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ITALIAN BANKING SUPERVISION UNDER THE SSM PRINCIPLES: AN ANALYSIS OF THE SANCTIONING ACTIVITY

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Italian Banking Supervision under the SSM principles: an analysis of the sanctioning activity[a].

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Abstract

This investigation exploits a newly built database, which merges the balance sheets data of Italian banks with data on the civil penalties inflicted by the main Italian Supervisory Authorities (i.e. Bank of Italy and Consob) in the last decade. This investigation evaluates the effect of the banking supervision in Italy by analyzing the banks performances before and after enforcement actions. The scope of the analysis is twofold: we identify the main determinants of the probability of civil penalty and we evaluate the effects of these enforcement actions on banks performance. The results underline the predictive role played by efficiency, productivity, transparency, and riskiness, mainly funding and interest risk, as well as, by the business orientation. Moreover, a positive causality has been detected between the sanction event and the banks performance, but only to the extent for which the penalty induces a change in the bank's behavior.

Key Words: *Administrative Sanctions; Enforcement Actions; Bank Supervision; Bank Performance; Risk Profile.*

JEL Classification: *G21, G28, G29.*

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1 Introduction

Since the Single Supervisory Mechanism (SSM) is under implementation and both the Banking Union and the Capital Market Union are being defined, it is of interest to analyze the determinants of the efficacy of the supervisory system that the Italian Supervisory Authorities applied towards national banks before the reform of the surveillance system. The arising of new financial institutes achieves primarily for contrasting the financial markets fragmentation at European level, which, as the recent financial crisis has underlined, threatens to compromise both the single money mechanism and the single market integrity. Furthermore, they aim at overcoming excessively tolerant behaviors by single country's Authority, mainly towards supervised large national banks.

The SSM is based on proportionality principles, which relate to the risk profile and the systemic relevance of the single intermediary, and on principles of efficacy and timing of the remedial action by a pro-active approach, as well as, on principles aimed at the best-practice and independence of the supervisory authority. The ultimate scope of such a system is the potential loss reduction and, thus, preventing unordered bankruptcy of relevant financial institutions (ECB,2014). Specifically, the SSM's funding regulation includes a comprehensive framework about the administrative sanctions (art. 18) that, jointly with the single national central banks' regulations, aims to guarantee the respect of the law and decisions on banking supervision. The innovation in the new regulation achieves for ensuring that civil penalties are efficient, proportionated and dissuasive in case of violation.

From legislative analyses of both Italian and European regulations about banking administrative sanctions, among which Clarich(1995) and Clarich(2014), the new single supervisory mechanism seems complete and smoothed. For what regards the Italian legislation, the "*Testo Unico Bancario*[1]"(TUB) has insured yet appropriated standards. Namely, the legal minima and maxima's revision[2] adopted in 2011 insured the respect of the proportionality, dissuasiveness and adequacy principles, as state in the EU regulation. However, it is poorly debated on the enforcement action mechanism designed by this system, namely on-site supervision and the civil money penalties. This analysis looks for providing useful information to such an evaluation, by referring to the actual regulation and future reforms, to identify strengths and weakness of the Italian system.

With the larger scope to empirically evaluate the sanctioning mechanism towards Italian banks and its compliance with the new principles stated by the SSM, this project, following Murè(2014), examines the reasons behind and the consequences of the administrative sanctions inflicted by the Italian Supervisory Authorities towards either the financial intermediaries or their managers. This investigation evaluates both the compliance of the enforcement actions to the proportionality principles, relative to risk and efficacy, and the timing of the

[1] Bank of Italy, June 2015, *Testo Unico Bancario*, d.lgs. n.385 of September 1st, 1993, updated version at d.lgs. n.72 of May 12nd, 2015
[2] The introduction in the TUB of the art.6, paragraph 21, point L, as in the dlgs. 217/2011.

action concerning risk reduction and expected loss. More precisely, the scope is to identify few economic-financial indexes predictive of the penalties inflicted to the banks and to show that each administrative sanction might have a cause-effect link with the selected balance sheet items. Specifically, we exploit a newly built database comprehensive of information concerning the civil money penalties inflicted to Italian banks and of the balance sheets data of these intermediaries between 2006 and 2015. Through a precise econometric investigation, we identify whether the dynamic of such indexes is associated with higher probability to incur in penalties and whether the enforcement actions have any effect on the future dynamic of the bank performance and, hence, on the same variables that might have induced it.

Although several investigations start by the assumption that enforcement actions are motivated by either management or financial problems (e.g. Danisewicz et al., 2016), the literature on this specific topic is scarce. Kersten & Kozberg (2013) for U.S. find that all proxies for CAMELS (i.e. capitalization, assets quality, management, earnings, liquidity and sensitivity to interest rates) ratings used by FDIC[3] are associated with the probability both of bank defaults and of enforcement actions. Furthermore, for Italy, Caiazza et al. (2015) report that banks with higher level of risk are more likely to be sanctioned, but only credit risk and profitability turn out to have a significant effect on the penalty probability.

In this analysis, we depart from Caiazza et al. (2015) by considering a broader spectrum of sanctions, namely our database includes also penalties from authorities other than Bank of Italy, to provide a more comprehensive view of the Italian supervisory system. Although our results are broadly aligned, the distinction between the penalties by Bank of Italy and by Consob allows to show chat, in Italo, assets liquidity and profitability are strictly monitored, as in the U.S., because they are at the base of both authorities' enforcement actions. Specifically, the soundness of the risk management system, with special reference to funding and interest risk, is a key element of the sanctioning activity from Bank of Italy because it is a pillar of the banking system stability. Furthermore, for this authority, which aims at ensuring the sound and prudent management of intermediaries, reveal also core efficiency, core productivity and bank business orientation; while for Consob, which activity is aimed at investors protection, is important the transparency and fairness of the trading activity in the Italian financial market.

By exploiting the database completeness, the analysis has been extended to study the phenomenon in its continuity. Specifically, jointly analyzing the bank performances before and after the enforcement actions, it has been possible to investigate the bank surveillance effectiveness through the identification of the performance and risk indexes most affected by civil money penalties.

Starting with the influential paper of Peek & Rosengren (1995), in which they argue that civil penalties are more effective to induce an increase in the bank capital-asset ratio than regulation by itself, a large swath of literature

[3] U.S. Federal Deposit Insurance Corporation. The Federal Deposit Insurance Corporation (FDIC) is an independent agency created by the Congress to maintain stability and public confidence in the nation's financial system by insuring deposits; examining and supervising financial institutions for safety and soundness and consumer protection; making large and complex financial institutions resolvable; and managing receiverships.

have investigated the relationship between enforcement actions and banks performance. As argued by Danisewicz et al. (2016), since banks understand that the assets choices determine supervisory closure rules, enforcement actions are likely to trigger change in conduct and, hence, to affect the scale and the scope of banks activity. Given the eventual large effects on both the bank system (Manser, 2015) and the real economy (Peek & Rosengren, 1995 and Danisewicz et al., 2016) following a series of enforcement actions, this literature focus on the main transmission channels: lending (Curry et al.,1999 for US and Caiazza et al., 2015 for Italy), liquidity creation (Berger et al., 2016 for Germany and Danisewicz et al., 2016 for U.S.), and the probability of bank failure (Delis et al., 2013 and Kersten & Kozberg, 2013 for U.S.). Overall, their results underline chat, although enforcement actions are quite effective in increasing the capital asset ratio and in reducing the overall bank risk, in the short run they reduce both lending and liquidity creation, while increasing returns volatility and the probability of banks'failure.

Differently from previous literature, looking at the persistence of unsafe, unsound or illegal practices, we distinguish between "good" and "bad" bank to account for the different behavior after the sanction. Berger et al. (2013) show that the effect of regulatory interventions is weaker if the capital ratio is below the median and Danisewicz et al. (2016) find that a prolonged series of less severe enforcement actions, like civil money penalties, typically forecast the implementation of severe enforcement actions, which impose restrictions on bank activities (i.e. deposits taking and origination of credit). Supported by these arguments, our findings challenge the weak results in term of the positive effect of penalties on bank performances reported in Caiazza et al. (2015), because the reported casual effects area more robust and stronger for the "good" banks, while for the "bad" banks are not significant or overturned.

The remaining of this paper is articulated as follows. Section 2 describes the supervisory activity of the main Italian Surveillance Authorities and analyzes the reasons of the administrative sanctions from a normative point of view. Section 3 describes the newly built database. Section 4 reports the empirical analysis of the determinants of the probability to incur in penalties, whereas Section 5 is devoted to the evaluation of the casualty link between the event of a sanction and the banks' performance. Section 6 concludes.

2 Administrative sanctions and regulatory supervision in Italy.

In Italy, there are 5 supervisory authorities: Banca of Italy, Consob[4], Ivass[5], Covip[6] and the antitrust authority (AGCM[7]). The sanctioning activity is mainly undertaken by Bank of Italy and Consob and, although coordinated, the distribution of monitoring powers among Bank of Italy and Consob is clearly defined by the "Testo Unico Bancario" (TUB) and "Testo Unico della Finanza"[8] (TUF). To the former is allocated the

[4] Commissione Nazionale per le Società e la Borsa: institution for the supervision on the Italian financial markets.
[5] Istituto per la Vigilanza sulle Assicurazioni: institution that achieves for stability on Italian insurance market and consumer protection.
[6] Commissione di Vigilanza sui Fondi Pensione: independent institution that is allocated to surveil on pension funds to protect participants and their savings allocated to supplementary social securities.
[7] Autorità Garante della Concorrenza e del Mercato: antitrust authority.
[8] Consob, January 2016, *Testo Unico della Finanza, d.lgs.* n.58 on February 24th 1998, updated versions including the changes applied with the L. n.208 on December 28th 2015.

supervision about risk-mitigation, balance-sheet stability and compliance to sound and prudent bank management standards, as key factors for the stability of the overall financial system. Either way, to the latter are allocated supervisory powers on intermediaries' transparency and fairness, achieving for both protecting savings and monitoring Italian securities markets for investors protection (see Paviotti, 2002). Table 1 reports the breakdown by Supervisory Authorities of the penalties inflicted between 2008 and 2014 to Italian banks. It is clear the dominant role of Bank of Italy for the whole period and the relevance of Consob in several years.

Table 1 Frequency of the surveillance action[9]

	Total	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*
Banca of Italy	60%	75%	55%	41%	60%	100%	83%	52%
Consob	28%	25%	45%	29%	10%	0%	17%	38%
Others	12%	0%	0%	30%	30%	0%	0%	10%

2.1 Bank of Italy[10]

Bank of Italy, as the Supervisory Authority for the financial intermediaries and for banking activity, pursues intermediaries' sound and prudent management, the overall stability and the efficiency of the financial system, as well as the supervised actors' compliance with the rules regulating the topic. The rules on penalties for this authority is regulated by the d.lgs. 669/1981 and by the d.lgs. 385/1993 (TUB) and they represent the closing element of the surveillance system on the Italian credit market and on the actors operating in this market. These laws assign to the allotted authority the powers to control and to repress violations of the rules governing banking activity.

The Bank of Italy's civil penalties complete and complement the traditional regulatory, on- and off-site supervisory tasks and, hence, they connect with the macro-prudential scopes underlining those activities. Therefore, the punitive actions aim at ensuring the compliance to sound and prudent management criteria by the supervised actors, the protection of overall stability, the financial system's efficiency and competitiveness, and the compliance with rules about credit (i.e. art. 5 TUB). Looking at the TUB legislative premises, while determining the probability of enforcement actions by Italian Central Bank, two different factors must be considered: the frequency of on-site audits, linked with the bank vulnerability, and the eventual violation of the duties stated in the TUB or in the Rules of Procedures issued by the Authority itself, as regulatory surveillance task.

About the frequency of the on-site inspections, Bank of Italy's surveillance system (i.e. since 2014 it has been harmonized under the SSM) mainly follows a risk-based approach, namely whenever the Supervisory Authority believes that there is an increase of risk for a single credit institute or for a group of financial institutions, these would be monitored more closely until the perceived risk would not be back to acceptable values. According with the risk-based approach, the supervisory intensity depends mainly on two factors: the damage that the bail-

[9] The data used in the table are relative only to enforcement actions towards cooperative "popolare" banks and listed banks, because data on the sanctioning activity are not available for the full sample.
[10] More details can be found in ECB (2014).

out/-in of the financial institution may cause to the Italian and European financial systems stability and the probability that the bail-out/-in occurs. Although this Authority selects the institutions to closely monitor in each period proportionally both to the systemic relevance and to the risk profile to efficiently allocate resources, it adopts a minimum supervision level for all financial institutions dependent only on the relevance of that type of institutions (i.e. Listed/Not Listed; Cooperative/Public Company; Large/SME; etc.) for the financial stability. Concerning the identification of the bank's vulnerability and, hence, its risk profile, Bank of Italy looks at three main elements:

- *Risk assessment system*: The risks, to which credit institutions are exposed, are generally inversely proportional to the adequacy of the internal monitoring system, which evaluation follows both a qualitative and quantitative analyses. On the contrary, profitability, internal governance and generally the risk-management system are evaluated on more qualitative basis.
- *Internal Capacity Adequacy Assessment Process* and *Liquidity Adequacy Assessment Process*: The capital requirements, as in the first pillar of Basilea Agreements, must be always satisfied. The Supervisory Authorities continuously monitor the capital adequacy with respect to the minimal requirements. Whereas, they evaluate the defining process for the excess-capital volume (i.e. ICAAP and LAAP) to cover the second pillar other risks.
- *Quantitative analysis of both capital and liquidity adequacy*: Following the assessment of the riskiness of the financial intermediary, Bank of Italy analyses quantitatively both capital and liquidity requirements compliance.

Specifically, following the procedure introduced since 2009, Bank of Italy each year makes an overall pronouncement on each intermediary, accounting for both the eventually undertaken off- and on-site investigations. Each intermediary's risk profile is scored based on a model relying on several synthetic indexes[11], that might be modified looking at qualitative elements and information not included in the models. This system resembles the CAMELS ratings adopted by FDIC in U.S. to identify troubled banks and Carry et al. (1999) show that CAMELS downgrades can induce a reduction in credit risk and boost asset growth, even if are not followed by enforcement actions. Therefore, most likely this recent reform has further improved the efficiency of the Italian Supervisory system.

Art. 144 of TUB regulates the reasons underlying Bank of Italy administrative sanctions. This refers mainly to art. 53, 67 and 108 that set the application fields of the regulatory surveillance and, indirectly, of the punitive one. As in art. 57 paragraph 1 "*Bank of Italy enacts general regulations concerning: a) capital adequacy; b) risk mitigation in all its configurations; c) holdings of equity; d) company's governance, administrative and accounting procedures as well as internal control and the remuneration and incentive systems […]*". Furthermore, among the motivations of Bank of Italy civil penalties reveals the transparency of the information

[11] Since 2009, while profiles based on organization, controls, productivity, risk, liquidity and capital are still valid, have been defined few analysis paths with different configurations based on banks characteristics and size.

offered to the public, of the contracts for mortgages and consumer credit supply and of the payment services (i.e. paragraphs 2 and 3).

From art. 144 and following the analysis of Bank of Italy final reports, it is possible to infer that, as showed in Murè(2014), the penalties inflicted are typically attributed to ten classes of sanctions: (i) irregularities in the balance sheets drawing; (ii) inadequacy of intern auditing system; (iii) inadequacy and criticalities in the credit process; (iv) inadequacy and criticalities in the finance process; (v) irregularities in the operating processes and in the group coordination processes; (vi) irregularities indirectly linked to the individual initiatives of companies managers; (vii) non-compliance with the current regulations; (viii) inadequacy and criticalities in the internal organization; (ix) non-compliance with regulations on capital adequacy; and (x) non-compliance with Bank of Italy's rules of periodic reports.

Table 2 Bank of Italy sanctions breakdown by motivation class.

Sanctions imputable also to:	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*Total*
Internal Controls	100%	100%	73%	83%	80%	88%	87%	100%	86%
Credit	100%	20%	36%	42%	20%	25%	40%	0%	30%
Reporting	33%	20%	18%	17%	20%	25%	33%	0%	23%
Other	67%	20%	36%	17%	0%	25%	20%	50%	24%

Table 2 shows the number (as percentage of the total) of sanctions which underlying motivation is attributable, not exclusively, to a specific class, among the ones listed above. Similar to what observed in Murè (2014) for the period 1998-2010, the irregularities reported by Bank of Italy manly concern criticalities in the process of credit and inadequacy of internal control system. Furthermore, despite fewer in number, reveal the sanctions inflicted due to irregularities in the reporting process and deficiencies in the organization. This results partially contrast the findings in Delis et al. (2013) because in U.S. actions taken for violations of the requirements concerning bank financial soundness (e.g. impairment of capital or liquidity or asset quality, provisions and reserves, etc.) constitute the largest group while actions taken for violations of the requirements regarding bank's internal organization (e.g., internal control and audit systems, including risk management systems, as well as money laundering, bank secrecy, etc.) are the smallest group.

2.2 Consob[12]

Consob was founded in 1974 to surveil over the financial intermediation sector as independent institution from the central government. Ascribing to its role of protecting savings and investors, it supervises the transparency and fairness of behaviors in Italian financial markets. It monitors the information that listed companies provide to the markets, the transparency about the holdings, accounting document and IPOs.

Art. 6 paragraph 2 of TUF invests Consob of regulatory powers to safeguard the several needs related to consumers' protection. Consob regulatory supervision mainly covers the transparency, to the extent of reporting

[12] More details in Consob(2014).

duties during both services and investment activity provision, as well as during collective asset management provision, with special focus on riskiness of offered financial products and managed portfolios, on activities and services provided, on safeguard of intermediary financial instruments and liquidity, on costs, on incentive and on strategies of orders execution. Furthermore, regarding only services and investment activities, Consob, jointly with Bank of Italy, for the subjects, which are qualified to the placement of financial products in regulated financial markets, regulates among other items: (i) corporate governance, organizational general requirements, remuneration and incentive systems; (ii) accounting and administrative organization, including the compliance function establishment; (iii) procedures, also internal auditing, for the sound and transparent provision of investment services and activities; (iv) business risk management; and (v) procedures, also internal auditing, for receiving or providing incentive (art. 6 paragraph 2-bis). The provisions of chapter II of TUF define Consob motivations for administrative sanctions and regulates its imposition process. However, these are not a fully autonomous system and, hence, it is necessary to integrate it with TUB regulations on administrative sanctions for what concerns general principles and procedures (Paviotti, 2002). Of great interest, Art.189 of TUF emphasizes reporting omissions regarding acquisitions or dismissals of collective assets management companies' shares and regarding acquisition or dismissal of controlling shares (art.18 paragraph 6) or interest shares in Sim[13], Sicav or Sicaf[14] (art. 15 paragraph 1), as well as all interest positions, as well as all major shareholdings (art. 80 paragraphs 6 and 7).

Finally, Consob jointly with Bank of Italy, monitors the implementation of the CE regulation n. 1060/2009[15] regarding the credit rating agencies because this activity has a significant impact on the financial markets functioning and on investors' and consumers' confidence, as it is the starting point for the computation of intermediaries' capital requirements and for the computation of risk in their investment activities. Although intermediaries are required to use only credit ratings issued by EU approved rating agencies for regulatory purposes, they are required a further internal assessment of credit risk. Both these Supervisory Authorities monitor the adequacy of the internal procedures of credit risk assessment and evaluate the use of contractual references to external credit rating, dissuading exclusive and mechanic counting on it.

Looking at the main motivations underlying Consob penalties for the period 2008-2015, it is possible to identify four classes of sanction based on the reported violations: (i) deficiencies in the implementation of measures act to grant both the efficient performances of services and activities and the identification/management of conflicts of interest (art.21 and art. 11 TUF); (ii) violations of reporting and accounting duties for listed companies and for financial assets issuers or insider dealing (art. 10, art. 106, art. 114, art. 115, art. 187 bis and following, and art. 193 TUF); (iii) deficiencies in the transparency and information on financial products (art. 94, art. 95 and

[13] Società d'Intermediazione Mobiliare, that means Stock Broking Company.
[14] Società di Investimento a Capitale Variabile (Sicav) o Fisso (Sicaf), that means unit trusts with variable or fixed capital.
[15] The CE regulation n. 1060/2009 of European Parliament and Council has been modified by the EU regulation n. 462/2013 of European Parliament and Council.

art.113); and (iv) violations of regulations regarding reporting of significant change in interest holdings and/or para-social deals (art. 120 e art. 122 TUF).

Table 3 Breakdown of Consob sanctions by motivation class

Sanctions imputable also to:	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*Total*
Internal Auditing and Organization	50%	14%	33%	67%	n.a.	67%	60%	100%	48%
Reporting and Accounting Duties	50%	71%	67%	33%	n.a.	33%	40%	0%	48%
Other	0%	57%	0%	0%	n.a.	0%	20%	0%	16%

Table 3 reports the number of sanctions attributable to a class of the ones identified above for what concerns the penalties imposed by Consob. Most sanctions refer either to reporting and accounting violations or to internal auditing and organizational deficiencies. Among the other violations, it is possible to identify deficiencies in reporting duties on holdings in 2009 and violations of informational duties on products in 2014.While determining the probability to incur in penalties by Consob, in addition to the violations listed above, it is necessary to account for few other factors: it monitors listed companies, stock broking companies, collective asset management companies, unit trusts and, hence, the probability to be inspected depend on the group structure and on the type of activity performed by the banking group; it evaluates mainly transparency, timing and completeness of information as well as transparency and composition of the companies'/group structure; and it has supervisory powers on all intermediaries issuing assets on regulated markets for what concerns reporting duties and fairness of the issuing itself.

3 The database

The proposed analysis is based on newly built database comprehensive of all civil money penalties inflicted by Italian Supervisory Authorities between 1998 and 2015 toward national banks. This database collects information regarding recipients, issuing authority, volume and motivations of each individual sanction imposed in the period. Specifically, in this analysis we have combined data on sanctions towards most of the Italian banks active at the end of 2015 with the intermediaries accounting items for the same period (fonts Bureau van Dijk Bankscope®). The analyzed period spans from 2006 to 2015. We decided to reduce the sample because in 2006 few relevant innovations have been introduced regarding both accounting and macro-prudential regulations, which led to structural breaks in the time series with regards both to the frequency of the enforcement actions and to the balance sheet items.

The sample covers roughly half of the population of Italian banks. Cooperative banks, to the extent of *Banche di Credito Cooperativo*, have been excluded from the analysis. The intermediaries belonging to this sector, although perform a similar activity to the other Italian credit institutions, show special characteristics connected with the mutualist scope, with the equity structure and with the combination of small size and high localization. The different management of these intermediaries implies that both on-site supervision and enforcement activity feature different fundamentals and procedures compared with the ones follows by the other intermediaries. In view of this, achieving for coherence in the sample, we left the analysis of this sector to further investigations.

We have not excluded the remaining cooperative banks ("*popolari*") because following the recent sectoral reforms, they have adopted the structure and management typical of a traditional commercial bank and several of them are currently undergoing an opening process towards financial markets.

Finally, banks that were inactive, dissolved or merged by 31/12/2015 or under extraordinary administration have been excluded from the sample as the exit of these banks from the observed sample would not be independent from the sanctioning event and, hence, problems of selection bias might arise. Namely, sanctions are often linked to an increase in a bank's risk profile and, hence, the lack of data following extraordinary administrations, bail-in or dismissals, and sometimes following mergers, is often connected with and anticipated by an intense sanctioning activity, with little success, achieving for reducing the riskiness and the unsound management of the intermediary itself. The analysis of this phenomenon is left to future research.

The selected sample of banks is comprehensive of 133 Italian banks, of which 22% cooperative (i.e. *Popolar*i) and 15% listed banks. For roughly 89% of the population the data are available for the full period (10 years), for the remaining, roughly 16 banks, the available years are at least 6.

Table 4 Penalties Volume Statistics

	Total	*Consob*	*Bank of Italia (yearly total)*
N. Sanctions	102	35	74
Av. Volume (€ Ths)	422.5	323.3	429.4
SD Volume (€ Ths)	114.6	144.3	138.6

In contrast with previous literature (Murè & Pesic, 2010), we prefer to focus on the analysis of the sanction event rather than on the overall or average penalty volume. The database is described in terms of frequency and distribution of the administrative sanctions in Table 4. As reported, the volatility of the sanction volume is very much concentrated around the mean. The penalty level is fixed between established boundaries and it is proportional to the severity of the violation. The determinants of penalties volume are highly correlated with the reasons underling the event "sanction" itself, because the proportionality of the system is based mainly on subjective and qualitative criteria, because either the severity of the violation or the behavior of the intermediaries after the detection of the violation are hardly identifiable with economic variables.

Table 5 Penalties distribution with breakdown for size, riskiness and profitability.

	Total Assets				*Assets Growth*				*Tier 1 Ratio*				*ROAA*			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
N. Sanctions	11	12	13	20	12	16	17	11	24	11	13	8	21	14	10	11
Sanctioned%	30	37.5	40.6	62.5	36	50	50	32	72	33	39	23.5	64	42.5	30	34.5
Other%	70	62.5	59.4	37.5	64	50	50	68	28	67	61	76.5	36	57.5	70	65.5

Q1: <25%; Q2: 25%<>50%; Q3: 50%<>75%; Q4: >75%.

Table 5 reports the number of penalties and the proportion of sanctioned banks in the period considered with breakdown for the quartiles of few relevant indexes distribution, regarding dimension, risk and profitability. On the one hand, it is possible to notice that that both intensity of sanctioning (i.e. percentage of charged banks) and the frequency (i.e. number of sanctions) tend to be uniformly distributed along either total assets or assets

growth distributions. On the other hand, it is possible to detect a reduction in both measures as either capital soundness or bank's profitability increases.

4 Determinants of the probability of penalty.

4.1 Explicative variable selection and estimation of the marginal effects-methodology.

Given the scarce previous literature on the topic, it is not possible to identify a priori among the budget items which might be highly correlated with administrative sanctions. The analysis is, hence, composed of two different phases: the first aims at selecting a group of variables with some predictive power and the second focus on estimating the marginal effects of these variables on the probability to incur in sanctions. In particular:

- Selection of the group of explicative variables: by consecutive significance tests there have been selected among balance sheet items (i.e. roughly 500 items, reduced to 150 by limiting the sample to available data for all banks and for all years) the ones with some explicative power of sanction probability.
- Estimation of the marginal effects: by means of panel methods for qualitative variables, the average marginal effect and the marginal effects at mean on the probability to incur in sanctions have been estimated for the indexes selected in the first phase.

4.2 Variables selection

Due to the large number of variables to be considered (see Appendix A, Table 7), it has not been possible to consider all of them in the same regression and, hence, to jointly evaluate their significance. Henceforth we decide to employ a multi-steps approach, for which variables sub-sets are separately evaluated. Specifically, the variables are divided in 9 sub-sets accordingly to their economic meaning, such that variables belonging to the same sub-set have similar interpretation. The groups, originally composed to roughly 15 items each, have been scaled down to avoid high/perfect correlation problems among the regressors that might affect the estimator's efficiency. According to the financial literature and to the correlation with the variable of interest (i.e. penalty's probability), two key variables have been identified for each sub-set, which mostly represent the economic/financial concept of their group. Subsequently, the dependent variable is regressed on a new variables' set composed of all the key variables and the sub-set that is going to evaluate. The key variables, which are not tested, account for the other sub-sets' explanatory power and, hence, this technique allows for a comprehensive analysis while minimizing the small sample bias due to the few degrees of freedom. We have selected the indicators with some explanatory power in each group by both *Likelihood Ratio* and *Wald* tests.The selection described above allowed for identifying a small number of variables (14) variables to consider in the main analysis, since we have not selected over the pre-determined sub-sets and, hence, the overall group significance in not tested, a further variables selection has been performed to get rid of spurious results by several significance tests (LR test and Wald test). This allows for scaling down the number of regressors for each dependent variable, limiting it to the variables with effective explanatory and predictive power.

Figure 1 Key Variables

1. *Loans-Size:*
   a. *Growth of Gross Loans (%): this variable indicates the bank commercial assets trend and, hence, the bank's core assets soundness;*
   b. *Net Loans on Total Assets: it is indicative of the size of core assets;*
2. *Capital- Size:*
   a. *Total Earning Assets share: it is an indicator of the assets portfolio quality with reference to its profitability;*
   b. *Growth of Total Assets(%): this variable indicates the bank total assets trend and, hence, the bank's assets soundness;*
3. *Funding and Liquidity:*
   a. *Deposits and Short-Term funding on Total Funding: It is an indicator of the bank exposure to the interest rate risk;*
   b. *Total Available For Sale (AFS) Assets: it is an indicator of the assets portfolio liquidity and of short-medium run investment assets management;*
4. *Governance Structure and Capital:*
   a. *Common Equity on Total Equity: Equity's quality indicator;*
   b. *Total Other Equity Reserves on Total Reserves: it is an indicator of the capital quality;*
5. *Credit Risk:*
   a. *Loans Impairment Charges on Average Gross Loans: loans impairment coverage volume;*
   b. *Loans Loss Reserves on Impaired Loans: indicator of the credit risk not in advance covered and, hence, of the vulnerability of the credit monitoring process;*
6. *Other Risks:*
   a. *Net Gains on Trading and Derivative on Other Operating Income: indicator of the quality of the non-core assets portfolio management;*
   b. *Securities Revaluation Reserves on Total Securities: Indicator of the coverage for trading risk;*
7. *Core Profitability:*
   a. *Net Interest Revenue on Average Assets: indicator of core profitability;*
   b. *Net Interest Income less Loan Impairment Charges on Average Assets: indicator of core assets profitability (interest margin) that accounts for the risk coverage process;*
8. *Efficiency:*
   a. *Operating Profits on Pre-Tax Profits: indicator of the ability to generate profits in the core activity*
   b. *Operating Profits on Average Equity: indicator of the ability to generate profits in the core activity;*
9. *Profitability and Taxes:*
   a. *Return on Average Equity: profitability index;*
   b. *Taxes on Pre-Tax Profit: sustainable profitability index to the extent of the effective tax rate;*

4.3 Econometric models

Given the qualitative (and binary) nature of the index variables identifying the event "sanction", which takes value 1 if the bank incurs in penalties in year t and 0 if not, we undertake the estimation of the marginal effects of the selected variables by means of a panel logit random effect estimator. This estimator combines the idea that the conditional probability of penalty depends on the probability of the casual error to be less than the weighted sum of regressors and the idea to account for unobserved fixed effects as components of the casual errors. Few fixed effects are explicitly considered, they are dummy variables identifying whether the bank is cooperative (i.e. *popolare*), listed or an investment bank, and takes value 1, or not, and takes value 0. The model is detailed as follows:

$$sanzione_{i,t} = \alpha_i + \beta\, x_{it}, + \gamma\, pop_i + \varepsilon_{i,t}$$

$$\begin{cases} y_{i,t} = 1 \; if \; sanzione_{i,t} > 0 \\ y_{i,t} = 0 \; \; if \; sanzione_{i,t} = 0 \end{cases}$$

$$Pr[y_{it} = 1 | x_{it}, pop_i, \alpha_i, \beta, \gamma] = \Lambda(\alpha_i + \beta x_{it}, + \gamma\, pop_i)$$

This estimator is based on two main assumptions: the independence of the observation over financial intermediaries and over time, as well as the independence of the selected variables from the unobserved time-invariant bank's characteristics, which are explicative of the bank's probability to incur in sanctions. With regards to the former assumption, since the Supervisory Authority usually do not repeat on-site inspection to previously controlled banks (follows-up excluded), whenever risk indexes are not close to high levels, the hypothesis of no time-correlation between the observations should be largely satisfied. Concerning the other assumption, a Hausman test has been performed to support this hypothesis.

Achieving for higher degree of detail in the analysis, we decided to breakdown the penalties by supervising authority. This allows to distinguish between factors underlying Bank of Italy's decisions and the ones related to Consob punitive actions, highlighting the common ground of the two strategies. Therefore, the estimation has been extended to an index that accounts for the charging authority and, hence, that takes values 1 if the sanction is not imposed, 2 if the penalty is inflicted by Bank of Italy and 3 if the enforcement action is taken by Consob.

To analyze this multiple-choice index from an econometric point of view, it is necessary that the observation of the event "sanction" from an authority is mutually exclusive. Namely, if an event occurs it is not possible that any other possible event among the ones considered occurs at the same time. Analyzing the proposed database, it is possible to notice that the event "sanction" and the event "no sanction" are mutually exclusive. Whereas, it is possible that several penalties are imposed in the same year by two or more different Authorities. Specifically, in the database the event "sanction" is observed if one or more penalties are imposed to the intermediary in the year. Henceforth, if several sanctions are imposed in the same year to the same intermediary by different Authorities, the event "sanction" is observed both for Bank of Italy and for Consob and, hence, the events would not be mutually exclusive. In detail, in the database there are 7 cases over 102 for which the sanction has been imposed in the same year to the same intermediary by both Bank of Italy and Consob. These observations have been exclusively allocated to Bank of Italy because it is the main Authority for the banking sector.

Thanks to the hierarchical structure, we consider a panel multinomial logit estimator, which also account for bank fixed effects as component of the unobserved error (i.e. random effects). In detail, we employed a Generalized Linear Latent and Mixed Model (GLLAMM) as proposed by Skrondal and Rabe-Hesketh(2003) and Rabe-Hesketh et al. (2005), (for details see Rabe-Hesketh et al. (2004)). Employing a multiple-choice model allows for distinguishing between the determinant of the probability to incur in sanctions from either Bank of Italy or Consob, with respect to the case of not being charged.

4.4 Determinants of the probability to incur in penalties.

Table 9 and Table 10 report the main results regarding the estimation of the sanction probability for both the dualistic model and the multinomial one. Since the employed models, respectively Panel Logit and Panel Multinomial Logit, assume a non-linear relation between the dependent variables and the group of regressors,

the marginal effect that a change in the explicative variable has on the dependent variables is neither constant nor equal to the estimated coefficient, but depends on the initial level of the independent variables. Hence, in the two table are either reported the marginal change in the relative risk to incur in a sanction with respect to not incur or the population-average marginal effects (AME).

4.4.1 Sanction probability- dualistic model

As reported in column 1 of Table 9 and Table 10, the analysis of the determinants of the sanction probability has driven the identification of mainly three classes of variables: (i) Indexes of asset quality and profitability; (ii) Indexes of operating efficiency; and (iii) Indexes of the riskiness and liquidity.

Specifically, regarding asset quality, we can identify that typically the quality and the level of non-earning assets decrease the sanction probability. Specifically, the share of fixed assets and other assets are negatively correlated with the probability of enforcement actions, because as these shares increase, the relevance of riskier and less transparent assets (i.e. Intangibles, Foreclose Real Estate, Discontinued Operations, etc.) tends to vanish. Furthermore, the results underline that on average an increase in the quota of earning assets strongly reduces the penalty probability, as well as an increase in their productivity does. Both the net interest margin and the pre-impairment operating profits on equity ratio are indicative of the sanction probability with large positive average marginal effects and a greater relevance of the first (i.e. an increase in 1% of net interest revenues on average asset lead to a decrease of more than 30 p.p. in the probability to incur in enforcement actions).

For what concerns the operating efficiency, rather than general indexes of assets and equity productivity, reveal the growth of gross loans and few indexes of profits sustainability, namely the share of operating profits on pre-tax profits and the effective tax rate (i.e. taxes on pre-tax profits ratio), and of business model as, for instance, the share of net gains or losses on trading and derivatives. Although the latter often has revealed as an index of the bank ability in proprietary trading of financial instruments on the markets, jointly with operating profits share, these indexes are indicative of the bank core activity orientation towards more commercial sectors. Follows that banks more oriented towards commercial sector have a lower penalty probability, even if the results indicate a higher average probability to incur in sanctions by cooperative (*popolari*) banks than by the other commercial banks[16]. An interpretation of this result might look at the larger exposure of business models more oriented towards investment to change in market interest rates, one of the pillar of the CAMELS scoring. Therefore, a larger portion of revenues accruing from lending activity is indicative of a smaller sensitivity of interest rates and hence an indicator of the bank risk, while the mutualistic scope of some banks does not provide indication of the bank sensitivity to interest rates. The uniformity of the average probability observed for the two types of banks is in line with the analysis performed in Murè (2014) for the period 1998-2010. Namely, they found that commercial bank sector represents on average and stably 23% of the total amount of sanctions, while it is reported a negative trend for both type of cooperative banks (BCC and *Popolari*).

[16] In the analysis, it has been accounted also for a dummy assuming value 1 if the bank is classified as investment banks or special governmental institution and value 0 in case of commercial or cooperative banks. The average probability to incur in sanctions is not statistically different between the two groups.

Risk profile is a determinant of the intensity of inspection because both Bank of Italy and Consob are allocated, among other, to supervise the implementation of CE regulation 1060/2006 about credit rating and, hence, to monitor the efficacy of the intermediaries' internal credit scoring system. Furthermore, as found by Murè (2014), the most of the violations reported refers mainly to deficiencies in credit process and to inadequacy of the internal control system. Additionally, among the determinants identified by the European Commission of the risk profile, it is possible to identify several items related to risk exposure as key elements. It is surprising then that the overall asset and credit riskiness on average do not increase the sanction probability. However, following the announcement of Basel III regulation, since 2010 the European Banking Authority (EBA), as well as several national supervisory authorities, have start to monitor few capital and liquidity ratios to achieve for the full implementation of the Net Stable Funding Ratio (NSFR). This new long run liquidity standard imposed by Basel III gives incentives to banks to fund their activities from stable sources, thus containing the maturity mismatch between assets and liabilities. "Principles for sound liquidity and risk management and supervision" by Basel Committee defines the guidelines for the management and supervision of the newly identified funding risk and the new regulation ask the banks to keep a stable funding profile suitable to their assets composition. The NSF ratio is meant to support the institution as going to concern for at least one year and, hence, is the ratio between the Available Stable Funding(ASF), mainly equity and long term funding (with maturity longer than one year) and the Required Stable Funding, that is the liquidity and risk weighted assets and off-balance sheet items. Since the implementation of this new requirements will start in 2018, this index is not available nowadays. Whereas, we construct a proxy[17] following Scalia et al. (2013)[18], and its negative correlation with the penalty probability suggests that the NSF ratio is an indicator that already matters for banks. Scalia et al. (2013) shows that the growth of the numerator has largely contributes the growth of this ratio in the last years, and that the growth of the long-term funding has largely contribute to the growth of the ASF, along with the ECB's LTROs in the European non-core countries as Italy. Since in these countries the shortfall between ASF and RSF has been often reduced by shifting from shot-term to long-term debt rather than from debit to equity, the new liquidity regulation has probably fostered the funding through covered bonds and the securitization process. Therefore, it is not surprisingly that there is a positive correlation between the probability to incur in sanctions and the ratio of long term funding to equity, because this phenomenon affects the recovery rates of unsecured securities by reducing the remaining value of assets.

Finally, among the selected variables there are few indexes of the liabilities composition that affect the probability of sanction because Consob regulates and monitor over the majority of intermediaries with regard to, among other, corporate governance and business risk management (i.e. art.6 TUF); Bank of Italy regularly evaluates, although qualitatively, the governance structure and the business risk and the MIFID(2007) implies a joint allocation of two authorities for what concern organizational requirements. Specifically, it reveals

[17] In the preliminary selection of the variables we considered Total Long Term Funding and the ratio on Total Funding. Only the first one reveals to be significant, but to ease its interpretation we construct two indexes out of it: the net stable funding ratio and the long term funding to equity ratio.
[18] The Available Stable Funding has been computed as the sum of Long Term Funding, Common Equity and Current Deposits, with weight 0.8 for the short-term items. The Required Stable Funding has been computed and the Risk Weighted Assets as for computation of the Tier1 requirement of Basel II re-scaled by the share of non-liquid assets (1-AFS assets-to-Total Assets ratio).

extraordinary items in equity, liabilities and income, like: the amount of fixed asset revaluation and other accumulated OCI (Other Comprehensive Income); the amount of extraordinary liabilities, namely the level of Fair Value debt, current and deferred tax liabilities, discounted operations and insurance liabilities; and exceptional or extraordinary items in the income statement, as for instance the amount of non-recurring income and expenses, of at equity non-operating losses or profits and the change in fair-value of own debt.

4.4.2 Sanction probability by Supervisory Authority- multinomial model.

Columns 2 and 3 of Table 9 and Table 10 report either the change in the relative risk or the marginal effects on the probability to be sanctioned by either Bank of Italy (column 2) or Consob (column 3) with respect to the case of not being sanctioned.

As reported in Murè (2014), the allocation of powers between Bank of Italy and Consob has been defined in the TUF and subsequently modified by MIFID(2007). Bank of Italy is allocated to the supervision over risk mitigation, capital soundness and compliance to sound and prudent management criteria of the intermediaries. Consob, instead, monitors mainly the transparency and fairness of the intermediaries. Additionally, MIFID includes a joint competence of the two Authorities on intermediaries' organizational requirements, with focus on both governance and equity structures.

Although there are common grounds to both Supervisory Authorities, it is possible to notice that just few indexes are explicative of the probability to be sanctioned by either one of two institutions. Namely, productivity indexes, to the extent of pre-impairment operating profits on average equity, and banks characteristics, as the listing on financial markets, are relevant for both types of enforcement actions. These indexes are determinants of the overall financial system stability and both reflect the scope of Bank of Italy supervision and found their bases in the art.123bis of TUF, which allocates to Consob the task to monitor, among others, the main characteristics of risk-management and intern audit systems with regards to the financial information reporting process for all companies issuing securities traded on regulated markets. Following the TUF, transparency of equity, governance and banking activity's structures are the main elements monitored by Consob. Surprisingly, hence, these elements, to the extent of non-core activity cost and relevance of non-banking activity, are relevant also for Bank of Italy, which found in them information on business risk. Indeed, following the 145th Updating of "Istruzioni di Vigilanza per gli Enti Creditizi" of 1998, have gained growing relevance topics related organization and control and necessary to insure a sound and prudent management of credit intermediaries.

Art. 123bis implies a monitoring by Consob of the equity structure and of the direct and indirect major holdings, as well as of the other items related to transparency of equity, governance and activity structure. Therefore, the capital structure with references to extraordinary items (i.e. reserves, accruals, deferred income and trade creditors) is significant only for Consob, along with extraordinary items in the non-operating income (i.e. change in the fair value of own debt, at-equity non-operating profits and non-recurring income). Therefore, it is possible to infer that for Consob non-core banking activity is quite relevant and both the level and the dynamic of both Fair Value debt and of the dismissed operations are important elements to monitor.

We have discussed above how non-core banking activity to the extent of non-operating profits or losses is a key factor for Consob but also the size and the profitability of the operating activity is relevant for this authority. This results is in line with the main scope of Consob to monitor the fairness and transparency, the larger is the non-operating activity the less transparent is the intermediary's activity and the larger is the weight given to trading and derivatives in the operating income, the larger is the exposure of the intermediary's to Consob monitoring. However, the relevance and dynamic of the non-core activity can also be considered as indicators of a sound and prudent corporate management of the intermediaries. Therefore, this activity is relevant for Bank of Italy only relatively to the banking profits, to the extent sustainable profitability (i.e. effective tax rates and pre-impairment profits on equity), but core efficiency (i.e. net interest margins) is one of the major determinants to incur in enforcement actions by this authority.

Looking at both assets quality and liquidity, Bank of Italy and Consob have opposite approaches. First, Bank of Italy focus on the earning assets, as the relevance of the growth of loans and the earning assets share suggest. Furthermore, regarding the composition of non-earning assets, an increase in the fixed assets quota decreases the sanction probability of Bank of Italy, while an increase in the other assets quota decreases the probability and, hence, a lower quota of fixed assets might increase the probability to incur in sanctions by Consob. However, for both authority is beneficial for the compliance of the intermediaries with the banking rules to reduce the quota of intangibles, discontinued operations and fore close real estate[19].

Indexes of banking risk, indexes of funding risk as for instance the net funding ratio and the long-term funding on equity ratio are exclusive interest of Bank of Italy because the banking risk management and, hence, the compliance with international regulations (i.e. Basel III) are at the basis of the supervisory activity. However, Bank of Italy is also interest in the sound management of the intermediaries, and hence it is not surprising that higher capital resilience to funding risk is as much relevant as the leverage ratio, to the extent of switching the stable funding from debt to equity.

In conclusion, it is worth to underline that peculiar bank's governance characteristics, as the feature of cooperative banks, make the perception of the bank from the Bank of Italy prospective as to be riskier. The higher average probability to incur in sanctions from Bank of Italy (not from Consob and in aggregate) might be an indicator of the higher difficulties faced by these banks in comply with the evolving of the regulation over the time. Even if important changes (i.e. increased dimension, listing, etc.) happened in this sector of the banking system, nowadays it seems less comfortable with the new banking regulatory framework than the other commercial and investment banks.

[19] The Non-Earning assets is composed by fixed assets, cash and due from banks, foreclose real estate, goodwill, other intangibles, current and deferred tax assets, discontinued operations and other assets. As both the quotas of the fixed assets and other assets increase, the overall quota of the other components decreases. We have tested for the significance of cash and due for banks, goodwill, current and deferred taxes but they are not relevant. Hence, it is possible to infer that for both authorities is relevant to minimize the volume of intangibles, foreclose real estate and discontinued operations.

5 An evaluation of the enforcement actions' effectiveness.

5.1 Estimation of sanction causal effect on banking performances (Methodology).

To evaluate the adequacy of the supervisory action and the its effects on intermediaries' strategies, following the approaches proposed in Murè & Pesic (2010), we decide to deviate from their analysis by employing a model in levels rather first differences, which evaluates directly abnormal operating performance eventually observable in the post-sanction period.

Effectively, the database employed is comprehensive of data regarding all Italian commercial banks and it is not limited just to sanctioned banks as in Murè and Pesic (2010). The database extension allows to exploit the banking performance observations of banks that have not been sanctioned in the period 2008-2014 to build a control group, which is representative of average performances' dynamic in absence of sanctions. This feature allows for performing a casual analysis of the penalty's' effect on performances by comparing sanctioned banks and not sanctioned ones. Specifically, it is applied an econometric model defined as difference-in-difference estimator. This tool, although it accounts for an observable difference between the performance level between the analyzed group (i.e. sanctioned banks) and the control group, assumes that in absences of sanctions the performances' trend of the two types of banks would have been the same. Henceforth, the effect of the enforcement action is given by the difference between the hypothetic growing trend (i.e. aligned with the control group ones) and the observed ones.

Looking at the database, we can observe that of 133 banks analyzed 77 banks (roughly 60%) have not face any penalties and, hence, consist in the control group. Of the remaining 56, which have been sanctioned, 27 (roughly 48%) have been sanctioned once while the remaining 52% has been subject to two or more enforcement actions, even in consecutive years. Regarding these 29 banks, defined as Bad Banks, it is noticed that 17 have been inflicted two sanctions, 8 have been sanctioned three times and the remaining either four or five times. Since we observe such a heterogeneity, we decided to split the sample in three subsets (i.e. control, sanctioned and bad banks) and to evaluated the casual effect of the first sanction imposed on a temporal scale. In this way, evaluating the effect of sanctions on banking performances, it has been possible to disentangle between banks that have successfully changed their strategies to avoid to further incur in sanctions and banks that have stick with their bad practice, which had previously driven them to incur in enforcement actions.

We decide to depart from the simpler approach proposed by Caiazza et al. (2015), which just adds lagged event dummies among the regressors, for two main reasons. On the one side, the proposed econometric technique allows to assess the causality of the penalty on the change in performance, while with the simpler methods it is just possible to observe an association between the penalty event and the performance dynamic that might be caused by common shocks. On the other side, disentangling the effect of the penalty for "good" and "bad" banks allows to depurate our results from the correlation between repeated penalties and future severe enforcement actions with negative effect of bank activity.

Table 6 ROA dynamic for selected banks sanctioned only once in 2006-2014 before and after the sanction.

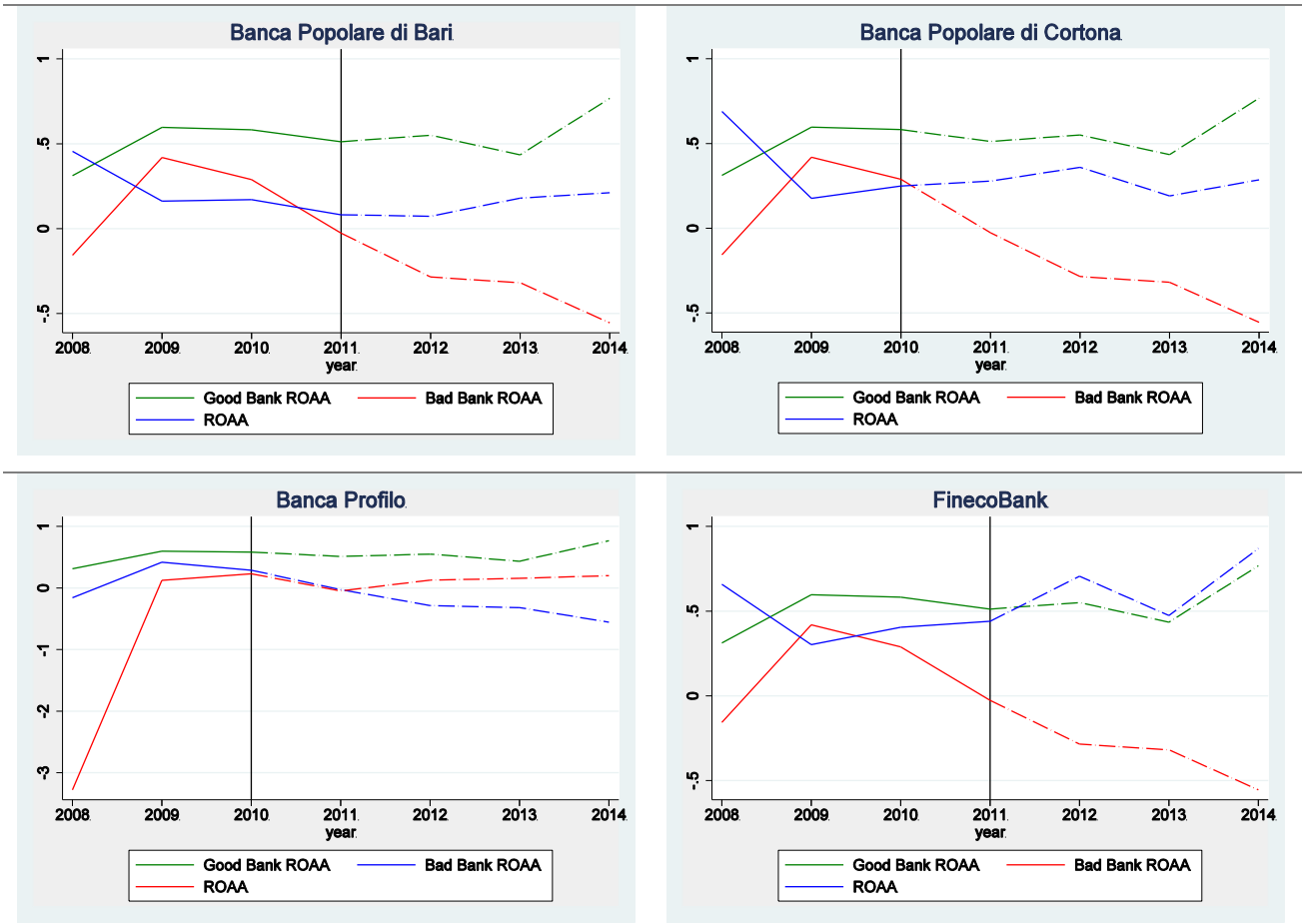

Table 6 graphics show the dynamic of the average ROA for the non-sanctioned banks, the average ROA for the banks that have been inflicted more than one sanctions and the ROA of few selected most representative banks that have been sanctioned only once. After 2009, period in which the majority of bad banks have received the first sanction, the average ROA have started to diverge with respect to the trend of the "good" banks average ROA and to show a strongly negative trend on average. For what concerns the banks sanctioned only once, it is noticed that after the penalty typically they tend to show a growth rate higher than non-sanctioned "good" banks for two or three years. For what concern the assumption of a common trend between the analyzed banks groups, it is possible to observe that the dynamic of ROA of the control group ("good" banks) and the one observed for banks, which incurred in sanctions only once, in the analyzed period is largely uniform among the graphs, while the average for bad banks is quite divergent. This supports the idea of a common trend consistent with the control group in absence of sanctions.

We have analyzed both general indexes of banking performances (i.e. ROAA, ROAE, *Growth of Gross Loans, Growth of Total Assets*) and riskiness and efficiency indexes (i.e. *Capital Ratio; Unreserved Impaired Loans on Equity, Net Interest Margin*, etc.). We excluded from the analysis most of the indexes highly explicative of the penalty probability because either they are more connected with reporting duties (for instance, indexes of the equity structure or of the asset quality) or extraordinary events.

To account for the possible delayed effect of the enforcement action on performance, the model has been estimated for different time horizons/lags with respect the moment in which the sanction has been inflicted and, hence, it assumes the form:

$$p_{i,t+j} = \beta p_{i,t+j-1} + \lambda_{t+j} + \gamma_i + \delta_{it} + \delta_{it} * bb_i + \varepsilon_{it+j} \; with \; j = 0,1,2,3$$

Where p_{t+j} is the banking performances index after j years, λ_t collects the time fixed effect and γ_i the difference in the levels among the banks, δ_{it} is a dummy that takes value 0 before the first sanction on a temporary scale and 1 after and account for the casual effect of the sanction on the banking performance index. Finally, bb_i is a dummy identifying the banks that have been sanctioned more than once and, hence, $\delta_{it} * bb_i$ represents the higher/lower casual effect that a sanction has on bad banks performances.

5.2 Discussion of the sanctioning activity in terms of its effects on banks performance.

Table 11 reports, for each accounting index, the estimated causal effects of enforcement actions for the banks sanctioned just once in the period (δ_{it}) and the for the other sanctioned banks, namely "bad" banks, $\delta_{it} + \delta_{it} * bb_i$). The casual effect on performance has been evaluated in case the penalty has been inflicted in the year or one, two or three years before. From a general discussion of table 11, it is possible to notice that enforcement actions have a persistent effect, whenever significant, because only in few cases the effect is going to vanish just after 3 years. Furthermore, the coefficient of the interaction term between the sanction event binary variable and the bad banks dummy has always the opposite sign and it is larger in magnitude, in absolute terms, compared to the coefficient of the penalty event dummy. This implies that incurring in sequential and closed in time sanctions is an indicator of "bad practice", which usually vanishes or eventually overcomes the positive effects of the enforcement actions. Whereas, sanctioning typically benefits medium run banking performances by means of change in banking strategies driven by the treat to face further penalties.

Looking at the sign and significance of sanctions casual effects for the two sanctioned groups considered, we can notice that on average sanctioning, for at least the two years following the event, increases banking performances to the extent of profitability (i.e. ROAA and ROAE) but not of growth rates (i.e. assets and loans growth). Whereas, the effects on growth are slightly negative and significant for banks following a bad practice for one or two years after the event and as negative as for the other banks for what regard profitability indexes. This partially support the argument in Murè & Pesic (2010) about the change in growth strategies after a penalty. On the contrary, the leverage ratio (equity on assets ratio), after few years since the sanction, starts to decreases, and for bad banks this happens from the first year after the event. As underlined in Murè & Pesic (2010), equity typically has not the same growth rate as observed for assets and, occasionally decreases after a sanction, but for a very short period, yet more prolonged in case of bad practice. Finally, concerning efficiency, it is showed that there is an improvement of the non-core areas efficiency (cost to income ratio) similar for "good" and "bad" banks but in the core areas' one (net interest margin) this is smaller and relative only to "bad" banks. This relates to the higher loans and securities impairment charges for average loans observed on average after an

enforcement actions for "good" banks, that it is not for "bad" banks, even if there is not a worsening in the credit quality higher than expected (i.e. unreserved impaired loans on equity).

Looking at the items more explicative of the probability to incur in sanctions, it has been found that typically these measures are not influenced back by the penalty in the short run (i.e. growth of gross loans). However, it is reported that, although the net stable funding increases only in the medium run, the funding is typically shifted more towards customer deposits for "good" banks and to other funding items (also long term funding) for the other bank.

6 Conclusions

In view of the implementation of a new supranational banks surveillance system, this analysis provides a details description of the Italian Supervisory Authorities' activity towards the national banking sector. It is analyzed the sanctioning activity of both the Central Bank and Consob, as final and complementary output compared to the regulatory and on-site surveillance activities. To consider the sanctioning activity in its completeness, the database, which was built by combining data on the single administrative penalty with intermediaries' balance sheets data, has been analyzed in its continuity to evaluate the cause-effect link between banks' performances and sanctioning activity.

Although the analysis replicates some of the findings of Caiazza et al. 2015 in terms of relevance of the bank performance for the probability to incur in enforcement actions, we underlined the relevance of several other factors, among which liquidity, funding quality and efficiency indicators, somehow in contrast with their research. However, the reported results are in lined with Delis et al. (2013), which propose the CAMELS rating as an early warnings indicator of both the probability of default and of enforcement actions. The whole risk management system, with special reference to credit and funding risk, is a key element of the sanctioning activity from all Supervisory Authorities, as seen also from their regulatory activity. A sound system of credit risk and banking risk evaluation is in general at the basis of financial market stability and, hence, main objective for both authorities. For reasons closely correlated to investors' protection and, hence, to transparency of information, reveal also indexes of the funding composition and, more generally, of capital composition. Furthermore, regarding Bank of Italy sanctioning activity, aimed also at ensuring the sound and prudent management of intermediaries, reveal both efficiency and funding liquidity indexes. While, regarding Consob, which activity is aimed at investors protection, reveal also index of transparency and fairness of the activity concerning issuing securities on financial markets.

The analysis did not exclusively focus on the motivations behind civil penalties, but we also evaluate sanctions' efficacy looking at their effects on banks' performances. The sanctioning activity is estimated to have a positive effect of productivity, growth and efficiency only in the case in which this activity shows a deterrent power and, hence, induces banks to makes changes to reduce the probability to further incur in sanctions. Enforcement actions have just a marginal effect on risk management, in particular on credit risk. On the contrary, Caiazza et

al. (2015) find penalties to be frequently associated with future sound credit management but this result holds just in the short run. Looking at the literature on the U.S. bank system, as in Danisewicz et al. 2016, after a penalty liquidity creation drops even for "good" banks for a very short time while lending drop more persistently only for the "bad" banks and increases for "good" banks. Therefore, the observed negative effects for the real economy after an enforcement action depends, at least in Italy, on the bite of regulatory interventions, as point out by Berger et al. (2016). In contrast with several papers, we have not find any effect on the risk profile, in terms of capital ratio or risk-weighted assets. However, as argued by Delis et al. (2013), if the enforcement actions are taken for violation of the requirements regarding bank's internal organization, these typically do not affect bank's fundamentals.

Form the analysis of penalties' motivations, it is possible to infer a great attention from both Bank of Italy and Consob towards both risk profile adequacy and the completeness and transparency of corporate information. On the contrary, the sanctioning activity shows a dissuasive power towards taking further risk that is very limited, although it is effective in increasing the soundness of intermediaries' management. Henceforth, it is possible to notice that such a complex system of control, also following the last years' reforms in regulations, is fully aligned with the new principles underlying the centralized and coordinated supervision implied by the enforcement of the Banking Union. Namely, the two Italian Supervisory Authorities' activity turns out to be already related to the intermediaries' exposure to internal and, less, to systemic, risk level as implied by the proportionality and risk-based approach principles required by the SSM. Furthermore, the actual supervisory system appears able to reduce the damage and potential loss for investors because, in most cases, it improves banks' performance. However, there is still a gap in the ability to reduce risk, as Supervisory Authorities, although attentive to intermediaries' risk profile, are not able to reduce risk appetite and to improve its management by the solely on site supervision and sanctioning activity.

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8 Appendix A: Tables

Table 7 List of Analysed Variables

Credit- Size	Assets- Size	Liquidity	7. Equity
1. Loans and Advances to Bank / Gross Loans	1. Total Earning Assets / Total Assets	1.Deposits & Short term funding / Total Funding	1. Common Equity / Equity
4. Growth of Gross Loans	2. Fixed Assets /Total Assets	2.Total Customer Deposits / Deposits & Short term funding	2. Other Liabilities / Total Liabilities
5. Loans / Customer Deposits	3. Other Assets/Total Assets	3.Deposits from Banks / Deposits & Short term funding	3.Ordinary Share Capital and Premium/Paid-in Capital
6. Net Loans / Tot Assets	4. Fixed Asset Revaluations and Other Accumulated OCI	4.Cash & Due from Banks / Total Funding	4.Other Common Equity / Total Common Equity
7. Guarantees and Commited Credit Lines / Total Business Volume	2. Growth of Total Assets	5.Long term funding / Total Funding	5.Total Capital Ratio
	3. Total Business Volume	6.Customer Deposits – Current	6.Equity / Net Loans
	4. Other Non-Interest bearing Assets	7.Total AFS Assets / Total Assets	7.Equity / Assets
	5. Intangibles	8.Long Term Funding	8.Other Reserves / Equity
	6. Total Valuation Reserves in OCI	9.Total Funding	9.Tier 1 Capital
	7.	10.Customer Deposits / Total Funding excluding Derivatives	10.RWA / Total Assets
	8. Number of Employees	11.Liquid Assets / Dep & ST Funding	
		12.Liquid Assets / Total Assets	

Credit Risk	Other Risks	Core Efficiency	Efficiency
1. Loans and securities impairment charges / Pre-impairment Operating Profit	1. Off Balance Sheet Items	1. Interest Income on Loans/ Gross Interest and Dividend Income	1. 1 – (Net Interest Margin / Total Non-Interest Operating Income)
2. Loan Impairment Charges / Average Gross Loans	2. Net Gains (Losses) on Trading and Derivatives / Other Operating Income	2. Other Interest income / Gross Interest and Dividend Income	2. Non-Interest Income / Gross Revenues
3.Collective/General Loan Impairment Reserves	3. Tier 1 Ratio	3. Interest Income on Loans / Average Gross Loans	3. Non-Interest Expense / Gross Revenues
4.Substandard Loans/ Loans Loss Reserves	4. Total Securities / Total Assets	4. Interest Income / Average Earning Assets	4. Non-Interest Expenses / Average Assets
5.Doubtful Loans / Loans Loss Reserves	5. Other Securities / Other Earning Assets	5. Net Interest Income Less Loan Impairment Charges / Average Earning Assets	5. Net Income after Allocation to Non-controlling Interests
6.Loan Loss Res / Gross Loans	6.Government Securities / Total Securities	2. Interest Expense on Customer Deposits/ Total Interest Expense	6. Recurring Earning Power
7.Loan Loss Res / Impaired Loans	7.Securities Revaluation Reserves / Securities	7. Other Interest Expense / Total Interest Expense	7. Personnel Expenses/ Number of Employees
8.Impaired Loans / Gross Loans	8.Net Gains on Other Securities	8. Total Interest Expense / Net Interest Income	8. Net Fees and Commissions / Other Operating Income
9.Unreserved Impaired Loans / Equity	9.Uncumbered Securities/ Total Securities	9. Interest Expense on Customer Deposits / Average Customer Deposits	9. Other / Pre-tax Profits
		10. Interest Expense / Average Interest-bearing Liabilities	10. Cost To Income Ratio
		11. Net Interest Revenues / Average Assets	11. Remaining Operating Income / Other Operating Income
			12. Operating Profit / Average Equity
			13. Other Operating Income / Average Assets
			14. Operating Profit / Pre-Tax Profits
			15. Pre-impairment Operating Profit / Average Equity

Profitability and Tax
1. Non-Operating Items and Taxes / Average Assets
2. Return On Average Assets (ROAA)
3. Return On Average Equity (ROAE)
4. Non-Operating Items / Net Income
5. Taxes / Pre-tax Profit
6. Deferred Tax Assets / Tax
8. Tax

Table 8 Test of the predictive power of the analysed variables.

DEPENDENT VARIABLE: Sanction Probability	Wald test	Wald test with bootstrap	LR-test-excl.	LR test-incl.
Growth of Gross Loans	0.067**	0.073**	0.041***	n.a.
Total Earning Assets / Total Assets	0.004***	0.058**	0.006**	n.a.
Fixed Assets /Total Assets	0.115*	0.129*	0.077**	n.a.
Other Assets/Total Assets	0.153*	0.251	0.111*	n.a.
Fixed Asset Revaluations and Other Accumulated OCI	0.196*	0.286	0.167*	n.a.
Other Non-Interest bearing Assets	0.182*	0.421	0.104*	n.a.
Long Term Funding	0.175*	0.238	0.148*	n.a.
Common Equity / Total Equity	0.634	0.668	0.633	0.727
Other Liabilities / Total Liabilities	0.731	0.814	0.728	0.910
Substandard Loans/ Loans Loss Reserves	0.669	0.694	0.679	0.529
Net Gains on Trading and Derivatives / Other Op. Income	0.131*	0.310	0.142*	n.a.
Net Interest Revenues / Average Assets	0.189*	0.243	0.189*	n.a.
Total Interest Expense / Net Interest Income	0.240	0.323	0.213	0.149*
Non-Interest Expense / Gross Revenues	0.330	0.416	0.196*	0.2694
Non-Interest Income / Gross Revenues	0.606	0.642	0.534	0.8070
Other / Pre-tax Profits	0.140*	0.337	0.148*	n.a.
Cost To Income Ratio	0.542	0.589	0.497	0.675
Personnel Expenses/ Number of Employees	0.901	0.930	0.901	0.529
Operating Profit / Pre-Tax Profits	0.064**	0.286	0.074**	n.a.
Pre-impairment Operating Profit / Average Equity	0.075**	0.213	0.062**	n.a.
Taxes / Pre-tax Profit	0.063**	0.164*	0.076**	n.a.

*** < 5% ** < 10% * < 20%, p-value reported of LR Chi^2 test

Table 9 Sanction Probability Estimation – Odd Ratios (log(p/(1-p))

Sanction Probability	*Logit*	*Multinomial Logit*	
	All	*BdI*	*Consob*
Growth of Gross Loans	-0.928*	-1.583***	-0.125
	(0.616)	(0.756)	(0.529)
Total Earning Assets / Total Assets	-3.888*	-4.391*	-3.877
	(2.476)	(2.796)	(3.378)
Fixed Assets /Total Non-Earning Assets	-0.921**	-0.797*	-1.351
	(0.498)	(0.506)	(1.086)
Other Assets[1]/Total Non-Earning Assets	-1.445***	-0.800	-3.025***
	(0.677)	(0.696)	(1.324)
Fixed Asset Revaluations and Other Accumulated OCI (€ mln)	0.047	0.028	0.095
	(0.039)	(0.041)	(0.080)
Other Non-Interest bearing Liabilities[2] (€ mln)	-0.0023	-0.002	-0.004
	(0.0021)	(0.002)	(0.003)
Net Stable Funding Ratio	-0.274**	-0.541***	0.014
	(0.156)	(0.230)	(0.177)
Long Term Funding / Equity	0.069*	0.089*	0.040
	(0.046)	(0.057)	(0.063)
Net Gains on Trading and Derivatives / Other Op. Income	0.193*	0.156	0.226*
	(0.135)	(0.154)	(0.175)
Net Interest Revenues / Average Assets	-3.643***	-3.181**	-3.522
	(1.813)	(1.923)	(3.067)
Other Non-Operating Items[3]/ Pre-tax Profits	-0.250*	-0.115	-0.506***
	(0.171)	(0.200)	(0.231)
Operating Profit / Pre-Tax Profits	-0.266**	-0.160	-0.405***
	(0.146)	(0.171)	(0.197)
Pre-impairment Operating Profit / Average Equity	-1.509**	-1.430**	-1.765*
	(0.789)	(0.841)	(1.155)
Taxes / Pre-tax Profit	0.226**	0.238***	0.160
	(0.122)	(0.121)	(0.247)
Listed Bank (Dummy)(d)	1.711***	1.289***	2.573***
	(0.306)	(0.294)	(0.466)
Banca Popolare (Dummy)(d)	0.557**	0.645***	-0.217
	(0.305)	(0.282)	(0.585)
Constant	2.750	2.992	1.557
	(2.292)	(2.591)	(3.099)

Observations: 1287; Standard errors in parentheses; * p < *0.2,* ** p < *0.1,* *** p < *0.05 (d) discrete variable.*

[1] Other Assets= Non-Earning Assets – Fixed Assets – (Cash and Due from Banks + Foreclose Real Estate + Goodwill + Other Intangibles + Current Tax Assets + Deferred Tax Assets + Discontinued Operations).

[2] Other Non-Interest Bearing Liabilities= Accruals, Deferred Income and Trade Creditors = Total Liabilities – Total Interest Earning Liabilities = (Fair Value Portion of Debt + Current Tax Liabilities + Deferred Tax Liabilities + Other Deferred Liabilities + Discontinued Operations + Insurance Liabilities + Other).

[3] Other non-operating items=At-equity non-operating profits/losses (i.e. profits/losses from participated) + Non-recurring income/expenses (i.e. exceptional or extraordinary items which are not part of the bank core business and occurs as a singular instance) + change in fair-value of own debt.

Table 10 Sanction Probability Estimation -Average Marginal Effects (AME)

Sanction Probability	*Logit*	*Multinomial Logit*	
	All	*BdI*	*Consob*
Growth of Gross Loans	-0.056*	-0.080***	0.002
	(0.037)	(0.039)	(0.010)
Total Earning Assets / Total Assets	-0.234*	-0.213*	-0.064
	(0.152)	(0.142)	(0.066)
Fixed Assets /Total Non-Earning Assets	-0.055**	-0.037*	-0.024
	(0.030)	(0.026)	(0.021)
Other Assets[1]/Total Non-Earning Assets	-0.087***	-0.033	-0.057***
	(0.040)	(0.035)	(0.027)
Fixed Asset Revaluations and Other Accumulated OCI (€ mln)	0.003	0.001	0.002
	(0.002)	(0.002)	(0.002)
Other Non-Interest bearing Liabilities[2] (€ mln)	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Net Stable Funding Ratio	-0.016**	-0.027***	0.002
	(0.009)	(0.012)	(0.003)
Long Term Funding / Equity	0.004*	0.004*	0.001
	(0.003)	(0.0029)	(0.001)
Net Gains on Trading and Derivatives / Other Op. Income	0.012*	0.007	0.004*
	(0.008)	(0.008)	(0.003)
Net Interest Revenues / Average Assets	-2.191***	-1.520**	-0.6039
	(1.095)	(0.9826)	(0.6018)
Other Non-Operating Items[3]/ Pre-tax Profits	-0.015*	-0.4512	-0.959***
	(0.010)	(1.007)	(0.464)
Operating Profit / Pre-Tax Profits	-0.016**	-0.007	-0.007***
	(0.008)	(0.009)	(0.004)
Pre-impairment Operating Profit / Average Equity	-0.091**	-0.068**	-0.031*
	(0.048)	(0.042)	(0.023)
Taxes / Pre-tax Profit	0.0136**	0.012***	0.003
	(0.0074)	(0.006)	(0.005)
Listed Bank (Dummy)(d)	-0.249***	0.099***	0.176***
	(0.072)	(0.046)	(0.068)
Banca Popolare (Dummy)(d)	-0.045*	0.048***	-0.005
	(0.031)	(0.027)	(0.007)

Observations: 1287; Standard errors in parentheses; * p < *0.2,* ** p < *0.1,* *** p < *0.05 (d) discrete variable, marginal effect computed at 1*

[1] Other Assets= Non-Earning Assets – Fixed Assets – (Cash and Due from Banks + Foreclose Real Estate + Goodwill + Other Intangibles + Current Tax Assets + Deferred Tax Assets + Discontinued Operations).

[2] Other Non-Interest Bearing Liabilities= Accruals, Deferred Income and Trade Creditors = Total Liabilities – Total Interest Earning Liabilities = (Fair Value Portion of Debt + Current Tax Liabilities + Deferred Tax Liabilities + Other Deferred Liabilities + Discontinued Operations + Insurance Liabilities + Other).

[3] Other non-operating items=At-equity non-operating profits/losses (i.e. profits/losses from participated) + Non-recurring income/expenses (i.e. exceptional or extraordinary items which are not part of the bank core business and occurs as a singular instance) + change in fair-value of own debt.

Table 11 Effect of sanctions on intermediaries' performances at deferent horizons

	During the year		One year before		Two years before		Three years before	
Growth of Gross Loans(%)								
δ_{it}	0.463	(3.975)	4.550	(4.582)	-2.393	(4.679)	-5.039	(3.408)
$\delta_{it} * bb_i$	-2.656	(4.726)	-7.946*	(5.031)	-1.752	(6.154)	2.547	(6.249)
Growth of Total Assets (%)								
δ_{it}	1.694	(2.266)	-1.396	(2.487)	-1.614	(2.998)	-3.023	(3.279)
$\delta_{it} * bb_i$	-8.302***	(3.642)	-4.731*	(3.211)	-4.543	(3.689)	-3.376	(3.571)
Equity on Total Assets								
δ_{it}	0.193	(0.378)	-1.074	(0.887)	-1.591*	(1.053)	-2.164**	(1.214)
$\delta_{it} * bb_i$	-1.595***	(0.644)	-0.237	(1.019)	0.676	(1.146)	1.573	(1.286)
Net Stable Funding Ratio								
δ_{it}	0.068	(0.102)	0.062	(0.110)	0.142	(0.115)	0.224*	(0.152)
$\delta_{it} * bb_i$	0.130	(0.112)	0.114	(0.119)	0.032	(0.118)	-0.087	(0.155)
Customer Deposits on Total Funding excl. Derivatives (%)								
δ_{it}	0.222	(1.819)	-0.121	(2.115)	4.157*	(3.012)	9.483***	(4.053)
$\delta_{it} * bb_i$	-3.162	(2.815)	-2.645	(2.555)	-6.190**	(3.410)	-10.53**	(4.043)
Loans and Securities Impairment Charges on Average Loan (%)								
δ_{it}	0.225*	(0.148)	0.282**	(0.147)	0.438***	(0.191)	0.238	(0.243)
$\delta_{it} * bb_i$	-0.263*	(0.173)	-0.271*	(0.174)	-0.525***	(0.217)	-0.363*	(0.263)
Unreserved Impaired Loans on Equity								
δ_{it}	5.782	(5.742)	5.022	(6.485)	3.804	(6.032)	2.277	(7.201)
$\delta_{it} * bb_i$	10.14	(8.269)	8.105	(8.481)	7.963	(7.927)	7.542	(9.204)
Tier1 Capital Ratio								
δ_{it}	1.487***	(0.692)	-0.224	(1.270)	-0.528	(1.487)	-1.463	(1.700)
$\delta_{it} * bb_i$	-1.876***	(0.815)	0.325	(1.333)	1.181	(1.480)	2.046	(1.714)
Net Interest Margin								
δ_{it}	-0.045	(0.075)	0.024	(0.109)	-0.147	(0.221)	-0.299	(0.295)
$\delta_{it} * bb_i$	0.224***	(0.092)	0.169*	(0.113)	0.308*	(0.226)	0.460*	(0.296)
Cost to Income Ratio								
δ_{it}	2.899**	(1.691)	3.116*	(1.789)	4.225**	(2.308)	3.267	(2.607)
$\delta_{it} * bb_i$	-0.891	(2.412)	0.018	(2.427)	-1.230	(2.798)	-1.220	(3.126)
ROAA								
δ_{it}	-0.280*	(0.175)	-0.412**	(0.213)	-0.598**	(0.306)	-0.394	(0.337)
$\delta_{it} * bb_i$	-0.193	(0.302)	-0.001	(0.263)	0.393	(0.331)	0.318	(0.367)
ROAE								
δ_{it}	-4.573**	(2.430)	-4.382*	(2.793)	-5.191*	(3.628)	-3.391	(3.875)
$\delta_{it} * bb_i$	0.270	(3.142)	-0.559	(3.312)	2.992	(3.927)	2.058	(4.352)
Bank F.E.	Yes		Yes		Yes		Yes	
Time F.E.	Yes		Yes		Yes		Yes	
Observations	340		340		340		340	

Standard errors in parentheses; * $p < 0.2$, ** $p < 0.1$, *** $p < 0.05$