans to bad borrowers. Indeed, medium-sized banks expanded their loans while relying more and more on credit scoring and Internal Rating Based models. That proved a problematic choice given the prolonged unfavorable European business cycle.

We consider this evidence full of policy implications. More analyses should be devoted in the future to this issue. Potential alternative measures to mitigate the undesired effects of regulatory stiffening should be evaluated. An attempt should be made trying to ameliorate the application of proportionality upon less significant banks. In particular, it would be crucial to distinguish the relationship lending oriented small banks from the mid-sized banks. These latter banks might, in fact, be caught in the middle of the transition from having abandoned lending technologies based on soft information into adopting transactional lending technologies they not fully command yet. All of these prescriptions seem to be needed to mitigate the potential spillover effects of stiffening bank regulation.

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Annexes

Tab. 1a – Dispersion among variables of analysis – Description over the Total Sample

stats	Size	Equity	Loans	Net Income	Loan Impairment	NPL System	Government Debt	GDP Growth	Capital System	Assets Growth	Loans Growth	LoansP Growth
mean	13.588	12.076	59.481	11.227	3.819	4.187	70.871	0.641	6.173	7.125	7.517	4.465
max	21.674	100.000	100.000	65833.400	605.600	33.680	174.900	10.680	17.900	902.800	900.000	851.258
p90	16.272	19.600	87.200	35.800	9.200	9.810	104.000	3.620	8.200	17.630	18.200	10.983
p75	14.638	11.100	76.390	21.000	4.900	4.290	81.700	2.610	6.200	8.520	8.900	5.534
p50	13.317	7.800	62.590	10.300	2.100	2.870	76.400	1.050	5.000	3.660	3.790	2.208
p25	12.280	5.600	47.790	4.700	0.000	2.650	53.600	-0.330	4.500	-0.020	-0.390	-0.136
p10	11.377	3.600	25.130	0.000	-0.300	0.810	36.700	-3.800	4.270	-6.030	-6.290	-2.664
min	2.329	0.000	0.000	-51700.000	-1071.100	0.080	4.340	-17.950	3.220	-79.910	-100.000	-84.403
sd	2.036	15.834	23.272	775.691	15.409	3.949	25.538	2.877	3.270	31.313	37.823	18.121
N	30406	30406	29055	29983	30406	36462	36511	37015	34831	29216	27895	27843

Tab. 1b – Evolution for variables of analysis – Breakdown by time over the Total Sample

t	Size	Equity	Loans	Net Income	Loan Impairment	NPL System	Government Debt	GDP Growth	Capital System	Assets Growth	Loans Growth	LoansP Growth
2007	13.476	11.371	60.386	17.448	2.993	2.402	58.726	3.256	6.113	11.951	12.934	8.084
2008	13.518	11.411	59.903	15.658	4.384	2.758	61.489	0.736	5.799	9.799	9.218	5.811
2009	13.537	11.755	59.006	8.501	5.573	4.071	70.095	-4.591	6.199	5.608	5.429	3.129
2010	13.589	12.308	59.371	33.968	4.338	4.345	74.166	2.656	6.209	5.570	7.783	4.403
2011	13.606	12.507	59.436	22.951	2.341	4.710	74.616	2.244	6.233	6.649	6.884	3.951
2012	13.656	12.553	58.928	-14.238	3.277	5.211	77.497	0.010	6.539	6.217	5.566	3.250
2013	13.725	12.509	59.422	-5.358	3.902	5.931	78.871	0.170	6.130	4.668	5.324	2.988
Total	13.588	12.076	59.481	11.227	3.819	4.187	70.871	0.641	6.173	7.125	7.517	4.465

Tab. 1c – Dispersion among variables of analysis – Breakdown by Country

Country	Size	Equity	Loans	Net Income	Loan Impairment	NPL System	Government Debt	GDP Growth	Capital System	Assets Growth	Loans Growth	LoansP Growth
AUSTRIA	13.166	12.564	54.378	8.508	5.113	2.516	77.200	1.061	7.177	5.504	7.386	3.418
BELGIUM	14.666	19.530	47.903	41.818	-1.695	2.894	98.362	0.821	4.837	6.603	10.393	3.677
CZECH REPUBLIC	13.963	13.839	60.626	46.878	-3.080	4.401	37.286	0.879	6.286	14.358	13.994	8.192
DENMARK	13.531	13.210	59.511	-82.468	11.979	3.343	40.143	-0.480	5.643	5.226	4.028	3.618
ESTONIA	12.976	17.988	50.770	-14.154	13.795	3.023	7.711	0.696	9.271	19.825	32.911	16.333
FINLAND	14.154	19.512	64.492	21.361	2.490	0.483	44.714	0.074	5.686	11.165	13.785	9.708
FRANCE	14.869	14.238	60.936	13.696	3.692	3.769	79.820	0.613	4.689	7.171	8.493	4.788
GERMANY	13.251	8.876	56.175	9.977	2.304	2.941	73.513	0.979	4.639	4.633	5.096	2.899
GREECE	14.802	15.614	74.708	-18.064	11.861	13.036	139.444	-3.329	7.300	10.792	9.108	8.210
HUNGARY	13.590	12.518	60.582	286.292	11.385	9.671	76.243	-0.359	8.220	15.292	15.703	7.046
IRELAND	16.169	12.319	41.656	-19.671	7.064	13.008	81.863	-0.236	5.864	4.820	7.311	4.707
ITALY	13.298	12.453	64.782	4.784	6.372	10.509	113.755	-0.994	4.971	9.344	8.544	5.308
LUXEMBOURG	14.747	11.663	28.760	41.464	1.259	0.380	17.172	1.609	5.458	15.251	17.043	5.852
NETHERLANDS	15.664	14.243	57.027	9.562	5.284	2.790	58.459	0.504	4.144	4.872	8.954	4.696
NORWAY	13.321	11.183	81.373	19.472	2.256	1.221	32.026	0.925	6.360	11.965	10.512	9.011
POLAND	14.338	11.226	69.352	-4.759	8.044	4.580	51.293	3.667	8.184	18.075	19.498	14.208
PORTUGAL	14.473	15.075	57.076	4.467	9.008	6.353	97.728	-0.697	6.353	5.966	6.460	3.564
SLOVAKIA	14.067	10.840	60.285	11.321	11.334	4.577	40.738	3.058	10.002	5.680	10.475	5.560
SLOVENIA	14.098	7.411	69.804	-47.362	19.392	8.575	40.772	0.093	8.325	4.320	7.230	5.182
SPAIN	14.129	13.107	61.372	13.268	4.954	5.042	61.826	-0.362	6.160	7.307	6.141	3.186
SWEDEN	13.459	13.088	70.305	19.605	2.564	0.587	37.585	1.076	4.834	8.429	9.309	6.338
SWITZERLAND	13.051	8.356	72.101	12.095	2.545	0.774	37.584	1.725	17.334	8.786	9.720	6.056
UNITED KINGDOM	14.000	26.339	50.013	17.628	3.770	2.916	70.220	0.553	5.134	9.983	9.512	6.243
Total	13.588	12.076	59.481	11.227	3.819	4.187	70.871	0.641	6.173	7.125	7.517	4.465

Tab. 2a – Dispersion among variables of analysis – Breakdown by Sub-Group of banks

Size Score	Size	Equity	Loans	Net Income	Loan Impairment	NPL System	Government Debt	GDP Growth	Capital System	Assets Growth	Loans Growth	LoansP Growth
1	8.061	62.186	52.017	72.460	-4.892	4.219	73.491	0.517	5.400	22.058	10.638	60.953
2	10.127	32.694	41.499	4.234	6.379	4.095	73.500	0.498	5.692	10.729	9.765	39.293
3	10.971	21.621	51.347	4.982	3.279	4.062	74.385	0.548	5.684	8.940	9.025	42.749
4	11.786	13.754	58.204	19.156	3.292	3.859	72.017	0.673	6.371	7.973	8.635	47.799
5	12.725	10.447	63.939	3.704	3.670	3.736	70.762	0.719	6.863	6.897	6.835	44.145
6	13.872	10.668	60.528	13.649	3.726	3.879	72.654	0.656	5.728	7.089	7.947	47.433
7	15.297	9.659	58.963	11.503	4.336	4.166	71.110	0.645	5.614	6.262	6.715	42.954
8	16.661	8.591	60.379	15.219	4.374	4.426	71.075	0.530	5.863	6.071	8.056	47.892
9	18.165	5.526	56.421	14.177	4.618	4.328	71.297	0.412	5.761	4.633	5.340	31.705
10	20.488	4.136	41.533	12.703	3.231	7.112	59.270	0.608	7.121	3.763	3.909	21.054
Total	13.588	12.076	59.481	11.227	3.819	4.187	70.871	0.641	6.173	7.125	7.517	44.650

Tab. 2b – Evolution of variables of analysis – Breakdown by Sub-Group of Banks

	t	Size	Equity	Loans	Net Income	Loan Impair	Assets Growth	Loans Growth	LoansP Growth
Size Score 1	2007	8.10	49.81	55.06	12.94	-38.30	40.15	31.59	32.30
	2008	8.21	49.17	56.24	-92.72	-7.60	18.91	-4.78	-0.28
	2009	8.07	61.02	59.05	-9.35	-4.73	8.89	-18.88	-7.21
	2010	8.02	72.64	58.31	952.42	12.19	-2.13	14.55	5.49
	2011	8.06	70.46	45.12	-78.20	-1.30	27.06	-11.94	-0.04
	2012	7.68	66.01	44.45	-63.22	0.86	9.24	22.40	2.43
	2013	8.35	62.94	46.35	-12.27	1.39	46.92	41.53	8.55
Size Score 2	2007	10.09	30.61	42.80	-24.33	6.88	10.12	4.09	5.43
	2008	10.06	32.38	45.06	4.74	7.84	8.28	12.75	5.93
	2009	10.13	33.59	40.07	9.40	11.88	9.22	4.72	2.14
	2010	10.12	33.38	40.66	-1.54	7.12	7.50	18.37	5.06
	2011	10.07	34.21	41.16	379.36	3.58	13.51	8.62	3.01
	2012	10.15	32.85	40.01	5.18	2.01	9.98	6.45	1.74
	2013	10.27	31.00	41.39	-417.69	5.90	15.83	12.55	5.03
Size Score 3	2007	10.83	21.71	51.92	9.00	2.73	10.31	11.58	4.51
	2008	10.77	23.35	51.75	5.90	4.16	6.91	3.00	2.50
	2009	10.91	21.35	51.68	13.51	5.47	7.59	4.55	3.14
	2010	10.97	21.94	50.73	-4.51	2.27	8.83	14.67	5.78
	2011	11.03	21.58	51.67	2.78	2.86	6.58	7.20	4.65
	2012	11.08	21.13	50.61	8.93	1.56	9.48	10.85	4.36
	2013	11.15	20.46	51.25	0.50	4.17	12.72	10.38	4.57
Size Score 4	2007	11.64	12.70	60.32	19.94	3.26	8.68	12.89	7.02
	2008	11.66	13.28	59.51	13.53	4.35	7.68	7.06	4.47
	2009	11.71	14.25	57.32	-26.59	4.66	6.58	5.38	2.79
	2010	11.77	14.32	57.63	138.14	3.41	10.59	11.43	5.79
	2011	11.85	14.09	57.37	45.11	2.72	7.91	8.26	5.20
	2012	11.90	14.01	57.50	-64.12	2.39	7.48	7.75	4.21
	2013	11.94	13.45	58.09	7.42	2.38	6.87	7.82	4.05
Size Score 5	2007	12.55	10.17	64.89	13.57	3.03	9.22	7.85	5.74
	2008	12.62	10.32	64.21	7.80	3.85	9.53	8.67	5.50
	2009	12.67	10.00	63.57	10.15	4.89	6.97	5.60	3.64
	2010	12.72	10.49	64.12	11.66	4.20	4.36	6.95	4.56
	2011	12.78	10.69	64.14	5.23	2.57	6.53	7.65	4.36
	2012	12.84	10.72	63.25	-30.18	3.48	6.72	5.98	3.69
	2013	12.88	10.70	63.44	9.70	3.71	5.21	5.28	3.55
Size Score 6	2007	13.73	10.14	61.02	17.99	3.46	11.76	13.30	8.54
	2008	13.80	9.92	60.52	8.89	4.54	9.91	9.29	5.84
	2009	13.83	10.13	60.10	17.36	5.67	5.64	6.34	3.35
	2010	13.88	10.70	60.56	13.26	4.38	4.70	8.04	4.53
	2011	13.92	10.89	60.82	16.52	1.26	6.05	7.50	4.18
	2012	13.96	11.23	60.14	14.87	3.09	7.24	5.99	3.93
	2013	13.99	11.62	60.56	6.51	3.79	4.62	5.49	3.06
Size Score 7	2007	15.21	9.21	58.68	22.48	3.40	15.65	16.30	9.95
	2008	15.24	8.30	58.81	37.37	5.31	11.20	10.00	6.77
	2009	15.27	8.87	58.40	19.25	6.46	2.17	5.37	3.09
	2010	15.31	9.77	58.84	15.90	5.09	5.36	4.71	3.23
	2011	15.33	10.10	59.23	-6.47	1.94	5.68	5.95	3.40
	2012	15.36	10.22	59.27	-4.60	3.71	4.13	3.18	2.09
	2013	15.35	11.05	59.51	-0.88	4.55	0.87	2.41	2.13
Size Score 8	2007	16.57	8.34	60.65	29.67	2.77	19.41	29.57	16.02
	2008	16.65	7.82	59.96	-7.97	4.26	12.60	14.63	9.29
	2009	16.65	8.27	59.87	26.33	5.53	2.26	5.67	2.54
	2010	16.66	8.68	60.22	25.42	4.14	2.45	3.68	3.08
	2011	16.70	8.58	60.50	1.18	3.90	7.16	2.53	2.19
	2012	16.70	9.13	60.30	3.81	4.85	2.12	3.37	0.97
	2013	16.67	9.18	61.13	28.76	5.07	-1.32	0.17	1.25
Size Score 9	2007	18.08	5.85	58.36	33.58	1.62	17.38	14.93	10.65
	2008	18.10	5.43	58.07	101.04	3.12	10.44	15.10	8.36
	2009	18.14	5.44	56.65	1.03	5.32	8.34	2.59	2.24
	2010	18.22	5.40	56.55	9.42	4.90	1.76	0.66	2.00
	2011	18.22	5.23	55.75	-17.58	4.54	2.10	3.21	0.96
	2012	18.22	5.45	54.57	-21.08	6.43	0.00	-0.67	0.76
	2013	18.15	5.91	55.41	3.27	5.91	-4.76	3.54	-1.19
Size Score 10	2007	20.43	3.83	41.46	26.26	1.49	19.11	16.66	7.96
	2008	20.51	3.02	39.44	15.07	2.99	16.44	8.96	4.38
	2009	20.44	4.00	42.40	3.74	5.29	-5.64	2.06	1.66
	2010	20.50	4.29	43.40	13.57	3.61	4.02	7.86	3.66
	2011	20.57	4.28	40.82	6.70	3.07	5.41	1.95	-0.07
	2012	20.52	4.54	40.64	12.93	2.92	-2.77	-4.05	-0.76
	2013	20.43	4.94	42.50	11.69	3.10	-7.60	-4.09	-1.23
Size Quartile 1	2007	11.18	17.85	56.53	11.81	2.47	9.87	11.98	6.76
	2008	11.17	18.91	56.08	8.40	4.52	7.89	6.76	4.20
	2009	11.23	19.62	53.89	-12.81	5.70	7.20	4.75	2.63
	2010	11.27	20.08	53.98	101.19	3.92	9.53	12.99	5.70
	2011	11.31	20.17	53.89	81.14	2.77	8.82	7.86	4.76
	2012	11.34	19.86	53.60	-39.44	2.12	8.31	8.39	3.91
	2013	11.43	18.97	54.41	-50.31	3.21	10.49	9.39	4.34
Size Quartile 2	2007	12.55	10.17	64.89	13.57	3.03	9.22	7.85	5.74
	2008	12.62	10.32	64.21	7.80	3.85	9.53	8.67	5.50
	2009	12.67	10.00	63.57	10.15	4.89	6.97	5.60	3.64
	2010	12.72	10.49	64.12	11.66	4.20	4.36	6.95	4.56
	2011	12.78	10.69	64.14	5.23	2.57	6.53	7.65	4.36
	2012	12.84	10.72	63.25	-30.18	3.48	6.72	5.98	3.69
	2013	12.88	10.70	63.44	9.70	3.71	5.21	5.28	3.55
Size Quartile 3	2007	13.73	10.14	61.02	17.99	3.46	11.76	13.30	8.54
	2008	13.80	9.92	60.52	8.89	4.54	9.91	9.29	5.84
	2009	13.83	10.13	60.10	17.36	5.67	5.64	6.34	3.35
	2010	13.88	10.70	60.56	13.26	4.38	4.70	8.04	4.53
	2011	13.92	10.89	60.82	16.52	1.26	6.05	7.50	4.18
	2012	13.96	11.23	60.14	14.87	3.09	7.24	5.99	3.93
	2013	13.99	11.62	60.56	6.51	3.79	4.62	5.49	3.06
Size Quartile 4	2007	16.16	8.27	58.26	25.79	2.92	16.82	18.75	11.18
	2008	16.21	7.51	58.03	37.28	4.65	11.60	11.72	7.43
	2009	16.24	7.98	57.68	17.04	6.04	2.84	4.83	2.77
	2010	16.27	8.62	58.08	16.70	4.81	4.16	4.00	3.02
	2011	16.29	8.77	58.13	-6.13	2.80	5.39	4.62	2.60
	2012	16.31	9.00	57.91	-4.68	4.34	2.77	2.27	1.51
	2013	16.32	9.53	58.37	6.57	4.82	-0.90	1.82	1.23

Tab. 3 – Correlation matrix

	Size	Total Assets	Equity	Loans	Net Income	Loan Impairment	NPL System	Government Debt	GDP Growth	Capital System	Assets Growth	Loans Growth	LoansP Growth
Size	1.000												
Total Assets	0.441	1.000											
Equity	-0.252	-0.071	1.000										
Loans	-0.002	-0.088	-0.251	1.000									
Net Income	0.002	0.000	-0.027	0.012	1.000								
Loan Impairment	0.012	-0.002	0.095	0.059	-0.035	1.000							
NPL System	0.027	-0.012	0.075	0.026	-0.018	0.149	1.000						
Government Debt	-0.012	-0.008	0.062	0.013	-0.013	0.044	0.765	1.000					
GDP Growth	-0.026	-0.008	-0.032	-0.008	0.007	-0.095	-0.290	-0.221	1.000				
Capital System	-0.076	-0.019	-0.033	0.170	0.001	-0.004	-0.215	-0.443	0.086	1.000			
Assets Growth	-0.003	-0.005	-0.021	-0.031	0.014	-0.049	-0.012	-0.048	0.035	0.038	1.000		
Loans Growth	-0.010	-0.008	0.029	-0.022	0.007	-0.047	-0.028	-0.042	0.040	0.025	0.463	1.000	
LoansP Growth	0.004	-0.013	-0.003	0.108	0.001	-0.045	-0.040	-0.056	0.050	0.038	0.570	0.716	1.000

Table 4a – Desired effects on Equity (Different estimates of Dynamic Panel Model upon the Total Sample)

Variable	Mod 1	Mod 2	Mod 3	Mod 4	Mod 5	Mod 6
L.EQUITY	0.8534*** <i>0.084</i>	0.8823*** <i>0.080</i>	0.9921*** <i>0.073</i>	1.0047*** <i>0.072</i>	0.9698*** <i>0.071</i>	0.9736*** <i>0.073</i>
SIZE	-0.2497* <i>0.133</i>	-0.1821 <i>0.124</i>	-0.0518 <i>0.104</i>	-0.0277 <i>0.103</i>	-0.0619 <i>0.100</i>	-0.0546 <i>0.103</i>
NLOANS	-0.0163 <i>0.011</i>	-0.0175* <i>0.010</i>	0.0014 <i>0.008</i>	0.0075 <i>0.008</i>	-0.0062 <i>0.008</i>	-0.0066 <i>0.008</i>
NPL_SYSTEM	-0.0162 <i>0.026</i>	0.0008 <i>0.021</i>	-0.0324 <i>0.020</i>	-0.0401** <i>0.020</i>	-0.0169 <i>0.019</i>	-0.0165 <i>0.019</i>
GOVERNMENT_DEBT	0.0006 <i>0.003</i>	-0.003 <i>0.003</i>	-0.0022 <i>0.002</i>	-0.0021 <i>0.002</i>	-0.002 <i>0.002</i>	-0.0018 <i>0.002</i>
GDP_GROWTH	0.0363 <i>0.037</i>	0.0396 <i>0.032</i>	0.0728** <i>0.033</i>	0.0744** <i>0.034</i>	0.0623** <i>0.031</i>	0.0643** <i>0.031</i>
CAPITAL_SYSTEM	-0.0356** <i>0.015</i>	-0.0279** <i>0.011</i>	-0.0543*** <i>0.010</i>	-0.0568*** <i>0.011</i>	-0.0320*** <i>0.009</i>	-0.0306*** <i>0.009</i>
tau2009	0.6757*** <i>0.234</i>	0.3423* <i>0.197</i>	0.8595*** <i>0.193</i>	0.8370*** <i>0.195</i>	0.5551*** <i>0.181</i>	0.5705*** <i>0.183</i>
tau2010	0.4888*** <i>0.126</i>	0.1143 <i>0.111</i>	0.3815*** <i>0.113</i>	0.3521*** <i>0.117</i>	0.1292 <i>0.111</i>	0.1162 <i>0.112</i>
tau2011	0.5774*** <i>0.126</i>	0.2276* <i>0.116</i>	0.4008*** <i>0.115</i>	0.3649*** <i>0.122</i>	0.182 <i>0.114</i>	0.1752 <i>0.117</i>
tau2012	0.8798*** <i>0.109</i>	0.4832*** <i>0.098</i>	0.7080*** <i>0.100</i>	0.6877*** <i>0.106</i>	0.4780*** <i>0.100</i>	0.4859*** <i>0.101</i>
tau2013	1.0012*** <i>0.110</i>	0.3731*** <i>0.103</i>	0.7526*** <i>0.106</i>	0.7299*** <i>0.112</i>	0.3830*** <i>0.107</i>	0.3876*** <i>0.107</i>
ASSETS_GROWTH		-0.0648*** <i>0.006</i>			-0.0586*** <i>0.006</i>	-0.0628*** <i>0.007</i>
LOANS_GROWTH			-0.0204*** <i>0.005</i>		-0.0041 <i>0.004</i>	
LOANSP_GROWTH				-0.0497*** <i>0.011</i>		0.0031 <i>0.014</i>
CONSTANT	5.5237* <i>3.212</i>	5.3176* <i>2.923</i>	1.095 <i>2.534</i>	0.4054 <i>2.516</i>	2.1326 <i>2.407</i>	1.9758 <i>2.488</i>
N	22707	22652	22471	22471	22468	22468
N(g)	4581	4576	4545	4545	4545	4545
AR2-p	0.8897	0.534	0.7938	0.6631	0.2116	0.1988
J	23	24	24	24	25	25
Hansen-df	10	10	10	10	10	10
Hansen-p	0.1288	0.6186	0.3122	0.4418	0.6662	0.6996

* for p<.10, ** for p<.05, and *** for p<.01

Table 4b – Desired effects on Equity (Estimates upon different Sub-Group of Banks)

Variable	ALL	SZ 1	SZ 2	SZ 3	SZ 4	SZ 5	SZ 6	SZ 7	SZ 8	SZ 9	SZ 10	SQ 1	SQ 2	SQ 3	SQ 4
L.EQUITY	0.9698*** <i>0.071</i>	0.7906*** <i>0.073</i>	0.7012*** <i>0.196</i>	0.8581*** <i>0.083</i>	0.5886** <i>0.248</i>	1.1466*** <i>0.104</i>	0.9046*** <i>0.090</i>	0.9001*** <i>0.127</i>	0.7211*** <i>0.088</i>	1.0485*** <i>0.054</i>	0.9901*** <i>0.129</i>	0.7372*** <i>0.111</i>	1.1466*** <i>0.104</i>	0.9046*** <i>0.090</i>	0.8783*** <i>0.130</i>
SIZE	-0.0619 <i>0.100</i>	-1.9560** <i>0.971</i>	-6.3990* <i>3.501</i>	-0.5244 <i>1.345</i>	-1.9941 <i>1.326</i>	0.2219 <i>0.401</i>	-0.3856* <i>0.200</i>	-0.5151*** <i>0.174</i>	-1.0424*** <i>0.340</i>	-0.067 <i>0.064</i>	0.0393 <i>0.067</i>	-2.2542** <i>0.944</i>	0.2219 <i>0.401</i>	-0.3856* <i>0.200</i>	-0.2078* <i>0.110</i>
NLOANS	-0.0062 <i>0.008</i>	0.0651** <i>0.030</i>	-0.1131 <i>0.078</i>	-0.0383 <i>0.024</i>	-0.0797* <i>0.048</i>	0.0009 <i>0.012</i>	-0.0109 <i>0.009</i>	-0.0059 <i>0.004</i>	-0.0034 <i>0.007</i>	-0.0021 <i>0.003</i>	0.0053 <i>0.007</i>	-0.0594** <i>0.025</i>	0.0009 <i>0.012</i>	-0.0109 <i>0.009</i>	-0.004 <i>0.003</i>
NPL_SYSTEM	-0.0169 <i>0.019</i>	0.3244 <i>1.010</i>	-0.1748 <i>0.195</i>	-0.092 <i>0.083</i>	0.1584 <i>0.129</i>	-0.0657 <i>0.047</i>	0.0287 <i>0.046</i>	0.0146 <i>0.029</i>	-0.0177 <i>0.052</i>	-0.0133 <i>0.012</i>	-0.0167 <i>0.037</i>	-0.0589 <i>0.055</i>	-0.0657 <i>0.047</i>	0.0287 <i>0.046</i>	0.0106 <i>0.018</i>
GOVERNMENT_DEBT	-0.002 <i>0.002</i>	-0.0139 <i>0.110</i>	0.0742** <i>0.036</i>	0.0142 <i>0.012</i>	-0.0082 <i>0.015</i>	-0.0029 <i>0.006</i>	-0.0083 <i>0.006</i>	-0.0026 <i>0.003</i>	0.0032 <i>0.009</i>	0.001 <i>0.002</i>	-0.0007 <i>0.007</i>	0.0200** <i>0.010</i>	-0.0029 <i>0.006</i>	-0.0083 <i>0.006</i>	-0.0031 <i>0.002</i>
GDP_GROWTH	0.0623** <i>0.031</i>	3.1291 <i>2.045</i>	-0.3964** <i>0.197</i>	-0.1154 <i>0.133</i>	0.017 <i>0.170</i>	0.0075 <i>0.070</i>	0.1079*** <i>0.041</i>	0.0717** <i>0.036</i>	0.0765* <i>0.042</i>	0.0580* <i>0.033</i>	0.0374 <i>0.060</i>	-0.0298 <i>0.099</i>	0.0075 <i>0.070</i>	0.1079*** <i>0.041</i>	0.0650*** <i>0.022</i>
CAPITAL_SYSTEM	-0.0320*** <i>0.009</i>	0.5733 <i>1.370</i>	0.5863* <i>0.304</i>	-0.0421 <i>0.074</i>	0.0392 <i>0.065</i>	-0.0128 <i>0.029</i>	-0.0711*** <i>0.019</i>	0.0104 <i>0.023</i>	0.104 <i>0.139</i>	0.0128 <i>0.023</i>	0.0083 <i>0.033</i>	0.1346** <i>0.059</i>	-0.0128 <i>0.029</i>	-0.0711*** <i>0.019</i>	0.0193 <i>0.036</i>
ASSETS_GROWTH	-0.0586*** <i>0.006</i>	-0.1913*** <i>0.029</i>	-0.1108** <i>0.047</i>	-0.1255*** <i>0.037</i>	-0.0530*** <i>0.015</i>	-0.0540*** <i>0.017</i>	-0.0482*** <i>0.008</i>	-0.0434*** <i>0.012</i>	-0.0303*** <i>0.006</i>	-0.0186*** <i>0.003</i>	-0.0082* <i>0.005</i>	-0.0809*** <i>0.018</i>	-0.0540*** <i>0.017</i>	-0.0482*** <i>0.008</i>	-0.0373*** <i>0.008</i>
LOANS_GROWTH	-0.0041 <i>0.004</i>	0.0082 <i>0.028</i>	0.0042 <i>0.006</i>	-0.0147** <i>0.007</i>	-0.0009 <i>0.006</i>	-0.021 <i>0.021</i>	0.005 <i>0.004</i>	-0.0039 <i>0.003</i>	0.0096** <i>0.004</i>	0.0014* <i>0.001</i>	0.0055 <i>0.004</i>	-0.0011 <i>0.004</i>	-0.021 <i>0.021</i>	0.005 <i>0.004</i>	-0.0003 <i>0.002</i>
tau2009	0.5551*** <i>0.181</i>	16.2462 <i>12.072</i>	-3.1043** <i>1.423</i>	-0.1589 <i>1.003</i>	0.2803 <i>0.913</i>	-0.0086 <i>0.456</i>	0.9679*** <i>0.284</i>	0.9215*** <i>0.271</i>	0.7508*** <i>0.261</i>	0.9908*** <i>0.175</i>	1.8753*** <i>0.359</i>	-0.0954 <i>0.550</i>	-0.0086 <i>0.456</i>	0.9679*** <i>0.284</i>	0.8764*** <i>0.185</i>
tau2010	0.1292 <i>0.111</i>	-10.1833 <i>9.901</i>	-0.8163 <i>1.125</i>	0.4695 <i>0.515</i>	0.3365 <i>0.565</i>	0.266 <i>0.187</i>	0.1509 <i>0.168</i>	0.5232*** <i>0.170</i>	0.3402 <i>0.230</i>	0.2203 <i>0.140</i>	1.0154*** <i>0.166</i>	0.0259 <i>0.361</i>	0.266 <i>0.187</i>	0.1509 <i>0.168</i>	0.4349*** <i>0.111</i>
tau2011	0.182 <i>0.114</i>	-8.3847 <i>8.419</i>	-0.2588 <i>1.145</i>	0.3712 <i>0.459</i>	0.4835 <i>0.535</i>	0.1047 <i>0.202</i>	0.4653*** <i>0.169</i>	0.5884*** <i>0.146</i>	0.3074 <i>0.224</i>	0.0423 <i>0.134</i>	0.6823*** <i>0.126</i>	0.204 <i>0.333</i>	0.1047 <i>0.202</i>	0.4653*** <i>0.169</i>	0.4101*** <i>0.106</i>
tau2012	0.4780*** <i>0.100</i>	-2.8511 <i>5.287</i>	-0.7229 <i>1.153</i>	1.0967*** <i>0.379</i>	0.8165*** <i>0.302</i>	0.1562 <i>0.293</i>	0.8368*** <i>0.167</i>	0.7139*** <i>0.133</i>	0.6081** <i>0.260</i>	0.5037*** <i>0.126</i>	1.1331*** <i>0.148</i>	0.5414** <i>0.234</i>	0.1562 <i>0.293</i>	0.8368*** <i>0.167</i>	0.6156*** <i>0.092</i>
tau2013	0.3830*** <i>0.107</i>	-3.2888 <i>7.280</i>	-0.8837 <i>1.305</i>	0.8227** <i>0.370</i>	0.5260* <i>0.315</i>	0.1564 <i>0.298</i>	0.7842*** <i>0.185</i>	0.6110*** <i>0.146</i>	0.4342 <i>0.300</i>	0.5396*** <i>0.151</i>	1.1014*** <i>0.173</i>	0.2723 <i>0.256</i>	0.1564 <i>0.298</i>	0.7842*** <i>0.185</i>	0.5150*** <i>0.117</i>
CONSTANT	2.1326 <i>2.407</i>	23.4323* <i>12.359</i>	71.4621* <i>41.185</i>	9.7516 <i>16.183</i>	32.5455 <i>20.597</i>	-3.1854 <i>5.888</i>	7.7318* <i>4.061</i>	9.0393*** <i>3.379</i>	18.7725*** <i>5.645</i>	0.7767 <i>1.246</i>	-1.7012 <i>1.291</i>	31.0366** <i>12.992</i>	-3.1854 <i>5.888</i>	7.7318* <i>4.061</i>	4.4749* <i>2.581</i>
N	22468	57	606	968	3179	5817	6094	3372	1198	920	257	4810	5817	6094	5747
N(g)	4545	23	148	213	677	1160	1172	678	236	190	48	1061	1160	1172	1152
AR2-p	0.2116	0.6166	0.6295	0.1611	0.9263	0.0571	0.3824	0.1082	0.4536	0.8964	0.918	0.727	0.0571	0.3824	0.2925
J	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Hansen-df	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Hansen-p	0.6662	0.967	0.5009	0.4386	0.3331	0.6364	0.0443	0.3637	0.0203	0.3902	0.2035	0.257	0.6364	0.0443	0.0544

Table 5a – Undesired effects on Loans (Different estimates of Dynamic Panel Model upon the Total Sample)

Variable	Mod 1	Mod 2	Mod 3	Mod 4	Mod 5	Mod 6
L.NLOANS	0.9799*** <i>0.066</i>	0.9949*** <i>0.065</i>	0.9835*** <i>0.058</i>	0.9420*** <i>0.054</i>	1.0130*** <i>0.051</i>	0.9494*** <i>0.046</i>
SIZE	0.0324 <i>0.039</i>	0.0173 <i>0.037</i>	-0.007 <i>0.036</i>	-0.044 <i>0.035</i>	0.0454 <i>0.033</i>	-0.0014 <i>0.032</i>
EQUITY	-0.1431** <i>0.059</i>	-0.1906*** <i>0.065</i>	0.0895* <i>0.054</i>	0.0940* <i>0.050</i>	-0.1387*** <i>0.048</i>	-0.1911*** <i>0.040</i>
LEQUITY	0.1335* <i>0.070</i>	0.1899** <i>0.081</i>	-0.1234* <i>0.063</i>	-0.1453** <i>0.059</i>	0.1270** <i>0.059</i>	0.1524*** <i>0.046</i>
NPL_SYSTEM	-0.3302*** <i>0.029</i>	-0.3278*** <i>0.028</i>	-0.3063*** <i>0.027</i>	-0.2800*** <i>0.026</i>	-0.3003*** <i>0.025</i>	-0.2505*** <i>0.022</i>
GOVERNMENT_DEBT	0.0253*** <i>0.009</i>	0.0237*** <i>0.008</i>	0.0257*** <i>0.007</i>	0.0284*** <i>0.007</i>	0.0218*** <i>0.007</i>	0.0260*** <i>0.006</i>
GDP_GROWTH	0.0382 <i>0.063</i>	0.0485 <i>0.061</i>	0.0537 <i>0.055</i>	0.0411 <i>0.053</i>	0.0751 <i>0.049</i>	0.0585 <i>0.044</i>
CAPITAL_SYSTEM	-0.0136 <i>0.102</i>	-0.0232 <i>0.101</i>	-0.014 <i>0.092</i>	0.0344 <i>0.086</i>	-0.0396 <i>0.079</i>	0.0404 <i>0.072</i>
tau2009	0.4784 <i>0.497</i>	0.3446 <i>0.470</i>	0.7695* <i>0.452</i>	0.7647* <i>0.433</i>	0.5961 <i>0.380</i>	0.5202 <i>0.356</i>
tau2010	1.2298*** <i>0.234</i>	0.9781*** <i>0.212</i>	1.1968*** <i>0.201</i>	1.2349*** <i>0.193</i>	0.7599*** <i>0.170</i>	0.6474*** <i>0.156</i>
tau2011	0.7846*** <i>0.225</i>	0.5948*** <i>0.207</i>	0.8670*** <i>0.203</i>	0.9371*** <i>0.194</i>	0.5171*** <i>0.170</i>	0.5194*** <i>0.156</i>
tau2012	0.1649 <i>0.318</i>	0.0142 <i>0.301</i>	0.3915 <i>0.302</i>	0.4003 <i>0.290</i>	0.2129 <i>0.247</i>	0.168 <i>0.236</i>
tau2013	1.1403** <i>0.444</i>	0.8802** <i>0.418</i>	1.4355*** <i>0.419</i>	1.3987*** <i>0.388</i>	1.0052*** <i>0.330</i>	0.7915*** <i>0.304</i>
ASSETS_GROWTH		-0.0491*** <i>0.009</i>			-0.1239*** <i>0.012</i>	-0.1711*** <i>0.014</i>
LOANS_GROWTH			0.0625*** <i>0.007</i>		0.0909*** <i>0.011</i>	
LOANSP_GROWTH				0.1605*** <i>0.015</i>		0.2825*** <i>0.017</i>
CONSTANT	-0.3092 <i>3.713</i>	-0.4865 <i>3.658</i>	-0.5573 <i>3.357</i>	1.7663 <i>3.098</i>	-2.0366 <i>2.927</i>	1.4987 <i>2.614</i>
N	22643	22603	22471	22471	22468	22468
N(g)	4566	4564	4545	4545	4545	4545
AR2-p	0.2632	0.2171	0.2466	0.1697	0.1928	0.264
J	21	22	22	22	23	23
Hansen-df	7	7	7	7	7	7
Hansen-p	0.5293	0.1519	0.1314	0.209	0.0009	0.0098

* for p<.10, ** for p<.05, and *** for p<.01

Table 5b – Undesired effects on Loans (Estimates upon different Sub-Group of Banks)

Variable	ALL	SZ 1	SZ 2	SZ 3	SZ 4	SZ 5	SZ 6	SZ 7	SZ 8	SZ 9	SZ 10	SQ 1	SQ 2	SQ 3	SQ 4
L.NLOANS	0.9949*** <i>0.065</i>	0.9597*** <i>0.120</i>	0.3815 <i>0.448</i>	1.1937*** <i>0.125</i>	0.9255*** <i>0.188</i>	1.0291*** <i>0.112</i>	1.0925*** <i>0.105</i>	1.1024*** <i>0.187</i>	0.9683*** <i>0.079</i>	0.9943*** <i>0.095</i>	0.8730*** <i>0.075</i>	1.0084*** <i>0.137</i>	1.0291*** <i>0.112</i>	1.0925*** <i>0.105</i>	1.0437*** <i>0.114</i>
SIZE	0.0173 <i>0.037</i>	1.109 <i>0.949</i>	2.8555 <i>3.745</i>	0.1561 <i>1.842</i>	-0.084 <i>0.824</i>	-0.341 <i>0.446</i>	-0.1152 <i>0.301</i>	-0.2115 <i>0.326</i>	-0.6131 <i>0.503</i>	-0.4031 <i>0.540</i>	-0.6991 <i>0.534</i>	-0.1497 <i>0.226</i>	-0.341 <i>0.446</i>	-0.1152 <i>0.301</i>	-0.0056 <i>0.227</i>
EQUITY	-0.1906*** <i>0.065</i>	0.1843* <i>0.095</i>	-0.2553** <i>0.104</i>	-0.2874 <i>0.349</i>	-0.1044 <i>0.101</i>	-0.3216** <i>0.157</i>	-0.0575 <i>0.110</i>	-0.1551* <i>0.093</i>	0.3238* <i>0.183</i>	0.5436** <i>0.240</i>	3.0182*** <i>0.939</i>	-0.1360* <i>0.080</i>	-0.3216** <i>0.157</i>	-0.0575 <i>0.110</i>	-0.017 <i>0.081</i>
L.EQUITY	0.1899** <i>0.081</i>	-0.1195 <i>0.099</i>	-0.0289 <i>0.151</i>	0.4102 <i>0.396</i>	0.0401 <i>0.143</i>	0.3371 <i>0.206</i>	0.1178 <i>0.116</i>	0.1953* <i>0.106</i>	-0.3619** <i>0.166</i>	-0.5151** <i>0.232</i>	-2.3402*** <i>0.861</i>	0.1298 <i>0.110</i>	0.3371 <i>0.206</i>	0.1178 <i>0.116</i>	0.0246 <i>0.082</i>
NPL_SYSTEM	-0.3278*** <i>0.028</i>	1.0034 <i>1.040</i>	0.3868 <i>0.809</i>	-0.4476** <i>0.203</i>	-0.3747** <i>0.167</i>	-0.6784*** <i>0.133</i>	-0.4740*** <i>0.087</i>	-0.0705 <i>0.159</i>	-0.1124 <i>0.105</i>	-0.1341 <i>0.089</i>	-0.2162 <i>0.277</i>	-0.4375*** <i>0.114</i>	-0.6784*** <i>0.133</i>	-0.4740*** <i>0.087</i>	-0.1051 <i>0.065</i>
GOVERNMENT_DEBT	0.0237*** <i>0.008</i>	-0.0365 <i>0.103</i>	-0.0948 <i>0.151</i>	0.0431 <i>0.029</i>	0.0425** <i>0.018</i>	0.0577*** <i>0.009</i>	0.0165 <i>0.016</i>	-0.027 <i>0.062</i>	0.019 <i>0.026</i>	0.0086 <i>0.010</i>	0.0226 <i>0.061</i>	0.0501*** <i>0.016</i>	0.0577*** <i>0.009</i>	0.0165 <i>0.016</i>	-0.004 <i>0.027</i>
GDP_GROWTH	0.0485 <i>0.061</i>	-0.0632 <i>1.213</i>	-1.3306*** <i>0.482</i>	0.1538 <i>0.384</i>	-0.0575 <i>0.155</i>	-0.0684 <i>0.118</i>	0.0887 <i>0.119</i>	0.2507** <i>0.117</i>	-0.0935 <i>0.174</i>	-0.1038 <i>0.194</i>	-0.0138 <i>0.221</i>	-0.1257 <i>0.151</i>	-0.0684 <i>0.118</i>	0.0887 <i>0.119</i>	0.1253 <i>0.090</i>
CAPITAL_SYSTEM	-0.0232 <i>0.101</i>	1.2078 <i>1.455</i>	-0.7753 <i>0.687</i>	0.0592 <i>0.174</i>	0.1232 <i>0.214</i>	-0.0547 <i>0.208</i>	-0.157 <i>0.130</i>	-0.0833 <i>0.164</i>	0.1259 <i>0.095</i>	0.02 <i>0.084</i>	-0.1705 <i>0.226</i>	0.0212 <i>0.122</i>	-0.0547 <i>0.208</i>	-0.157 <i>0.130</i>	0.0029 <i>0.060</i>
ASSETS_GROWTH	-0.0491*** <i>0.009</i>	0.0399 <i>0.053</i>	-0.0274 <i>0.028</i>	-0.0813 <i>0.095</i>	-0.0128 <i>0.016</i>	-0.0364** <i>0.017</i>	-0.0549*** <i>0.013</i>	-0.0972*** <i>0.016</i>	-0.1114*** <i>0.028</i>	-0.0337 <i>0.022</i>	-0.0466 <i>0.030</i>	-0.0199 <i>0.017</i>	-0.0364** <i>0.017</i>	-0.0549*** <i>0.013</i>	-0.0889*** <i>0.013</i>
tau2009	0.3446 <i>0.470</i>	2.8716 <i>6.463</i>	-8.7470*** <i>2.577</i>	0.7974 <i>2.535</i>	-0.4285 <i>0.991</i>	-0.0891 <i>0.920</i>	0.8695 <i>0.913</i>	1.9283 <i>1.187</i>	-2.3520** <i>0.931</i>	-2.8159*** <i>0.990</i>	-3.9849** <i>1.943</i>	-0.9885 <i>0.928</i>	-0.0891 <i>0.920</i>	0.8695 <i>0.913</i>	0.2263 <i>0.694</i>
tau2010	0.9781*** <i>0.212</i>	4.9296 <i>7.175</i>	2.2007 <i>1.801</i>	1.4472 <i>1.088</i>	1.1748** <i>0.537</i>	1.6749*** <i>0.330</i>	1.3332*** <i>0.429</i>	0.4456 <i>0.719</i>	-1.0818 <i>0.733</i>	-1.6063** <i>0.744</i>	-2.2890** <i>1.146</i>	1.5734*** <i>0.503</i>	1.6749*** <i>0.330</i>	1.3332*** <i>0.429</i>	-0.2483 <i>0.364</i>
tau2011	0.5948*** <i>0.207</i>	-0.5504 <i>7.707</i>	1.9403 <i>1.543</i>	0.721 <i>1.045</i>	0.9028 <i>0.596</i>	1.3955*** <i>0.309</i>	0.7653** <i>0.380</i>	0.3767 <i>0.816</i>	-1.6642** <i>0.773</i>	-1.7131** <i>0.718</i>	-4.2069*** <i>1.009</i>	1.1656*** <i>0.435</i>	1.3955*** <i>0.309</i>	0.7653** <i>0.380</i>	-0.5751 <i>0.427</i>
tau2012	0.0142 <i>0.301</i>	2.6038 <i>6.312</i>	-2.5829* <i>1.554</i>	0.663 <i>1.241</i>	0.0521 <i>0.851</i>	0.0764 <i>0.443</i>	0.482 <i>0.550</i>	0.4475 <i>0.809</i>	-2.0101** <i>0.801</i>	-2.4492*** <i>0.636</i>	-4.3061*** <i>1.284</i>	0.0509 <i>0.566</i>	0.0764 <i>0.443</i>	0.482 <i>0.550</i>	-0.5985 <i>0.445</i>
tau2013	0.8802** <i>0.418</i>	-4.4128 <i>5.712</i>	-2.3072 <i>2.475</i>	1.4503 <i>0.941</i>	0.742 <i>1.206</i>	1.3466* <i>0.739</i>	1.3091** <i>0.665</i>	1.1649 <i>1.284</i>	-1.6022** <i>0.775</i>	-1.2909* <i>0.752</i>	-2.3063** <i>1.170</i>	0.9697 <i>0.780</i>	1.3466* <i>0.739</i>	1.3091** <i>0.665</i>	0.1012 <i>0.655</i>
CONSTANT	-0.4865 <i>3.658</i>	-18.9360** <i>9.225</i>	15.5794 <i>25.932</i>	-16.0142 <i>26.993</i>	3.1387 <i>9.447</i>	0.5294 <i>10.373</i>	-3.5198 <i>5.293</i>	-0.5613 <i>7.403</i>	12.7308 <i>9.013</i>	8.8718 <i>15.066</i>	19.5783 <i>12.394</i>	-1.2177 <i>7.815</i>	0.5294 <i>10.373</i>	-3.5198 <i>5.293</i>	-1.2024 <i>8.628</i>
N	22603	61	638	995	3208	5823	6112	3387	1201	921	257	4902	5823	6112	5766
N(g)	4564	25	155	216	679	1161	1175	679	236	190	48	1075	1161	1175	1153
AR2-p	0.2171	0.2847	0.6984	0.3259	0.6966	0.3206	0.1903	0.9917	0.5614	0.8742	0.6775	0.6056	0.3206	0.1903	0.9331
J	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Hansen-df	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Hansen-p	0.1519	0.5588	0.2217	0.1561	0.3263	0.4203	0.699	0.7073	0.1713	0.5156	0.0123	0.5589	0.4203	0.699	0.4637

Table 5c – Undesired effects on Loan Impairments (Different estimates of Dynamic Panel Model upon the Total Sample)

Variable	Mod 1	Mod 2	Mod 3	Mod 4	Mod 5	Mod 6
L.LOANIMPAIR_TAENL	0.8070*** <i>0.149</i>	0.7953*** <i>0.151</i>	0.8039*** <i>0.147</i>	0.8030*** <i>0.146</i>	0.7939*** <i>0.150</i>	0.7945*** <i>0.150</i>
NLOANS	0.014 <i>0.009</i>	0.0115 <i>0.010</i>	0.0163* <i>0.009</i>	0.0206*** <i>0.008</i>	0.0145 <i>0.009</i>	0.0164* <i>0.009</i>
SIZE	-0.0209 <i>0.098</i>	-0.0124 <i>0.094</i>	-0.0076 <i>0.095</i>	-0.002 <i>0.094</i>	0.002 <i>0.093</i>	0.0033 <i>0.093</i>
EQUITY	0.0135 <i>0.039</i>	0.009 <i>0.041</i>	0.0214 <i>0.042</i>	0.022 <i>0.042</i>	0.0173 <i>0.044</i>	0.0177 <i>0.044</i>
NET_INCOME	-0.0012* <i>0.001</i>	-0.0012* <i>0.001</i>	-0.0013* <i>0.001</i>	-0.0013* <i>0.001</i>	-0.0013* <i>0.001</i>	-0.0013* <i>0.001</i>
NPL_SYSTEM	-0.2417 <i>0.710</i>	-0.1163 <i>0.677</i>	-0.1062 <i>0.694</i>	-0.1058 <i>0.694</i>	-0.0027 <i>0.662</i>	-0.014 <i>0.665</i>
GOVERNMENT_DEBT	-0.01 <i>0.018</i>	-0.0143 <i>0.017</i>	-0.0142 <i>0.017</i>	-0.0141 <i>0.017</i>	-0.0176 <i>0.017</i>	-0.0172 <i>0.017</i>
GDP_GROWTH	-3.7644 <i>4.573</i>	-3.0583 <i>4.342</i>	-2.9102 <i>4.448</i>	-2.8768 <i>4.437</i>	-2.3451 <i>4.239</i>	-2.3973 <i>4.260</i>
tau2009	-29.5562 <i>35.720</i>	-24.1177 <i>33.916</i>	-22.89 <i>34.733</i>	-22.6695 <i>34.666</i>	-18.562 <i>33.138</i>	-18.9778 <i>33.303</i>
tau2010	-0.6038 <i>1.780</i>	-0.9239 <i>1.716</i>	-0.8111 <i>1.791</i>	-0.8589 <i>1.773</i>	-1.1334 <i>1.663</i>	-1.1192 <i>1.673</i>
tau2011	-3.0804*** <i>0.682</i>	-3.2164*** <i>0.665</i>	-3.1787*** <i>0.679</i>	-3.2239*** <i>0.663</i>	-3.3350*** <i>0.620</i>	-3.3379*** <i>0.622</i>
tau2012	-8.3409 <i>9.484</i>	-6.9567 <i>8.993</i>	-6.5851 <i>9.209</i>	-6.5628 <i>9.206</i>	-5.5078 <i>8.799</i>	-5.6256 <i>8.848</i>
tau2013	-8.6055 <i>9.104</i>	-7.3534 <i>8.658</i>	-6.9199 <i>8.837</i>	-6.9076 <i>8.840</i>	-5.9412 <i>8.469</i>	-6.0521 <i>8.515</i>
ASSETS_GROWTH		-0.0328** <i>0.014</i>			-0.0312** <i>0.014</i>	-0.0289** <i>0.013</i>
LOANS_GROWTH			-0.0152** <i>0.006</i>		-0.0068* <i>0.004</i>	
LOANSP_GROWTH				-0.0444** <i>0.019</i>		-0.0185 <i>0.013</i>
CONSTANT	11.267 <i>13.531</i>	9.9392 <i>13.036</i>	8.9016 <i>13.192</i>	8.5923 <i>13.099</i>	7.7765 <i>12.793</i>	7.7892 <i>12.804</i>
N	23602	23549	23379	23379	23376	23376
N(g)	4585	4581	4552	4552	4552	4552
AR2-p	0.2326	0.1564	0.1567	0.1511	0.1143	0.1167
J	23	24	24	24	25	25
Hansen-df	9	9	9	9	9	9
Hansen-p	0.4792	0.4738	0.4748	0.4641	0.468	0.4641

* for p<.10, ** for p<.05, and *** for p<.01

Table 5d – Undesired effects on Loan Impairments (Estimates upon different Sub-Group of Banks)

Variable	ALL	SZ 1	SZ 2	SZ 3	SZ 4	SZ 5	SZ 6	SZ 7	SZ 8	SZ 9	SZ 10	SQ 1	SQ 2	SQ 3	SQ 4
L.LOANIMPAIR_TAENL	0.8039*** <i>0.147</i>	1.6447*** <i>0.251</i>	0.3418** <i>0.144</i>	1.7735** <i>0.773</i>	0.4941*** <i>0.111</i>	0.3618* <i>0.188</i>	0.7913 <i>0.494</i>	0.5003*** <i>0.130</i>	0.161 <i>0.144</i>	0.5737*** <i>0.127</i>	0.5759*** <i>0.056</i>	0.2422 <i>0.327</i>	0.3618* <i>0.188</i>	0.7913 <i>0.494</i>	0.3691*** <i>0.127</i>
NLOANS	0.0163* <i>0.009</i>	0.0278 <i>0.024</i>	-0.0231 <i>0.145</i>	0.0406 <i>0.075</i>	0.004 <i>0.019</i>	0.0111 <i>0.017</i>	0.0382*** <i>0.015</i>	0.0429*** <i>0.014</i>	0.0451*** <i>0.011</i>	0.0480*** <i>0.017</i>	0.0735** <i>0.032</i>	0.0184 <i>0.026</i>	0.0111 <i>0.017</i>	0.0382*** <i>0.015</i>	0.0434*** <i>0.011</i>
SIZE	-0.0076 <i>0.095</i>	0.0339 <i>1.478</i>	-0.7889 <i>2.843</i>	-12.4264 <i>10.388</i>	3.7930** <i>1.887</i>	-0.5866 <i>0.808</i>	-1.3771 <i>1.054</i>	0.2102 <i>0.392</i>	0.0323 <i>0.802</i>	-0.1357 <i>0.334</i>	0.4052 <i>0.358</i>	-0.387 <i>1.470</i>	-0.5866 <i>0.808</i>	-1.3771 <i>1.054</i>	0.1567 <i>0.175</i>
EQUITY	0.0214 <i>0.042</i>	0.0248 <i>0.070</i>	0.1936 <i>0.126</i>	-0.0184 <i>0.207</i>	0.0224 <i>0.072</i>	-0.0663 <i>0.086</i>	0.0205 <i>0.028</i>	-0.0171 <i>0.043</i>	0.0169 <i>0.071</i>	0.003 <i>0.056</i>	-0.4187 <i>0.264</i>	0.1590** <i>0.080</i>	-0.0663 <i>0.086</i>	0.0205 <i>0.028</i>	0.0159 <i>0.047</i>
NET_INCOME	-0.0013* <i>0.001</i>	-0.1093*** <i>0.006</i>	-0.0246 <i>0.031</i>	-0.1181 <i>0.080</i>	-0.0003* <i>0.000</i>	-0.0007 <i>0.001</i>	-0.0089 <i>0.007</i>	-0.0006 <i>0.001</i>	-0.0027* <i>0.002</i>	-0.0012 <i>0.001</i>	-0.0050* <i>0.003</i>	-0.0015 <i>0.002</i>	-0.0007 <i>0.001</i>	-0.0089 <i>0.007</i>	-0.0011 <i>0.001</i>
NPL_SYSTEM	-0.1062 <i>0.694</i>	-0.725 <i>1.185</i>	-1.0434 <i>3.089</i>	0.5796 <i>2.977</i>	-0.8764 <i>0.811</i>	-0.025 <i>0.616</i>	1.1860* <i>0.700</i>	0.9133** <i>0.365</i>	0.7525*** <i>0.247</i>	0.3628 <i>0.292</i>	0.8231*** <i>0.239</i>	0.5355 <i>2.112</i>	-0.025 <i>0.616</i>	1.1860* <i>0.700</i>	0.7350*** <i>0.222</i>
GOVERNMENT_DEBT	-0.0142 <i>0.017</i>	0.0086 <i>0.099</i>	0.0313 <i>0.246</i>	0.0635 <i>0.246</i>	-0.0166 <i>0.024</i>	-0.0670*** <i>0.025</i>	-0.0718** <i>0.029</i>	-0.0507** <i>0.020</i>	-0.0348* <i>0.020</i>	0.0009 <i>0.017</i>	-0.0617** <i>0.024</i>	-0.0669 <i>0.094</i>	-0.0670*** <i>0.025</i>	-0.0718** <i>0.029</i>	-0.0393*** <i>0.012</i>
GDP_GROWTH	-2.9102 <i>4.448</i>	-1.9748 <i>1.391</i>	-5.6899 <i>14.265</i>	3.7345 <i>10.988</i>	-7.6675* <i>4.370</i>	-4.4192 <i>2.991</i>	4.0365 <i>5.403</i>	2.539 <i>3.283</i>	1.1463 <i>2.395</i>	0.7663 <i>0.479</i>	1.1668 <i>0.840</i>	-1.037 <i>9.559</i>	-4.4192 <i>2.991</i>	4.0365 <i>5.403</i>	0.5794 <i>2.514</i>
LOANS_GROWTH	-0.0152** <i>0.006</i>	-0.0139 <i>0.020</i>	-0.0209 <i>0.025</i>	0.0278 <i>0.054</i>	-0.0147* <i>0.009</i>	-0.0165 <i>0.010</i>	-0.0065 <i>0.010</i>	-0.0106* <i>0.006</i>	-0.0096 <i>0.015</i>	0.0005 <i>0.005</i>	0.0152* <i>0.008</i>	-0.0144** <i>0.007</i>	-0.0165 <i>0.010</i>	-0.0065 <i>0.010</i>	-0.01 <i>0.008</i>
tau2009	-22.89 <i>34.733</i>	-11.8106* <i>6.644</i>	-44.3174 <i>107.524</i>	29.3694 <i>91.347</i>	-57.1064* <i>32.370</i>	-31.4004 <i>21.998</i>	31.2958 <i>41.339</i>	21.7567 <i>29.869</i>	10.3226 <i>17.411</i>	8.1452** <i>3.820</i>	9.0437* <i>5.086</i>	-9.0834 <i>72.339</i>	-31.4004 <i>21.998</i>	31.2958 <i>41.339</i>	5.2093 <i>21.796</i>
tau2010	-0.8111 <i>1.791</i>	11.0425* <i>6.509</i>	-2.9557 <i>8.985</i>	-6.7351 <i>4.215</i>	6.1286 <i>4.128</i>	3.6456 <i>2.419</i>	-4.0918 <i>4.272</i>	-0.9143 <i>2.787</i>	0.538 <i>1.169</i>	0.3843 <i>0.742</i>	-1.7271*** <i>0.641</i>	-1.3951 <i>7.200</i>	3.6456 <i>2.419</i>	-4.0918 <i>4.272</i>	-1.0737 <i>2.049</i>
tau2011	-3.1787*** <i>0.679</i>	6.7966 <i>5.871</i>	-7.3086 <i>6.155</i>	-4.0311 <i>4.404</i>	2.3113 <i>2.702</i>	0.1846 <i>1.447</i>	-5.4145** <i>2.251</i>	-3.5905 <i>3.042</i>	-0.2045 <i>1.128</i>	0.5073 <i>0.636</i>	-0.9944** <i>0.480</i>	-3.2511 <i>4.201</i>	0.1846 <i>1.447</i>	-5.4145** <i>2.251</i>	-2.9774 <i>2.280</i>
tau2012	-6.5851 <i>9.209</i>	0.7848 <i>2.430</i>	-15.4068 <i>28.726</i>	7.3263 <i>28.306</i>	-15.5391* <i>8.031</i>	-7.8818 <i>5.172</i>	8.3842 <i>11.727</i>	5.7352 <i>9.799</i>	2.7928 <i>5.295</i>	3.6827*** <i>1.409</i>	1.5884 <i>1.390</i>	-5.1338 <i>17.750</i>	-7.8818 <i>5.172</i>	8.3842 <i>11.727</i>	0.6017 <i>7.519</i>
tau2013	-6.9199 <i>8.837</i>	1.2275 <i>3.289</i>	-14.2363 <i>28.604</i>	12.9037 <i>28.612</i>	-15.2242** <i>7.664</i>	-7.7626 <i>4.983</i>	7.2415 <i>10.865</i>	4.7048 <i>9.599</i>	2.506 <i>4.759</i>	0.2014 <i>1.326</i>	1.2673 <i>1.473</i>	-4.5174 <i>17.272</i>	-7.7626 <i>4.983</i>	7.2415 <i>10.865</i>	-0.2895 <i>7.050</i>
CONSTANT	8.9016 <i>13.192</i>	-0.3979 <i>12.812</i>	26.6429 <i>37.902</i>	119.0371 <i>96.115</i>	-23.2619 <i>14.898</i>	23.5236*** <i>8.758</i>	10.9654 <i>7.071</i>	-8.5565 <i>14.686</i>	-2.9981 <i>17.276</i>	-1.5403 <i>5.748</i>	-8.1428 <i>7.833</i>	11.2804 <i>8.950</i>	23.5236*** <i>8.758</i>	10.9654 <i>7.071</i>	-2.724 <i>10.550</i>
N	23379	48	595	1003	3336	6191	6293	3478	1221	950	264	4982	6191	6293	5913
N(g)	4552	19	145	213	677	1167	1181	678	236	188	48	1054	1167	1181	1150
AR2-p	0.1567	0.4965	0.3711	0.6004	0.2992	0.8594	0.8154	0.8225	0.73	0.0695	0.8517	0.8582	0.8594	0.8154	0.6777
J	24	23	24	24	24	24	24	24	24	24	24	24	24	24	24
Hansen-df	9	8	9	9	9	9	9	9	9	9	9	9	9	9	9
Hansen-p	0.4748	0.9343	0.2733	0.7731	0.2006	0.2899	0.1382	0.1698	0.0044	0.0386	0.0371	0.6286	0.2899	0.1382	0.0043

Table 6a – Spillover effects on Loans (Different estimates of Dynamic Panel Model upon Size Q3 Banks)

Variable	Mod 1	Mod 2	Mod 3	Mod 4	Mod 5	Mod 6	Mod 7	Mod 8	Mod 9	Mod 10	Mod 11	Mod 12
L.NLOANS	1.0850*** <i>0.103</i>	1.0884*** <i>0.106</i>	1.0800*** <i>0.104</i>	1.0831*** <i>0.103</i>	1.0951*** <i>0.106</i>	1.0804*** <i>0.102</i>	1.0851*** <i>0.103</i>	1.0870*** <i>0.106</i>	1.0789*** <i>0.103</i>	1.0853*** <i>0.103</i>	1.0853*** <i>0.105</i>	1.0933*** <i>0.105</i>
SIZE	-0.1099 <i>0.296</i>	-0.1093 <i>0.296</i>	-0.1126 <i>0.292</i>	-0.1111 <i>0.293</i>	-0.0964 <i>0.301</i>	-0.1056 <i>0.292</i>	-0.1033 <i>0.296</i>	-0.098 <i>0.294</i>	-0.0995 <i>0.290</i>	-0.0763 <i>0.294</i>	-0.0712 <i>0.289</i>	-0.0305 <i>0.295</i>
EQUITY	-0.0591 <i>0.110</i>	-0.0577 <i>0.111</i>	-0.0634 <i>0.110</i>	-0.0601 <i>0.110</i>	-0.0565 <i>0.110</i>	-0.0655 <i>0.110</i>	-0.0615 <i>0.110</i>	-0.0619 <i>0.108</i>	-0.0645 <i>0.110</i>	-0.0601 <i>0.110</i>	-0.0694 <i>0.108</i>	-0.0628 <i>0.107</i>
L.EQUITY	0.1159 <i>0.115</i>	0.1165 <i>0.115</i>	0.1176 <i>0.115</i>	0.1156 <i>0.115</i>	0.1197 <i>0.115</i>	0.1188 <i>0.115</i>	0.1162 <i>0.115</i>	0.1198 <i>0.113</i>	0.1169 <i>0.115</i>	0.115 <i>0.115</i>	0.1249 <i>0.113</i>	0.121 <i>0.112</i>
NPL_SYSTEM	-0.4697*** <i>0.085</i>	-0.4691*** <i>0.084</i>	-0.4617*** <i>0.086</i>	-0.4644*** <i>0.090</i>	-0.4403*** <i>0.084</i>	-0.4520*** <i>0.084</i>	-0.4474*** <i>0.089</i>	-0.4332*** <i>0.085</i>	-0.4518*** <i>0.083</i>	-0.4538*** <i>0.090</i>	-0.3813*** <i>0.080</i>	-0.3624*** <i>0.090</i>
GOVERNMENT_DEBT	0.0174 <i>0.016</i>	0.0171 <i>0.016</i>	0.0179 <i>0.015</i>	0.0176 <i>0.015</i>	0.0127 <i>0.017</i>	0.0183 <i>0.015</i>	0.017 <i>0.015</i>	0.0114 <i>0.016</i>	0.0186 <i>0.015</i>	0.0173 <i>0.015</i>	0.0102 <i>0.016</i>	0.007 <i>0.016</i>
GDP_GROWTH	0.0862 <i>0.118</i>	0.0884 <i>0.120</i>	0.0752 <i>0.121</i>	0.0864 <i>0.117</i>	0.0519 <i>0.113</i>	0.123 <i>0.115</i>	0.1307 <i>0.109</i>	0.0265 <i>0.118</i>	0.138 <i>0.123</i>	0.1729 <i>0.111</i>	0.0987 <i>0.120</i>	0.1429 <i>0.113</i>
CAPITAL_SYSTEM	-0.1484 <i>0.128</i>	-0.154 <i>0.134</i>	-0.1465 <i>0.126</i>	-0.148 <i>0.124</i>	-0.1344 <i>0.127</i>	-0.1601 <i>0.125</i>	-0.1736 <i>0.120</i>	-0.1036 <i>0.136</i>	-0.1594 <i>0.127</i>	-0.1889 <i>0.123</i>	-0.1187 <i>0.134</i>	-0.1616 <i>0.132</i>
ASSETS_GROWTH	-0.0548*** <i>0.013</i>	-0.0546*** <i>0.013</i>	-0.0552*** <i>0.013</i>	-0.0550*** <i>0.013</i>	-0.0523*** <i>0.013</i>	-0.0561*** <i>0.013</i>	-0.0564*** <i>0.013</i>	-0.0521*** <i>0.013</i>	-0.0560*** <i>0.013</i>	-0.0564*** <i>0.013</i>	-0.0526*** <i>0.012</i>	-0.0530*** <i>0.012</i>
tau2009	0.8401 <i>0.906</i>	0.7598 <i>0.778</i>	0.9474 <i>0.868</i>	0.9192 <i>0.832</i>	0.2173 <i>0.823</i>	1.3076 <i>0.866</i>	1.4278* <i>0.779</i>	0.4206 <i>0.764</i>	1.3155 <i>0.873</i>	1.4379* <i>0.782</i>	0.8525 <i>0.763</i>	1.0083 <i>0.732</i>
tau2010	1.3121*** <i>0.427</i>	1.2364*** <i>0.418</i>	1.5028*** <i>0.409</i>	1.3785*** <i>0.383</i>	0.9939** <i>0.427</i>	1.3010*** <i>0.424</i>	1.3767*** <i>0.417</i>	1.2918*** <i>0.411</i>	1.1400*** <i>0.402</i>	0.9182** <i>0.397</i>	0.7532* <i>0.421</i>	0.4561 <i>0.418</i>
tau2011	0.7534** <i>0.380</i>	0.6806* <i>0.361</i>	0.8868** <i>0.360</i>	0.8201** <i>0.341</i>	0.4818 <i>0.386</i>	0.8274** <i>0.375</i>	0.8787** <i>0.362</i>	0.7837** <i>0.356</i>	0.7350** <i>0.356</i>	0.4964 <i>0.357</i>	0.5521 <i>0.358</i>	0.2267 <i>0.369</i>
tau2012	0.4564 <i>0.547</i>	0.3781 <i>0.425</i>	0.6086 <i>0.492</i>	0.5425 <i>0.444</i>	0.0542 <i>0.505</i>	0.7343 <i>0.524</i>	0.8189* <i>0.458</i>	0.3418 <i>0.423</i>	0.6667 <i>0.493</i>	0.5317 <i>0.446</i>	0.4418 <i>0.417</i>	0.2752 <i>0.413</i>
tau2013	1.2717* <i>0.663</i>	1.1420** <i>0.465</i>	1.4835** <i>0.592</i>	1.3772*** <i>0.528</i>	0.6455 <i>0.600</i>	1.5906** <i>0.640</i>	1.6892*** <i>0.556</i>	1.1309** <i>0.464</i>	1.4819** <i>0.589</i>	1.3014** <i>0.533</i>	1.0661** <i>0.459</i>	0.7905* <i>0.472</i>
AGMS_SIZE_Q4		-0.0152 <i>0.044</i>						0.0872 <i>0.056</i>			0.0806 <i>0.058</i>	0.0757 <i>0.057</i>
LGMS_SIZE_Q4			0.0321 <i>0.024</i>						-0.0253 <i>0.033</i>		-0.0439 <i>0.032</i>	
LPGMS_SIZE_Q4				0.0266 <i>0.059</i>						-0.2024** <i>0.079</i>		-0.2671*** <i>0.085</i>
AGMS_TOTAL					-0.1094*** <i>0.038</i>			-0.1609*** <i>0.049</i>			-0.2332*** <i>0.055</i>	-0.2644*** <i>0.057</i>
LGMS_TOTAL						0.0786*** <i>0.023</i>			0.0987*** <i>0.032</i>		0.1801*** <i>0.038</i>	
LPGMS_TOTAL							0.1459** <i>0.063</i>			0.3194*** <i>0.076</i>		0.5435*** <i>0.085</i>
CONSTANT	-3.2276 <i>5.204</i>	-3.2766 <i>5.177</i>	-3.2175 <i>5.115</i>	-3.2564 <i>5.066</i>	-2.9227 <i>5.280</i>	-3.7199 <i>5.094</i>	-4.0054 <i>5.025</i>	-2.7526 <i>5.202</i>	-3.6813 <i>5.124</i>	-4.1296 <i>5.059</i>	-3.4643 <i>5.144</i>	-4.0931 <i>5.173</i>
N	6112	6112	6112	6112	6112	6112	6112	6112	6112	6112	6112	6112
N(g)	1175	1175	1175	1175	1175	1175	1175	1175	1175	1175	1175	1175
AR2-p	0.1894	0.1938	0.1956	0.1897	0.191	0.1697	0.1677	0.2121	0.1704	0.1622	0.1794	0.1753
J	25	26	26	26	26	26	26	27	27	27	29	29
Hansen-df	10	10	10	10	10	10	10	10	10	10	10	10
Hansen-p	0.827	0.8513	0.7983	0.8251	0.8995	0.7833	0.7933	0.8809	0.7954	0.7299	0.9004	0.9047

* for p<.10, ** for p<.05, and *** for p<.01

Table 6b – Spillover effects on Loans (Different estimates of Dynamic Panel Model upon Size Q2 Banks)

Variable	Mod 1	Mod 2	Mod 3	Mod 4	Mod 5	Mod 6	Mod 7	Mod 8	Mod 9	Mod 10	Mod 11	Mod 12	Mod 13	Mod 14	Mod 15
L.NLOANS	1.0291*** <i>0.112</i>	1.0281*** <i>0.111</i>	1.0277*** <i>0.112</i>	1.0259*** <i>0.112</i>	1.0284*** <i>0.112</i>	1.0294*** <i>0.111</i>	1.0313*** <i>0.111</i>	1.0579*** <i>0.106</i>	1.0190*** <i>0.113</i>	1.0249*** <i>0.114</i>	1.0282*** <i>0.110</i>	1.0215*** <i>0.112</i>	1.0283*** <i>0.111</i>	1.0252*** <i>0.111</i>	1.0376*** <i>0.113</i>
SIZE	-0.341 <i>0.446</i>	-0.3476 <i>0.459</i>	-0.3695 <i>0.451</i>	-0.3768 <i>0.453</i>	-0.3396 <i>0.445</i>	-0.324 <i>0.447</i>	-0.3208 <i>0.441</i>	-0.2896 <i>0.446</i>	-0.3323 <i>0.440</i>	-0.318 <i>0.460</i>	-0.3434 <i>0.451</i>	-0.2962 <i>0.450</i>	-0.2733 <i>0.457</i>	-0.2514 <i>0.450</i>	-0.211 <i>0.457</i>
EQUITY	-0.3216** <i>0.157</i>	-0.3221** <i>0.157</i>	-0.3237** <i>0.157</i>	-0.3250** <i>0.156</i>	-0.3219** <i>0.157</i>	-0.3273** <i>0.158</i>	-0.3277** <i>0.157</i>	-0.3172** <i>0.161</i>	-0.3321** <i>0.156</i>	-0.3315** <i>0.155</i>	-0.3220** <i>0.158</i>	-0.3302** <i>0.156</i>	-0.3306** <i>0.155</i>	-0.3264** <i>0.158</i>	-0.3243** <i>0.157</i>
L.EQUITY	0.3371 <i>0.206</i>	0.3368* <i>0.204</i>	0.3375* <i>0.205</i>	0.3359 <i>0.205</i>	0.3368 <i>0.206</i>	0.3401* <i>0.206</i>	0.3401* <i>0.205</i>	0.3484* <i>0.206</i>	0.3380* <i>0.204</i>	0.3382* <i>0.205</i>	0.3365 <i>0.205</i>	0.3381* <i>0.204</i>	0.3402* <i>0.204</i>	0.3366 <i>0.206</i>	0.3394 <i>0.207</i>
NPL_SYSTEM	-0.6784*** <i>0.133</i>	-0.6789*** <i>0.123</i>	-0.6725*** <i>0.135</i>	-0.6550*** <i>0.145</i>	-0.6822*** <i>0.131</i>	-0.6764*** <i>0.133</i>	-0.6740*** <i>0.134</i>	-0.7091*** <i>0.124</i>	-0.6528*** <i>0.134</i>	-0.6555*** <i>0.138</i>	-0.6808*** <i>0.127</i>	-0.6583*** <i>0.134</i>	-0.6752*** <i>0.142</i>	-0.6086*** <i>0.128</i>	-0.6101*** <i>0.145</i>
GOVERNMENT_DEBT	0.0577*** <i>0.009</i>	0.0578*** <i>0.009</i>	0.0574*** <i>0.009</i>	0.0563*** <i>0.009</i>	0.0582*** <i>0.009</i>	0.0600*** <i>0.009</i>	0.0602*** <i>0.009</i>	0.0588*** <i>0.008</i>	0.0582*** <i>0.008</i>	0.0593*** <i>0.009</i>	0.0580*** <i>0.009</i>	0.0584*** <i>0.008</i>	0.0613*** <i>0.009</i>	0.0540*** <i>0.009</i>	0.0554*** <i>0.009</i>
GDP_GROWTH	-0.0684 <i>0.118</i>	-0.0688 <i>0.117</i>	-0.0799 <i>0.124</i>	-0.0658 <i>0.117</i>	-0.0696 <i>0.119</i>	-0.0423 <i>0.115</i>	-0.0233 <i>0.110</i>	-0.0421 <i>0.114</i>	-0.0239 <i>0.113</i>	-0.0077 <i>0.110</i>	-0.0729 <i>0.124</i>	-0.0049 <i>0.118</i>	0.008 <i>0.109</i>	-0.0202 <i>0.116</i>	-0.0112 <i>0.116</i>
CAPITAL_SYSTEM	-0.0547 <i>0.208</i>	-0.0519 <i>0.213</i>	-0.0548 <i>0.207</i>	-0.0537 <i>0.206</i>	-0.055 <i>0.207</i>	-0.063 <i>0.205</i>	-0.0629 <i>0.205</i>	-0.1061 <i>0.196</i>	-0.0557 <i>0.208</i>	-0.0741 <i>0.206</i>	-0.0519 <i>0.216</i>	-0.0591 <i>0.205</i>	-0.0806 <i>0.204</i>	-0.0446 <i>0.220</i>	-0.0761 <i>0.218</i>
ASSETS_GROWTH	-0.0364** <i>0.017</i>	-0.0364** <i>0.017</i>	-0.0365** <i>0.017</i>	-0.0367** <i>0.017</i>	-0.0365** <i>0.017</i>	-0.0373** <i>0.017</i>	-0.0372** <i>0.017</i>	-0.0366** <i>0.017</i>	-0.0384** <i>0.017</i>	-0.0386** <i>0.017</i>	-0.0364** <i>0.017</i>	-0.0385** <i>0.017</i>	-0.0388** <i>0.017</i>	-0.0374** <i>0.017</i>	-0.0373** <i>0.017</i>
tau2009	-0.0891 <i>0.920</i>	-0.0656 <i>0.791</i>	-0.0561 <i>0.906</i>	0.1317 <i>0.834</i>	-0.0855 <i>0.914</i>	0.1158 <i>0.882</i>	0.3221 <i>0.818</i>	0.1121 <i>0.853</i>	0.426 <i>0.867</i>	0.5722 <i>0.831</i>	-0.087 <i>0.831</i>	0.4604 <i>0.868</i>	0.5299 <i>0.781</i>	0.2694 <i>0.777</i>	0.2517 <i>0.782</i>
tau2010	1.6749*** <i>0.330</i>	1.6966*** <i>0.331</i>	1.8107*** <i>0.332</i>	1.8649*** <i>0.322</i>	1.7070*** <i>0.343</i>	1.6039*** <i>0.336</i>	1.6536*** <i>0.334</i>	1.6772*** <i>0.342</i>	1.5784*** <i>0.332</i>	1.6330*** <i>0.334</i>	1.7253*** <i>0.347</i>	1.4177*** <i>0.330</i>	1.4263*** <i>0.326</i>	1.2093*** <i>0.352</i>	1.1382*** <i>0.381</i>
tau2011	1.3955*** <i>0.309</i>	1.4154*** <i>0.282</i>	1.4776*** <i>0.286</i>	1.5895*** <i>0.277</i>	1.4211*** <i>0.308</i>	1.4344*** <i>0.303</i>	1.5001*** <i>0.288</i>	1.3974*** <i>0.308</i>	1.4572*** <i>0.301</i>	1.4900*** <i>0.296</i>	1.4365*** <i>0.289</i>	1.3674*** <i>0.285</i>	1.3228*** <i>0.276</i>	1.2406*** <i>0.291</i>	1.0929*** <i>0.308</i>
tau2012	0.0764 <i>0.443</i>	0.0957 <i>0.351</i>	0.1141 <i>0.424</i>	0.284 <i>0.367</i>	0.0904 <i>0.429</i>	0.1809 <i>0.419</i>	0.2883 <i>0.380</i>	0.177 <i>0.401</i>	0.3557 <i>0.409</i>	0.4761 <i>0.376</i>	0.0929 <i>0.402</i>	0.3516 <i>0.376</i>	0.3679 <i>0.348</i>	0.1576 <i>0.350</i>	0.0877 <i>0.367</i>
tau2013	1.3466* <i>0.739</i>	1.3892*** <i>0.516</i>	1.4624** <i>0.683</i>	1.6627*** <i>0.603</i>	1.3778* <i>0.715</i>	1.5592** <i>0.699</i>	1.7274*** <i>0.621</i>	1.4977** <i>0.671</i>	1.7648** <i>0.703</i>	1.9216*** <i>0.649</i>	1.3990*** <i>0.540</i>	1.6829** <i>0.666</i>	1.7602*** <i>0.569</i>	1.4172*** <i>0.520</i>	1.3400** <i>0.543</i>
AGMS_SIZE_Q4		0.0057 <i>0.049</i>									0.0082 <i>0.056</i>			0.0433 <i>0.069</i>	0.0417 <i>0.062</i>
LGMS_SIZE_Q4			0.023 <i>0.026</i>									-0.0264 <i>0.022</i>		-0.0376 <i>0.028</i>	
LPGMS_SIZE_Q4				0.0831 <i>0.079</i>									-0.0855 <i>0.067</i>		-0.1075 <i>0.077</i>
AGMS_SIZE_Q3					0.0057 <i>0.025</i>						0.0098 <i>0.041</i>			0.0602 <i>0.046</i>	0.0653 <i>0.049</i>
LGMS_SIZE_Q3						0.0477* <i>0.025</i>						-0.0077 <i>0.032</i>		-0.006 <i>0.032</i>	
LPGMS_SIZE_Q3							0.1232** <i>0.056</i>						0.0181 <i>0.061</i>		0.0014 <i>0.066</i>
AGMS_TOTAL								0.0004 <i>0.050</i>			-0.0124 <i>0.087</i>			-0.2005** <i>0.101</i>	-0.2463** <i>0.105</i>
LGMS_TOTAL									0.1095*** <i>0.036</i>			0.1279*** <i>0.044</i>		0.1717*** <i>0.047</i>	
LPGMS_TOTAL										0.2119*** <i>0.074</i>			0.2506*** <i>0.076</i>		0.3696*** <i>0.091</i>
CONSTANT	0.5294 <i>10.373</i>	0.6206 <i>10.350</i>	0.8241 <i>10.440</i>	0.8023 <i>10.370</i>	0.4853 <i>10.309</i>	-0.2246 <i>10.315</i>	-0.7053 <i>10.029</i>	-1.7678 <i>9.830</i>	0.0821 <i>10.252</i>	-0.6247 <i>10.411</i>	0.5475 <i>10.413</i>	-0.4164 <i>10.180</i>	-1.3299 <i>10.180</i>	-0.608 <i>10.380</i>	-1.751 <i>10.383</i>
N(g)	1161	1161	1161	1161	1161	1161	1161	1161	1161	1161	1161	1161	1161	1161	1161
AR2-p	0.3206	0.3272	0.3282	0.3303	0.3257	0.3091	0.3009	0.3322	0.3262	0.3187	0.3261	0.3242	0.3136	0.2889	0.2648
J	22	23	23	23	23	23	23	24	23	23	25	25	25	28	28
Hansen-df	7	7	7	7	7	7	7	8	7	7	7	7	7	7	7
Hansen-p	0.4203	0.4133	0.3556	0.3934	0.4079	0.5309	0.6887	0.307	0.5235	0.6119	0.4126	0.4862	0.6408	0.3682	0.5044

* for p<.10, ** for p<.05, and *** for p<.01

Table 6c – Spillover effects on Loan Impairments (Different estimates of Dynamic Panel Model upon Size Q3 Banks)

Variable	Mod 1	Mod 2	Mod 3	Mod 4	Mod 5	Mod 6	Mod 7	Mod 8	Mod 9	Mod 10	Mod 11	Mod 12
L.LOANIMPAIR_TAENL	0.7913 <i>0.494</i>	0.7680* <i>0.456</i>	0.7584* <i>0.460</i>	0.7651* <i>0.458</i>	0.7651* <i>0.458</i>	0.7644* <i>0.458</i>	0.7663* <i>0.458</i>	0.7638* <i>0.457</i>	0.7587* <i>0.461</i>	0.8097** <i>0.405</i>	0.7533 <i>0.464</i>	0.7598* <i>0.458</i>
NLOANS	0.0382*** <i>0.015</i>	0.0302 <i>0.022</i>	0.0319 <i>0.022</i>	0.0335 <i>0.022</i>	0.0307 <i>0.022</i>	0.0315 <i>0.022</i>	0.0328 <i>0.022</i>	0.0301 <i>0.022</i>	0.0318 <i>0.023</i>	0.0245 <i>0.018</i>	0.0309 <i>0.022</i>	0.0322 <i>0.022</i>
SIZE	-1.3771 <i>1.054</i>	-0.9484 <i>0.611</i>	-0.943 <i>0.610</i>	-0.9456 <i>0.610</i>	-0.938 <i>0.608</i>	-0.9296 <i>0.607</i>	-0.9317 <i>0.606</i>	-0.9274 <i>0.604</i>	-0.927 <i>0.603</i>	-1.1760* <i>0.694</i>	-0.9133 <i>0.602</i>	-0.9201 <i>0.602</i>
EQUITY	0.0205 <i>0.028</i>	-0.0036 <i>0.038</i>	0.0007 <i>0.039</i>	0.0043 <i>0.038</i>	-0.0021 <i>0.038</i>	0.0019 <i>0.037</i>	0.0026 <i>0.038</i>	-0.0035 <i>0.038</i>	0.0024 <i>0.038</i>	-0.0148 <i>0.033</i>	0.0001 <i>0.038</i>	0.0001 <i>0.038</i>
NET_INCOME	-0.0089 <i>0.007</i>	-0.0086 <i>0.008</i>	-0.0086 <i>0.008</i>	-0.0086 <i>0.008</i>	-0.0086 <i>0.008</i>	-0.0086 <i>0.008</i>	-0.0086 <i>0.008</i>	-0.0085 <i>0.008</i>	-0.0086 <i>0.008</i>	-0.0087 <i>0.008</i>	-0.0086 <i>0.008</i>	-0.0086 <i>0.008</i>
NPL_SYSTEM	1.1860* <i>0.700</i>	0.4304 <i>0.377</i>	0.4365 <i>0.376</i>	0.4613 <i>0.378</i>	0.4483 <i>0.381</i>	0.4726 <i>0.377</i>	0.4832 <i>0.381</i>	0.4533 <i>0.379</i>	0.4757 <i>0.357</i>	-0.0198 <i>0.294</i>	0.4692 <i>0.361</i>	0.4576 <i>0.378</i>
GOVERNMENT_DEBT	-0.0718** <i>0.029</i>	-0.0335 <i>0.035</i>	-0.035 <i>0.035</i>	-0.0383 <i>0.035</i>	-0.0367 <i>0.036</i>	-0.0407 <i>0.035</i>	-0.0428 <i>0.036</i>	-0.0387 <i>0.035</i>	-0.0409 <i>0.032</i>	0.0484 <i>0.055</i>	-0.0426 <i>0.034</i>	-0.0426 <i>0.035</i>
GDP_GROWTH	4.0365 <i>5.403</i>	-0.1673 <i>0.137</i>	-0.1854 <i>0.136</i>	-0.184 <i>0.135</i>	-0.1474 <i>0.147</i>	-0.1326 <i>0.143</i>	-0.1326 <i>0.145</i>	-0.128 <i>0.147</i>	-0.1352 <i>0.158</i>	-0.7981 <i>0.515</i>	-0.1286 <i>0.158</i>	-0.1769 <i>0.149</i>
LOANS_GROWTH	-0.0065 <i>0.010</i>	-0.0114** <i>0.005</i>	-0.0116** <i>0.005</i>	-0.0116** <i>0.005</i>	-0.0116** <i>0.005</i>	-0.0119** <i>0.005</i>	-0.0118** <i>0.005</i>	-0.0117** <i>0.005</i>	-0.0119** <i>0.005</i>	-0.007 <i>0.006</i>	-0.0120** <i>0.005</i>	-0.0115** <i>0.005</i>
tau2009	31.2958 <i>41.339</i>	0.0616 <i>1.018</i>	0.4507 <i>0.995</i>	0.7754 <i>0.992</i>	0.2726 <i>0.991</i>	0.536 <i>0.926</i>	0.611 <i>0.962</i>	0.1634 <i>1.029</i>	0.5549 <i>0.973</i>	-0.5134 <i>1.296</i>	0.3136 <i>1.036</i>	0.2846 <i>1.006</i>
tau2010	-4.0918 <i>4.272</i>	-0.2386 <i>1.335</i>	0.0389 <i>1.379</i>	0.2734 <i>1.322</i>	-0.1968 <i>1.311</i>	-0.1952 <i>1.305</i>	-0.1391 <i>1.301</i>	-0.3612 <i>1.347</i>	-0.1612 <i>1.496</i>	3.2439 <i>3.154</i>	-0.3929 <i>1.481</i>	-0.0774 <i>1.395</i>
tau2011	-5.4145** <i>2.251</i>	-2.9613*** <i>0.890</i>	-2.9941*** <i>0.885</i>	-2.9501*** <i>0.890</i>	-3.0146*** <i>0.901</i>	-3.1318*** <i>0.914</i>	-3.1310*** <i>0.913</i>	-3.0293*** <i>0.902</i>	-3.1195*** <i>0.946</i>	-0.5937 <i>2.259</i>	-3.1102*** <i>0.945</i>	-2.7893*** <i>0.949</i>
tau2012	8.3842 <i>11.727</i>	1.0225 <i>0.941</i>	0.9018 <i>0.997</i>	1.027 <i>0.942</i>	1.0071 <i>0.947</i>	1.0751 <i>0.942</i>	1.0788 <i>0.939</i>	0.997 <i>0.943</i>	1.0557 <i>1.097</i>	0.3814 <i>1.309</i>	0.9792 <i>1.144</i>	1.0017 <i>0.951</i>
tau2013	7.2415 <i>10.865</i>											
L2.AGMS_SIZE_Q4		-0.0068 <i>0.034</i>						0.0362 <i>0.039</i>			0.0736 <i>0.045</i>	0.1674*** <i>0.055</i>
L2.LGMS_SIZE_Q4			-0.0536 <i>0.040</i>						-0.0035 <i>0.075</i>		-0.0368 <i>0.086</i>	
L2.LPGMS_SIZE_Q4				-0.1488*** <i>0.050</i>						-1.5165 <i>1.144</i>		-0.3242*** <i>0.118</i>
L2.AGMS_TOTAL					-0.034 <i>0.037</i>			-0.0605 <i>0.044</i>			-0.0143 <i>0.056</i>	-0.0336 <i>0.045</i>
L2.LGMS_TOTAL						-0.0672** <i>0.029</i>			-0.0647 <i>0.061</i>		-0.0668 <i>0.073</i>	
L2.LPGMS_TOTAL							-0.1227** <i>0.057</i>			1.6842 <i>1.389</i>		0.038 <i>0.108</i>
CONSTANT	10.9654 <i>7.071</i>	13.5822 <i>8.409</i>	13.7554 <i>8.397</i>	13.9030* <i>8.416</i>	13.7367 <i>8.446</i>	13.9867* <i>8.441</i>	14.0604* <i>8.456</i>	13.8005 <i>8.453</i>	13.9505* <i>8.437</i>	10.6068 <i>8.723</i>	14.0133* <i>8.450</i>	13.9527 <i>8.518</i>
N	6293	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273
N_g	1181	1167	1167	1167	1167	1167	1167	1167	1167	1167	1167	1167
ar2p	0.8154	0.0491	0.0546	0.0523	0.0513	0.0521	0.0526	0.0517	0.0558	0.0208	0.0612	0.0562
j	24	25	25	25	25	25	25	26	26	26	28	28
hansen_df	9	10	10	10	10	10	10	10	10	10	10	10
hansenp	0.1382	0.0381	0.057	0.0573	0.0412	0.0568	0.0618	0.0426	0.0598	0.0102	0.065	0.0673

* for p<.10, ** for p<.05, and *** for p<.01

Table 6d – Spillover effects on Loan Impairments (Different estimates of Dynamic Panel Model upon Size Q2 Banks)

	Sys01	Sys02	Sys03	Sys04	Sys05	Sys06	Sys07	Sys08	Sys09	Sys10	Sys11	Sys12	Sys13	Sys14	Sys15
L.LOANIMPAIR_TAENL	0.3710*	0.3292*	0.3268*	0.3266*	0.3299*	0.3215*	0.3232*	0.3309*	0.3250*	0.3247	0.3326*	0.3246*	0.3282*	0.5365	0.3255*
	0.191	0.195	0.197	0.196	0.195	0.195	0.196	0.196	0.197	0.197	0.196	0.197	0.197	0.364	0.195
NLOANS	0.0082	0.0243	0.0251	0.0266	0.0228	0.0256	0.0265	0.0227	0.0251	0.0254	0.0234	0.0243	0.0249	-0.0237	0.0262
	0.015	0.022	0.023	0.023	0.021	0.022	0.022	0.022	0.024	0.022	0.023	0.023	0.024	0.052	0.024
SIZE	-0.3816	-1.0178	-1.036	-1.0054	-1.0474	-0.9943	-0.99	-1.0401	-1.0138	-1.007	-1.0574	-1.0269	-1.0667	-1.8693	-1.0641
	0.912	0.668	0.679	0.667	0.665	0.667	0.666	0.664	0.667	0.662	0.667	0.684	0.658	1.338	0.661
EQUITY	-0.0972	-0.0101	-0.0075	-0.0034	-0.0135	-0.0022	-0.0023	-0.014	-0.0076	-0.0074	-0.0108	-0.0032	0.0013	-0.0601	0.0069
	0.097	0.057	0.057	0.059	0.054	0.057	0.056	0.055	0.057	0.059	0.057	0.058	0.057	0.084	0.059
NET_INCOME	-0.0008	-0.0007	-0.0007	-0.0007	-0.0007	-0.0006	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007	-0.0006	-0.0006	-0.0008	-0.0006
	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
NPL_SYSTEM	-0.3393	0.7215***	0.7190***	0.7273***	0.6950***	0.7831***	0.7685***	0.7018***	0.7402***	0.7407***	0.6862***	0.7559***	0.6875***	0.3083	0.6717***
	0.720	0.217	0.211	0.218	0.216	0.220	0.225	0.224	0.229	0.242	0.218	0.212	0.236	0.510	0.231
GOVERNMENT_DEBT	-0.0664**	-0.0690***	-0.0688***	-0.0697***	-0.0646***	-0.0795***	-0.0763***	-0.0668***	-0.0721***	-0.0724***	-0.0612**	-0.0759***	-0.0610**	0.0683	-0.0593**
	0.027	0.024	0.024	0.025	0.025	0.026	0.026	0.026	0.027	0.029	0.024	0.025	0.028	0.137	0.027
GDP_GROWTH	-6.1732	-0.37	-0.3748	-0.3865	-0.3934	-0.2953	-0.3027	-0.3825	-0.3595	-0.3612	-0.4065*	-0.2812	-0.3398	-1.3308	-0.3309
	3.891	0.236	0.241	0.246	0.243	0.245	0.233	0.234	0.230	0.227	0.240	0.268	0.258	1.205	0.256
LOANS_GROWTH	-0.0191*	-0.0099	-0.0097	-0.0097	-0.0102	-0.0092	-0.0099	-0.01	-0.0096	-0.0099	-0.0102	-0.0094	-0.0094	-0.0019	-0.0101
	0.011	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.015	0.007
tau2009	-44.3656	-0.2824	-0.1348	-0.0255	-0.6862	0.3526	0.3214	-0.5902	-0.2076	-0.2096	-0.4789	0.6441	0.903	-2.2366	0.6881
	28.627	1.039	0.924	0.920	1.132	1.163	1.078	1.039	0.967	0.929	1.111	1.160	1.145	4.258	1.200
tau2010	5.0588	1.596	1.6555	1.8311	1.4596	1.5462	1.5445	1.467	1.5919	1.6003	1.5949	1.5356	2.0209	4.4013	1.7767
	3.259	1.281	1.328	1.422	1.200	1.217	1.215	1.246	1.254	1.288	1.256	1.357	1.367	4.126	1.298
tau2011	0.9701	-0.4496	-0.4641	-0.3962	-0.454	-0.5629	-0.5674	-0.4259	-0.4865	-0.4703	-0.4731	-0.5348	-0.289	0.7397	-0.3416
	1.868	0.982	0.973	1.018	0.986	1.005	0.981	0.989	0.961	0.951	0.957	0.982	0.989	2.219	0.951
tau2012	-10.8783	0.1649	0.1113	0.1749	0.2098	0.3117	0.2531	0.1786	0.1997	0.1892	0.2147	0.2089	0.1708	0.40788	0.4004
	6.766	0.406	0.383	0.411	0.416	0.409	0.420	0.403	0.431	0.436	0.425	0.421	0.421	4.510	0.485
tau2013	-10.5877	6.595													
L2.AGMS_SIZE_Q4		-0.0101									-0.0409			-3.3362	0.1146**
		0.031									0.039			3.636	0.056
L2.LGMS_SIZE_Q4			-0.0251									-0.0374		1.6194	
			0.044									0.052		1.989	
L2.LPGMS_SIZE_Q4				-0.0711									-0.2416***		-0.3745***
				0.076									0.067		0.093
L2.AGMS_SIZE_Q3					0.0331					0.0256				-2.9731	0.1235*
					0.034					0.063				3.311	0.065
L2.LGMS_SIZE_Q3						-0.0648**						-0.1024*		0.5063	
						0.032						0.055		0.842	
L2.LPGMS_SIZE_Q3							-0.0784*						-0.1782*		-0.2838***
							0.042						0.092		0.083
L2.AGMS_TOTAL								0.03			0.0362			7.3181	-0.0939
								0.039			0.088			7.832	0.079
L2.LGMS_TOTAL									-0.0271			0.0895		-1.9713	
									0.042			0.070		2.500	
L2.LPGMS_TOTAL										-0.038			0.3590**		0.4159**
										0.087			0.170		0.184
CONSTANT	25.8817***	16.1698*	16.4281*	15.9927*	16.2313*	16.6193*	16.2118*	16.2935*	16.3451*	16.2317*	16.0517*	16.7983*	16.0648*	8.6354	15.8200*
	9.359	9.499	9.643	9.503	9.535	9.593	9.518	9.504	9.556	9.504	9.511	9.702	9.407	17.257	9.458
N	6191	5229	5229	5229	5229	5229	5229	5229	5229	5229	5229	5229	5229	5229	5229
N(g)	1167	1155	1155	1155	1155	1155	1155	1155	1155	1155	1155	1155	1155	1155	1155
AR2-p	0.6429	0.836	0.8352	0.8358	0.8358	0.821	0.8289	0.8421	0.8298	0.8336	0.8377	0.8338	0.8368	0.4395	0.828
J	21	22	22	22	22	22	22	22	22	22	24	24	24	26	27
Hansen-df	6	7	7	7	7	7	7	7	7	7	7	7	7	6	7
Hansen-p	0.5654	0.1437	0.1464	0.1463	0.1386	0.145	0.1552	0.1375	0.1464	0.142	0.1468	0.1377	0.1503	0.9902	0.116

* for p<.10, ** for p<.05, and *** for p<.01

Table 7a – Robustness Check Upon Spillover effects on Loans (Different estimates of Dynamic Panel Model upon Medium Sized Banks)

Variable	Mod 1	Mod 2	Mod 3	Mod 4	Mod 5	Mod 6	Mod 7	Mod 8	Mod 9	Mod 10	Mod 11	Mod 12
L.NLOANS	1.0306*** <i>0.086</i>	1.0305*** <i>0.087</i>	1.0269*** <i>0.087</i>	1.0272*** <i>0.087</i>	1.0367*** <i>0.088</i>	1.0227*** <i>0.087</i>	1.0266*** <i>0.087</i>	1.0351*** <i>0.088</i>	1.0251*** <i>0.086</i>	1.0293*** <i>0.087</i>	1.0342*** <i>0.087</i>	1.0438*** <i>0.088</i>
SIZE	-0.0183 <i>0.105</i>	-0.0182 <i>0.105</i>	-0.0219 <i>0.104</i>	-0.0208 <i>0.104</i>	-0.019 <i>0.106</i>	-0.0029 <i>0.103</i>	0.0091 <i>0.102</i>	-0.0243 <i>0.106</i>	0.0036 <i>0.104</i>	0.0257 <i>0.104</i>	0.0066 <i>0.105</i>	0.0398 <i>0.106</i>
EQUITY	-0.2350** <i>0.120</i>	-0.2349** <i>0.120</i>	-0.2377** <i>0.119</i>	-0.2370** <i>0.119</i>	-0.2321* <i>0.120</i>	-0.2431** <i>0.119</i>	-0.2414** <i>0.119</i>	-0.2339* <i>0.120</i>	-0.2419** <i>0.119</i>	-0.2404** <i>0.119</i>	-0.2412** <i>0.119</i>	-0.2379** <i>0.119</i>
L.EQUITY	0.2635* <i>0.146</i>	0.2635* <i>0.146</i>	0.2640* <i>0.145</i>	0.2626* <i>0.146</i>	0.2650* <i>0.147</i>	0.2653* <i>0.145</i>	0.2640* <i>0.146</i>	0.2650* <i>0.146</i>	0.2653* <i>0.145</i>	0.2652* <i>0.145</i>	0.2697* <i>0.145</i>	0.2700* <i>0.146</i>
NPL_SYSTEM	-0.5507*** <i>0.075</i>	-0.5502*** <i>0.071</i>	-0.5434*** <i>0.077</i>	-0.5366*** <i>0.082</i>	-0.5288*** <i>0.072</i>	-0.5297*** <i>0.075</i>	-0.5251*** <i>0.079</i>	-0.5259*** <i>0.073</i>	-0.5331*** <i>0.075</i>	-0.5408*** <i>0.082</i>	-0.4664*** <i>0.071</i>	-0.4589*** <i>0.081</i>
GOVERNMENT_DEBT	0.0382*** <i>0.008</i>	0.0382*** <i>0.008</i>	0.0382*** <i>0.008</i>	0.0379*** <i>0.008</i>	0.0351*** <i>0.009</i>	0.0392*** <i>0.008</i>	0.0388*** <i>0.008</i>	0.0343*** <i>0.008</i>	0.0393*** <i>0.008</i>	0.0399*** <i>0.008</i>	0.0318*** <i>0.008</i>	0.0308*** <i>0.008</i>
GDP_GROWTH	0.0182 <i>0.089</i>	0.0182 <i>0.090</i>	0.0064 <i>0.092</i>	0.0194 <i>0.088</i>	0.0039 <i>0.086</i>	0.0597 <i>0.086</i>	0.073 <i>0.082</i>	-0.0053 <i>0.090</i>	0.0795 <i>0.091</i>	0.0948 <i>0.084</i>	0.0632 <i>0.089</i>	0.085 <i>0.086</i>
CAPITAL_SYSTEM	-0.0866 <i>0.153</i>	-0.0869 <i>0.158</i>	-0.0835 <i>0.152</i>	-0.0843 <i>0.151</i>	-0.0842 <i>0.152</i>	-0.0908 <i>0.151</i>	-0.1071 <i>0.148</i>	-0.0686 <i>0.159</i>	-0.0953 <i>0.151</i>	-0.1171 <i>0.149</i>	-0.0775 <i>0.159</i>	-0.1112 <i>0.158</i>
ASSETS_GROWTH	-0.0467*** <i>0.012</i>	-0.0467*** <i>0.012</i>	-0.0470*** <i>0.012</i>	-0.0471*** <i>0.012</i>	-0.0454*** <i>0.012</i>	-0.0484*** <i>0.012</i>	-0.0487*** <i>0.012</i>	-0.0453*** <i>0.012</i>	-0.0484*** <i>0.012</i>	-0.0488*** <i>0.012</i>	-0.0461*** <i>0.012</i>	-0.0463*** <i>0.012</i>
tau2009	0.3983 <i>0.722</i>	0.3851 <i>0.607</i>	0.4619 <i>0.698</i>	0.5674 <i>0.647</i>	0.1211 <i>0.663</i>	0.902 <i>0.687</i>	1.0621* <i>0.624</i>	0.2392 <i>0.607</i>	0.9378 <i>0.692</i>	1.0051 <i>0.621</i>	0.676 <i>0.601</i>	0.7465 <i>0.586</i>
tau2010	1.3821*** <i>0.274</i>	1.3716*** <i>0.258</i>	1.5434*** <i>0.263</i>	1.5249*** <i>0.247</i>	1.2016*** <i>0.272</i>	1.3303*** <i>0.274</i>	1.3993*** <i>0.271</i>	1.3284*** <i>0.260</i>	1.1624*** <i>0.260</i>	1.1039*** <i>0.256</i>	0.7951*** <i>0.268</i>	0.6639*** <i>0.279</i>
tau2011	0.9949*** <i>0.261</i>	0.9850*** <i>0.232</i>	1.0983*** <i>0.244</i>	1.1389*** <i>0.258</i>	0.8382*** <i>0.256</i>	1.0632*** <i>0.247</i>	1.1121*** <i>0.234</i>	0.9633*** <i>0.243</i>	0.9747*** <i>0.236</i>	0.8619*** <i>0.236</i>	0.7427*** <i>0.236</i>	0.5637** <i>0.249</i>
tau2012	0.1735 <i>0.404</i>	0.1622 <i>0.304</i>	0.2566 <i>0.375</i>	0.344 <i>0.324</i>	-0.0301 <i>0.369</i>	0.4581 <i>0.384</i>	0.5741* <i>0.340</i>	0.0902 <i>0.309</i>	0.4317 <i>0.372</i>	0.3946 <i>0.321</i>	0.2145 <i>0.305</i>	0.1573 <i>0.300</i>
tau2013	1.1521** <i>0.577</i>	1.1316*** <i>0.390</i>	1.3043** <i>0.527</i>	1.3813*** <i>0.464</i>	0.8171 <i>0.520</i>	1.5173*** <i>0.555</i>	1.6582*** <i>0.495</i>	1.0574*** <i>0.397</i>	1.4391*** <i>0.525</i>	1.4007*** <i>0.464</i>	1.0587*** <i>0.393</i>	0.9510** <i>0.402</i>
AGMS_SIZE_Q4		-0.0023 <i>0.036</i>						0.047 <i>0.041</i>			0.0448 <i>0.044</i>	0.0434 <i>0.041</i>
LGMS_SIZE_Q4			0.0278 <i>0.018</i>						-0.0272 <i>0.018</i>		-0.0315* <i>0.018</i>	
LPGMS_SIZE_Q4				0.0601 <i>0.051</i>						-0.1261** <i>0.049</i>		-0.1434*** <i>0.055</i>
AGMS_TOTAL					-0.0619* <i>0.032</i>			-0.0909** <i>0.035</i>			-0.1758*** <i>0.039</i>	-0.2080*** <i>0.043</i>
LGMS_TOTAL						0.0948*** <i>0.021</i>			0.1127*** <i>0.022</i>		0.1688*** <i>0.026</i>	
LPGMS_TOTAL							0.1879*** <i>0.053</i>			0.2761*** <i>0.051</i>		0.4154*** <i>0.067</i>
CONSTANT	-2.5178 <i>5.088</i>	-2.4997 <i>4.926</i>	-2.4952 <i>5.030</i>	-2.6097 <i>4.935</i>	-2.2444 <i>5.017</i>	-3.1188 <i>5.022</i>	-3.6083 <i>4.885</i>	-2.2192 <i>4.962</i>	-3.274 <i>5.013</i>	-3.7798 <i>4.892</i>	-2.9482 <i>4.947</i>	-3.7289 <i>4.927</i>
N	11935	11935	11935	11935	11935	11935	11935	11935	11935	11935	11935	11935
N_g	2336	2336	2336	2336	2336	2336	2336	2336	2336	2336	2336	2336
ar2p	0.1066	0.1121	0.1125	0.1089	0.1021	0.0998	0.0965	0.1082	0.0984	0.0954	0.0903	0.0843
j	25	26	26	26	26	26	26	27	27	27	29	29
hansen_df	10	10	10	10	10	10	10	10	10	10	10	10
hansenp	0.1651	0.1823	0.1099	0.1405	0.1169	0.1853	0.2137	0.0797	0.271	0.2815	0.1179	0.157

* for p<.10, ** for p<.05, and *** for p<.01

Table 7b – Robustness Check Upon Spillover effects on Loan Impairments (Different estimates of Dynamic Panel Model upon Medium Sized Banks)

Variable	Mod 1	Mod 2	Mod 3	Mod 4	Mod 5	Mod 6	Mod 7	Mod 8	Mod 9	Mod 10	Mod 11	Mod 12
L.LOANIMPAIR_TAENL	0.6604*** 0.233	0.6463** 0.259	0.6423** 0.260	0.6429** 0.259	0.6464** 0.259	0.6415** 0.260	0.6420** 0.260	0.6472** 0.258	0.6449** 0.261	0.7168*** 0.231	0.6468** 0.262	0.6416** 0.258
NLOANS	0.0240** 0.011	0.0312** 0.015	0.0321** 0.015	0.0337** 0.015	0.0310** 0.015	0.0328** 0.015	0.0332** 0.015	0.0311** 0.015	0.0325** 0.009	0.0229** 0.015	0.0317** 0.015	0.0331** 0.015
SIZE	-0.1587 0.156	-0.1808 0.149	-0.1822 0.149	-0.1801 0.150	-0.1823 0.148	-0.1734 0.150	-0.1777 0.149	-0.1827 0.148	-0.1684 0.149	-0.2382 0.156	-0.1696 0.149	-0.1868 0.148
EQUITY	-0.0204 0.050	-0.0236 0.031	-0.0206 0.032	-0.0168 0.031	-0.0239 0.030	-0.0183 0.031	-0.0188 0.031	-0.0236 0.031	-0.0193 0.032	-0.0334 0.027	-0.02 0.032	-0.0186 0.031
NET_INCOME	-0.0014 0.001	-0.0012 0.001	-0.0012 0.001	-0.0012 0.001	-0.0013 0.001	-0.0012 0.001	-0.0012 0.001	-0.0012 0.001	-0.0012 0.001	-0.0012 0.001	-0.0013 0.001	-0.0013 0.001
NPL_SYSTEM	0.1399 0.768	0.4252* 0.235	0.4294* 0.232	0.4411* 0.237	0.4190* 0.241	0.4574* 0.240	0.4548* 0.248	0.4171* 0.238	0.4664** 0.218	0.0185 0.331	0.4479** 0.221	0.4156* 0.241
GOVERNMENT_DEBT	-0.0331 0.022	-0.0352 0.023	-0.0353 0.023	-0.0367 0.024	-0.0339 0.024	-0.0396 0.024	-0.0394 0.025	-0.0333 0.023	-0.0412** 0.021	0.0339 0.061	-0.0379* 0.022	-0.035 0.024
GDP_GROWTH	-1.9005 4.437	-0.2981* 0.161	-0.3037* 0.164	-0.3129* 0.163	-0.3053* 0.168	-0.2803* 0.163	-0.2852* 0.163	-0.3083* 0.170	-0.266 0.175	-0.732 0.549	-0.2908 0.179	-0.3520** 0.179
LOANS_GROWTH	-0.0139* 0.008	-0.0106** 0.005	-0.0106** 0.005	-0.0105** 0.005	-0.0106** 0.005	-0.0106** 0.005	-0.0107** 0.005	-0.0106** 0.005	-0.0106** 0.005	-0.008 0.006	-0.0105** 0.005	-0.0104** 0.005
tau2009	-13.6814 33.356	-0.2899 0.765	-0.0551 0.750	0.159 0.698	-0.3391 0.755	0.0714 0.699	0.0254 0.708	-0.3161 0.778	-0.02 0.750	-0.7339 1.133	-0.286 0.812	-0.2455 0.771
tau2010	0.4498 3.529	0.5449 1.089	0.6825 1.151	0.8848 1.144	0.5445 1.057	0.6447 1.066	0.6522 1.077	0.5673 1.100	0.542 1.202	2.679 2.979	0.4352 1.177	0.8351 1.159
tau2011	-2.3259 2.048	-1.6858** 0.787	-1.7062** 0.777	-1.6621** 0.792	-1.6742** 0.796	-1.7836** 0.789	-1.7524** 0.782	-1.6756** 0.794	-1.8060** 0.807	-0.1807 2.225	-1.8072** 0.811	-1.4909* 0.833
tau2012	-3.6267 8.101	0.5246 0.387	0.4807 0.433	0.5293 0.386	0.5302 0.393	0.5668 0.383	0.552 0.378	0.5326 0.391	0.6387 0.498	0.0613 0.759	0.7167 0.543	0.5526 0.391
tau2013	-4.0954 7.799											
L2.AGMS_SIZE_Q4		0.0056 0.026						-0.0066 0.029			-0.0054 0.040	0.0686* 0.038
L2.LGMS_SIZE_Q4			-0.0196 0.037						0.0239 0.060		0.0239 0.072	
L2.LPGMS_SIZE_Q4				-0.0778* 0.047						-0.93 0.954		-0.1967** 0.085
L2.AGMS_TOTAL					0.0139 0.031			0.0191 0.036			0.0824 0.053	0.0433 0.040
L2.LGMS_TOTAL						-0.0434* 0.025			-0.0619 0.045		-0.1046* 0.059	
L2.LPGMS_TOTAL							-0.056 0.050			1.1068 1.203		0.0138 0.072
CONSTANT	8.601 10.995	3.1138 2.584	3.175 2.644	3.178 2.618	3.018 2.677	3.3791 2.656	3.3507 2.677	2.9717 2.682	3.4071 2.644	-0.8946 4.940	3.1241 2.740	3.0768 2.713
N	12484	10502	10502	10502	10502	10502	10502	10502	10502	10502	10502	10502
N_g	2348	2322	2322	2322	2322	2322	2322	2322	2322	2322	2322	2322
ar2p	0.3096	0.4002	0.4051	0.4032	0.3988	0.4092	0.4054	0.3972	0.4095	0.3296	0.4027	0.3939
j	24	25	25	25	25	25	25	26	26	26	28	28
hansen_df	9	10	10	10	10	10	10	10	10	10	10	10
hansenp	0.215	0.1892	0.226	0.2339	0.1934	0.2368	0.238	0.1909	0.2406	0.0264	0.2464	0.2142

* for p<.10, ** for p<.05, and *** for p<.01