The determinants and effects of administrative sanctions on banks performance: the Italian evidence

Abstract

The recent financial turmoil has refuelled the debate on the effectiveness of supervision and the overall architecture for the safeguard and stability of the international financial system. From this perspective, the design of the right incentives for a sounder and more prudent management of banks has attracted increasing attention, especially for those who are attempting to identify an effective discipline for bank organizations and their board members. Coherently with the evolution of financial markets and the increase of challenges which supervisory authorities have to face in order to guarantee a more reliable financial system, we move throughout an analysis of the evolution which has been characterizing the supervisory behaviour during last decade, in order to highlight which are the latest objectives supervisors are going to pursue in their undertaking. Thus, in order to investigate the effectiveness of the supervisory enforcements, we take into consideration the role of on-site inspections and sanctions inflicted by supervisory authorities. In particular, coherently with the objective to perform an analysis upon the effectiveness of supervisory action, we research for the determinants and effects of administrative sanctions issued by the Bank of Italy upon the Italian banks during the period from 1998 to 2009, in order to investigate, if any, a relation within the financial performance achieved by those banks before and after the sanction. To perform this analysis, we created a complete dataset including the entirety of administrative sanctions issued by the Bank of Italy during this period, which we matched with the economic performance achieved before and after the sanction by the banks included in our analysis. Because of its relevant conclusions, we consider this paper as particularly relevant for China and other Asian countries, given their developing financial infrastructure and extreme reliance on banks in providing financing to the economy.

JEL Codes: G21; G32; G38

Keywords: Regulation; Supervision; Sanctions; Economic Performance

1. Introduction

The recent financial turmoil has refuelled the debate on the effectiveness of supervision and the overall architecture for the safeguard and stability of the international financial system. From this perspective, the design of the right incentives for a sounder and more prudent management of banks has attracted increasing attention, especially for those who are attempting to identify an effective discipline for bank organizations and their board members, which focuses on board responsibility, sound internal control systems, effective risk management systems, as well as adequate enforcements by supervisory authorities. Coherently with the evolution of financial markets and the increase of challenges which supervisory authorities have to face in order to guarantee a more reliable financial system, we move throughout an analysis of the evolution which has been characterizing the supervisory behaviour during last decade, in order to highlight which are the latest objectives supervisors are going to pursue in their undertaking. Thus, in order to investigate the effectiveness of the supervisory enforcements, we take into consideration the role of on-site inspections and sanctions inflicted by supervisory authorities: we consider the procedure which can lead to disciplinary actions, eventually starting from on-site inspections or distance-controls, followed by inspection reports presented to board members containing corrective measures and administrative sanctions. By this meaning, inspections and sanctions may also play a key role in order to ensure prudent and sound behaviour within bank organizations. Moving from this framework, coherently with the objective to perform an analysis upon the effectiveness of supervisory action, we research for the determinants and effects of administrative sanctions issued by the Bank of Italy upon the Italian banks during the period from 1998 to 2009, in order to investigate, if any, a relation within the financial performance achieved by those banks before and after the sanction. To perform this analysis, we created a complete dataset including the entirety of administrative sanctions issued by the Bank of Italy during this period, which we matched with the economic performance achieved before and after the sanction by the banks included in our analysis. Thanks to this activity, this research adds to the existing literature through the analysis of effective sanctions issued from the supervisory authority and their relation with the financial performance achieved by those operators, leading to a first judgment over the effectiveness for a stronger discipline of board members and thereby an enhanced sound bank systems. The research proceeds as follows: Section 2 contains an analysis of the evolution which has been characterizing the supervisory activity during last decade, so to highlight which are the latest objectives supervisors are going to pursue in their undertaking. Section 3 draws a brief review of literature focusing on the peculiarities of governance of financial firms and the role that enforcements by supervisory authorities can play in order to guarantee a sound financial system. Section 4 presents the methodology used to perform the analysis and the main results we obtained from this first version of the research. Section 5 concludes.

2. Evolution in bank regulation in Italy and the role of inspections and sanctions in the current framework

2.1 Evolution of regulation and prudential supervision: the role of Bank of Italy

The increasing complexity of the financial system, the necessity to protect the public savings and the increasing internationalization and competitiveness of the financial operators, led over the time, especially in the last twenty years, to redefine the regulatory framework, to make it, not only more articulated and accurate, but also effective with regard to the transposition and implementation of standards.

Moreover, it is increasingly necessary to prudently manage the issue of systemic crises because of the evolution and internationalization of the Italian financial system. By this meaning, the non-compliance of a large player, can affect the operation of the entire financial system, with a high probability, and just after of the real economy too (Curry, Fissel, Ramirez, 2006). Thus, it can determinate very bad effects on the stability of the single financial institution and, on the other hand, on the entire financial system (Delis, Staikouras, 2009). Therefore, in relation to the financial intermediation, the necessity to prevent such crises, has led, first to the redefinition of the regulations for all the operators, and second, but not less important, to a new role, organizational structure and review process for the supervisory authorities.

In particular, in the Italian financial system, the supervisory model is structured to achieve specific objectives, such as stability or efficiency of the entire financial system and of the single financial institutions (supervisory by objectives). On the other hand, the supervisory model is structured to ensure the correct operation of the single financial sectors, such as banking, insurance, pension funds etc. (institutional supervisory). Therefore, in Italy, the supervisory model is so called "mixed", combining "institutional" supervisory and "for objectives" supervisory (Onado, 2000; Di Giorgio, Di Noia, 2002; Corigliano, 2002).

More specifically, the Banking Law (TUB)[1] gives the Bank of Italy the supervisory on banks, banking groups, financial entities ex art. 107 TUB (companies listed in a special section), and electronic money institutions. Those powers must be used having regard to the sound and prudent management of the supervised entities, "the overall stability", efficiency and competitiveness of the financial system, compliant with the credit and financial regulations.

The Consolidated Law on Finance (TUF)[2], concerns the supervision of financial intermediaries operating in the field of investment services and asset management (mainly banks, investment firms, asset management companies, investment firms with variable capital), whose objective is the maintenance of confidence in the financial system, investor protection, stability, good performance and competitiveness of the financial system and compliance with financial rules.

In those areas, supervisory is shared between the Bank of Italy and the National Commission for Companies and Stock Exchange (Consob). Bank of Italy monitors risks, capital adequacy and sound and prudent management of intermediaries, such as core factors for the stability of the financial system as a whole; instead, Consob guarantees transparency and fairness of behaviors.

This pattern of allocation of supervisory tasks for objectives was confirmed by a Legislative Decree[3], which transposed the relative EC directive[4] (so-called Markets in Financial Instruments Directive - MiFID), changing the TUF. Among other things, changes included a joint responsibility between the supervisory authorities in relation to the organizational requirements of the intermediaries.

To complete the Italian supervisory framework, we have three other independent authorities. First, the Institute for the supervision of private insurance and collective interest (ISVAP), which performs its supervisory functions in relation to insurance and reinsurance, as well as all the other entities and people which are subject to the discipline of private insurance, including insurance agents and brokers. Second, the Commission on supervision of pension funds (Covip), which is an administrative authority,

1 Italian legislative decree, September, 1, 1993, nr.385

2 Italian legislative decree, February, 24, 1998, nr. 58

3 Italian legislative decree, September, 17, 2007, nr. 164

4 European union directive, April, 21, 2004, nr. 39

responsible for overseeing the correct working of the supplementary pension funds. Third, the guarantor authority on competition (AGCM), with the task of supervisory on market competitiveness. Certainly, the last makes a supervisory for objectives. On the contrary Isvap and Covip make an institutional supervisory.
The current picture just outlined the result of a still running process, based on a large number of measures realized to achieve the objective of financial stability. It is known, that this task can be achieved primarily by increasing the degree of capitalization of the financial entities. This statement is even more appropriate as soon as the current economic environment is characterized by increasingly growing risks which undermine the solvency of financial intermediaries and of all other entities acting within the financial system.
For the first time, the Basel Accord in 1988[5], "forced" financial intermediaries to reconsider their degree of capitalization in relation to the risk they are exposed to. The Basle Core Principles were accepted by the Bank of Italy which issued special instructions to introduce the solvency ratio, which relates regulatory capital to credit risk.
By this meaning, the supervision focused on the necessity for any intermediary, to ensure effective and efficient organizational structure, in order to pursue sound and prudent management. In particular, in 1999 the Bank of Italy issued the Supervisory Instructions for banks[6] introducing, for the first time, an organic framework aimed to establish, among other things, effective and efficient internal control systems. The new rules, forced the banks to formalize and regulate tasks and responsibilities of the people who perform management activities (Board) and control activities (board of auditors, internal auditors, statutory auditors).
This legislation involves the introduction of the culture of control which determines the ability of any other intermediary to assess the adequacy of its organizational structure in order to acknowledge the signs of the supervisory, guard the exposure at risk and guaranty capital solvency.
These considerations assume greater importance if we consider the company law reform in 2003[7]. This applies to all financial entities and otherwise. These rules outline a variety of corporate models, modernize governance systems and expand financing channels, compliant with the process of internationalization and EU legislation.
In addition, the necessity to supervise banking risks, which have been significantly growing, and combine them with an appropriate organizational and capital structure, are the leading principles of the New Capital Accord (NAC)[8] in Basel which was a decisive moment, a turning point for both financial intermediaries and supervisory.
The three pillars of the NAC (minimum capital requirements, supervisory review process, disclosure), had a considerable impact on banks organization, on risk concept (in terms of modality of identification, measurement, monitoring and managing), on internal controls and on reports for supervisory authority.

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5 Bank of International Settlements, International convergence of capital measurement and capital standards, July 1988

6 Bank of Italy, Istruzioni di Vigilanza, April 1999

7 Italian legislative decree, January, 17, 2003, nr. 6

8 Bank of International Settlements, International Convergence of Capital Measurement and Capital Standards: a Revised Framework, June 2004

As a result, the supervisory process adopted by the Bank of Italy (BoI, 2006) had to be deeply revised. In particular, the supervisory review process (SRP) so called by the NAC, involves, both the supervised entities, which must periodically carry out their capital assessment adequacy (in terms of current results and prospective) through the ICAAP (Internal Capital Adequacy Assessment Process), and the Bank of Italy, which must evaluate the results of this process through the SREP (the Supervisory Review and Evaluation Process). The ICAAP and the SREP so determine a new relationship between intermediaries and the supervisory authority. As a result, we can look at a major reorganization of the monitoring process of the Bank of Italy, as highlighted in the "Guide for the surveillance activities"[9], which became operational in 2009. In particular, the reorganization concerned the procedures set for the coordination of remote and on site supervision. The new approach is risk based and follows the principle of proportionality, to ensure fully efficiency in the achievement of the purposes of supervision and transparency.
Here, the aim is still to avoid overexposures at risks and detects as soon as possible any risk factors which can potentially affect the equity and the income profiles of banks, thereby strengthening the capacity of the system and intermediaries to deal with possible financial crisis.

2.2 New techniques and controls for the Bank of Italy

The regulatory requirements laid down under the remote and on site supervisory, find a key moment during the controls of the Bank of Italy. In particular, the examination of technical and organizational profiles of the intermediaries consists in remote controls and inspections. They jointly contribute to the overall assessment of the company. When necessary, the results of the assessment can bring to the adoption of corrective measures and actions (BIS, 2002). In particular, supervisory uses to send letters of intervention to formalize criticism detected into the intermediaries. In certain cases, which are specified by law, it is also possible to impose the payment of administrative sanctions.
Remote checks are systematically conducted. They are based on information and documents obtained through statistical reports and hearings of the corporate officers (Berger, Davies 1998). The remote monitoring is conducted according to established procedures which provide, at fixed intervals, the verification of compliance with prudential rules, the analysis of major economic and financial aggregates, the assessment of basic technical issues, such as balance sheets, income, risk, liquidity and organization.

Figure 1

Hearings and letters of intervention in period 1998-2008

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Banks interested	470	380	524	372	434	450	444	372	454	456	330
Hearings	475	484	519	424	469	456	435	477	464	403	498
Letters of intervention	N.A.	N.A.	N.A.	N.A.	451	403	N.A.	350	393	442	457
SIM & SGR											
Hearings	19	24	56	0	118	133	128	129	154	138	34
Letters of intervention	79	52	31	0	111	108	172	199	177	222	103
Other Financial Intermediaries											
Hearings	0	0	57	106	98	91	121	127	114	78	27
Letters of intervention	14	28	2	38	45	58	65	58	43	63	246

Source: own elaboration on Bank of Italy data

[9] Bank of Italy, Guida per l'attività di vigilanza, May, 2008

The inspections are carried out according to periodical plans or according to the results expressed from the remote control. Among other things, they seek the quality and accuracy of the information and data on which the remote assessments are based on. Furthermore, these are integrate through a closer examination of the organizational aspects of the intermediaries activity.
Every year, the supervisory board makes a comprehensive assessment on operators, which considers results and findings of the remote controls, as well as inspections if carried out. For all intermediaries, on the basis of model of analysis focused on synthetic indicators, an automatic score is calculated for the different assessed profiles. This score can be amended as a result of further qualitative and quantitative information not included in the model of analysis. In particular, until 2008, banks were examined through five core principles: capital, profitability, risk, liquidity and organization.

Figure 2

Banks profiles examined by Bank of Italy until 2008

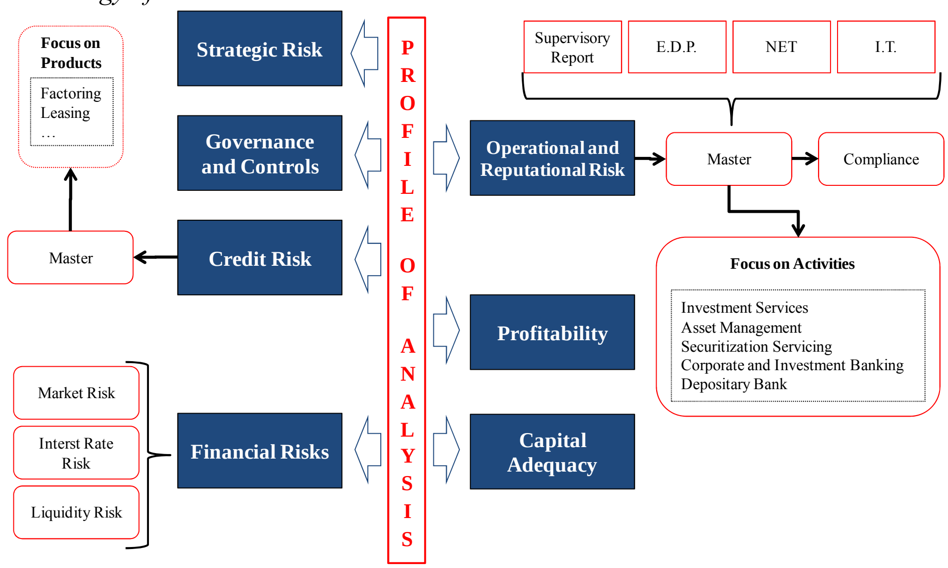
Source: own elaboration

Feedback are expressed by a number between 1 and 5. Scores 1 and 2 represent positive situations that required only ordinary controls. Score 3 identifies intermediaries with some critic issues, which need specific attention or preventive interventions. Scores 4 and 5 are indicative of abnormal conditions which require corrective actions.
New methods of analysis have been defined since 2009, following the evolution of the regulatory framework. Anyway the five profiles so far analyzed are still valid. New methods could have different configurations about the characteristics and dimensions of the intermediary. In any case, a common feature in all these new profiles, is the special attention towards the strategic risk, as well as compliance, and the new rating scale that provides scores from 1 to 6 and it is not comparable with the previous one.
The evaluation (with both the "old" and "new" methodology) is the reference point for planning and setting priorities for supervisory action. The activity is planned looking at the opinion expressed, at the nature and importance of the elements of weakness identified, at the degree of awareness and at the reliability of board members.
Distinguishing the so determined feedbacks in three classes (favorable, partially favorable and unfavorable), the situation for Italian banks significantly improved year after year in the period 1998-2008. In particular, the unfavorable feedbacks on the South Italy banks have been reducing with a compound average growth rate of 7.8% per year. In the same geographical area, the partially favorable and favorable feedbacks, have been growing respectively with annual increases of 5.62% and 11.15%. In the Central part of Italy, unfavorable feedback have been drastically decreasing. Anyway, Northern banks' trend seems

opposite: it is possible to look at a migration of some intermediaries from the best to the intermediate class.

Figure 3

The new methodology of evaluation



Source: own elaboration

A new reclassification of the same data, in term of size of banks, shows as the best evaluations for the largest banks have been significantly increased in the eleven years analyzed (13.6% for major banks, large and medium). The situation is different for small banks, where a declining trend for extremes feedbacks is associated with an increase of the banks in the middle class (6.14%). In these terms a gradual improvement in the system of mutual banks can also be watched, even if we must consider that the most critical situations were sometimes solved through mergers and acquisitions.

Figure 4

Feedbacks by Bank of Italy on banks situation between 1998 and 2008 in term of annual compound average growth rate (C.A.G.R.)

	CAGR			
GEOGRAPHIC AREA	N	C	S	ToT
Favorable	-1,91%	3,37%	11,15%	0,52%
Partially Favorable	4,37%	0,38%	5,62%	3,67%
Unfavorable	0,22%	-10,40%	-7,80%	-6,61%
SIZE	L&M	S	BCC	ToT
Favorable	13,60%	-4,87%	1,51%	0,52%
Partially Favorable	0,00%	6,14%	2,95%	3,67%
Unfavorable	2,54%	-3,59%	-7,97%	-6,61%

Source: own elaboration on Bank of Italy data

Anyway remote and on site supervisory have been deeply changed for certain aspects in the period from 1998 to 2008 (Barth, Caprio, Levine, 2004; 2008) . In particular, in the last nineties Bank of Italy focused its inspections in the assessing of the adequacy of the internal controls system, as it is considered a crucial aspect for the prevention of anomalies. During the same period, new information from outsourced entities have been implemented in the evaluation process, to determine with a deeper confidence the reliability of the banks' information. However, in the early years of the new century, the ever-increasing levels of complexity in organization and management of the major banking groups and the large number of smaller banks working in the traditional intermediation, led Bank of Italy to make systematic differences in the way to conduct inspections. In particular, since 2001, the inspections in intermediaries of lower complexion have been making according to an established pattern including an assessment of all aspects of production and organization (general inspections). Whilst, in the main banking groups, inspections usually refer to specific aspects (specific inspections), concerning non-compliance or regulations (transparency, anti-money laundering ..) or, alternatively, individual components of the aggregate (banking network, product companies) or business sectors, directly managed by the holding and / or its subsidiaries in Italy or abroad.

Figure 5

Inspections by the Bank of Italy between 1998 and 2008

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Banks	185	167	164	178	175	184	180	173	165	141	141
- General	185	167	164	172	170	176	177	159	150	120	129
- Specific	0	0	0	6	5	8	3	14	15	21	12
SIM	6	7	7	7	8	10	9	6	8	6	N.A.
SGR	2	2	3	4	2	4	5	4	7	11	N.A.
Other Financial Intermediaries	9	10	6	6	11	19	15	12	13	15	40
TOTAL	202	186	180	195	196	217	209	195	193	173	181

Source: own elaboration on Bank of Italy data

In any case, the reorganization process of supervision of the Bank of Italy has its origin in 2004 according to the formalization of the core principles of the new supervisory framework (BIS, 2004). In particular, these principles, introduced in the new legislation, have highlighted the necessity to review control methodologies and criteria in order to implement the new Supervisory Review and Evaluation Process (SREP).

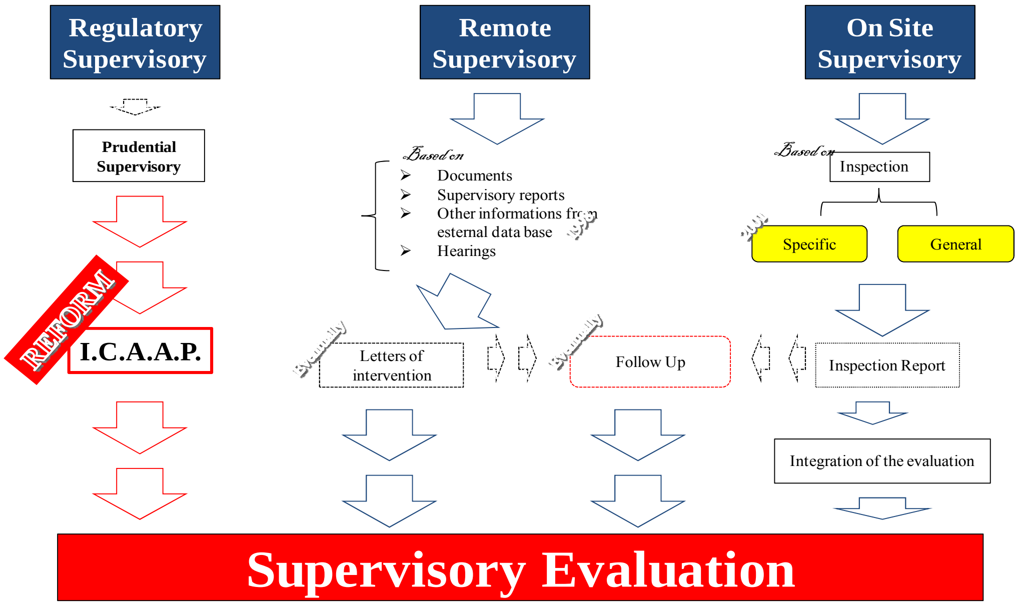
The SREP is built to form a judgment about the current and forward looking situation of the intermediaries and to take the subsequent supervisory actions. The SREP is divided into three main areas of activities:

- The knowledge of the subject watched through the conduct of on-site and remote analysis.
- The enforcement of the rules of supervision and disclosure.
- The assessment of overall risk profile, capital and organizational adequacy and the request of eventually corrective measures.

The new supervisory review process is based on the principles of proportionality, focused on risk and consolidated analysis, integration of remote monitoring and inspection. According to this, the analysis of the Internal Capital Adequacy Assessment Process (ICAAP), conducted by the board members of banks, provides significant added value to the deepening of the different profiles which are relevant in the context of the SREP.

Figure 6

The integration of the reform in the supervisory process



Source: own elaboration

The reviewed methodology of analysis made by the supervisory (Cihàk, Tieman, 2008), certainly necessary for the purposes of compliance with supranational law, has still helped to streamline the monitoring activities, speed up the procedures and direct most of resources to the priorities shared by regulators. Thus, the increased complexity of companies, the growing awareness of the risks inherent in to the intermediation activity, the always more articulate products, should not be more an insurmountable problem for the efficiency of the activities that the Bank of Italy is called to do.

2.3 The role of administrative sanctions within the supervisory action

In order to ensure that the conduct of banking and financial activity is based on the principles of sound and prudent management, as well as fairness and transparency, the administrative sanction procedure, as envisaged in the TUB, is the reference framework about sanctions for overall Italian financial system. Sanction rules enshrined in art. 195 of TUF, are also based on it too. They refer to irregularities in the conduct of investment services and management of the disputes on cross-border transfers.

According to art. 145, TUB, detection and evaluation of the violations carried out by the Bank of Italy, should take into account the severity, extent and consequences of the breach itself. In particular, the attention is focused on failure of the rules relating to risk, the deficiencies identified in the organizational structure and internal control systems and, last but not the least, the lack, or inaccuracy, of flows of information transmitted to the supervisory.

The Bank of Italy conducts the investigations, through the modalities before analyzed. Until 2005, it proposed to the Ministry of Economics and Finance (MEF) the imposition of administrative fines.

However, art. 26 of the Law of 28 December 2005, n. 262 (Saving Law), art.9 of Law April 18, 2005, No 62 (Community law for 2004) modified the procedure laid down art. 145 TUB and art. 195 TUF, allowed the Bank of Italy and not to the MEF anymore, to impose sanctions.

The responsibility for violations is attributable to individuals as a result of conduct "contra legem". In particular, sanctions can be imposed to: the subjects who are in management, administrative, monitoring, inspection positions, all those responsible for specific operational functions, all those who have a relationship voted to integrate in to the banking organizations, and all those responsible for the audit. Therefore, sanctions are directly imputable to individuals, but banks, companies or institutions the authors of the violations belong to, are jointly and severally liable for payment of the sanctions.

The administrative sanction procedure, provided in Article 145 of TUB, is split into five main phases:

1. Contestation of irregularities
2. Submission of rebuttal
3. Evaluation of rebuttal by the Bank of Italy, and any proposal to impose sanctions to the MEF until 2005 and after to the Governing Board of the Bank of Italy (Directorate)
4. Sanction decree by the MEF or by the Governing Board of the Bank of Italy since 2006
5. Communication and publication of the decree.

In particular, the contestation of irregularities, made by the Bank of Italy, open the proceedings through an appropriate notification within 90 days after the investigations. This term may be extended to a maximum of 360 days for residents abroad. The starting date depends on whether the Bank of Italy detect violations during inspections or in the course of remote supervisory. The administrative sanction procedure begins with the letter of objection. In addition to contain the formal elements, it also covers some ancillary information: description of irregularities related to the inspection, a list of provisions violated and a reminder to send any counter-arguments. The letter can also be notified by the administration and, banks, companies and institutions are required to provide to the Bank of Italy, without delay, all pertinent information relating to persons receiving contestation.

Within 30 days, beginning from the submission of the letter of contestation, the responsible people with their banks, corporations, or any other entity they belong to, may submit a counter-collegial or individual rebuttal related to the contestations. Within the same period those individuals may make an application for personal hearing to the branch of the Bank of Italy to illustrate their statements in support. These terms may be briefly extended if there are particular reasons which could prevent the compliance with.

Based on the information gained, the Bank of Italy assesses its rebuttal. If there were means for the application of administrative sanctions, up to 2005, the defined dossier was sent to the MEF. Therefore, it was the proposal for the imposition of sanctions. However, since 2006, as a result of the implementation of the principles laid down by art. 24, c. 1 of the law on savings, by decision of 27 April 2006, the Bank of Italy, introduced organizational arrangements to ensure the separation of the inquiry, chaired by the Commission for the examination of irregularities (CEI), from decision making, whose responsibility belongs to the Directorate. Therefore, the Commission is the collective body entrusted with the final phase of investigation and proposals to the Directorate about the administrative enforcement. In any case, the CEI was joined by a unit with specially set up Technical Secretariat, which takes care the preparation of the dossier and follows the subsequent performance after the Commission decisions. It still cooperates for the assessment of the most recurrent aspects of irregularities, the identification of potential vulnerabilities which are systemically relevant. It should also be noted that since 2008, at the CEI meeting, chaired by the Director of the Central Supervision and composed by the heads of the Area and the head of the Area

Coordination and branch liaison unit, joins the head of the branch which supervisory the intermediary. The Bank of Italy should also inform about the termination of the proceedings where the defense documents and other information collected are appropriate to justify the facts disputed.
The amount of the sanction is related, according to the l. 689/1981, to the gravity of the violation, taking into account, the size of the intermediary. The Bank of Italy, with a copy of the proposal for the imposition of administrative sanction, transmits the sanctioning decree to the persons concerned and the parties jointly and severally liable. This decree is published “per estracto " in the Supervisory Bulletin of the Bank of Italy too. Within 30 days of the submission, the decree of sanction can be appealed to the Court of Appeals and notified to the Bank of Italy. However the opposition, does not suspend the payment of punitive measure. In this occasion, the Bank of Italy, shows the reason to defend the legality of the administrative procedure and deposits the related documents. The decree of the Court of Appeal is published in abridged form in the Supervisory Bulletin of the Bank of Italy. In any case, the process described above, following the already-mentioned decision of 27 April 2006, must be completed within 240 days after the deadline for submission of rebuttal by the person who last received a notification of the contestation, except in the case of suspension of the terms laid down by the laws.

Figure 7

Amount of administrative sanctions imposed by the Bank of Italy from 1998 to 2009. By type of intermediary

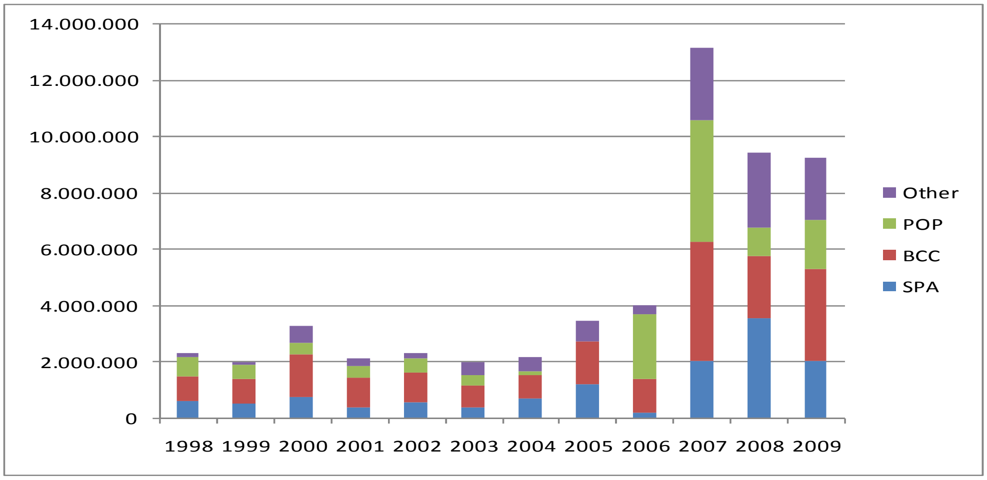
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
N° of sanctions versus Banks	75	71	103	81	76	55	66	47	27	56	35	38
Total Bank Sanctions	2.176.608	1.868.283	2.640.902	1.814.830	2.117.733	1.510.950	1.670.034	2.723.293	3.685.634	10.558.080	6.761.804	7.010.213
SPA	*587.728*	*510.518*	*726.138*	*370.816*	*572.164*	*386.506*	*671.270*	*1.213.000*	*171.000*	*2.012.500*	*3.521.304*	*2.014.500*
BCC	*896.827*	*850.088*	*1.517.609*	*1.046.083*	*1.036.688*	*776.406*	*841.787*	*1.510.293*	*1.227.000*	*4.229.580*	*2.236.500*	*3.281.713*
BP	*692.052*	*507.677*	*397.155*	*397.930*	*508.881*	*348.038*	*156.977*	*0*	*2.287.634*	*4.316.000*	*1.004.000*	*1.714.000*
N° of other sanctions	7	7	11	10	8	11	17	12	6	14	17	43
Other sanctions	123.950	83.408	598.315	310.907	180.744	445.384	494.280	732.000	296.000	2.565.000	2.666.000	2.210.267
TOTAL	**2.300.564**	**1.951.698**	**3.239.229**	**2.125.747**	**2.298.485**	**1.956.345**	**2.164.331**	**3.455.305**	**3.981.640**	**13.123.094**	**9.427.821**	**9.220.523**

Source: own elaboration on Supervisory Bulletin of the Bank of Italy 1998-2009

At the end of 2009, the sanctions imposed by the Bank of Italy to banks amounted to 7 million, three and a half times higher than in 1998. On the contrary, the number of deliberate sanctions (first by the MEF and then by the Bank of Italy) almost halved (from 75 to 38). Reasons can be mainly found in the revision of the amounts of the sanctions as a result of the provisions of Law 262/2005 about the strengthening of criminal and administrative penalties to protect savings, whose actual effects can be found from 2007.
The trend of the sanctions imposed to brokers and other subjects relapsed in the supervision of the Bank of Italy for crimes concerning the financial intermediation results particularly interesting. The multiplication of about eighteen times is related to the effects of the law on savings mentioned above, to the increase of non-bank intermediaries, to the increase of their size and interrelationships, which makes them subject increasingly critical in relation to the maintaining of the financial stability of the system. Consequently, supervisory must guarantee larger garrison.

Figure 8

Amount of administrative sanctions imposed by the Bank of Italy from 1998 to 2009. By type of intermediary



Source: own elaboration on Supervisory Bulletin of the Bank of Italy 1998-2009

In terms of distribution by type of intermediary, SPAs show a stable weight value of the sanctions imposed. In 2009 their weight is 21.85% compared to an average calculated over twelve years of 23.43%. The weight of the Cooperative Credit Banks (BCC) has remained broadly stable too. From 39% in 1998,

Figure 9

Distribution of administrative sanctions imposed by the Bank of Italy from 1998 to 2009. By type of intermediary

	SPA	BCC	POP	SGR	SIM	FI	OTHER
1998	25,55%	38,98%	30,08%	0,00%	2,58%	2,58%	0,22%
1999	26,16%	43,56%	26,01%	2,02%	1,32%	0,82%	0,11%
2000	22,42%	46,85%	12,26%	0,00%	13,88%	4,59%	0,00%
2001	17,44%	49,21%	18,72%	0,97%	8,77%	0,00%	4,88%
2002	24,89%	45,10%	22,14%	0,00%	0,90%	6,96%	0,00%
2003	19,76%	39,69%	17,79%	0,08%	6,32%	14,52%	1,85%
2004	31,02%	38,89%	7,25%	2,22%	4,46%	16,04%	0,12%
2005	35,11%	43,71%	0,00%	0,00%	7,21%	13,98%	0,00%
2006	4,29%	30,82%	57,45%	0,00%	6,73%	0,70%	0,00%
2007	15,34%	32,23%	32,89%	0,00%	14,28%	5,13%	0,14%
2008	37,35%	23,72%	10,65%	10,71%	2,15%	15,16%	0,25%
2009	21,85%	35,59%	18,59%	8,29%	4,89%	10,36%	0,43%
Average	**23,43%**	**39,03%**	**21,15%**	**2,02%**	**6,12%**	**7,57%**	**0,67%**

Source: own elaboration on Supervisory Bulletin of the Bank of Italy 1998-2009

percentage almost close to the average of the period, in 2009, the sanctions directed towards those institutions were passed at 35.6%. The greatest impact to the BCC can be seen in the years between 1999 and 2005, a period during which the cooperative credit system has been characterized by several mergers and acquisition that have gradually reduced the number of banks of the category. However, with regard to "Popolari" banks (POP), it is possible to find a negative trend, for at least the last two years. In 1998, sanctions to those institutions weighted for 30.08% of the total. They reduced to 18.6% in 2009, through peaks of 57.45% and 32.9% in respectively 2006 and 2007. It was due to some heavy sanctions imposed to few institutions of great relevance.
What just said assumes major strength by comparing these data with the number of sanctions imposed by type of intermediary. This analysis shows that the impact of sanctions on industry BCC unit is sufficiently small, while much higher with regard to BP.

Figure 10

Number of administrative sanctions imposed by the Bank of Italy from 1998 to 2009. Distribution by type of intermediary

	SPA	BCC	POP	SGR	SIM	FI	OTHER
1998	17,07%	59,76%	14,63%	0,00%	2,44%	4,88%	1,22%
1999	15,38%	65,38%	10,26%	1,28%	2,56%	2,56%	2,56%
2000	14,91%	71,05%	4,39%	0,00%	7,89%	1,75%	0,00%
2001	12,09%	70,33%	6,59%	1,10%	7,69%	0,00%	2,20%
2002	13,10%	63,10%	14,29%	0,00%	1,19%	8,33%	0,00%
2003	15,15%	57,58%	10,61%	1,52%	3,03%	10,61%	1,52%
2004	24,10%	50,60%	4,82%	3,61%	4,82%	9,64%	2,41%
2005	22,03%	57,63%	0,00%	0,00%	10,17%	10,17%	0,00%
2006	6,06%	63,64%	12,12%	0,00%	15,15%	3,03%	0,00%
2007	15,71%	58,57%	5,71%	0,00%	11,43%	7,14%	1,43%
2008	15,38%	44,23%	7,69%	9,62%	1,92%	13,46%	7,69%
2009	14,81%	27,16%	4,94%	6,17%	4,94%	39,51%	2,47%
Average	**15,48%**	**57,42%**	**8,00%**	**1,94%**	**6,10%**	**9,26%**	**1,79%**

Source: own elaboration on Supervisory Bulletin of the Bank of Italy 1998-2009

This consideration could be even more supported analyzing the relation between the two distributions (Yield). It clearly shows a very low value for the BP (0.38) and far higher for BCC (1.47), which corresponds proportionately to more number of sanctions than their amount. The other SPA banks, because of their size heterogeneity, are placed between the two segments with a value of the Yield of 0.66.

Figure 11

Yield – weight of the No sanctions / weight amount of sanctions – Calculated on the average values between 1998 and 2009. Distribution by type of intermediary

	SPA	BCC	POP	SGR	SIM	FI	OTHER
Yield	0,66	1,47	0,38	0,96	1,00	1,22	2,68

Source: own elaboration

Figure 12

% amount and No of administrative sanctions imposed by the Bank of Italy from 1998 to 2009. By geographical distribution.

	Weight of sanctions					Weight of the number of sanctions				
	NW	**NE**	**C**	**S**	**I**	**NW**	**NE**	**C**	**S**	**I**
1998	9,54%	8,32%	21,09%	48,15%	12,90%	18,29%	12,20%	24,39%	34,15%	10,98%
1999	7,46%	18,19%	15,41%	44,77%	14,16%	14,10%	14,10%	20,51%	35,90%	15,38%
2000	28,13%	7,27%	20,76%	36,02%	7,83%	21,93%	16,67%	21,93%	29,82%	9,65%
2001	23,79%	10,59%	19,50%	33,31%	12,74%	20,88%	17,58%	20,88%	27,47%	12,09%
2002	49,31%	3,47%	24,85%	18,65%	3,72%	28,57%	11,90%	26,19%	25,00%	8,33%
2003	19,79%	13,72%	35,83%	28,57%	2,08%	30,30%	19,70%	24,24%	22,73%	3,03%
2004	49,07%	11,70%	19,55%	11,60%	8,00%	43,37%	14,46%	16,87%	16,87%	7,23%
2005	24,89%	16,22%	28,21%	19,58%	11,10%	20,34%	22,03%	18,64%	25,42%	13,56%
2006	71,28%	2,41%	9,72%	15,27%	1,32%	42,42%	9,09%	18,18%	27,27%	3,03%
2007	55,14%	10,61%	16,52%	14,00%	2,56%	31,43%	18,57%	21,43%	18,57%	7,14%
2008	52,02%	16,91%	9,69%	13,99%	7,32%	32,69%	25,00%	11,54%	17,31%	11,54%
2009	26,46%	20,86%	22,38%	26,28%	1,31%	30,86%	17,28%	27,16%	19,75%	3,70%
AVERAGE	**34,74%**	**11,69%**	**20,29%**	**25,85%**	**7,09%**	**27,93%**	**16,55%**	**21,00%**	**25,02%**	**8,81%**

Source: own elaboration on Supervisory Bulletin of the Bank of Italy 1998-2009

In terms of geographical distribution, the sanctions of the Bank of Italy appear imposed primarily to the northwest area of Italy (34.74% on average) and to the South Italy (25.85% on average). However, two different trends have been found for the two areas. The North trend would seem to be rising, while decreasing for the South The same applies to the number of imposed sanctions.

Figure 13

The Regions of the more sanctioned banks between 1998 and 2009

Pos.	**Average**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
1	Lombardia	Puglia	Campania	Lombardia	Puglia	Lombardia	Campania	Lombardia	Lazio	Lombardia	Lombardia	Lombardia	Lombardia
2	Lazio	Sicilia	Emilia-Romagna	Campania	Lombardia	Lazio	Lombardia	Lazio	Lombardia	Piemonte	Piemonte	Liguria	Veneto
3	Campania	Campania	Sicilia	Calabria	Campania	Piemonte	Lazio	Emilia-Romagna	Trentino-Alto Adige	Puglia	Calabria	Veneto	Calabria
4	Veneto	Abruzzo	Puglia	Sicilia	Trentino-Alto Adige	Campania	Veneto	Sicilia	Puglia	Lazio	Marche	Puglia	Campania
5	Calabria	Lazio	Lazio	Lazio	Sardegna	Calabria	Marche	Piemonte	Sicilia	Campania	Veneto	Campania	Lazio

Source: own elaboration on Supervisory Bulletin of the Bank of Italy 1998-2009

Analyzing only the banking sector, using a greater geographic detail, the most punished areas are Lombardy, Lazio and Campania. In particular, bank boards of Lombardy in the last four years have been sanctioned for more than 10 million €, which is approximately 36.4% of the total in the same period.

With regard to the individual Provinces, the most sanctioned are the representatives of banks headquartered in Lodi. It comes from the huge sanctions imposed to the members of the Banca Popolare Italiana in 2006 and 2007.

Figure 14

Sanctions imposed to banks between 1998 and 2009. By Region

AREA	AVERAGE	REGION	AVERAGE	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
NO	344.491	Liguria	80.457	0	0	91.929	42.608	46.468	62.734	0	0	0	0	721.740	0
		Lombardia	1.085.573	68.431	50.871	556.224	256.937	675.647	195.385	631.925	496.000	2.035.834	4.292.500	2.483.304	1.283.820
		Piemonte	195.194	78.760	17.560	0	34.603	274.437	102.751	105.837	0	506.300	1.145.580	76.500	0
		Valle d'Aosta	16.739	0	0	5.165	0	0	6.708	0	0	0	39.000	150.000	0
NE	134.864	Emilia-Romagna	130.527	96.836	280.436	24.273	0	8.772	37.168	137.334	114.000	0	171.000	199.500	497.000
		Friuli-Venezia Giulia	30.333	0	26.598	21.691	21.691	1.032	6.708	40.274	0	0	0	246.000	0
		Trentino-Alto Adige	148.053	17.560	29.438	103.291	175.595	35.862	43.344	43.086	246.500	79.500	548.500	318.960	135.000
		Veneto	230.543	30.471	18.592	86.248	27.889	32.010	142.491	32.529	95.000	16.500	624.000	664.800	995.987
C	159.843	Lazio	338.129	241.444	212.522	245.059	127.823	393.138	159.082	214.478	785.500	171.000	510.000	316.500	681.000
		Marche	108.258	38.218	6.714	131.697	50.096	34.572	123.932	18.576	68.293	22.500	764.000	0	40.500
		Toscana	148.977	147.707	45.190	32.279	111.038	71.477	74.865	21.672	12.000	114.000	216.500	276.000	665.000
		Umbria	44.008	52.679	36.410	119.302	0	30.205	0	0	0	79.500	210.000	0	0
M	156.879	Abruzzo	80.238	263.393	136.861	157.519	51.646	23.994	113.600	26.845	156.000	0	0	33.000	0
		Basilicata	70.475	155.712	35.119	141.767	18.592	24.253	2.064	6.192	63.000	0	234.000	165.000	0
		Calabria	228.906	87.539	107.165	313.489	44.932	99.879	17.802	98.071	99.000	98.500	918.000	31.500	831.000
		Campania	298.354	294.122	362.553	318.654	223.109	212.970	262.796	105.042	126.000	136.000	414.000	408.000	717.000
		Molise	34.715	0	0	5.681	0	0	20.898	0	0	90.000	0	0	300.000
		Puglia	228.588	307.034	231.114	33.053	357.388	67.596	118.498	14.964	232.500	283.500	135.000	456.500	505.906
I	96.315	Sardegna	29.801	0	33.570	0	146.157	0	0	59.386	19.500	0	99.000	0	0
		Sicilia	162.829	296.704	237.570	253.580	124.724	85.421	20.124	113.823	210.000	52.500	237.000	214.500	108.000
TOTALE			**3.690.697**	**2.176.608**	**1.868.283**	**2.640.902**	**1.814.830**	**2.117.733**	**1.510.950**	**1.670.034**	**2.723.293**	**3.685.634**	**10.558.080**	**6.761.804**	**6.760.213**

Source: own elaboration on Supervisory Bulletin of the Bank of Italy 1998-2009

Figure 15

Provinces of the more sanctioned banks between 1998 and 2009

Pos.	Average	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
1	Lodi	Bari	Roma	Varese	Bari	Brescia	Napoli	Milano	Roma	Lodi	Lodi	Milano	Milano
2	Milano	Catania	Salerno	Catanzaro	Milano	Roma	Roma	Roma	Milano	Verbano-Cusio-Ossola	Cosenza	Genova	Cosenza
3	Roma	Salerno	Avellino	Avellino	Sassari	Novara	Milano	Viterbo	Bolzano	Bari	Ancona	Padova	Vicenza
4	Salerno	Roma	Bari	Roma	Trento	Milano	Ancona	Trapani	Palermo	Brescia	Padova	Salerno	Pisa
5	Cosenza	L'Aquila	Parma	Potenza	Roma	Avellino	Pescara	Alessandria	Lodi	Roma	Biella	Foggia	Bari
6	Bari	Pescara	Ferrara	Ancona	Salerno	Caserta	Bari	Cremona	Salerno	Cosenza	Trento	Arezzo	Bologna
7	Padova	Firenze	Foggia	Milano	Lecce	Vibo Valentia	Verbano-Cusio-Ossola	Sassari	Teramo	Campobasso	Cuneo	Udine	Caserta
8	Trento	Potenza	Agrigento	Terni	Avellino	Salerno	Vicenza	Benevento	Lecce	Terni	Salerno	Bolzano	Frosinone
9	Vicenza	Cosenza	Cosenza	Bergamo	Bolzano	Savona	Pistoia	Vibo Valentia	Latina	Napoli	Torino	Palermo	Roma
10	Ancona	Matera	Ravenna	Salerno	Firenze	Rieti	Rovigo	Ferrara	Agrigento	Siena	Bergamo	Latina	Verona

Source: own elaboration on Supervisory Bulletin of the Bank of Italy 1998-2009

3. Review of the literature

3.1 Peculiarities of governance within financial firms

The recent financial turmoil has refueled the debate on the effectiveness of supervision and the overall architecture for the safeguard and stability of the international financial system. In particular, a large literature has examined the causes and circumstances that led to the generation of the crisis of 2007-2008, along with the boundaries of the OTD originate-to-distribute model of financial intermediation (Borio, 2008; Acharya, Richardson, 2009). By this meaning, the fundamental weakness characterizing the capital adequacy regime have been highlighted, together with the need to strengthen prudential supervision and achieve a stronger coordination for a more effective international supervision architecture (Financial Stability Board, 2009). Moreover, it was pointed out the excessive risks exposure achieved by financial operators willing to maximizing profitability targets through an excessive short-term view (Blundell-

Wignall, Atkinson, Lee, 2008; Kirkpatrick, 2009), along with the need to provide a stronger regulation about organization and governance of banks.

Above all, the crisis has contributed to increase attention on the debate, which has long been investigated in the discipline of financial intermediation, above the contribution that a good governance is capable to provide in order to ensure greater stability for financial firms, and thus, for the financial system as a whole (BIS, 2006; Kirkpatrick, 2009; Beltratti, Stulz, 2009).

The economic literature has long defined the critical role that corporate governance can play in order to improve the efficiency of the financial system and thus contribute to economic growth. From this perspective, it is possible to distinguish a more traditional literature, which is focusing on the issue of corporate governance as a the key variable arising from the separation between ownership and management (Berle, Means, 1932), along with other issues arising from different components of governance influencing business performance (Hermalin, Weisbach, 2003). From another side, it is possible to consider the discipline of financial intermediaries, where the issue of governance acquires an even broader meaning, since it broadens a larger range of subjects that are being affected by management decisions. For those reasons, regulation and supervisory become fundamental variables which can affect effectively the corporate governance of financial firms, bringing a vital role for the realization of a sound and prudent management, together with a fundamental discipline for decision-making of management and board members, willing to offer more safeguards to protect the interests of all corporate stakeholders, and not just the one's of shareholders (Macey, O'Hara, 2003).

The Basel Committee has long recognized that given the important role played by banks in financial intermediation, their high sensitivity to potential difficulties arising from ineffective corporate governance and finally the need to safeguard the interests shareholders and all stakeholders, the corporate governance of banking organizations has a significant importance for the international financial system (BIS, 2006). The corporate governance of banks thus becomes critical to ensure an effective bank goverance able, on the one hand, to achieve an efficient use of resources, and secondly, to realize the stability of the financial system (Levine, 2004). From this standpoint, valid governance mechanisms lead to an efficient bank management mobilization and allocation of funds, including improving the governance systems of companies that are bargained from them (Adams, Mehran, 2003).

An extensive literature has already highlighted how the government of banks appears to be much more complex than industrial firms (Adams, Mehran, 2004). The number of stakeholders involved is greater: we refer to shareholders, depositors and Supervisory Authority, which are directly concerned with performance of the bank. By this meaning, the classic agency problems (Berle, Means, 1932) must be enlarged to other features, related to the possible negative externalities arising from the failure of a bank, the inefficient monitoring by depositors and other stakeholders, the opacity of banks' operating environment, the regulation (Levine, 2004).

From this perspective, a significant awareness has to be drawn to the issue of financial sector regulation, which can have a fundamental influence on governance and performance of banking firms. In this regard, we must consider several reasons justifying the intense regulation that characterizes the banks' industry, such as the importance of those operators in the economic system, the presence of systemic risk, the need to protect depositors, the objective to safeguard the economy within the efficiency of the financial system and payment system. Whatever the reasons we consider like fundamental for the presence of such a strong financial sector regulation, we should consider how the regulatory system clearly influence the corporate governance system of banks. We refer to the whole mechanisms of prevention of risks infection and systemic risk, such as mechanisms of safety net, deposit insurance, and other facets which make very particular this sector of the economy, but, at the same time, they also make ineffective the traditional control mechanisms and market for corporate control (Bergloef, 1990; Mayer 1990, 1994; Beck, Demirguc-Kunt, Levine, 2006). Because of these peculiarities, management decision can be affected by several mechanisms of moral hazard, as well as the attitudes of shareholders and creditors/depositors can be influenced by distorting effects, leading to revise the traditional paradigms of interaction between those stakeholders (Levine, 1994; Laeven, Levine, 2008). For this reason, the monitoring of Supervisory Authority becomes a fundamental factor for the discipline of banks governance, given the growing importance it has assumed in recent years, positioning itself alongside other prudential measures (Bank of Italy, 2006, 2009), such as minimum capital requirements and other prudential rules essential to ensure the stability of financial system.

Similarly, we have to consider other controls and restrictions affecting the banks activity by different ways, which sometimes are configured like various forms of barriers to entry for incoming operators, minimum capital requirements, other statutory constraints to banks activity, elements of public disclosure, other characteristics of banks ownership structure (Adams, Mehran, 2003). The banking industry is therefore configured like a heavily protected sector against the dynamics of competition, whose entry barriers restrict the entry of new operators, helping to generate a regulated oligopoly, leading de facto to an absence of competitive forces which, in other situations, regulate the activities of managers (Mace, 1971; Lorsch, MacIver, 1989; Hermalin, 2005). Consequently, the absence of an active market for corporate control subtracts banks with poor performance from hostile takeovers, avoiding mechanisms for management control, with the result that hostile takeovers in the banking industry are generally rare (Baker, Gompers, 2003; Bebchuck et al., 2005). Finally, because the ownership structure of banks generally differs from that of non-banking companies, with situations often highlighting conditions of high ownership concentration, it becomes difficult for small shareholders to exercise an effective management control (Caprio, Laeven and Levine, 2006). By this meaning, it is possible to identify a reduction for the incentive for blockholders to monitor the board, with the result that especially in situations where the regulators are particularly active, the blockholders can be considered like inactive (La Porta et al., 1999).

3.2 The discipline role of administrative sanction

In the above section, we have mentioned the peculiar characteristics of bank governance, especially for what concerning the issues of management control and board discipline: as we already mentioned, the peculiarities of banks governance sometimes impose to make allowances for even conflicting interests forthcoming from a broad range of stakeholders. From this perspective, because of the necessity to achieve and maintain public trust and confidence in the banking system, it becomes fundamental the role of supervision to maintain a proper functioning of the banking sector and economy as a whole. In order to evaluate the adequacy of banks, the supervisor employs an appropriate mix of on-site and off-site supervision, throughout it performs the evaluation of their inherent risks, and determines the corrective measures necessary to address supervisory concerns.

From this perspective, a broad literature has analyzed the effectiveness of supervision, in order to determine causes and circumstances of failures of supervision and their consequences for banks' stakeholders (Di Giorgio, Di Noia, 2002; Barth, Caprio, Levine, 2004; Beck, Demirgüç-Kunt, Levine, 2006; Caprio, Demirgüç-Kunt, Kane, 2008).

From another side, other scholars have tried to determine supervisory effectiveness by measuring enforcements outputs through the analysis of on-site audits and enforcement actions: in particular, the seminal works of Jackson (2005) and Jackson and Roe (2008) attempted to estimate the effectiveness of supervisory activity through the use of data about regulatory budgets and staffing. By this analysis, they tried to determine the supervisor's capability to perform a satisfactory assessment overall the quality of financial system. Nevertheless, as Delis and Staikouras (2009) noticed, the use of those kind of information can be affected by underestimation bias, because of the inherent problems concerning data inconsistency and completeness, so that it becomes suitable to collect information on the effective enforcement activities accomplished by supervisory authorities.

From this perspective, we can refer to a first strand of studies which is attempting to assess the supervisory effectiveness through the analysis of fundamental attributes determined for public enforcement quality (Noy, 2004; Neyapti, Dincer, 2005; La Porta et al., 2006; Dincer, Neyapti, 2008). Secondly, from a different standpoint, we can refer to scholars who have tried to investigate the disciplinary effect of on-sitebanking audits, especially for what concerning the relation between audits activity and loan quality (Wu, 1969; Berger et al., 2000; DeYoung et al., 2001; Bhattacharya et al., 2002; Gunther, Moore, 2003). Nevertheless the above strands of studies have been fairly ample, there is a consistent lack of research which directly focuses on the impact of supervisory sanctions upon banking discipline. In our knowledge, the research of Delis and Staikouras (2009) is one exception in this misplacing, according with the objective of their paper to perform an assessment of supervisory effectiveness through the analysis on-site audits and sanctions: in particular, in their work they collect information on on-site audits and enforcement actions for 17 countries over the period from 1998 to 2007, confirming the capacity of supervisors to exert a disciplinary role upon banks management decisions.

Moving from this framework, coherently with the objective to perform an analysis upon the effectiveness of supervisory action, in this research we decided to investigate the determinants and effects of administrative sanctions issued by the Bank of Italy upon the Italian banks during the period from 1998 to 2009. Therefore, this study adds to the existing literature through the analysis of effective sanctions issued from the supervisory authority – we collected the entirety of administrative sanctions issued by the Bank of Italy during this period – which we matched with the economic performance achieved before and after the sanction by the banks included in our analysis.

4. Empirical analysis

4.1 Dataset construction and descriptive analysis

In this section we are going to illustrate the methodology we used to develop this unique dataset, together with a brief description of the characteristics of the sample analyzed.

Consistent with the objective to analyze the relationship between administrative sanctions inflicted by the Bank of Italy and the performance achieved by Italian banks during the period from 1998 to 2009, a relevant effort has been spent in order to create an extensive data set, gathered from the official documentation provided by the Bank of Italy. In particular, in order to collect all the information about the administrative sanctions issued in Italy, we analyzed the "Bollettino di Vigilanza" monthly publication of

Bank of Italy from January 1998 to December 2009. Through the analysis of those documents, we were able to manually collect all the information about the financial firms which have been sanctioned during this period, the motivation of the sanction, the amount of the sanction inflicted for each firm, as well as the amount of sanction inflicted per person, together with other characteristics for each firm included in our dataset. Through this effort, we were able to collect information about the entirety of sanctions issued by Bank of Italy from 1998 to 2009, respectively for a total of 893 sanction, 730 of which were inflicted to banks (SPA, POP, BCC).

Thus, in order to conduct our analysis about the financial performance achieved by those banks, the Bankscope database (Bureau Van Dijk Electronic Publishing ©) has been utilized, in order to collect information about the balance sheet of banks included in the dataset. Because the necessity to analyze the financial performance achieved before and after the sanction, we decided to consider only the banks which have been sanctioned during the period from 1999 to 2007: therefore, we obtained a dataset of 617 banks. Then, depending on the availability and completeness of data, a final sample of 496 banks which have been sanctioned during the period from 1999 to 2008 was obtained, for which we collected, when available, information about the financial performance achieved during a period of 3 years before the sanction, as well as 3 years after the sanction (the financial data we obtained from Bankscope generally covered only the period from 1998 to 2008).

In our initial hypothesis, our intent was to build up a universe of banks which have not been sanctioned, to be used as benchmark in our analysis. Unfortunately, the size of our dataset diverted us from our proposal, because of the difficult to collect information for comparable banks for all the banks included in our dataset. For this reason we decided to perform our analysis only by the use of the sample of banks included in our dataset, with the possibility to enlarge the analysis with comparable banks in the future.

In order to perform our analysis we distinguished between different characteristics of banks included in our dataset: because of the necessity to perform our analysis through a period of time which covered 3 years before the sanction and 3 years after the sanction, we decided to conduct our analysis through 3 different time perspective. In the first perspective, we considered data for one year before and one year after the sanction: by this manner, we were able to calculate the change in the short-run financial performance for the largest number of banks. In the second perspective, we considered data available for two years before and after the sanction: therefore, through the use of average measures over those period, we reduced the noise from year to year fluctuations so allowing us to focus on medium term performance. In the third perspective, we considered data available for three years before and after the sanction: therefore, through the use of average measures over those longer period, we attempted to evaluate the performance achieved during a long-term perspective.

In annexes, Tables from 1 to 4 summarizing the nature and the distribution of banks included in our database across time, institutional category and different typology of sanctions are included.

Table 1 is intended in order to explain the coverage of our sample over the population of banks which have been sanctioned by Bank of Italy during the period from 1999 to 2008. Nevertheless the difficult to collect information especially for banks sanctioned in earlier years of our dataset, Table 1 demonstrates that our dataset constitutes a good representation of the population of banks sanctioned, both in term of banks included and total amounts of sanctions committed. Only for 1999 and 2000 the number of banks considered is less than 80% of population, with a coverage of 85,22% about the entire population. Similarly, the amounts of sanctions inflicted to the banks we considered in our dataset represent the 88,42% of total amounts of sanction inflicted to the population of Italian banks during the whole period.

Table 2 summarizes the main sanctions characteristics (number of bank, amount of the sanction, ratio of amount of sanction to total assets, ratio of amount of sanction to total operating income) by year. In particular, Panel A (Total Amount) demonstrates that after 1999, during the period 2000-2002, the number of banks sanctioned increases, with a mean value of sanction which is approximately constant, whilst during last period, 2005-2007, the number of banks sanctioned decreases, whilst the mean amount increases significantly. By the analysis of Table 1, is also possible to evaluate the relation between amount of sanction and size of bank: both the ratios we utilized, the total amount of sanction to total assets and the total amount of sanction to total operating income show an increase of their value over the time, thus demonstrating that the Bank of Italy is going to strengthen the effectiveness of sanctions. Similar considerations can be drawn from the analysis of Panels B, C and D, where a similar analysis has been conducted for Amount per Sanction, Total Head Amount, and Head Amount per Sanction, respectively (for a broader description of these variables see section 4.2).

Table 3 summarizes the main sanctions characteristics by institutional category of banks and time. As can be observed in Panel A (Total Sample), the BCC banks represents about the 75,00% of the banks included in our sample, whilst the SPA and POP banks represents the 16,13% and 8,87% respectively: nevertheless, if we consider the amount of sanctions, we can understand that BCC banks incurred about the 45% of total sanctions, with a significant amount for POP banks which incurred about the 32% of total sanctions. In order to better understand the methodology which is characterizing the Bank of Italy activity, we can also refer to the ratios of total amount of sanction to total assets and the total amount of sanction to total operating income, from which is possible to have a confirm of the increase of the strength that Bank of Italy is demonstrating over last years. This phenomenon is particularly noticeable if we consider Panels B, C and D, where we analysed each category of banks through time: for all of them, it is possible to notice an increase of the mean value of sanctions incurred, as well as an increase of the ratios to total assets and total operating income.

Table 4 summarizes the main sanctions characteristics, which we collected by 10 fundamental motivation of sanctions[10]. By this meaning, we have to consider that Bank of Italy whilst issuing a sanction, often refers to different motivations which collectively conduct to the total amount of sanction which is inflicted to a bank. In order to consider the different importance that each motivation can assume for the determination of the sanction, when collecting the data of the sanctions we distinguished between different motivation and we successively distinguished when a multiple motivation was considered. Therefore, we were also able to calculate a mean amount of sanction per argument, which we represent in Table 4. This is the reason why the number of arguments of sanctions is larger than the banks analyzed, respectively 1.223 against 496 banks, whilst the total amount is equal. As can be observed in Table 4, sanctions for “Internal Control”, “Personal Initiative”, “Normative”, “Organization” represent more the 80% of the total sanction issued by Bank of Italy, both in term of number of sanctions and amount incurred. Their relevance is confirmed also by the analysis of the ratios to total assets and to total operating income, even if the sanction “Credit” shows the highest ratios overall the sample.

[10] We collected the motivation of sanction into 10 fundamental arguments: Balance Sheet; Internal Control; Credits; Finance; Management; Personal Initiative; Normative; Organization; Capital; Supervisory Reports.

4.2 Analysis methodology and results

In this section we are going to describe in the detail the models we have utilised to carry out our analysis, together with the results we obtained in this first version of our research. Consistent with the objective to analyse the determinants and effects of sanctions on banks performance, we structured the analysis through two distinguished perspective.

In the first part, we attempted to investigate the determinants of sanctions, through the use of a multivariate regression model, which is performed over the entire dataset, in order to investigate the financial variables which can be assumed as determinants of sanction. Secondly, we tried to discover, if any, the determinants of the specific category of sanctions issued by the Bank of Italy: in this case, we referred to a binary probit model, throughout we attempted to distinguish between specific determinants for different administrative sanctions.

In the second part, we attempted to analyse the effects of administrative sanction on banks performance: in order to conduct this analysis, we decided to refer to the strand of academic literature which has already been involved upon the study of changes in the operating performance around an economic event. Nevertheless a broad literature has utilized a huge range of methodologies to perform this kind of analysis (Healy, 1992; Barber, Lyon, 1996; Ghosh, 2001), in this research we refer to the classification proposed by Caselli et al. (2010), who distinguished between three fundamental approaches: the "level model", which considers the post event abnormal operating performance as dependent variable; the "change model", which uses the delta between the industry-adjusted post-event operating performance and the industry-adjusted pre-event operating performance; the "regression based model", which attempts to regress the industry-adjusted post-event operating performance over the industry-adjusted pre-event operating performance. In particular, coherently with the objectives to perform our analysis over the whole dataset, in order to avoid any bias depending from permanent or temporary factors, in this research we utilized both the change model and the regression based model to investigate, if any, the effects of administrative sanctions above banks financial performance (Caselli et al., 2010).

Consistent with the objective to investigate for the determinants of administrative sanction above the sample analyzed, in Table 5 the results of regression estimating the relation between different measures of sanctions and financial indicators are reported. In particular, even if in order to verify the robustness of our results different version of the model have been tested, we decided to show only three of them, which we reported in Table 5a, Table 5b and Table 5c, respectively. For each table, we reported the results of regression between different measures of sanction and financial indicators. In particular, we consider the following measures of sanction: *Total Amount* is the total amount of sanction inflicted to the bank; *Amount per Sanction* is the amount of sanction per argument (equal to the ratio of Total Amount to the number of arguments of sanction); *Total Head Amount* is the total amount of sanction inflicted to each board member (equal to the ratio of Total Amount to the number of individuals sanctioned); *Head Amount per Sanction* is the amount per sanction inflicted to each individual (equal to the ratio of Amount per Sanction to the number of individuals sanctioned). For each of these variables, we considered three version of the model: version (a) considers the absolute value of the measures of sanction; version (b) considers the ratio of sanction to total assets; version (c) considers the ratio of sanction to total operating income. Therefore, through the analysis of those 12 different regressions, we have the possibility to distinguish between different elements as determinants of sanctions, such as financial characteristics and size effects. In Tables 5a, 5b and 5c we reported different version of the model, alternatively considering the following elements as independent variables: POP is a dummy variable equal to 1 if the bank matches with POP institutional category; BCC is a dummy variable equal to 1 if the bank matches with BCC institutional category; Loans is the ratio of $Avg_{t-3years}$ Loans to $Avg_{t-3years}$ Total Assets; Interest Income on Loans is the ratio of $Avg_{t-3years}$ Interest Income on Loans to $Avg_{t-3years}$ Total Assets; Dep & ST Funding is the ratio of $Avg_{t-3years}$ Deposit & Short Term Funding to $Avg_{t-3years}$ Total Assets; Liquid Asset is the ratio of $Avg_{t-3years}$ Liquid Assets to $Avg_{t-3years}$ Total Assets; Net Loans/Total Dep & Bor is the ratio of $Avg_{t-3years}$ Net Loans to $Avg_{t-3years}$ Total Deposit & Borrowing; Liquid Assets/Dep & ST Funding is the ratio of $Avg_{t-3years}$ Liquid Assets to $Avg_{t-3years}$ Deposit & Short Term Funding; Net Interest Income is the ratio of $Avg_{t-3years}$ Net Interest Income to $Avg_{t-3years}$ Total Assets; Overheads is the ratio of $Avg_{t-3years}$ Overheads to $Avg_{t-3years}$ Total Assets; Personnel Expense is the ratio of $Avg_{t-3years}$ Personnel Expense to $Avg_{t-3years}$ Total Assets; Equity is the ratio of $Avg_{t-3years}$ Equity to $Avg_{t-3years}$ Total Assets; Equity/Net Loans is the ratio of $Avg_{t-3years}$ Equity to $Avg_{t-3years}$ Net Loans; Equity/Liabilities is the ratio of $Avg_{t-3years}$ Equity to $Avg_{t-3years}$ Liabilities; Cost to Income is the $Avg_{t-3years}$ Cost to Income Ratio; ROA in the $Avg_{t-3years}$ Return on Assets; Log(Total Assets) is the $Avg_{t-3years}$ logarithm of Total Assets. Throughout the complementary reading of the 12 regressions above mentioned, it is possible to distinguish between different elements as determinants of sanctions, such as financial characteristics and size effects. By this meaning, all the versions of the model (Table 5a, 5b, 5c) demonstrate that the availability of liquid assets reduce the dimension of sanction, whilst the size of the bank is differently related to the alternative measures of sanction. Throughout all the models we tested, if we consider the institutional classification of banks, we notice that the absolute measure of sanction are positively correlated to POP category, whilst the relative measure to total assets and total operating income are negative correlated to BCC category.

In order to investigate for the determinants of the specific motivations that Bank of Italy indicated when issuing an administrative sanction, in Table 6 the results of regression estimating the relation between different category of sanctions and financial indicators are reported. In this case, we refer to a binay probit model, within the category of sanctions used as dependent variables. For this purpose, in this model we utilized the category of sanction like a dummy variable equal to 1 when the bank has been sanctioned for one of the arguments we considered in our classification: *Balance Sheet*, *Internal Control*, *Credits*, *Finance*, *Personal Initiative*, *Normative*, *Organization*, *Capital*, *Supervisory Reports*. In order to investigate for the determinants of each specific sanction, we utilized some of the financial characteristics we have tested as most significant in above regression, for which we considered the average value over three years prior the sanction. Table 6 demonstrates a relevant heterogeneity upon the determinants of different sanctions: for sanctions like *Balance Sheet*, *Personal Initiative* and *Supervisory Reports* is not possible to verify any significant determinants. Instead, sanctions for *Internal Control* and *Organization* seem to be negatively related to size, whilst sanctions for *Finance* are positively related to size. Moreover, it is possible to consider that availability of liquid assets and a lower ratio of net loans to total assets seems to decrease the probability for banks to incur in sanctions for *Credits*, as well as the ratio of equity to total assets reduces the probability to suffer from sanctions for *Capital*.

Consistent with the objective to estimate the effects of administrative sanctions above the sample analyzed, in Table 7 we evaluate the average change, measured through the median delta, between the post-sanction and pre-sanction industry adjusted performance, overall some fundamental financial indicators. In particular, in order to avoid any bias concerning the selection of the period analyzed, we considered the following different time frame: we focused on a short view, through the analysis of the t_{+1} year post-sanction and t_{-1} year pre-sanction period; secondly, we considered a medium term, by analyzing the Avg $_{t+2\ years}$ post-sanction and Avg $_{t-2\ years}$ pre-sanction period; finally, we considered a longer time, by the use of the Avg $_{t+3\ years}$ post-sanction and Avg $_{t-3\ years}$ pre-sanction period. In order to avoid any bias which could be related to the specific characteristics of banks, we considered the industry adjusted performance for each financial indicator we utilized. In order to perform this objective, we collected the data for industry performance from the "Relazione Annuale" annual publication of Bank of Italy, so that we estimated the adjusted industry performance for the following financial indicators: Loans to Total Assets; Interest Income on Loans to Total Assets; Deposit & Short Term Funding to Total Assets; Liquid Assets to Total Assets; Net Loans to Total Deposit & Borrowing; Net Interest Income to Total Assets; Overheads to Total Assets; Personnel Expense to Total Assets; Cost to Income Ratio; Equity to Total Assets; Total Capital to Total Assets, Equity to Liabilities; ROA. As is it possible to notice from Table 7, banks which have been sanctioned in the average are not disrupted from their strategies, since they continue to increase the portfolio of net loans, both if compared with Total Assets and Total Deposits and Borrowing. At the same time, Equity doesn't seem to increase with the same force, so that the ratio of Equity to Total Assets evidences a negative trend overall the time frame we considered.

In Table 8, in order to investigate the impact of administrative sanctions on the operating performance of banks, we referred to the intercept model (Caselli et al., 2010), by regressing the post-sanction industry-adjusted operating performance against the pre-sanction industry-adjusted operating performance. By this meaning, we have to consider the intercept as measuring whether the sanction caused a significant change in operating performance: in particular, by the slope coefficient β we capture the persistence in industry-adjusted performance, while through the intercept coefficient α we measure the abnormal change in performance, or, otherwise, the sanction-induced changes in performance. Therefore, for each financial indicator the relation between post and pre sanction value is calculated, over the following time periods: the t+1 year post-sanction and t-1 year pre-sanction period; the Avg $_{t+2\ years}$ post-sanction and Avg $_{t-2\ years}$ pre-sanction period; the Avg $_{t+3\ years}$ post-sanction and Avg $_{t-3\ years}$ pre-sanction period. The following financial indicators are considered: Loans to Total Assets; Interest Income on Loans to Total Assets; Deposit & Short Term Funding to Total Assets; Liquid Assets to Total Assets; Net Loans to Total Deposit & Borrowing; Net Interest Income to Total Assets; Overheads to Total Assets; Personnel Expense to Total Assets; Cost to Income Ratio; Equity to Total Assets; Total Capital to Total Assets, Equity to Liabilities; ROA.

The results we obtained by the implementation of the regression based model upon the performance of each bank mainly confirm some of the results we obtained by the application of the change model utilizing the industry adjusted performance. By this meaning, Table 8 confirms the tendency for the banks sanctioned to pursue in their undertaking, registering a significant increase of ratios of Loans to Total Assets and Loans to Total Deposits & Borrowing. In the opposite, the use of financial performance we regress for each bank without taking into account the industry performance, direct us to different evidence around the capitalization and the cost to income ratio.

5. Conclusions

The recent financial turmoil has refuelled the debate on the effectiveness of supervision and the overall architecture for the safeguard and stability of the international financial system. From this perspective, in this research we move throughout an analysis of the evolution which has been characterizing the supervisory activity during last decade, in order to highlight which are the latest objectives supervisors are going to pursue in their undertaking. Thus, in order to investigate the effectiveness of the supervisory enforcements, we took into consideration the role of on-site inspections and sanctions inflicted by Supervisory Authority: we considered the procedure which can lead to disciplinary actions, eventually starting from on-site inspections or distance-controls, followed by inspection reports presented to board members containing corrective measures and administrative sanctions. Moving from this framework, coherently with the objective to perform an analysis upon the effectiveness of supervisory action, we researched for the determinants and effects of administrative sanctions issued by the Bank of Italy upon the Italian banks during the period from 1998 to 2009. We investigated, if any, a relation within the financial performance achieved by those banks before and after the sanction. In order to perform this analysis, we created a complete dataset including the entirety of administrative sanctions issued by the Bank of Italy during this period, which we matched with the economic performance achieved before and after the sanction by the banks included in our analysis. We investigated for the determinants of administrative sanctions over the entire dataset, but the heterogeneity between the motivations of sanctions issued by the Bank of Italy avoided us to find any appreciable evidence upon the financial indicators determining the amount of sanctions. Conversely, when analyzing the determinants for each category of sanction, we were able to distinguish between distinctive determinants, which perhaps allowed us to speculate upon the finding which directed Bank of Italy to issue some of those specific sanctions. On the opposite, when investigating for the effects of sanctions, we found weak evidence of the effectiveness of enforcement action played by the supervisory authority, both by the analysis of the performance achieved by each bank on a solo basis, both through the evaluation of the industry adjusted performance. In line with the above result, we suggest as a future line of research the further investigation for the administrative sanctions issued by the Bank of Italy: in particular, we consider as suitable to prosecute by collecting data upon the sanction during next years, so to understand the amendments which have characterized the supervisory action during last time. Moreover, we consider worthwhile to ameliorate the statistical analysis through the creation of a sample of banks which have not be sanctioned, in order to perform the analysis through the comparison with a reasonable control sample.

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Annexes

Table 1 – Representative of Sample Analyzed (Period Breakdown)

	Number of Banks Analized	Number of Banks Sanctioned	% of Total	Total Sanctions for Banks Analyzed	Total Sanctions for Banks Sanctioned	% of Total
1999	42	71	59,15%	1.007.091	1.868.283	53,90%
2000	82	103	79,61%	1.836.004	2.640.902	69,52%
2001	71	81	87,65%	1.363.963	1.814.830	75,16%
2002	71	76	93,42%	1.929.025	2.117.733	91,09%
2003	48	55	87,27%	1.232.606	1.510.950	81,58%
2004	60	66	90,91%	1.507.377	1.670.034	90,26%
2005	42	47	89,36%	2.333.793	2.723.293	85,70%
2006	27	27	100,00%	3.685.634	3.685.634	100,00%
2007	53	56	94,64%	10.382.580	10.558.080	98,34%
Total	496	582	85,22%	25.278.073	28.589.739	88,42%

Table 2 - Characteristics of Sanctions (Period Breakdown)

					Panel A - Total Amount			Panel B - Amount per Sanction			Panel C - Total Head Amount			Panel D - Head Amount per Sanction		
	N. of Sanctions	% of Total	Total Amount	% of Total	Mean Value	Mean Value/ Total Assets (‰)	Mean Value/ Total Op. Income (‰)	Mean Value	Mean Value/ Total Assets (‰)	Mean Value/ Total Op. Income (‰)	Mean Value	Mean Value/ Total Assets (‰)	Mean Value/ Total Op. Income (‰)	Mean Value	Mean Value/ Total Assets (‰)	Mean Value/ Total Op. Income (‰)
1999	42	8,47%	1.007.091	3,98%	23.978	0,2266	3,7593	10.492	0,0778	1,3818	1.710	0,0170	0,2877	773	0,0064	0,1184
2000	82	16,53%	1.836.004	7,26%	22.390	0,2186	4,0478	8.620	0,0827	1,5109	1.661	0,0182	0,3361	706	0,0075	0,1377
2001	71	14,31%	1.363.963	5,40%	19.211	0,1924	4,2291	13.352	0,1472	3,1998	1.411	0,0155	0,3399	1.042	0,0125	0,2699
2002	71	14,31%	1.929.025	7,63%	27.169	0,1469	3,1502	9.365	0,0591	1,3232	1.893	0,0121	0,2746	792	0,0058	0,1406
2003	48	9,68%	1.232.606	4,88%	25.679	0,1246	2,4527	10.046	0,0431	0,8764	1.786	0,0091	0,1840	780	0,0033	0,0699
2004	60	12,10%	1.507.377	5,96%	25.123	0,1720	3,6647	8.568	0,0583	1,2607	2.035	0,0136	0,2901	702	0,0046	0,0990
2005	42	8,47%	2.333.793	9,23%	55.567	0,4489	10,1734	18.744	0,1672	3,7040	4.391	0,0370	0,8360	1.641	0,0139	0,3066
2006	27	5,44%	3.685.634	14,58%	136.505	0,4149	9,3986	53.529	0,1214	2,8064	7.999	0,0328	0,7449	3.049	0,0110	0,2515
2007	53	10,69%	10.382.580	41,07%	195.898	0,7765	16,1944	59.304	0,2957	6,1800	12.073	0,0595	1,2620	4.148	0,0241	0,5163
Total	496	100,00%	25.278.073	100,00%												

Table 3 - Characteristics of Sanctions (Banks Breakdown)

TOTAL

	Number of Sanctions	% of Total	Mean Sanction Value	Total Value	% of Total	Mean Sanction/ Total Assets (‰)	Mean Sanction/ Total Op. Income (‰)
SPA	80	16,13%	70.197	5.615.758	22,22%	0,081	1,691
POP	44	8,87%	186.835	8.220.759	32,52%	0,138	1,881
BCC	372	75,00%	30.757	11.441.555	45,26%	0,343	7,276
Total	496	100,00%		25.278.073	100,00%		

SPA

	Number of Sanctions	% of Total	Mean Sanction Value	Total Value	% of Total	Mean Sanction/ Total Assets (‰)	Mean Sanction/ Total Op. Income (‰)
1999-2001	31	38,75%	43.915	1.361.380	24,24%	0,083	1,551
2002-2004	31	38,75%	45.899	1.422.878	25,34%	0,071	1,370
2005-2007	18	22,50%	157.306	2.831.500	50,42%	0,098	2,579
Total	80	100,00%		5.615.758	100,00%		

POP

	Number of Sanctions	% of Total	Mean Sanction Value	Total Value	% of Total	Mean Sanction/ Total Assets (‰)	Mean Sanction/ Total Op. Income (‰)
1999-2001	14	31,82%	45.135	631.885	7,69%	0,259	4,426
2002-2004	22	50,00%	44.784	985.240	11,98%	0,086	0,299
2005-2007	8	18,18%	825.454	6.603.634	80,33%	0,048	1,378
Total	44	100,00%		8.220.759	100,00%		

BCC

	Number of Sanctions	% of Total	Mean Sanction Value	Total Value	% of Total	Mean Sanction/ Total Assets (‰)	Mean Sanction/ Total Op. Income (‰)
1999-2001	150	40,32%	14.759	2.213.792	19,35%	0,081	4,609
2002-2004	126	33,87%	17.944	2.260.890	19,76%	0,138	4,046
2005-2007	96	25,81%	72.572	6.966.873	60,89%	0,343	15,172
Total	372	100,00%		11.441.555	100,00%		

Table 4 - Characteristics of Sanctions (Category of Sanctions Breakdown)

	Category of Sanctions	% of Total	Mean Sanction Value	Total Value	% of Total	Mean Sanction/ Total Assets (‰)	Mean Sanction/ Total Op. Income (‰)
Balance Sheet	5	0,41%	148.524	742.620	2,94%	0,0251	0,6668
Internal Control	305	24,94%	17.719	5.404.179	21,38%	0,1267	2,7307
Credits	43	3,52%	17.561	755.103	2,99%	0,2193	4,7690
Finance	17	1,39%	45.062	766.058	3,03%	0,0451	1,0938
Management	52	4,25%	7.497	389.868	1,54%	0,0786	1,6899
Personal Initiative	281	22,98%	18.971	5.330.864	21,09%	0,1217	2,4679
Normative	238	19,46%	19.368	4.609.644	18,24%	0,1176	2,3818
Organization	222	18,15%	21.645	4.805.161	19,01%	0,1147	2,3738
Capital	48	3,92%	28.399	1.363.135	5,39%	0,0587	1,4176
Supervisory Reports	12	0,98%	92.620	1.111.440	4,40%	0,0772	1,0640
Total	1.223	100,00%		25.278.073	100,00%		

Table 5a – Regression results for determinants of sanctions

	Total Amount			Amount per Sanction			Total Head Amount			Head Amount per Sanction		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
Constant	523371.0**	2.566***	55.448***	164974.7***	1.242***	24.202***	30956.2***	0.208***	4.640***	10819.2***	0.108***	2.164***
	(2.553)	(4.280)	(4.295)	(3.784)	(6.023)	(5.360)	(3.469)	(4.689)	(4.732)	(5.242)	(6.362)	(5.635)
POP	139741.9***	0.104	1.690	38142.8***	0.033	0.613	4338.4**	0.005	0.101	1033.8**	0.002	0.053
	(3.022)	(0.772)	(0.609)	(3.878)	(0.708)	(0.632)	(2.155)	(0.559)	(0.460)	(2.220)	(0.536)	(0.650)
BCC	33791.73	-0.220*	-3.844	4403.2	-0.100**	-1.641*	-464.6	-0.019**	-0.403**	-703.6	-0.010***	-0.198***
	(0.789)	(-1.782)	(-1.512)	(0.483)	(-2.366)	(-1.846)	(-0.249)	(-2.160)	(-2.087)	(-1.632)	(-2.878)	(-2.629)
Dep & ST Funding	-2360.6*	0.002	0.032	-530.9*	0.001	0.029*	-105.6*	0.0002	0.004	-18.878	0.0001	0.003
	(-1.915)	(0.602)	(0.432)	(-2.025)	(0.731)	(1.114)	(-1.969)	(0.946)	(0.790)	(-1.521)	(1.101)	(1.558)
Liquid Assets	-4002.1**	-0.016***	-0.311***	-1321.6***	-0.008***	-0.152***	-214.4***	-0.001***	-0.025***	-79.813***	-0.0006***	-0.013***
	(-2.364)	(-3.246)	(-3.059)	(-3.670)	(-4.771)	(-4.276)	(-2.910)	(-3.550)	(-3.338)	(-4.682)	(-4.987)	(-4.369)
Net Loans / Tot Dep & Bor	-3765.8***	-0.009**	-0.177**	-1127.2***	-0.005***	-0.095***	-163.3***	-0.0007***	-0.014**	-52.393***	-0.0004***	-0.007***
	(-2.945)	(-2.455)	(-2.241)	(-4.145)	(-4.201)	(-3.469)	(-2.935)	(-2.604)	(-2.337)	(-4.069)	(-4.151)	(-3.198)
Net Interest Income	-41744.5**	-0.004	-0.785	-12664.2***	-0.016	-0.571	-2260.5**	-0.002	-0.115	-807.5***	-0.002	-0.083**
	(-2.036)	(-0.074)	(-0.642)	(-2.903)	(-0.777)	(-1.336)	(-2.533)	(-0.626)	(-1.244)	(-3.911)	(-1.648)	(-2.289)
Overheads	23565.2	0.019	0.144	6571.7*	0.003	0.084	1061.9	0.001	0.0003	300.1*	-9.13E-06	0.002
	(1.429)	(0.397)	(0.147)	(1.873)	(0.203)	(0.247)	(1.479)	(0.290)	(0.004)	(1.807)	(-0.006)	(0.154)
Personnel Expense	-73135.3*	-0.060	-1.074	-20567.8**	-0.038	-0.992	-3410.3**	-0.005	-0.111	-1016.7**	-0.003	-0.101
	(-1.864)	(-0.515)	(-0.452)	(-2.464)	(-0.965)	(-1.193)	(-1.997)	(-0.639)	(-0615)	(-2.573)	(-1.064)	(-1.428)
Equity	3610.6	-0.005	-0.109	1004.5	0.002	0.050	149.5	-4.10E-06	0.001	55.218*	0.0004*	0.011**
	(1.218)	(-0.603)	(-0.619)	(1.593)	(0.840)	(0.813)	(1.159)	(-0.006)	(0.093)	(1.850)	(1.931)	(2.103)
Log (Total Assets)	28303.5**	-0.192***	-4.039***	7279.0***	-0.079***	-1.601***	858.3*	-0.015***	-0.343***	169.45	-0.007***	-0.151***
	(2.535)	(-5.830)	(-5.811)	(3.065)	(-6.946)	(-6.665)	(1.766)	(-6.395)	(-6.577)	(1.507)	(-9.343)	(-7.420)
Number of Observation	325	311	309	325	311	309	325	311	309	325	311	309
Adj-R^2	0.156	0.158	0.155	0.264	0.238	0.225	0.159	0.181	0.181	0.268	0.262	0.253

The regression estimates the relation between different measures of sanction and financial characteristics of banks. Total Amount is the total amount of sanction inflicted to the bank; Amount per Sanction is the amount of sanction per argument (equal to the ratio of Total Amount to the number of argument of sanction); Total Head Amount is the total amount of sanction inflicted to each board member (equal to the ratio of Total Amount to the number of individual sanctioned); Head Amount per Sanction is the amount per sanction inflicted to each individual (equal to the ratio of Amount per Sanction to the number of individual sanctioned). Version (a) considers the absolute value of the measures of sanction; version (b) considers the ratio of sanction to total assets; version (c) considers the ratio of sanction to total operating income. POP is a dummy variable equal to 1 if the bank matches with POP institutional category; BCC is a dummy variable equal to 1 if the bank matches with BCC institutional category; Dep & ST Funding is the ratio of $Avg_{t-3years}$ Deposit & Short Term Funding to $Avg_{t-3years}$ Total Assets; Liquid Asset is the ratio of $Avg_{t-3years}$ Liquid Assets to $Avg_{t-3years}$ Total Assets; Net Loans/Total Dep & Bor is the ratio of $Avg_{t-3years}$ Net Loans to $Avg_{t-3years}$ Total Deposit & Borrowing; Net Interest Income is the ratio of $Avg_{t-3years}$ Net Interest Income to $Avg_{t-3years}$ Total Assets; Overheads is the ratio of $Avg_{t-3years}$ Overheads to $Avg_{t-3years}$ Total Assets; Personnel Expense is the ratio of $Avg_{t-3years}$ Personnel Expense to $Avg_{t-3years}$ Total Assets; Equity is the ratio of $Avg_{t-3years}$ Equity to $Avg_{t-3years}$ Total Assets; Log(Total Assets) is the logarithm of $Avg_{t-3years}$ Total Assets. Alternative models have been developed to test robustness to different included/excluded variables. Numbers in parenthesis represent the T-statistic. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Adj.-R^2 is adjusted R-squared.

Table 5b – Regression results for determinants of sanctions

	Total Amount			Amount per Sanction			Total Head Amount			Head Amount per Sanction		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
Constant	381326.6	2.5214***	54.291***	123114.5**	0.8441***	20.5382***	25258.41**	0.2071***	4.7252***	8568.225***	0.0736***	1.9059***
	(1.347)	(3.141)	(3.296)	(2.048)	(3.332)	(3.741)	(2.047)	(3.503)	(3.798)	(3.006)	(3.708)	(4.364)
POP	133509.4***	0.0959	1.5456	37098.61***	0.0342	0.6319	4145.384**	0.0047	0.0815	1035.610**	0.0020	0.0477
	(2.838)	(0.716)	(0.558)	(3.715)	(0.810)	(0.684)	(2.022)	(0.483)	(0.390)	(2.187)	(0.6043)	(0.650)
BCC	35190.94	-0.1901	-3.4091	4380.861	-0.0735*	-1.4241	-569.92	-0.0161*	-0.3377*	-754.9587*	-0.0067**	-0.1523**
	(0.786)	(-1.509)	(-1.312)	(0.461)	(-1.851)	(-1.644)	(-0.292)	(-1.739)	(-1.721)	(-1.676)	(-2.161)	(-2-211)
Loans	510.58	-0.0059	-0.0612	596.0358	0.0036	0.0708	91.704	-0.0009	-0.0197	68.8422	-5.86E-05	-0.0055
	(0.061)	(-0.253)	(-0.127)	(0.338)	(0.492)	(0.442)	(0.253)	(-0.542)	(-0.543)	(0.824)	(-0.100)	(-0.432)
Dep & ST Funding	-2879.31**	0.0015	0.0197	-657.1344**	0.0012	0.0207	-128.33**	0.0002	0.0034	-24.3478*	0.0001	0.0025
	(-2.253)	(0.421)	(0.261)	(-2.422)	(1.074)	(0.822)	(-2.304)	(0.799)	(0.595)	(-1.892)	(-1.576)	(1.287)
Liquid Assets	-4548.763**	-0.0166***	-0.3219***	-1390.07***	-0.0062***	-0.1349***	-234.70***	-0.0013***	-0.0263***	-77.2385***	-0.0005***	-0.0113***
	(-2.253)	(-3.121)	(-2.946)	(-3.469)	(-3.722)	(-3.704)	(2.853)	(-3.311)	(-3.187)	(-4.065)	(-3.851)	(-3.912)
Net Loans / Tot Dep & Bor	-4696.921	-0.0049	-0.1386	-1704.68	-0.0070	-0.1479	-260.323	2.55E-05	0.0012	-110.0976*	-0.0002	-0.0024
	(-0.711)	(-0.267)	(-0.363)	(1.215)	(-1.201)	(-1.165)	(-0.904)	(0.018)	(0.043)	(-1.655)	(-0.566)	(-0.240)
Net Interest Income	-22509.4	0.0079	-0.5233	-7913.77	0.0007	-0.2825	-1488.730	-0.0018	-0.0962	-598.3427**	-0.0010	-0.0513
	(-0.948)	(0.118)	(-0.382)	(-1.570)	(-1.201)	(-0.619)	(-1.439)	(-0.383)	(-0.931)	(-2.504)	(-0.643)	(-1.415)
Overheads	16631.04	0.0180	0.0914	5033.18	0.0121	0.1176	784.5968	0.0014	0.0030	251.3624	0.0009	0.0099
	(0.970)	(0.373)	(0.092)	(1.382)	(0.799)	(0.358)	(1.050)	(0.399)	(0.041)	(1.456)	(0.829)	(0.378)
Personnel Expense	-83595.59**	-0.0526	-0.9019	-23142.3***	-0.0536	-1.0393	-3842.365**	-0.0049	-0.0906	-1133.57***	-0.0049*	-0.1036
	(-2.035)	(-0.449)	(-0.376)	(-2.653)	(-1.451)	(-1.300)	(-2.146)	(-0.572)	(-0.500)	(-2.741)	(-1.695)	(-1.630)
Equity	5194.387	-0.0083	-0.1387	1623.345	0.0040	0.0817	254.2861	-0.0006	-0.0115	102.7261*	0.0003	0.0056
	(0.900)	(-0.509)	(-0.413)	(1.325)	(0.789)	(0.731)	(1.011)	(-0.501)	(-0.456)	(1.768)	(0.833)	(0.636)
Cost to Income Ratio	2017.794**	0.0006	0.0129	465.40**	0.0003	0.0056	77.9492*	-1.75E-05	-0.0003	16.4206	6.46E-05	5.31E-06
	(2.037)	(0.224)	(0.228)	(2.213)	(0.378)	(0.301)	(1.805)	(-0.085)	(-0.077)	(1.646)	(0.093)	(0.003)
Log (Total Assets)	34901.10***	-0.1801***	-3.8200***	9066.37***	-0.0613***	-1.3823***	1112.587**	-0.0145***	-0.3254***	255.1165**	-0.0053***	-0.1293***
	(2.780)	(-5.027)	(-5.168)	(3.401)	(-5.421)	(-5.611)	(2.033)	(-5.517)	(-5.831)	(2.018)	(-6.047)	(-6.602)
Number of Observation	316	303	302	316	303	302	316	303	302	316	303	302
Adj-R^2	0.166	0.143	0.142	0.275	0.211	0.207	0.166	0.159	0.162	0.272	0.236	0.242

The regression estimates the relation between different measures of sanction and financial characteristics of banks. Total Amount is the total amount of sanction inflicted to the bank; Amount per Sanction is the amount of sanction per argument (equal to the ratio of Total Amount to the number of argument of sanction); Total Head Amount is the total amount of sanction inflicted to each board member (equal to the ratio of Total Amount to the number of individual sanctioned); Head Amount per Sanction is the amount per sanction inflicted to each individual (equal to the ratio of Amount per Sanction to the number of individual sanctioned). Version (a) considers the absolute value of the measures of sanction; version (b) considers the ratio of sanction to total assets; version (c) considers the ratio of sanction to total operating income. POP is a dummy variable equal to 1 if the bank matches with POP institutional category; BCC is a dummy variable equal to 1 if the bank matches with BCC institutional category; Loans is the ratio of $Avg_{t\text{-}3years}$ Loans to $Avg_{t\text{-}3years}$ Total Assets; Interest Income on Loans is the ratio of $Avg_{t\text{-}3years}$ Interest Income on Loans to $Avg_{t\text{-}3years}$ Total Assets; Dep & ST Funding is the ratio of $Avg_{t\text{-}3years}$ Deposit & Short Term Funding to $Avg_{t\text{-}3years}$ Total Assets; Liquid Asset is the ratio of $Avg_{t\text{-}3years}$ Liquid Assets to $Avg_{t\text{-}3years}$ Total Assets; Net Loans/Total Dep & Bor is the ratio of $Avg_{t\text{-}3years}$ Net Loans to $Avg_{t\text{-}3years}$ Total Deposit & Borrowing; Liquid Assets/Dep & ST Funding is the ratio of $Avg_{t\text{-}3years}$ Liquid Assets to $Avg_{t\text{-}3years}$ Deposit & Short Term Funding; Net Interest Income is the ratio of $Avg_{t\text{-}3years}$ Net Interest Income to $Avg_{t\text{-}3years}$ Total Assets; Overheads is the ratio of $Avg_{t\text{-}3years}$ Overheads to $Avg_{t\text{-}3years}$ Total Assets; Personnel Expense is the ratio of $Avg_{t\text{-}3years}$ Personnel Expense to $Avg_{t\text{-}3years}$ Total Assets; Equity is the ratio of $Avg_{t\text{-}3years}$ Equity to $Avg_{t\text{-}3years}$ Total Assets; Equity/Net Loans is the ratio of $Avg_{t\text{-}3years}$ Equity to $Avg_{t\text{-}3years}$ Net Loans; Equity/Liabilities is the ratio of $Avg_{t\text{-}3years}$ Equity to $Avg_{t\text{-}3years}$ Liabilities; Cost to Income is the $Avg_{t\text{-}3years}$ Cost to Income Ratio; Log(Total Assets) is the logarithm of $Avg_{t\text{-}3years}$ Total Assets. Alternative models have been developed to test robustness to different included/excluded variables. Numbers in parenthesis represent the T-statistic. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Adj.-R^2 is adjusted R-squared.

Table 5c – Regression results for determinants of sanctions

	Total Amount			Amount per Sanction			Total Head Amount			Head Amount per Sanction		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
Constant	281994.2	2.8058***	61.9750***	91379.67	0.9304***	21.9230***	24987.25	0.2416***	5.4828***	7733.93**	0.0832***	2.0119***
	(0.769)	(3.765)	(3.944)	(1.195)	(4.165)	(4.504)	(1.571)	(4.165)	(4.106)	(2.162)	(4.1161)	(4.555)
POP	83541.38	0.0073	-0.5165	26637.97**	0.0110	0.0890	2082.07	-6.43E-05	-0.0237	667.71	0.0012	0.0326
	(1.614)	(0.069)	(-0.229)	(2.467)	(0.348)	(0.127)	(0.927)	(-0.007)	(-0.124)	(1.321)	(0.424)	(0.517)
BCC	12026.43	-0.1318	-1.3303	-1755.41	-0.0549*	-0.7305	-1340.51	-0.0109	-0.1621	-1027.98**	-0.0053*	-0.1046
	(0231)	(-1.235)	(-0.584)	(-0.161)	(-1.716)	(-1.036)	(-0.593)	(-1.224)	(-0.838)	(-2.023)	(-1.857)	(-1.636)
Loans	-3505.48	-0.0212	-0.4887	-910.35	-0.0073	-0.1985	-105.99	-0.0026	-0.0621	-33.8547	-0.0011**	-0.0316***
	(-0.363)	(-1.069)	(-1.168)	(-0.452)	(-1.240)	(-1.533)	(-0.253)	(-1.577)	(-1.749)	(-0.359)	(-2.196)	(-2.693)
Interest Income on Loans	72118.55**	0.0231	-0.2755	12983.28*	0.0130	-0.0168	2732.14*	0.0014	-0.0293	309.659	0.0001	-0.0227
	(2.081)	(0.3220)	(-0.182)	(1.797)	(0.607)	(-0.036)	(1.818)	(0.234)	(-0.228)	(0.915)	(0.070)	(-0.535)
Dep & ST Funding	1548.66	-0.0004	0.0020	483.10	-0.0004	-0.0030	27.86	2.27E-05	0.0012	23.613	8.87E-06	0.0010
	(0.469)	(-0.062)	(0.014)	(0.702)	(-0.234)	(-0.069)	(0.194)	(0.040)	(0.107)	(0.733)	(0.049)	(0.256)
Liquid Assets	-17049.07**	-0.0076	-0.1503	-4554.51***	-0.0015	-0.0473	-665.76**	-0.0007	-0.0155	-203.10***	-0.0002	-0.0066
	(-2.506)	(-0.550)	(-0.519)	(-3.210)	(-0.364)	(-0.528)	(-2.255)	(-0.630)	(-0.634)	(-3.058)	(-0.560)	(-0.816)
Net Loans / Tot Dep & Bor	-4668.60	0.0084	0.2556	-1053.23	0.0024	0.0966	-227.71	0.0014	0.0387	-40.656	0.0007	0.0215**
	(-0.593)	(0.524)	(0.753)	(-0.641)	(0.513)	(0.919)	(1.394)	(1.057)	(1.345)	(-0.529)	(1.648)	(2.263)
Liquid Assets / Dep & ST Funding	7723.47*	-0.0028	-0.0394	1985.03**	-0.0019	-0.0259	265.04	-0.0001	-0.0024	80.635*	-0.0001	-0.0008
	(1.763)	(-0.325)	(-0.212)	(2.172)	(-0.721)	(-0.450)	(1.394)	(-0.265)	(-0.156)	(1.885)	(-0.476)	(-0.166)
Net Interest Income	-80010.62**	-0.0375	-0.6559	-19015.76***	-0.0154	-0.3481	-3663.73**	-0.0041	-0.0867	-918.20***	-0.0015	-0.0395
	(-2.261)	(-0.518)	(-0.431)	(-2.576)	(-0.711)	(-0.739)	(-2.386)	(-0.693)	(-0.617)	(-2.658)	(-0.777)	(-0.924)
Overheads	15834.23	0.0198	0.3265	3598.24	0.0006	-0.0862	815.86	0.0012	0.0143	140.05	-0.0001	-0.0133
	(0.788)	(0.487)	(0.382)	(0.859)	(0.053)	(-0.326)	(0.936)	(0.354)	(0.197)	(0.714)	(-0.173)	(-0.554)
Personnel Expense	-83634.25*	0.0129	0.7816	-20648.49**	0.0050	0.3055	-3585.32*	0.0019	0.0666	-834.006*	0.0003	0.0123
	(-1.795)	(0.135)	(0.388)	(-2.125)	(0.174)	(0.489)	(-1.774)	(0.242)	(0.389)	(1.834)	(0.147)	(0.218)
Cost to Income Ratio	1330.93	-0.0077*	-0.2235**	420.66	-0.0014	-0.0467*	13.709	-0.0006	-0.0175**	12.459	-0.0001	-0.0027
	(0.641)	(-1.831)	(-2.501)	(0.972)	(-1.137)	(-1.688)	(0.152)	(-1.870)	(-2.318)	(0.615)	(-0.904)	(-1.096)
Equity	9269.85	-0.0122	-0.3874	1830.48	-0.0018	-0.1022	403.60	-0.0013	-0.0381	68.001	-0.0003	-0.0134
	(1.183)	(-0.757)	(-1.139)	(1.120)	(-0.375)	(-0.971)	(1.187)	(-0.990)	(-1.320)	(0.889)	(-0.855)	(-1.405)
ROA	-37373.41	-0.1180	-3.6812**	-6144.54	-0.0093	-0.4901	-2215.012	-0.0085	-0.2562	-291.294	-0.0002	-0.0180
	(-1.052)	(-1.635)	(-2.431)	(-0.829)	(-0.434)	(-1.045)	(-1.437)	(-1.418)	(-1.992)	(-0.840)	(-0.115)	(-0.424)
Log (Total Assets)	39117.02***	-0.1369***	-2.8995***	9150.61***	-0.0493***	-1.1218***	1307.85**	-0.0118***	-0.2679***	203.86	-0.0048***	-0.1204***
	(2.653)	(-4.509)	(-4.505)	(2.976)	(-5.425)	(-5.627)	(2.045)	(-4.686)	(-4.899)	(1.416)	(-5.999)	(-6.658)
Number of Observation	279	268	267	279	268	267	279	268	267	279	268	267
Adj-R^2	0.212	0.124	0.125	0.326	0.210	0.202	0.203	0.125	0.128	0.308	0.216	0.226

The regression estimates the relation between different measures of sanction and financial characteristics of banks. Total Amount is the total amount of sanction inflicted to the bank; Amount per Sanction is the amount of sanction per argument (equal to the ratio of Total Amount to the number of argument of sanction); Total Head Amount is the total amount of sanction inflicted to each board member (equal to the ratio of Total Amount to the number of individual sanctioned); Head Amount per Sanction is the amount per sanction inflicted to each individual (equal to the ratio of Amount per Sanction to the number of individual sanctioned). Version (a) considers the absolute value of the measures of sanction; version (b) considers the ratio of sanction to total assets; version (c) considers the ratio of sanction to total operating income. POP is a dummy variable equal to 1 if the bank matches with POP institutional category; BCC is a dummy variable equal to 1 if the bank matches with BCC institutional category; Loans is the ratio of $Avg_{t\text{-}3years}$ Loans to $Avg_{t\text{-}3years}$ Total Assets; Interest Income on Loans is the ratio of $Avg_{t\text{-}3years}$ Interest Income on Loans to $Avg_{t\text{-}3years}$ Total Assets; Dep & ST Funding is the ratio of $Avg_{t\text{-}3years}$ Deposit & Short Term Funding to $Avg_{t\text{-}3years}$ Total Assets; Liquid Asset is the ratio of $Avg_{t\text{-}3years}$ Liquid Assets to $Avg_{t\text{-}3years}$ Total Assets; Net Loans/Total Dep & Bor is the ratio of $Avg_{t\text{-}3years}$ Net Loans to $Avg_{t\text{-}3years}$ Total Deposit & Borrowing; Liquid Assets/Dep & ST Funding is the ratio of $Avg_{t\text{-}3years}$ Liquid Assets to $Avg_{t\text{-}3years}$ Deposit & Short Term Funding; Net Interest Income is the ratio of $Avg_{t\text{-}3years}$ Net Interest Income to $Avg_{t\text{-}3years}$ Total Assets; Overheads is the ratio of $Avg_{t\text{-}3years}$ Overheads to $Avg_{t\text{-}3years}$ Total Assets; Personnel Expense is the ratio of $Avg_{t\text{-}3years}$ Personnel Expense to $Avg_{t\text{-}3years}$ Total Assets; Equity is the ratio of $Avg_{t\text{-}3years}$ Equity to $Avg_{t\text{-}3years}$ Total Assets; Cost to Income is the $Avg_{t\text{-}3years}$ Cost to Income Ratio; ROA in the $Avg_{t\text{-}3years}$ Return on Assets; Log(Total Assets) is the logarithm of $Avg_{t\text{-}3years}$ Total Assets. Alternative models have been developed to test robustness to different included/excluded variables. Numbers in parenthesis represent the T-statistic. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Adj.-R^2 is adjusted R-squared.

Table 6 – Regression results for determinants of category of sanctions

	Balance Sheet	Internal Control	Credits	Finance	Personal Initiative	Normative	Organization	Capital	Supervisory Reports
POP	-0.0958	-0.2189	-0.0358	0.4303	0.0774	0.1346	-0.2685	0.1756	2.3048
	(-0.102)	(-0.697)	(-0.074)	(0.562)	(0.259)	(0.450)	(-0.864)	(0.483)	(1.604)
BCC	0.5689	-0.1178	0.3209	1.7904*	0.2948	0.3736	-0.4713	-0.2956	2.2596
	(0.493)	(-0.414)	(0.715)	(1.933)	(1.062)	(1.342)	(-1.682)	(-0.812)	(1.256)
Dep & ST Funding	-0.0199	0.0072	-0.0038	0.0023	-0.0074	-0.0060	-0.0011	-0.0189*	-0.0439
	(-0.633)	(0.852)	(-0.337)	(0.127)	(-0.924)	(-0.746)	(-0.138)	(-1.748)	(-1.696)
Liquid Assets	0.0238	-0.0067	-0.0303**	-0.0016	0.0102	0.0127	0.0022	0.0070	0.0387
	(0.518)	(-0.588)	(-2.123)	(-0.057)	(0.929)	(1.155)	(0.203)	(0.433)	(0.882)
Net Loans / Tot Dep & Bor	0.0015	0.0113	-0.0399***	-0.0024	0.0031	0.0037	0.0174**	0.0033	0.0051
	(0.042)	(1.303)	(-3.632)	(-0.121)	(0.379)	(0.447)	(2.061)	(0.263)	(0.161)
Net Interest Income	-0.8095	0.0225	0.2926	0.5318	-0.0596	-0.0971	0.0326	0.0541	-0.3956
	(-1.332)	(0.145)	(1.706)	(1.560)	(-0.428)	(-0.683)	(0.230)	(0.277)	(-0.663)
Overheads	-0.2582	-0.5046**	-0.0614	0.0326	0.2613	0.3895**	-0.0321	-0.1206	0.0456
	(-0.601)	(-2.490)	(-0.424)	(0.073)	(1.641)	(2.136)	(-0.251)	(-0.628)	(0.091)
Personnel Expense	0.8866	0.6140*	-0.0087	0.0254	-0.1294	-0.2410	-0.1503	0.4737	0.0215
	(0.726)	(1.813)	(-0.024)	(0.034)	(-0.443)	(-0.773)	(-0.562)	(1.141)	(0.019)
Equity	0.0435	-0.0217	0.0473*	-0.0490	-0.0308	-0.0269	-0.0034	-0.1019***	-0.1789
	(0.620)	(-1.095)	(1.891)	(-0.853)	(-1.588)	(-1.380)	(-0.176)	(-2.994)	(-1.588)
Log (Total Assets)	0.2558	-0.2942***	0.1065	0.4520***	0.0691	0.1126	-0.1623**	-0.0945	0.2186
	(0.9471)	(-3.659)	(1.071)	(2.600)	(0.939	(1.510)	(-2.167)	(-0.935)	(0.880)
Number of Obs.	325	325	325	325	325	325	325	325	325
Log likelihood	-14.505	-196.397	-98.589	-39.251	-217.092	-216.718	-205.033	-102.807	-23.924

The table represents the result we get by applying the binary probit model. The category of sanction is the dependent variables. It is a dummy variable equal to 1 when the bank has been sanctioned for one of the arguments we considered in our classification, respectively: Balance Sheet, Internal Control, Credits, Finance, Personal Initiative, Normative, Organization, Capital, Supervisory Report. POP is a dummy variable equal to 1 if the bank matches with POP institutional category; BCC is a dummy variable equal to 1 if the bank matches with BCC institutional category; Dep & ST Funding is the ratio of $Avg_{t-3years}$ Deposit & Short Term Funding to $Avg_{t-3years}$ Total Assets; Liquid Asset is the ratio of $Avg_{t-3years}$ Liquid Assets to $Avg_{t-3years}$ Total Assets; Net Loans/Total Dep & Bor is the ratio of $Avg_{t-3years}$ Net Loans to $Avg_{t-3years}$ Total Deposit & Borrowing; Net Interest Income is the ratio of $Avg_{t-3years}$ Net Interest Income to $Avg_{t-3years}$ Total Assets; Overheads is the ratio of $Avg_{t-3years}$ Overheads to $Avg_{t-3years}$ Total Assets; Personnel Expense is the ratio of $Avg_{t-3years}$ Personnel Expense to $Avg_{t-3years}$ Total Assets; Equity is the ratio of $Avg_{t-3years}$ Equity to $Avg_{t-3years}$ Total Assets; Log(Total Assets) is the logarithm of $Avg_{t-3years}$ Total Assets. Numbers in parenthesis represent the Z-statistic. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Adj.-R^2 is adjusted R-squared.

Table 7 – Change model finding

Financial Indicators	1 y Post – Pre Sanction		2 y Post – Pre Sanction		3 y Post – Pre Sanction	
	Median Delta (%)	Banks with increase	Median Delta (%)	Banks with increase	Median Delta (%)	Banks with increase
Loans/Total Assets	2.56	65.60%	6.41	76.21%	11.01	84.65%
Interest Income on Loans/Total Assets	0.41	64.13%	1.05	84.07%	1.78	96.00%
Dep & ST Funding/Total Assets	-1.08	44.96%	-1.36	46.62%	-2.33	48.37%
Liquid Assets/Total Assets	-1.41	45.21%	-4.50	38.59%	-10.29	26.85%
Net Loans / Tot Dep & Bor	12.18	63.93%	7.24	74.51%	2.90	81.99%
Net Interest Income/Total Assets	0.06	58.97%	0.22	58.90%	0.46	73.49%
Overheads/Total Assets	0.03	54.79%	0.14	57.42%	0.18	65.58%
Personnel Expense/Total Assets	0.08	65.27%	0.17	70.87%	0.23	74.42%
Cost to Income Ratio	-2.01	47.37%	-2.28	47.54%	-2.34	73.17%
Equity/Total Assets	-0.25	42.01%	-0.65	40.84%	-1.05	41.20%
Total Capital/Total Assets	-0.28	54.02%	0.17	58.70%	0.92	65.13%
Equity/Liabilities	-0.34	43.38%	-1.00	41.35%	0.16	42.13%
ROA	-0.25	57.85%	-0.09	45.95%	0.18	41.43%

The table represent the average change (median delta %), between the post-sanction and pre-sanction industry adjusted performance. In particular, we considered the following time periods: the t+1 year post-sanction and t-1 year pre-sanction period; the Avg $_{t+2\ years}$ post-sanction and Avg $_{t-2\ years}$ pre-sanction period; the Avg $_{t+3\ years}$ post-sanction and Avg $_{t-3\ years}$ pre-sanction period. The median delta over these frames is showed, together with the percentage of banks achieving an increasing performance, for the following financial indicators: Loans to Total Assets; Interest Income on Loans to Total Assets; Deposit & Short Term Funding to Total Assets; Liquid Assets to Total Assets; Net Loans to Total Deposit & Borrowing; Net Interest Income to Total Assets; Overheads to Total Assets; Personnel Expense to Total Assets; Cost to Income Ratio; Equity to Total Assets; Total Capital to Total Assets, Equity to Liabilities; ROA.

Table 8 – Regression based model finding

Financial Indicators	Time Frame	Dependent Variable	Independent Variable	N° of observations	α	β	Adjusted R-squared	Log Likehood
Loans/Total Assets	1y	Loans $_{t+1}$	Loans $_{t-1}$	407	6.186*** (4.808)	0.937*** (40.323)	0.800	-1381.82
	2y	Loans $_{avg.\ t+2}$	Loans $_{avg.\ t-2}$	310	8.837*** (5.386)	0.917*** (40.323)	0.747	-1079.01
	3y	Loans $_{avg.\ t+3}$	Loans $_{avg.\ t-3}$	213	12.068** (5.766)	0.896*** (23.264)	0.718	-756.65
Interest Income on Loans/Total Assets	1y	Int.Loans $_{t+1}$	Int.Loans $_{t-1}$	368	1.233*** (8.137)	0.648*** (16.161)	0.414	-433.87
	2y	Int.Loans $_{avg.\ t+2}$	Int.Loans $_{avg.\ t-2}$	273	1.160*** (7.600)	0.642*** (15.922)	0.481	-275.78
	3y	Int.Loans $_{avg.\ t+3}$	Int.Loans $_{avg.\ t-3}$	168	1.054*** (5.716)	0.655*** (13.282)	0.512	-153.27
Dep & ST Funding/Total Assets	1y	D&STF $_{t+1}$	D&STF $_{t-1}$	407	3.242* (1.781)	0.906 (32.868)	0.726	-1317.11
	2y	D&STF $_{avg.\ t+2}$	D&STF $_{avg.\ t-2}$	310	2.337 (0.933)	0.904*** (24.273)	0.655	-1033.98
	3y	D&STF $_{avg.\ t+3}$	D&STF $_{avg.\ t-3}$	213	-0.1249 (-0.037)	0.918*** (18.717)	0.622	-716.11
Liquid Assets/Total Assets	1y	Liquid $_{t+1}$	Liquid $_{t-1}$	407	4.944*** (3.969)	0.732*** (20.801)	0.515	-1557.10
	2y	Liquid $_{avg.\ t+2}$	Liquid $_{avg.\ t-2}$	310	1.839 (1.081)	0.764*** (16.470)	0.466	-1188.77
	3y	Liquid $_{avg.\ t+3}$	Liquid $_{avg.\ t-3}$	214	-2.217 (-1.136)	0.785*** (14.881)	0.508	-802.78
Net Loans / Tot Dep & Bor	1y	Net.Loans $_{t+1}$	Net.Loans $_{t-1}$	402	8.398*** (5.213)	0.915*** (37.568)	0.778	-1440.88
	2y	Net.Loans $_{avg.\ t+2}$	Net.Loans $_{avg.\ t-2}$	308	10.282*** (6.170)	0.908 (35.674)	0.758	-665.23
	3y	Net.Loans $_{avg.\ t+3}$	Net.Loans $_{avg.\ t-3}$	213	12.547*** (7.294)	0.893*** (33.630)	0.735	-289.59
Net Interest Income/Total Assets	1y	Net.Int.In. $_{t+1}$	Net.Int.In. $_{t-1}$	407	1.102*** (9.306)	0.619*** (17.764)	0.436	-327.64
	2y	Net.Int.In. $_{avg.\ t+2}$	Net.Int.In. $_{avg.\ t-2}$	308	1.503*** (9.954)	0.477*** (10.648)	0.267	-242.77
	3y	Net.Int.In. $_{avg.\ t+3}$	Net.Int.In. $_{avg.\ t-3}$	213	1.485*** (7.611)	0.467*** (8.047)	0.231	-178.62
Overheads/Total Assets	1y	Overheads $_{t+1}$	Overheads$_{t-1}$	407	0.524*** (5.527)	0.780*** (28.406)	0.664	-412.08
	2y	Overheads$_{avg.\ t+2}$	Overheads $_{avg.\ t-2}$	309	0.905*** (11.016)	0.646*** (27.069)	0.703	-224.76
	3y	Overheads$_{avg.\ t+3}$	Overheads$_{avg.\ t-3}$	213	0.775*** (9.916)	0.661*** (29.124)	0.799	-116.82
Personnel Expense/Total Assets	1y	Personnel $_{t+1}$	Personnel$_{t-1}$	406	0.113** (2.362)	0.886*** (31.548)	0.710	-73.51
	2y	Personnel$_{avg.\ t+2}$	Personnel$_{avg.\ t-2}$	307	0.291*** (6.535)	0.762*** (29.517)	0.739	4.93
	3y	Personnel$_{avg.\ t+3}$	Personnel$_{avg.\ t-3}$	212	0.291*** (5.721)	0.742*** (25.065)	0.748	11.82
Cost to Income Ratio	1y	CostInc$_{t+1}$	CostInc$_{t-1}$	399	49.828*** (20.504)	0.298*** (9.230)	0.174	-1520.74
	2y	CostInc$_{avg.\ t+2}$	CostInc$_{avg.\ t-2}$	298	47.291*** (16.310)	0.328*** (8.501)	0.193	-1094.89
	3y	CostInc$_{avg.\ t+3}$	CostInc$_{avg.\ t-3}$	207	43.735*** (12.423)	0.367*** (7.691)	0.220	-735.62
Equity/Total Assets	1y	Equity$_{t+1}$	Equity$_{t-1}$	407	1.486*** (6.060)	0.848*** (43.531)	0.823	-803.94
	2y	Equity$_{avg.\ t+2}$	Equity$_{avg.\ t-2}$	310	3.020*** (8.787)	0.694*** (25.551)	0.678	-678.96
	3y	Equity$_{avg.\ t+3}$	Equity$_{avg.\ t-3}$	214	4.268*** (10.710)	0.565*** (18.164)	0.606	-475.81

Total Capital/Total Assets	1y	$Capital_{t+1}$	$Capital_{t-1}$	361	5.824*** (14.561)	0.478*** (18.120)	0.476	-1044.11
	2y	$Capital_{avg\ t+2}$	$Capital_{avg\ t-2}$	252	4.222*** (10.883)	0.596*** (19.405)	0.599	-566.69
	3y	$Capital_{avg\ t+3}$	$Capital_{avg\ t-3}$	172	3.671*** (8.625)	0.637*** (18.525)	0.666	-359.36
Equity/Liabilities	1y	Eq/Lia_{t+1}	Eq/Lia_{t-1}	408	1.885*** (6.359)	0.831*** (42.174)	0.813	-948.06
	2y	$Eq/Lia_{avg\ t+2}$	$Eq/Lia_{avg\ t-2}$	310	3.726*** (10.260)	0.675*** (28.789)	0.669	-656.25
	3y	$Eq/Lia_{avg\ t+3}$	$Eq/Lia_{avg\ t-3}$	214	0.409 (0.415)	0.924*** (14.708)	0.344	-269.24
ROA	1y	ROA_{t+1}	ROA_{t-1}	382	0.524*** (15.789)	0.175*** (5.518)	0.071	-327.26
	2y	$ROA_{avg\ t+2}$	$ROA_{avg\ t-2}$	279	0.488*** (11.709)	0.199**** (4.371)	0.061	-229.11
	3y	$ROA_{avg\ t+3}$	$ROA_{avg\ t-3}$	195	0.531*** (11.709)	0.163** (2.468)	0.025	-160.15

The regression estimates the result we obtained applying the intercept model. For each financial indicator the relation between post and pre sanction value is calculated, over the following time periods: the t+1 year post-sanction and t-1 year pre-sanction period; the Avg $_{t+2\ years}$ post-sanction and Avg $_{t-2\ years}$ pre-sanction period; the Avg $_{t+3\ years}$ post-sanction and Avg $_{t-3\ years}$ pre-sanction period. The following financial indicators are considered: Loans to Total Assets; Interest Income on Loans to Total Assets; Deposit & Short Term Funding to Total Assets; Liquid Assets to Total Assets; Net Loans to Total Deposit & Borrowing; Net Interest Income to Total Assets; Overheads to Total Assets; Personnel Expense to Total Assets; Cost to Income Ratio; Equity to Total Assets; Total Capital to Total Assets, Equity to Liabilities; ROA. Numbers in parenthesis represent the T-statistic. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.