LUISS Guido Carli
LIBERA UNIVERSITÀ INTERNAZIONALE DEGLI STUDI SOCIALI

Faculty of Economics and Finance
Master of Science in Finance

The Italian NPL Market:
Analysis and Deleveraging Strategies

Supervisor
Prof. **Marshall Langer**

Assistant Supervisor
Prof. **Domenico Curcio**

Candidate
Federica Chiappetta

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Abstract

This paper is aimed at analyzing the traits of the Italian NPL market and at defining the potential deleveraging strategies that could be undertaken in order to reduce the stock of non performing loans (NPLs) held in bank's balance sheet.

The first chapter gives an overwview of the Italian Banking System and goes through the causes of the two economic crisis that have led to credit deterioration and the remarkable increase in the stock of these non-performing assets.

The second chapter provides the definition of non-perfoming loans illustrating the different classes of credits and giving some sparks on the accounting principles and the theoretical concepts that apply to NPL analysis and valuation.

In the third chapter, the relation between the NPLs and credit supply in the context of the Italian NPL market has been examined according to a recent Bank of Italy research run in 2017.

Lastly, in the fourth and firth chapters, the develeraging strategies that could be undertaken in order to face the problem of the non-performing loans and the recent reforms that have been adopted within the national regulatory framework in order to strengthen banking stability have been explained.

1. Chapter 1 – Overview of the Italian Financial Context

1.1. The Italian Banking System and the two crisis

Banks are the common thread that connects the world of finance with that of the real economy. These entities act as intermediaries for companies and individuals who are willing to find financiers for their business by solving information asymmetries and matching available financial resources between money lenders and borrowers. Financial intermediaries allow borrowers to access savings of other individuals and therefore, in the absence of banks, savers should assess their investments and verify interest payments and the return of the principal amount on their own. In banks, the selection process of creditors and the risk-taking attitude lead to the creation of the loan portfolio, which in turns affects the value creation, the balance of financial flows and the size and the quality of the assets (Colombini e Calabrò, 2011).

Given the banks' nature, any substantial transformation of their business must occur with due regard for credit system efficiency. This is why the issue of the great amount of "bad" credit, the so-called Non-Performing Loans (NPLs), that has been in existence for some years in the balance assets of domestic credit institutions, is worth to be considered. To this end, while in other countries the National Competent Authorities (NCAs) have promptly tackle the issue, Italian banks have tried to postpone the matter.

Non-performing loans and bad banks are concepts that have become increasingly common, showing how the issue is crucial to a full recovery of the credit system and, indirectly, of the real economy in general. Since the onset of the global financial crisis in 2008, the NPL stocks on the balance sheets of European banks have risen substantially; in Italy NPLs tripled, reaching 18% of total loans in 2015. Besides raising concerns on the soundness of the banking sector, this phenomenon might trigger a vicious circle where the contraction in credit supply driven by the NPL stock can lead to lower growth, slower recovery and hence a further deterioration in bank balance sheets. In 2014, 320 billion of credits were impaired loans (one fifth of Italian GDP) and 180 billion were "bad" loans (without considering the fact that some debtors are not technically insolvent, but may soon

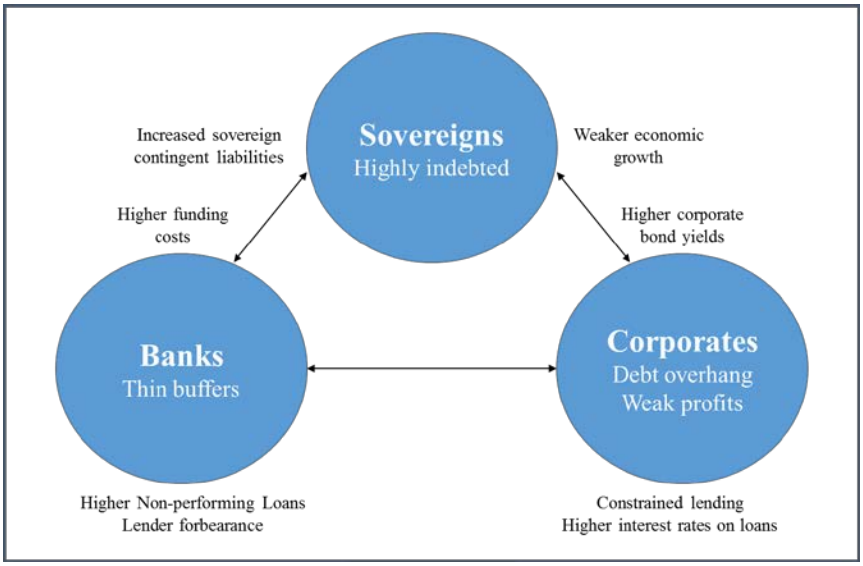
become); ROE stood at 1%, compared to the negative values of the previous three years. Standard & Poor estimated a steady rise in credit ratings for the years 2015 and 2016. In 2016 “bad” loans issued by Italian Banks amounted to €349 billion before deduction of any write-down already recorded. It is therefore reasonable to investigate what are the strategies for a better disinvestment of these assets (the so-called “deleveraging strategies”) and how the Italian banks are approaching the problem.

First of all, it is necessary to analyze the context where the issue has been highlighted, prior to identifying the deleveraging strategies used to dispose of these non-strategic assets. The economic background, on the one hand, explains the seriousness of the problem but, on the other hand, it represents the incentive to start a wave of non-core asset divestments in order to create a NPL market in Italy as it actually has occurred.

Looking at the Italian banking system, it is possible to notice how the country is historically bank-centric like Germany. Indeed, Italian banks play a central role within the national production system given the high presence of small and medium-sized businesses in our economic landscape. In light of the bank-based orientation of the country, the most popular bank type in Italy is the commercial bank. The latter operates as a traditional bank: it transfers resources from surplus units (generally households) to those in deficit (companies) through the bank's balance sheet itself or by transforming direct deposits into profitable assets. The current Governor of Banca d'Italia, Ignazio Visco, recalled that Italian companies operate with a leverage of 44% and bank credit accounts for 64% of total debt.

Banks have always been considered the engine of economic growth, on the basis of their role as both consumer and investment lenders. With the financial crisis and the subsequent sovereign debt crisis, the credit supply has been reduced (credit crunch) by feeding a vicious circle (See Figure 1.1).

Figure 1.1. - The Economic Vicious Cycle[1]



Source: GSFR, October 2013.

The financial crisis of 2007-2008 which started in the US with the collapse of the subprime mortgage market, was essentially a liquidity and confidence crisis caused by several factors as excessive subprime lending due to easy credit conditions, weak and fraudulent underwriting practices, deregulation of the financial market, increased debt burden and overleveraging, mispricing of risk and excessive risk-taking. Initially, the contraction of the credit caused minimal effects for two reasons: on the one hand, also the credit demand[2] reduced due to a mistrust climate, economic uncertainty and decline in production activities; on the other hand, most banks had enough customer deposits to offset a reduction in credit supply.

The second crisis, the one of sovereign debt in 2009-2010, had more serious credit effects. It was a financial crisis that made it difficult or impossible for some countries in the euro area to repay or re-finance their government debt without the assistance of third parties. Since the bank capacity to raise funds on the market is also a function of the rating assigned by specialized agencies that, when assessing the bank rating, take into account also the rating of the country in which the institutions are based, the crisis affected the banking system as well. The European sovereign debt crisis was the result of a combination of complex factors

[1] This vicious cycle that has been activated explains the ongoing increase of NPLs in bank portfolios and how these loans act as a stop to the financial operations.
[2] Credit demand reduction regarded both corporates and individuals.

- including the globalization of finance – as (i) easy credit conditions during the 2002–2008 period that encouraged high-risk lending and borrowing practices; (ii) the 2007–2008 global financial crisis; (iii) international trade imbalances; (iv) real-estate bubbles that have since burst; (v) fiscal policy choices related to government revenues and expenses; (vi) approaches used by nations to bail out troubled banking industries and private bondholders, assuming private debt burdens or socialising losses.

As the Figure 1.1. shows, the two recessions led to a liquidity crisis for banks and invoicing reductions for corporations; the former reacted by reducing credit supply through an increase in lending rates, which worsed the situation of debtors that consequently had no capacity to fulfil their obligations. As a result, the bank's loan portfolio also deteriorated causing an increase in non-performing assets, *i.e.* the assets for which the collection is uncertain both in terms of maturity and amount. To face the issue, financial intermediaries were forced to reduce their assets, becoming more selective in customers' choice. NPLs therefore appear to be a restraint to bank operations.

1.2. Credit deterioration and main causes for credit impairment in Italy

Throughout the crisis period, the credit quality significantly worsed and led to an increase of the non-performing exposures. Initially, the increase solely referred to the category of bad loans – that will be better explained in Chapter 2 - and it subsequently extended to the NPLs. The NPL classification rate, *i.e.* the ratio between the NPLs and the total stock of loans, remarkably increased: it passed from 1% in 2007 to 3% in 2013, it dropped slightly in 2014 and it remained constant in 2015.

The negative economic cycle hitting several corporations called for a tighter financial restructuring on the one hand, and caused the impossibility to face the credit commitments on the other hand. In a similar context and in light of the strong competition within the banking system and the frequent access to the capital market by large corporations, there was a significant deterioration in the assets held by the banks.

The phenomenon of non-performing loans and the intensification of insolvencies triggered a broad debate on the motivations that fueled the rapid growth of risky assets. To this extent, two types of factors have been identified:

- **structural factors**: the worsening of credit quality is thought to be due to the sudden expansion of market shares of banks, without a careful analysis of the solvency of the entrusted customers. In addition, the banks have pursued asset policies geared to meeting subjective needs;
- **economic factors**: the growth in impaired loans is linked to the negative economic scenario that worsed the balance sheets of banks and caused a treasury management imbalance affecting the quality of loans granted.

Regardless of which of the two factors is more or less relevant in the growth of impaired loans, it can be stated that the particular financial structure of Italian companies played a key role in the development of this phenomenon throughout the country. The spread out of NPLs is mainly tied to:

- high leverage;
- low capital mobility, poor use of the capital market monitoring mechanisms of the profitability of corporate investments;
- low access to listed market and concentration of short-term debt;
- wide spread of pluri-entrustment.

Moreover, the strong debt demand fueled a completely unbalanced market structure in Italy. The condition that limits the Italian market has turned out to be the low allocation efficiency of credit. Banks are thus responsible for not being able to assess the quality of the borrowers and properly allocate savings.

The absence of competition in the labour market and in the capital market are conditions that favour the onset of unsuitable behaviours. With regard to the labour market, it is well-known that an efficient labour market would discourage non-optimizing behavior, as managers would be deeply concerned with their reputation; as far as the capital market is concerned, its good functioning guarantees optimum operating efficiency.

After clarifying the conditions that allow managers to behave abnormally, it can be explained how these behaviours imply a qualitative deterioration of the bank's assets:

- bank executives are pushed to pursue an accommodating credit policy by following a risk-taking attitude in order to maximize the bank’s profits;

- a sub-optimal behavior results in a lower overall bank efficiency and hence a lower ability to distinguish between credits *in bonis* and impaired credits.

Therefore, bad credit quality can be the outcome of plausible managerial inefficiencies as well as adverse environmental conditions[3].

Another aspect that is worth mentioning is related to the costs that banks have to bear for holding these non-core assets in their balance sheets. A key role is played by the capital provisions required by Basel's legislation, in addition to the impact of value adjustments on the net income. As better specified in the following paragraph, according to Basel III agreements, financial intermediaries are required to hold a regulatory capital that is proportional to the riskiness of the assets. Obviously, the cost of capital will also depend on the adopted methodology for calculating the capital requirement. Indeed, when assessing the capital requirement, the intermediaries are called to adopt standardized or internal models (with different sophistication) on the basis of the proportionality principle.

On the basis of research done by the International Monetary Fund, it can be pointed out that:

- for those banks using the **standardized approach** (mainly small banks and Cooperative Banks), non-performing loans account for 12% of risk-weighted assets;
- in case of using **internal ratings-based** (IRB) **approaches**, a further distinction needs to be made. For those banks adopting the IRB *advanced* (*e.g.* UniCredit, Intesa San Paolo, Banca Monte dei Paschi in Siena, Ubi Banca, Banca Popolare) the cost of capital to hold NPL depends on two factors: the "IRB shortfall", *i.e.* the difference between the provisions required by Basel legislation and the IFRS accounting principles, and the required capital requirement relating to the gross level of NPL. For those banks using the IRB *Foundation* approach (such as medium-sized banks), the cost of capital solely depends only on the IRB shortfall.

[3] The issue of competition in the output market is neglected since the capital markets are all characterized by a certain degree of monopoly.

1.3. Some sparks on Basel III

In the aftermath of the 2007-2008 crisis it became clear that the legislation addressing the banking sector had to be reformed. To this end, the Basel Committee on Banking Supervision[4] (BCBS), in late 2009, published the first version of Basel III containing a new set of reforms designed to improve the regulation, supervision and risk management within the banking sector. The aim was to strengthen the global capital and liquidity rules with the goal of promoting a more resilient banking sector and to improve the financial industry's ability to absorb shocks arising from financial and economic stress, whatever the source, thus reducing the risk of spillover from the financial sector to the real economy.

The reforms strengthened bank-level, or microprudential, regulation, whose aim was raising the resilience of individual banking institutions to periods of stress. The reforms also had a macroprudential focus, addressing system-wide risks that can build up across the banking sector as well as the procyclical amplification of these risks over time. Clearly these micro and macroprudential approaches to supervision are interrelated, as greater resilience at the individual bank level reduces the risk of system-wide shocks.

In order to foster the resilience of the banking sector the Basel Committee firstly focused on strengthening the regulatory capital framework, building on the three pillars of the Basel II framework, namely:

- Pillar 1: Minimum Capital Requirements (operational risk was added alongside credit risk and market risk for the computation of the capital ratio);
- Pillar 2: Supervisory Review Process (supervisors were entitled to impose higher capital requirements on top of pillar 1 requirements based on supervisory judgement);
- Pillar 3: Disclosure (increased market discipline thanks to more bank disclosure).

The reforms raised both the quality and quantity of the regulatory capital base compared to Basel II requirements and enhanced the risk coverage of the capital framework.

[4] The BCBS is the primary global standard setter for the prudential regulation of banks and provides a forum for cooperation on banking supervisory matters. Its mandate is to strengthen the regulation, supervision and practices of banks worldwide with the purpose of enhancing financial stability.

They were underpinned by a non-risk leverage ratio that serves as a backstop to the risk-based capital measures, intended to constrain excess leverage in the banking system and provide an extra layer of protection against model risk and measurement error. A solvency coefficient has been introduced and it has been set that the regulatory capital, which differs from the net book equity, must be at least 8% of the risk-weighted assets (RWA). The goal is to ensure the strengthening of banks' capital, making them more eligible to bear the risks to which their assets are exposed. Due to these new and more stringent capital tresholds, the profitability and cost of equity are negatively affected, and the issue of banks' NPLs, in relation to the asset absorption that they imply, is even more accentuated. Basel III does not only focus on the quantity side, but it also takes into consideration the quality side of capital. By the end of 2019, all banks, in order to be considered financially sound, will have to comply with the new minimum capital threshold set at 10.5%.

1.4. The European Banking Union

In order to conclude the overview of the economic and financial environment, is the recent Banking Union, another aspect that is worth to be mentioned is the recent Banking Union of which Italy has automatically become part as an EU Member State, whose aim is to create a stronger stability of the euro area banking system. With regards to this paper, only one of the three pillars involved has been considered, namely the Single Supervisory Mechanism (SSM).

On November 4th 2014, the ECB thus assumed the role of single supervisor on 120 banking groups, including 15 Italian groups. The Mechanism is based on the close cooperation between the ECB and the competent national authorities (NCAs) of the Member States. The review of the bank assets (Comprehensive Assessment) run by BCE was mandatory in order to activate the SSM and it firstly involved an Asset Quality Review (AQR), and a subsequent endurance test against two macroeconomic scenarios: a base scenario and an adverse one[5]. The AQR was conducted by the ECB and their respective

[5] The so-called Stress Test. Stress testing is a useful method for determining how a portfolio will fare during a period of financial crisis. Stress testing is most commonly used by financial professionals for regulatory reporting and also for portfolio risk management.

NCAs and entailed an analysis of the intermediary's loan portfolio: proper distribution of the performing and non-performing loans and adequacy of provisions.

Recently, there have been relevant news about the perception that the Single Supervisory Mechanism aims at forcing banks to quickly dissolve NPLs on the market. Such perception may be one of the causes of the recent sharp fall in bank currencies in the Euro Area and in Italy. Nevertheless, the idea that the SSM intends to force banks to quickly and indirectly dispose of NPLs are erroneous, as stressed by the ECB, SSM and Bank of Italy in several occasions[6].

With respect to the NPLs, the Supervision carefully analyzes the single cases, taking into account both the various specific variables of each bank - including the effectiveness of recovery procedures, the adequacy of hedging rates and the NPL's impact on total lending - and the external environment in which banks operate.

The Italian banking system had an overall positive rating, despite the particularly heavy economic situation.

On the basis of this background information, it is clear that some disposal strategies need to be implemented in order to unlock the operations of credit institutions. For years, Italian banks have underestimated the disinvestment task: the negativity of the psychological impact that disinvestment entails makes it solely as an extrema ratio in the range of strategic options available to management. Under a more theoretical point of view, disinvestment is one of the corporate strategies that a company, whether it is involved in production or service activities, has at its disposal.

[6] M. Draghi, *Introductory statement to the press conference – Governing Council decisions*, January 21st 2016; D. Nouy, *Introductory statement at the Presentation of the ECB Annual Report on supervisory activities 2015 in the ECON Committee of the European Parliament*, March 22nd 2016; I. Visco, *Indagine conoscitiva sulle condizioni del sistema bancario e finanziario italiano e la tutela del risparmio, anche con riferimento alla vigilanza, la risoluzione delle crisi e la garanzia dei depositi europee*, April 19th 2016.

2. Chapter 2 – Non-performing loans: definition and valuation method

2.1. Definition and classes of non-performing loans

In the EU context, the theoretical definitions of non-performing loans are very heterogeneous and the one adopted by Italian banks is particularly wide[7]. In recent years, Italian banks have called for more guarantees and have reduced the gap between the credit granted and the value of the guarantee itself[8]. If the definition of impaired credit adopted by European banks - ruling out the fully collateralized exposures - was applied to Italian banks, the Italian banking system's coverage ratio would be much higher and would currently show a growing trend[9].

Monitoring the behaviors of depositors through the current account tool allows financial operators to observe the initial state of an exposure[10] and its subsequent evolution, which may show signs of distress and evolve in a bad exposure at the worst. Given the consistency of customer exposures and assuming that they are all related to credits *in bonis*, i.e. those assets following a normal or non-worrying evolution, they begin to deteriorate when the contractual terms of the loan agreement are not met, which occurs after 30 days from the contractual expiration of the loan itself. This limitation coincides with the overcoming of the "grace period" provided by banking practice, i.e. 30 days[11].

The Circular no. 272 of July 30th, 2008 of Bank of Italy, provides the definition of non-performing loans and it states that NPLs are exposures to debtors who are no longer able to meet all or part of their contractual obligations because their economic and financial circumstances have deteriorated. All these claims show an objective impairment and have a different risk level. The parameters used for classifying a claim as a non-performing loan are

[7] See S. Barisitz, *Non-performing Loans in Western Europe – A Selective Comparison of Countries and National Definitions*, Oesterreichische Nationalbank, Focus on European Economic Integration, Q1/13, http://www.oenb.at/de/img/feei_2013_q1_studies_barisitz_tcm14-253775.pdf.
[8] Loan to value ratio, LTV.
[9] Bank of Italy, *Financial Stability Report*, n. 5/2013, April 2013.
[10] Exposure: sum of risky assets against a client, which may involve cash transactions such as loans, shares, bonds, subordinated subsidiaries and off-balance sheet transactions, including warranties and commitments and derivative contracts.
[11] Bank of Italy, *Manuale per la compilazione della matrice dei conti*, Circular n. 272, July 30th, 2008.

the following two: the "delays" in the expected payments, and the "probability of default" of the counterparty. The default may occur in that the borrower is no longer able to repay the capital and the interests due to creditors. In other words, these loans are receivables for which the collection is uncertain both in terms of maturity and cash amount.

Bank of Italy[12] has identified four categories of impaired loans by increasing risk level:

- **Past due loans** ("*esposizioni scadute e/o sconfinanti*" in Italian): this type of loans has expired for more than 180 days and is generally not included in the categories mentioned below. For some claims of this kind, the maximum time limit settled by the Supervisory Provisions is 90 days.
- **Restructured loans** ("*esposizioni ristrutturate*" in Italian): in this case a bank or a pool of banks has changed the original terms of the loan contract[13], due to the deterioration of the borrower's financial condition, causing a substantial economic loss. Obviously, not all the non-performing receivables turn into losses, but conversely, in some cases we may have partial or total credit recovery. The conversion rate of non-performing receivables into losses depends on various factors including the existence of collateral, the *ex-ante* presence of a credit recovery program and, ultimately, on the effectiveness of the recovery provisions.
- **Bad loans** ("*incagli*" in Italian): this class includes all the financial exposures to debtors that are temporarily experiencing an objective situation of economic distress. The existence of any collateral covering the borrower's exposure is disregarded in this case. Unlike the non-performing receivables which refer to permanently immobilized financial assets, bad loans represent claims that are supposed to be recoverable within a reasonable timeframe. Therefore, those loans classifying as bad lare characterized by a lower risk level with respect to the non-performing receivables and consequently require lower provisions against credit risk. This category of loans does not comprise the exposures whose situation of distress is caused by country-specific factors directly tied to the

[12] Bank of Italy, *La recente analisi dei prestiti deteriorati condotta dalla Banca d'Italia: principali caratteristiche e risultati*, Annex 1, July 2013.
[13] For example, rescheduling the terms of the loan or reducing the interest rate and / or the debt amount.

country risk. Unless these claims are eligible for a classification as non-performing loans, also the exposures to those who have not honored their payment obligations related to listed debt securities fall within this class; for this purpose it is necessary to identify the "grace period" provided for in the contract or, in the absence thereof, recognized by the stock quotation market. Given that it is plausible to think that part of the bad loans turn into non-performing loans, the category of bad claims can ideally be split into two parts: one characterized by a lower liquidity risk and the other (the one that statistically falls within the non-performing class) that shows a higher liquidity risk.

- **Non-performing loans** ("*sofferenze*" in Italian): credits whose collection is not certain for the intermediaries who have granted the loan because the relevant debtors have become insolvent[14] or are in comparable situations, regardless of the bank's default forecast and the presence of collateral or personal guarantees. In order to overcome the problem, appropriate sums of money, in proportion to the credit risk of the loan and its condition, are set aside into specific reserves by the financial intermediaries. The exposures whose situation of distress is caused by country-specific factors are not classified as non-performing loans; conversely, the financial exposures against local authorities currently facing a situation of financial distress fall within this category in proportion to the share subject to the relevant liquidation procedure.

  Non-performing loans are a particularly relevant indicator for assessing the bank's credit policies and analyzing the following two factors:

  – the lender's risk appetite, given that non-perfomring receivables in homogeneous credit groups have been taken into account, together with other qualitative information such as the degree of portfolio diversification, the performance of the productive sector, the geographical area and the size class of insolvent customers; all these factors may explain the bank's lending policies and the related criteria;

[14] The insolvency status may also not be declared by a court.

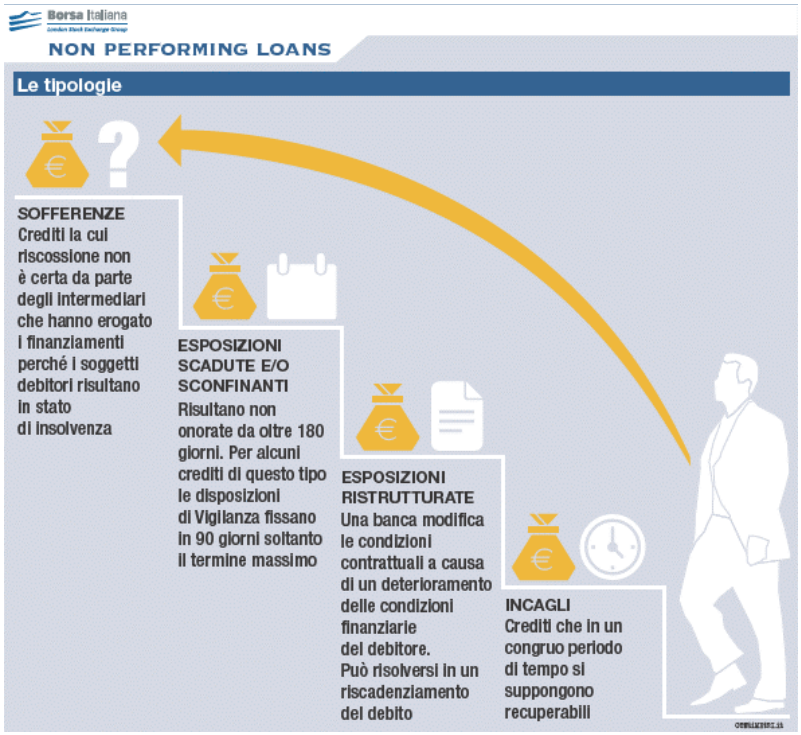
– the ability to effectively assess the creditworthiness of fundraisers; also in this case, the qualitative information package can help to properly appreciate the valuation skills of the credit grant holders.

Obviously, the last category of impaired credits is the most risky and is not related to a specific period of time but to the condition that the intermediary no longer considers the financial distress as temporary. Since collection is no longer certain, recovery procedures are put in place. The first action performed by the bank is the revocation of the credit line. Thus, as it often happens, the reclassification of a credit line as a non-performing loan can be the last step of the various levels of impaired credit, but it may also be an immediate step without going through the intermediate categories.

However, the class of non-performing loans is the most risky, and based on this, the intermediaries set aside money into specific reserves in proportion to the condition of the risk involved.

In the category of bad loans, the banks always provide reserve provisions but these latter will be of a lower amount than those settled in the previous case.

Figure 2.1. - Classes of non-performing loans



Source: www.borsaitaliana.it

It can therefore be pointed out that the Supervisory Authority has based the NPL classification on a judgment that does not solely depend on neither the failure to fulfill a contractual relationship nor the presence of guarantees. The issue is directly related to the acquired awareness that the debtor is now incapable of regularly fulfilling his contractual obligations, irrespective of the fact that legal or non-legal proceedings have been initiated against him.

In order to monitor the systemic risk, Bank of Italy has set up the Central Credit Register (*Centrale Rischi* in Italian) that is an archive inclusive of each party's debit positions against all the financial intermediaries. On one hand it allows each debtor to assess the risk of the overall exposure and, on the other hand, it allows each intermediary to directly control the customer solvency[15]. The Central Credit Register data are, obviously, confidential, but the individuals may ask to access to the information recorded on their behalf; in particular, the reporting intermediaries are required to disclose to the person concerned the relevant data contained in the return streams of the Central Credit Register in compliance with the implementing provisions issued by Bank of Italy. This latter, on request of the party concerned, provides details of the risk reports drafted by the individual reporting agents.

As far as concerns are concerned, as reported in Circular n. 139 - 14th Update of April 29th, 2011 "*Central Credit Register - Guidelines for credit intermediaries*" issued by Bank of Italy, the reclassification into non-performing loan occurs when the bank has good reason to believe that the credit is unrecoverable. For the recovery of such claims, legal actions are undertaken by the trusted jurisdiction service that will deal with the recovery of the credit previously entrusted to the Facility Service (*Servizio FIDI* in Italian) of the bank. This refers to the credits claimed against customers who are involved in serious and non-transitory economic and financial difficulties. Threfore, the bank's assessment must relate to the overall financial situation of the client and cannot automatically arise from the mere borrower's delay in repaying debt; neither it matters whether the loans is secured or unsecured.

[15] Bank of Italy, *Governor Final Comments - Annual Report 2015*, Rome, May 31st, 2016.

Regardless of the accounting procedures adopted by the intermediaries, the NPLs must be reported for an amount equal to the monetary amount originally granted, net of any reimbursements and gross of write-downs and any loss reclassification that may have been made. This amount includes the principal, the accrued interests and the expenses incurred in credit recovery actions. Moreover, this criterion must be followed also by the intermediary who has transferred the loan to another party. Intermediaries must inform the customer and any co-obligants (guarantors, unlimited liability shareholders) in writing the first time they classify the loans as a NPL. Reporting a classification of NPL is no longer due when:

- the state of insolvency or the comparable situation ceases;
- the credit is reimbursed by the debtor or by a third party, also following a liberatory settlement agreement, a composition before bankruptcy or a remissive bankruptcy agreement;
- partial repayments of the credit result in a corresponding reduction of the reported amount;
- the credit is transferred to third parties;
- the competent Corporate Bodies, with specific resolution, have definitively recognized the irrecoverability of the entire credit or have renounced to pursue the recovery proceedings;
- the credit is entirely timebarred (Article 2934 et seq. of Italian Civil Code);
- the credit was deferred (Article 142 of Bankruptcy Law)[16].

The payment of the debt and/or the termination of the insolvency state or the comparable situation does not involve the cancellation of the non-performing classifications relating to past claims.

1.1. Regulatory differences among jurisdictions

It is interesting to analyze the regulatory differences between the European Banking Authority and the Italian legislation. Since September 30th, 2014, a harmonized definition of

[16] Intermediaries who did not apply for admission to the bankruptcy liabilities of the debtor or, even if submitted, were not admitted, no longer have to report the full amount of the credit claimed but an amount equal to the percentage that the creditors of the same rank have, since the date of the bailiff decree.

in bonis and non-performing positions has entered into force with the aim of eliminating the heterogeneity of the matter in Europe and facilitating the establishment of the Single Supervisory System. The definitions settled by the Eupean Banking Authority (EBA) are quite in line with the Italian ones; Italy indeed proved to be the most severe country in dealing with non-performing exposures. The EBA clarifies that the underlying principle of the existence of NPLs is the "unlikely to pay" principle.

Regardless of the guarantees issued and the expired quotas, the exposure enters the NPL category when the debtor is involved in a situation such that the bank may fear that the loan may no longer be honored. Moreover, if the credit has expired for more than 90 days, it ceases to be considered *in bonis* and is classified as past due loan. To this end, the EBA further specifies: as already happens in Italy, the claims expired and related to the same counterparty can be accounted for using the debtor or the transaction approach. The former is always required if the borrower is a large institution or a corporate entity. The difference lies in the fact that while in the transaction method, only the credit line is registered as non-performing, in the other case (the debtor approach) all exposures to that counterparty will be included in the non performing exposure (NPE). It will be mandatory to switch to the debtor approach if the expired exposure exceeds 20% of the total cash exposures against the same counterparty. There was less rigid legislation in Italy: the threshold to be exceeded was 10%, but the calculation only included the expired quota and not the entire loan amount. Again in Italy, such bad loans[17] continued to accrue interests, causing an increase in the total NPL level, as opposed to the rest of the continent where the impairment of financial assets ceases to produce them.

These are all those loans that have been granted by the bank and that are defined as "restructured loans" by Bank of Italy, *i.e.* those loan contracts envisaging new terms and conditions in favour of the borrower. Bank of Italy, when classifying them as restructured loans already treated them as problematic exposures as opposed to other European countries. To this regard the EBA was forced to intervene in order to ensure homogeneity and to differentiate between performing and non-performing credits so that only the latter category would be included in the NPE class. Also in this case Bank of Italy was already in line with

[17] Non-performing loans were not included in this category.

the European dictum, and for some aspects it was even more severe. In order to get out of the non-performing class forbearance, Bank of Italy requires that the loan has been restructured for at least two years and that a resolution of the company's top executives has been issued in order to confirm the return of the solvency status. However, in Europe, this statement is not necessary but it is enough that one year has elapsed from the agreement and that the risk of insolvency has collapsed. More precisely, the EBA specifies[18]:

- Non-performing forbearance: this class corresponds to the Italian category of "*crediti ristrutturati*". These loans are categorized with this wording once they have been granted by the original creditor bank, and in order to be included in the following category at least one year must have passed.
- Performing forbearance: this class is composed of those credits no longer part of the previous category. In such a case, at least one year must have passed (the so-called probation period) for the loan to be completely risk-free and then fall under the category of credits *in bonis*.

From an accounting point of view, after the restructuring agreement, the credit will appear as non-performing forbearance loan for the first year; at maturity, if the risk of insolvency has collapsed, the loan can be considered as performing, but still belonging to the forbearance class. At the end of the probation period, if all the conditions are met, the exposure will be classified as performing, without requiring additional reserves.

2.2. Basic concepts and accounting valuation principles

With regard to the accounting valuation of this type of financial assets, all Italian banks, like the major European banks, follow the International Accounting Standards[19] using the amortized cost method[20]. This criterion envisages the discounting of the estimated future cash flows that are computed along the expected life of the credit. The discounting method

[18] See the box: *La definizione di esposizioni deteriorate (non-performing) e oggetto di concessioni (forbearance)* in the EBA rules of the *Asset Quality Review*, *Financial Stability Review*, May 2014.
[19] Regulation (EC) n. 1606/2002 of the European Parliament and of the Council requires the application of international accounting standards in the consolidated financial statements of companies issuing securities traded on listed markets. The Italian legislator, by exercising an option provided for by this Regulation, has extended the application of international accounting standards by requiring all banks and supervised intermediaries to implement them in drawing up individual and consolidated financial statements.
[20] Except that the credits have been classified in the accounting portfolios valued at the fair value.

takes into account the financial principle of the time value of money (TVM); the IAS require that the original effective interest rate of the loan itself[21] must be used for this purpose. In general, the Gross Book Value (GBV) of a NPL is therefore equal to this discounted sum:

$$GBV = \sum_{t=1}^{n} \frac{f_t}{(1+i)^t}$$

where f denotes the expected cash flow at time t. This method is also implemented when computing the net value of NPLs, the so-called Net Book Value (NBV). When the debtor (for example a corporation) has some problems in repaying the loan, the bank must assess: a) the probability of default, *i.e.* the probability of not to recover the full amount of the loan, inclusive of the interests agreed in the contract; b) the amount actually recoverable, directly depending on the presence of collateral or other personal guarantees; c) the recovery times, generally different from those contractually agreed. The assessment of these elements implies a new estimate of the expected cash flows f', which normally translates into a "value adjustment" (a reduction of the value of the exposure) on the income statement.

In computing the new variable f', banks must also take into account the "direct" management costs of NPLs, relating, for example, to the appropriation and the future sale of the guarantees. Conversely, the "indirect" costs are misregarded as they reflect, to a large extent, the personnel costs or the management fees due to an external manager (servicer), that are recorded in the economic year of the year to which they refer to. Therefore the value of a non-performing loan net of value adjustments (NBV) is equal to:

$$NBV = \sum_{t'=1}^{n'} \frac{f'_{t'}}{(1+i)^{t'}}$$

where f' represents the new cash flow, revised downwards in light of the new financial condition of the company and n' represents the length of recovery time, revised upwards taking into account, *inter alia*, the expected lasting of the enforcement measures needed to recover the credit value from the disposal of guarantees.

The value adjustment is therefore the difference between GBV and NBV:

$$R = GBV - NBV$$

[21] See IAS 39 "*Financial Instruments: Recognition and Measurement*".

As time passes, it is possible that the exposure turns out to be again *in bonis* (in such a case the bank will make a value recovery equal to R in the balance sheet), or that the credit deteriorates further (in such a case the bank will need to make additional value adjustments). At any time the difference between GBV and NBV is given by the cumulative adjustments (and any write-offs) recorded over time. The coverage ratio is given by the ratio between the amount of value adjustments and the gross value of non-performing exposures[22].

2.3. NPLs in the Italian Banking System: the current situation

The high amount of NPLs in Italy is mainly the result of the following factors: a) the economic downturn that hit the Italian economy in recent years; (b) the long lasting of credit recovery procedures. The lack of development of a secondary market for these assets has contributed to the stock increase of NPLs[23].

In December 2015 the non-performing loans amounted to approximately €360 billion (GBV), equal to 18.1% of total customer credits. The non-performing loans (the worst category of impaired loans)[24] amounted to €210 billion (10.6% of total credits). For accounting purposes, the corresponding net book values, at the same date, were respectivelyat €197 and €87 billion (See Table 2.1.).

Table 2.1. - Impaired loans: amount, recovery rates and guarantees
(€/billion and % values; December 2015)

	GBV	Value adjustments	NBV	Recovery rate	Collateral(1)	Personal guarantees(2)
Total level of impaired loans	360	163	197	45.4%	160	52
o/w non-performing loans	210	123	87	58.7%	85	37

[22] In the notes to the financial statements value adjustments can be recorded in two different ways that both require to indicate the net book value of the NPL in the balance sheet. The first method entails the depreciation of part of the exposure that is no longer recoverable (the so-called write-down); the second one, once the credit recovery can no longer be considered as reasonably expected, involves the direct "exclusion" of the loss component (the so-called write-off), resulting in a reduction of the GBV. In the calculation of coverage rates also partial write-offs must be considered, in that the financial indicator would be undervalued otherwise. For futher details, see the box: *Coverage Rates and Outline of Losses* in the Financial Stability Report, 4, 2012.
[23] In the three-year period 2012-14, the disposals of non-performing loans were of limited amount (they amounted to about €11 billion, equal to 2% of the year average stock). Sales increased in 2015 (about €9 billion), but remain limited.
[24] Non-performing loans consist of exposures with a different degree of recoverability. In cases where it is reasonable to believe that the debtor's financial distress is temporary, the bank makes contained value adjustments.

Source: consolidated supervisory reports for groups and individuals for banks not belonging to banking groups.
(1) The amount is calculated using the reports on an individual basis. The figure does not represent the value of the guarantee but the amount of the secured loan. In the case of a credit covered by a guarantee whose value is higher than the value of the credit itself, the maximum amount reported is the loan amount.

From 2012, a steady rise in recovery rates has been detected, in part as a results of a specific supervisory action undertaken by Bank of Italy[25]: the average write-down of impaired credits currently accounts for 45% (o/w 59% solely due to non-performing loans), in line with the European average[26]; in June 2012, these indicators were, respectively, 37% and 55%.

The real estate guarantees covering the impaired exposures amounted to €160 billion. This amount does not necessarily correspond to the fair value of the guarantee, but it may reflect the amount of the collateralized credit[27]. The average impact of secured loans on the total of impaired loans is of 67%; with regad to the mortgaged loans granted to households, the secured amount (almost fully collateralized) is of 94%.

2.4. Main determinants of the difference between book value and market price of NPLs

One of the reasons for the lack of development in Italy of a secondary market of NPLs is the persistence of a significant gap between the loan value before any adjustments (the so-called Gross Book Value, GBV) and the price offered by the investors for this cateogory of assets. The main factors behind this economic gap appear to be essentially two:

1. the rate of return required by investors interested in NPLs is very high, even for the minor leverage they generally employ with respect to banks. It typically varies between 15%-20%. This yield is used as the discount factor for the expected cash flows from the NPL resulting in a lower market price. The banks

[25] See Bank of Italy, *La recente analisi dei prestiti deteriorati condotta dalla Banca d'Italia: principali caratteristiche e risultati*, Annex 1, July 2013.
[26] In Italy, differently from what happens in other countries, including the European ones, the impact of foreclosed assets (assets of which the bank has gained the ownership following the debtor's insolvency), is substantially irrelevant. A correct international comparison must take into account this component. In fact, from a technical point of view, the foreclosed assets aren't NPLs, but they imply the similar risks as those arising from the collateralized NPLs. In both cases, the bank is exposed to the real estate market trend.
[27] For example, in the case of a credit covered by a guarantee whose fair value is higher than the credit itself, the amount reported is equal to the loan amount. Moreover, the value of collateral is derived from the individual bank reports, while the credit value is taken from the consolidated reports (thus including the impaired exposures of foreign intermediaries and Italian financial companies belonging to the same banking group).

instead, as settled by the International Accounting Standards (IAS/IFRS), use the original interest rate on these assets which is typically much lower;

2. in accordance with the international accounting standards, the banks keep record of the indirect management costs of the NPLs in the financial statements of the year in which they are incurred, while the potential buyers immediately deduct them from the NPL net value, consequently reducing the offered price.

According to an analysis performed by Bank of Italy, these two factors can fully explain the economic gap between the book value of the non-performing loans and the price offered by an investor and, remarkably, this difference is proportional to the length of recovery (judicial or extrajudicial). In other words, recovery times play a key role in the valuation process of these assets.

The implications of these results for the problem resolution of the existence of such a high NPL stock are particularly relevant. First of all, a shortening of the recovery procedures would increase the value of NPL almost immediately, with positive consequences on the intermediaries' ability to properly allocate the funding resources of the economy and ensure financial stability. On the basis of proper simulations run by Bank of Italy, it follows that a reduction of two years of the recovery time would imply a 10% increase of the market price of the non-performing loans and, *ceteris paribus*, a significant reduction of the burden of NPLs in the long-run.

Moreover, as pointed out by the ECB and the Bank of Italy in 2016, the disposal of NPLs will happen gradually. The Supervisory Authorities accurately examine the actual financial situation of each bank - the effectiveness of the internal management and recovery procedures of NPLs, the coverage rates and the overall impact of these loans on total assets – in order to identify the most appropriate supervisory measures, taking into account the context in which banks operate as well. They do not indiscriminately drive banks to quickly sell these assets on the market.

Banks will have to increase the efficiency of the internal NPL management process by carefully assessing the opportunity to outsource the NPLs to specialized operators and to plan disposal operations within an industrial plan.

It is well-known that the net book value (NBV) of non-performing laons is significantly higher than what investors (typically speculative funds - hedge funds) are willing to pay. For the NBV, reliable data are avaialable: as of today, it is equal to 41% of GBV on average. For market prices there are no representative data since the market is poor and the products sold are very heterogeneous in terms of typology, guarantees, and degree of write-down. There have been cases where the disposal value has exceeded the 45% of the GBV for some secured portfolios (*e.g.* guaranteed by valuable residential properties), and other cases where the purchase price has just reached the 3% of GBV (for unsecured portfolios). Consequently, it is not possibile to indentify an average market price. For instance, the non-performing assets of the four Italian Banks under Special Administration subject to the resolution process started by the Bank of Italy in November 2015 (Banca delle Marche S.p.A., Banca Popolare dell'Etruria e del Lazio S.c.p.a., Cassa di Risparmio di Ferrara S.p.A. and Cassa di Risparmio della Provincia di Chieti S.p.A.), turn out to be valued 22.3% of GBV according to the experts.

However, it is possible to identify and analyze the factors behind this monetary gap. Consider a non-performing GBV credit exposure of €100, partially covered by a real estate guarantee. It is assumed that the bank estimate of the expected cash flows coincides with that of the active investors on this market[28] and foresees a unique inflow, whose expected value is equal to 47% of the GBV (already net of the direct selling costs of the guarantee), to be collected once the recovery procedures have been completed[29]. It is also assumed that the residual expected recovery time is of 4 years. This value is consistent with the results of the 2015 Bank of Italy's survey run on recovery procedures of corporate loans[30].

Let us first see how these hypotesis lead to the exposure valuation from the bank's point of view. To this end, an additional assumption on the original effective rate of return

[28] This hypothesis may not be true and it may happen that the low price offered by the market operators depends on an underestimate of the future cash flows; In other words, the coverage rate may be too low. In this context, the hypothesis is used in order to identify the determinants of the pricing gap and differentiate them from those related to the coverage rate.
[29] In the example, partial credit reimbursements over time have been neglected.
[30] Carpinelli L., Cascarino G., Giacomelli S., Vacca V., *La gestione dei crediti deteriorati: un'indagine presso le maggiori banche italiane*, Questioni di Economia e Finanza, 311, February 2016. According to this study, almost 80% of financing affected by liquidation is involved in legal procedures for less than 5 years and the average duration of the liquidation process, weighted for the related amount and on the basis of some simplifying assumptions, was 3.5 years in 2014. In the event of bankruptcies, the average duration is 3.8 years, while for composition before bankruptcy and foreclosure procedures it is, respectively, 2.9 and 3.3 years.

that banks, in compliance with IAS 39, must use when discounting the streamline of expected cash flows, is needed. This value is set at 4% - figure resulting from the Asset Quality Review (AQR) of 2014.

Based on these data, the bank indicated a net exposure value of 40% of the GBV, with a coverage rate of 60% (Table 2, column (1)). Note that the example has been carried out in such a way as to approximate the net value of NPL and the relevant recovery rate, reported in Table 2.1..

Table 2.2. - Valuation methods for NPLs: main differences between banks and investors

NPL Valuation		Bank	Bank with indirect costs	Investor IRR 15%	Investor IRR 25%
Assumptions		(1)	(2)	(3)	(4)
Gross Book Value (GBV)	(a)	100	100	100	100
Expected value of inflows (guarantees' disposal and other)	(b)	47	47	47	47
Residual time to cash flow collection (year)	(c)	4	4	4	4
Weighted average cost of liabilites (investor's IRR)	(d)	neglectible	neglectible	15%	25%
Indirect costs	(e)	0%	6%	6%	6%
Average discount factor	(i)	4%	4%	15%	25%
Results					
Discounted cash flow	(j=b/(1+i)^c)	40.2	40.2	26.9	19.3
Indirect costs	(k=e*b)	0	2.8	2.8	2.8
Net Book Value (NBV) for the bank; Price for the investor	(l=j-k)	40.2	37.4	24.1	16.4
Expected loss (coverage ratio)	(m=a-l)	59.8	62.6	-	-

Let us now consider the market investors' point of view. They have a different perspective with respect to banks, and adopt different valuation methodologies that will be better explained. In particular:

1. They deduct from the offered price all indirect management costs of management (administrative costs and fees due to the chosen servicer) to bear during the four years needed for the recovery of cash flows, banks account for these costs annually, until the closing of the position).
2. They aim at obtaining an internal rate of return (IRR) much higher than the discount rate used by banks for accounting purposes. The high IRR is due to

several factors. Firstly, the liabilities structure is almost fully represented by equity. Secondly, even with the same valuation process of expected cash flows, investors are risk averse and the greater the volatility of the expected return the greater the risk premium they require. Thirdly, the expected return required by investors takes into account the performance fees applied by fund managers, whose amount can reach 20% of net income. Finally, there can be further differences due to the information asymmetries existing in the financial market.

These two factors have a remarkable impact on prices:

1. Effect of indirect management costs

   There are no reliable public statistics on indirect management costs of NPLs. Anecdotal evidence shows that these costs may account for an amount equal to 6% of expected cash flows.

   The Table. 2 (column (2)) indicates the valuation of a bank that, violating the accounting principles, additionally considers these costs while keeping unchanged the other determinants showed in column (1). The present value of NPL in this case would be equal to 37% of GBV, about 3 percentage points lower than the case of the column (1). It would therefore be necessary a corresponding increase of the value adjustments.

2. Effect of the rate of return

   On the basis of the available evidence, in the simulation it has been assumed that the IRR required by investors in order to purchase the non-performing loan is between 15% and 25%.

   The results, reported in columns (3) and (4) of Table 2, show that the impact on the valuation of NPLs is particularly significant, ranging between 13% and 21% of GBV, depending on the IRR considered[31].

3. Overall effect

[31] In the range considered (15-25%), the IRR's effect on the bid price is approximately linear. For example, with an IRR of 20%, the valuation is 19.8% of GBV, against 16.4% and 24.1% corresponding to an IRR of, respectively, 25% and 15% as reported in Table 2.1..

Considering both factors (indirect costs and IRR), the different approach followed by investors would justify a price differential which may range from 16% to over 24% of GBV, implying a purchase price included between 24.1% and 16.4% of GBV.

These evidence suggests that the main reasons behind the price differential in the NPL market refer to the different valuation criteria used for accounting purposes on one side, and those used by investors for the determination of the bid prices on the other side. Therefore, the price diffential does not seem to be due to inappropriate coverage ratios.

2.5. The impact of recovery times on price and NPL stock

It has been already pointed out that the valuation of a non-performing exposure can be deeply different, both in terms of book value and market price, on the basis of the recovery time. This measure depends on various factors, *e.g.* the effectiveness of the banking internal procedures and the efficiency of the country-specific legislation. The NPL valuation can change significantly even within the same country, depending on the speed with which the various Courts are able to dispose of the recovery procedures.

Table 2.3. shows a sensitivity analysis of the NPL value for different time horizons of the cash flow recovery. In particular, different prices corresponding to different recovery time horizon have been collected, assuming a target IRR of 20%. The shortening of even one year of the recovery time, from 4 to 3 years, would increase the price by 4.6% of GBV.

Table 2.3. - Price of NPLs: sensitivity analysis on varying recovery times (*percentage of GBV*)

Recovery Time (years)	Price
1	36.3
2	29.8
3	24.4
4	19.8
5	16.1
6	12.9

It has been assumed an IRR of 20%.

Recovery times do not solely affect the NPL vaulation but have some effects also on the balance sheets. In particular, the longer the recovery time the higher the ratio between the NPLs and the assets. Recent estimates show that two banking systems characterized by the same growth rate of assets and the same NPL classification rate (5% and 2% respectively) but with different recovery times (2 and 5 years respectively), would imply a NPL level of, respectively, 3.5% and 7.4% of total assets[32].

[32] See the box: *La relazione tra i tempi di recupero dei crediti e la consistenza delle sofferenze registrate in bilancio dalle banche* in the Financial Stability Report, 5, 2013.

3. Chapter 3 – Evidence from the Italian Market of NPLs

3.1. The issues to investigate

As of today, formal evidence on the role and importance of bad legacy assets in shaping banks' lending policies is hard to come by. In the Bank of Italy research, whose results have been published in March 2017, the experts have gone through two main issues:

1. a rise in NPLs is largely the endogenouos product of a prolonged period of economic stagnation that depress both demand and supply of credit;
2. given the different implications that may arise, a distinction between the impact of the level of NPL ratios and of an increase of NPLs needs to be made in order to better analyze the relation between non-performing loans and credit supply. Examining the impact of different levels of NPL ratios on credit supply boils down to making a sort of comparative statics exercise; the analysis envisages the examination of a transition from one state to another; the former being with lower NPL level and the latter with an higher one. Of course, the mechanisms operating in the two scenarios are connected but making a distinction will turn out to be very useful.

The fist issue has been addressed by using a loan-level dataset, where identification is stronger and casuality can be established with a higher degree of confidence: NPL ratios of all Italian banks are merged with information on banks' balance sheets and with data on borrower-level loans to Italian firms between 2008 and 2015. In order to capture unobserved changes in borrower characteristics, and test whether banks with different credit quality behaved in a different way towards the same firm at the same point in time time-varying firm fixed effects have been used (Jiménez et al., 2014).

In order to investigate the second issue, the assessment of the impact of both the variability across banks and time of the share of non-performing exposures in a 500 bank panel on credit supply have been analyzed. To separately account for the implications of

exogenous variations in NPLs, information reported in the 2014 Asset Quality Review (AQR)[33] has been considered.

3.1.1. Relation between NPLs and credit supply and existing literature

The worse quality of the balance sheet traditionally associated to a high burden of NPLs could in principle affect the supply of credit through three types of channels:

- a mechanical accounting mechanism, by which lower credit quality ultimately affects bank capital via risk weights;
- increase in funding costs stemming from heightened market pressures;
- the bank's risk-taking attitude.

First of all, a balance-sheet structure characterized by highly risky assets is generally one of the reasons for which NPLs arise. Given the prudential regulation financial intermediaries are subject to, a deterioration of credit quality imply higher risk weights on banks' exposure in the calculation of regulatory capital ratios in order to cope with the expected risk. The size of the bank's balance sheet might be reduced in order to partially offset the increased level of risk weights a permanently lower rate of expansion of asset base might be adopted[34] if excessive credit risk makes cost of capital remarkably increase.

A second possibility is that financial intermediaries with a high NPL stock are forced to scale down their operations by market pressure rather than implementing deleveraging strategies. In this case the higher funding costs brought about by a heavier burden of NPLs which may be due to an increased idiosyincratic risk (the diversifiable risk) and worsened managerial abilities, can cause a decline in loan supply.

Finally, NPLs might cause bank managers to bear excessive risks. The access to "risk taking channel" of monetary policy and the possibililty to misregard creditworthiness are measures to which low-capitalized banks are more sensitive (Jimenéz et al., 2014) in periods where the interest rates are at low levels. This aspect triggers the "gamble for resurrection"

[33] The in-depth supervisory credit book revision of 130 European banking groups carried out by the European Central Bank and national supervisory authorities.
[34] Under IRB (internal ratings-based approach), banks must calculate their risk weights on the basis of the losses their realize on non-performing exposures (among other factors); in this case, the managers' independent response to a rise in NPL might be reinforced by the regulatory pressure due to an increase in the capital absorption of the rest of the loan portfolio.

type of logic which may be followed by banks holding high NPL stock that have an incentive to use more leverage that their competitors.

On the other hand, another implication of NPLs is useful to be considered. An increase in NPL level, especially if large, implies worsened balance sheet conditions that force banks to make several value adjustments, both automatic and voluntary. Most of the balance-sheet adjustment operates through the profit and loss account. One way to prevent the bank from being completely affected by the risks associated to huge NPL stock is to adopt an appropriate coverage ratio. Inceasing loan loss provisions helps the financial intermediary to be less exposed to the borrowers' defaults. In turn, higher provisions cause a decrease in bank's ROA (Return on Assets) and, depending on their size and duration, can even cause profits to become negative, depleting the capital base and consequently determining a reduction in credit supply. In short, the readjustment on the asset side triggered by an increase in NPLs may have broadly the same implications as a decline in capital, and a depletion of the capital buffers is known to determine a contraction in credit supply (Froot and Stein, 1998; Aiyar et al., 2014).

Beyond this, the interactions between these mechanisms and the operating conditions are hard to be examined due to the lack of a well-defined theoretical framework. The available literature has focused on the main drivers of the non-performing loans rather than the implications of NPLs. The drivers have been found to depend both on bank characteristics and on the macroeconomic performance of the economies where the banks operate. With regard to the macroeconomic context, it is important to outline that it highlights the endogeneity issue that undermines any attempt to find a causal impact of NPLs on credit supply: a negative correlation between NPLs and credit volumes is not strongly explanatory; banks see their NPL stock increase in periods characterized by a slowdown of the national economic activity and, consequently, by a deterioration of creditworthiness and a weakness in credit demand. A rise in NPL stock is indeed often anticipated by credit expansions and a loosening of lending standards (Keeton, 1999; Jiménex and Saurina, 2006) but it is also associated with prior reductions in banks' overall cost efficiency, suggesting that poor managerial practices in banks' lending policies may cause an increase in both banks' costs and NPL exposures (Berger and De Young, 1997). The issue has already been

investigated by various scholars and a common denominator of these works is the high level of aggregation of the data. A considerable stock of NPLs is often associated with the outbreak of banking crises that may have been previously triggered by macroeconomic forces that weaken simultaneously the banking sector and the real economy (Kaminsky and Reinhart, 1999). Balgova et al. (2016) study the relation between output growth and changes in NPL stocks making use of aggregate data on a panel of 100 countries between 1997 and 2014, finding that countries that actively reduced their NPLs typically experienced higher growth rates. Bending et al. (2014) estimate dynamics regressions using bank-level data for a sample of intermediaries from 16 European countries (excluding Italy) and document that both NPL ratios and changes in NPLs are negatively correlated with net growth in corporate and commercial loans in the following year. Cucinelli (2015) obtains a similar result for Italy, arguing that both NPLs and the loan-loss provision ratio (two similar proxies of the credit quality of the bank's portfolio) have a negative impact on the supply of bank loans.

However, endogeneity problems are pervasive, and imply that moving from a statistical to a causal statement on the basis of country or bank-level observations is fairly problematic. Against this backdrop, our main contributions to the debate are to (i) discriminate more explicitly between stocks and flows of NPLs, and (ii) exploit a loan-level dataset where identification is stronger and causality can be established with a higher degree of confidence.

3.2. The analysis – Dataset

In this paragraph the dataset used by Bank of Italy to perform its analysis will be explained. For every firm it has been gathered information on credit obtained by any bank operating in Italy considering banking groups and individual banks for those not belonging to a group. For every bank, a large set of balance sheet indicators, including the NPL ratios, has been reported. For bank-firm credit relationships, the experts investigating the problem have relied on the information on outstanding loan amounts taken from the Italian Credit Register (henceforth CR), over the 2008-2015 period[35] and have focused on all non-financial

[35] The CR records various end-of-year information on all loans exceeding €30,000.

firms, including very small firms, such as sole proprietorships. Data on credit quantity consists of both granted credit (dependent variable as it is more sensitive to supply varations) and drawn credit. Loans are made of three different categories of credit: revolving credit lines, term loans and loans backed by accounts receivable.

The firm-level dataset includes overall 500 banks and more than 2 million borrowers, totalling more than 4 million bank-firm relationships. When running the regressions, there have been included solely firms borrowing from at least two banks in order to account for unobservable heterogeneity through firm-time fixed effects. In this way, there have been gathered 2 million bank-firm relationships given that multiple lending is a common practice in the Italian context. Moreover, for computational reasons, a random sample of about 20% of this universe has been selected.

Table 3.1. displays some basic statistics reported for the aggregate of the banking sector and for some categories of intermediaries: (a) banks that underwent the Comprehensive Assessment of 2014 (AQR Banks); (b) mutual banks, *i.e.* the local and not-for-profit cooperatives; (c) the remaining ones.

Table 3.1. - Basic statistics on CR data for some categories of indermediaries
Delta of log Credit Granted

Date	All Banks	o/w: AQR Banks	o/w: non-AQR Banks	o/w: Mutual Banks
2008	-0.6	-1.5	1.3	3.0
2009	-3.3	-3.8	-2.3	0.9
2010	-1.4	-0.9	-2.2	-0.6
2011	-5.4	-5.8	-4.5	-2.9
2012	-7.2	-7.0	-7.6	-6.5
2013	-5.9	-6.0	-5.6	-4.0
2014	-2.1	-1.3	-3.6	-2.1
2015	-1.5	-0.9	-2.4	-1.0

Source: Bank of Italy, Credit Register (CR).

The panel shows the averages delta variation of credit (in log terms) over time, corresponding to the left-hand side variable of the regressions. As it can be observed, credit granted to all firms decreased on average in the period taken into account.

For what concernes bank-level information, the main sources have been the banks' balance sheet and the profit and loss accounts to gather information of the financial

intermediary's health and capital structure: in particular total assets has been used as a proxy of size, Tier 1 Ratio as indicator of capitalization, Return on Equity (ROE) for profitability, provisions over operating profit to assess the relevance of the yearly flows of provisions on operating margins and the cost to income ratio as a measure of efficiency. All this information has been collected from the Supervisory and Statistical Reports submitted by the intermediaries to the National Authority.

Table 2 shows the values of these variables over the period 2008-2015, for the whole of the banking sector.

Table 3.2. - Banks characteristics
All banks (€/m and % values)

Date	NPL Ratio	Coverage ratio	Total assets	T1 ratio	Leverage ratio	Cost-income ratio	Loan loss provisions to operating profit	RoE
2008	6.1	45.0	6,636	7.6	6.6	66.9	50.0	5.0
2009	9.0	39.5	6,836	8.9	6.8	60.9	62.5	4.1
2010	9.8	39.7	6,918	9.3	7.0	64.7	60.5	3.9
2011	11.0	39.8	6,964	10.1	7.2	67.9	70.2	-10.2
2012	13.2	39.3	7,138	11.1	6.9	60.5	82.9	-0.2
2013	15.9	41.7	6,725	11.1	6.8	67.7	147.0	-9.4
2014	17.7	44.5	6,706	12.3	6.9	63.6	111.9	-2.1
2015	18.1	45.4	6,696	12.7	7.0	64.8	67.5	2.7

As the Table above illustrates, NPL ratios increased dramatically on average and the phenomenon was widespread across bank types. The figures reported in the Table lead to the following considerations:

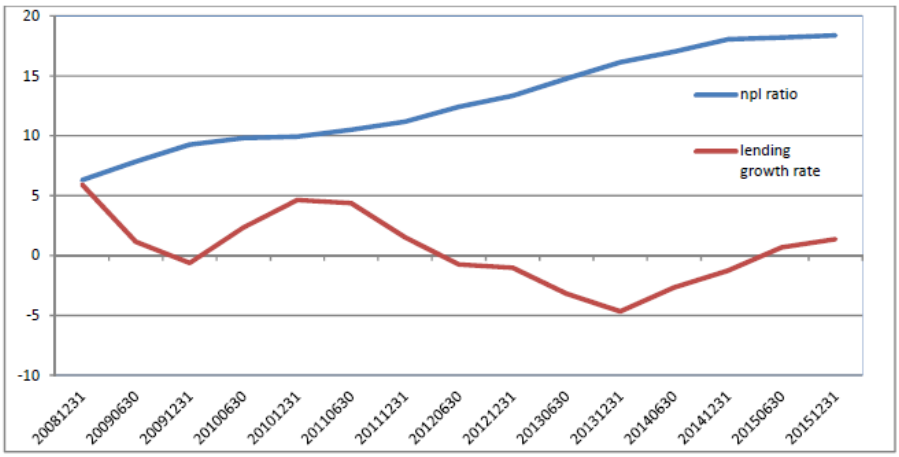
- The NPL ratio almost tripled since the beginning of 2008 for AQR banks;
- the increase of NPL ration was even more amplified for other banks;
- consequently, the impact of loans loss provisions over operating profit increased largely in the time horizon taken into consideration. In particular, there was a spike in 2013 and 2014, corresponding to the period of the aforementioned Asset Quality Review;
- profitability followed a downward trend since the beginning of the period and it turned even negative in 2011, and again in 2013 driven by AQR banks that had been already recording losses since 2013;
- coverage ratios went up, reaching an average of 45% but is was not linked to a significant deleveraging process, given the continuous increase in capital;

- capitalization indeed grew throughout the 8-year period. For smaller banks, it almost reached 17%; for larger banks (such as the AQR ones), after a steady increase, tier 1 ratio stood at over 12% by the end of 2015.

3.3. Relation between NPLs, credit flows and funding costs

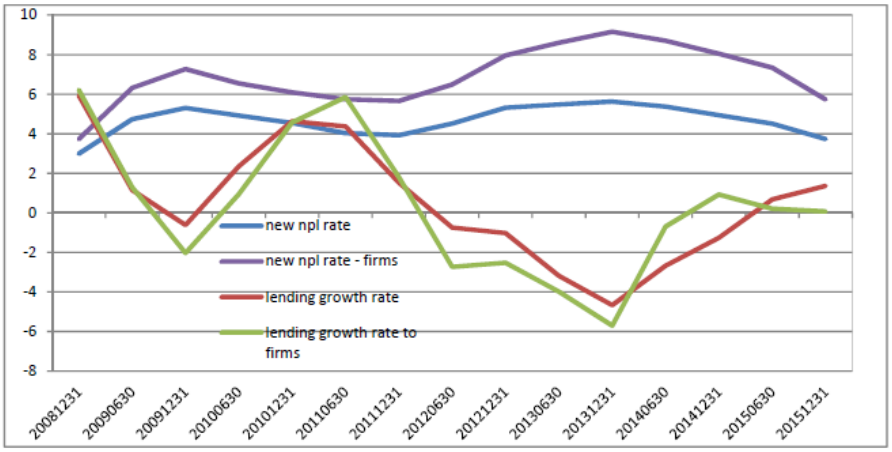
In order to examine the evolution of relation between NPLs and credit in Italy in the 10 years it is useful to start by looking at bank-level data first. Figure 3.1. shows how the aggregate NPL ratio went up dramatically over time.

Figure 3.1. - Aggregate NPL ratio, new NPL rate and lending growth, 2008-2015 – Panel A



The Figure illustrates the negative correlation between the aggregate NPL ratio and the lending growth: the blue line plots the NPL ratio; the red line plots the lending growth rate. The first variables was just around 6% at the outbreak of the Lehman crisis and it grew constantly in the aftermath reaching almost 20% over the following years. Panel A points out how credit growth to the Italian economy was negative for more than half of the period under examination (Panel A). Panel B, reported below, confirms that the effect is particularly accentuated for loans to firms.

Figure 3.2. - Aggregate NPL ratio, new NPL rate and lending growth, 2008-2015 – Panel B

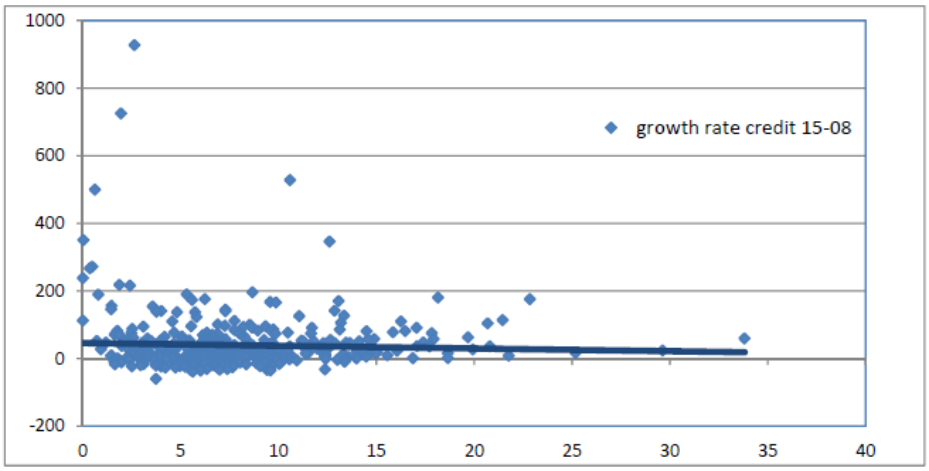


This figure plots shows the negative correlation between the annualized flow of new NPLs over total loans (New NPL rate) and the lending growth. The blue line plots the new NPL ratio; the purple line plots the new NPL ratio to firms; the red line plots the lending growth ratio; the green line plots the lending growth rate to firms.

Moreover, the correlation between the banks' NPL ratios measured at three specific, important dates has been analyzed to enhance the quality of the informative dataset used. Also the subsequent performance of these ratios in terms of lending and profitability has been examined. In order to account for heterogeneity across banks, three pivotal dates have been considered: the first snapshot has been taken at the end of 2008 providing an overall picture of the banking system following the 2007-2008 financial shock, when it had not yet hit the Italian banks; the second date corresponds to the end of 2010 before Italy was affected by sovereign debt crisis (Bofondi et al. 2017); the third date picked is December 2015 when the consequences and the impact of the global and sovereign crisis had fully materialized.

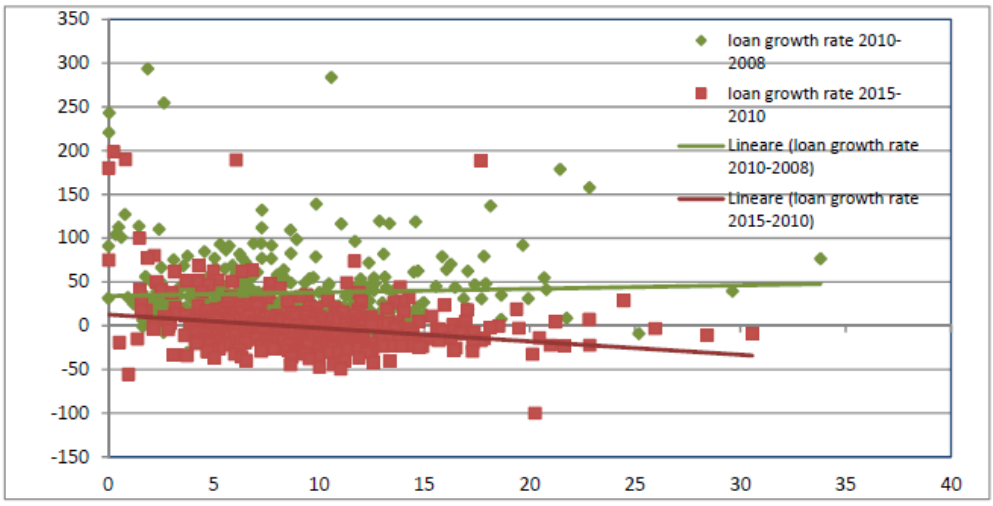
In the scatterplot of Figure 2 banks' credit growth rates between 2008 and 2015 (vertical axis) are plotted against their initial NPL ratios (horizontal axis).

Figure 3.3. - Growth rates of credit over the period 2008-2015 for their initial NPL ratio



In the Figure above banks' credit growth rates between 2008 and 2015 (vertical axis) are plotted against their initial NPL ratios (horizontal axis) and the blue line plots the trend-line. As it can be easily noticed, the correlation is extremely low. If one separately analyze the two sub-periods 2008-2010 and 2010-2015 (See Figure 3), it becomes clear that in the first two years after the Lehman crisis the correlation between credit quality and credit growth was very low (green line). Conversely, banks that had higher NPL ratios as of December 2010 do seem to have lent less in the following years (red line).

Figure 3.4. - Growth rates of credit over the period 2008-2010 and 2010-15 for different initial NPL ratios 2008 and 2010



Another interesting link to analyze is the one that involves NPL ratios and the balance sheet characteristics in order to capture potential connection. we examine next the relation between NPL ratios and some basic balance-sheet indicators. In Figures 3.5.- 3.7. the correlation between NPL ratios and, respectively, the log of total assets, capital ratios and the cost to income ratio have been plot, again measuring them at three specific dates: end-2008, end-2010 and end-2015.

Figure 3.5. - Correlation between NPL ratios and total assets at end 2008, 2010, 2015

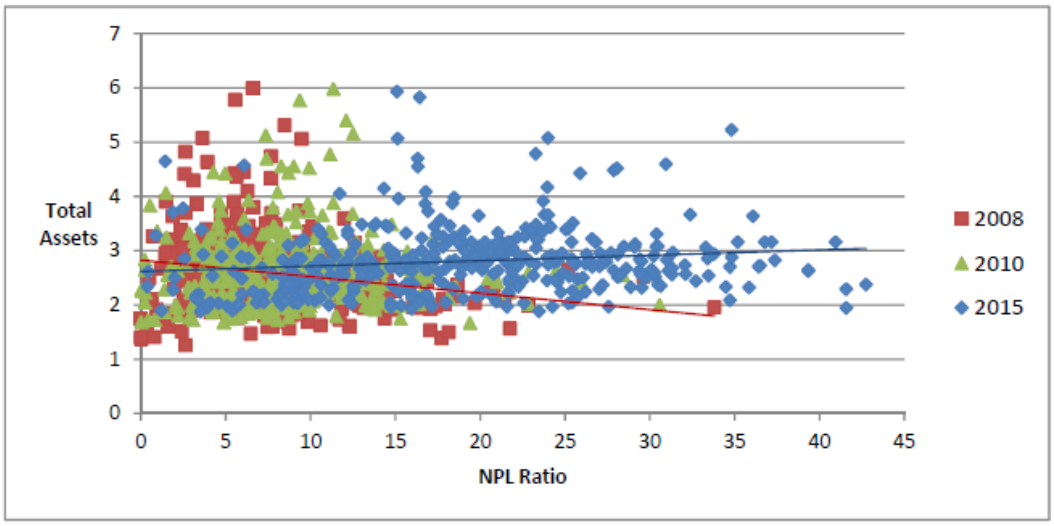


Figure 3.6. - Correlation between NPL ratios and capital ratios at end 2008, 2010, 2015

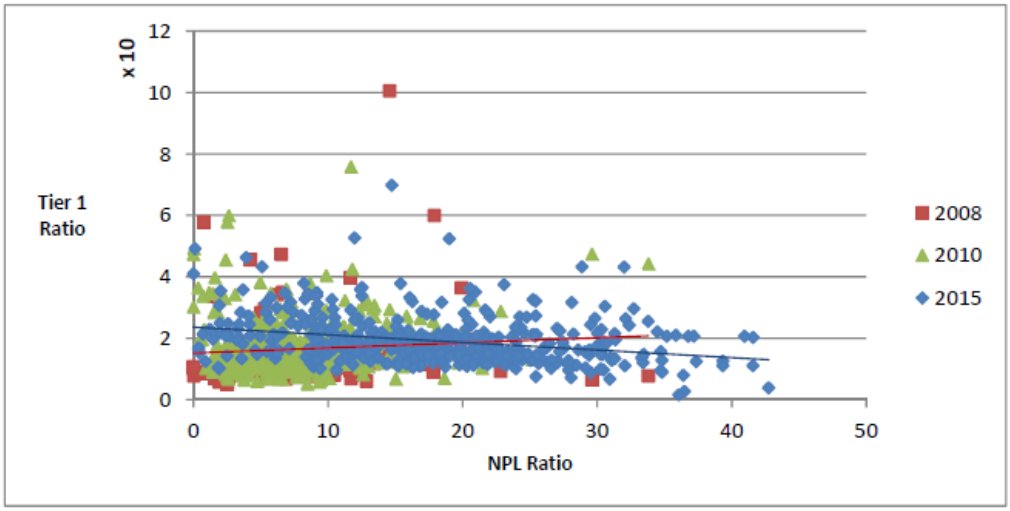
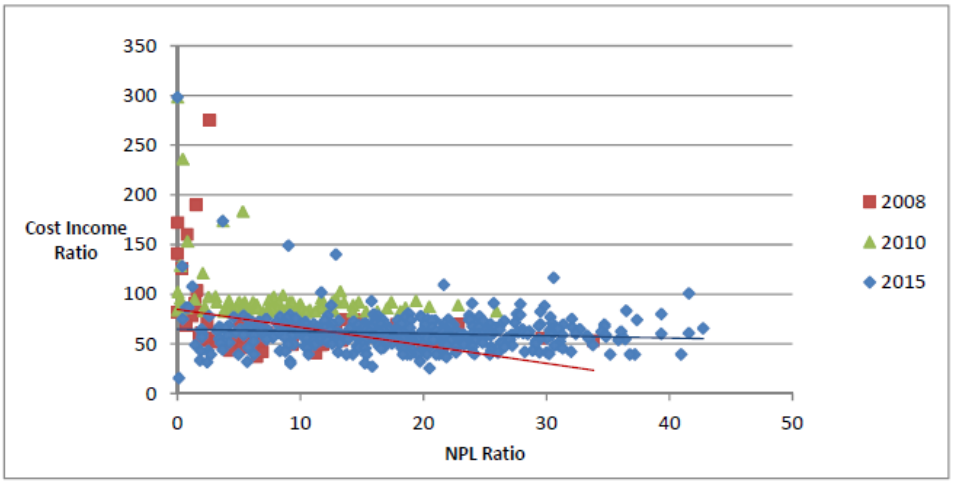


Figure 3.7. - Correlation between NPL ratios and the cost-income ratio at end 2008, 2010, 2015



From Figure 3.5. it is possible to see that, up to 2010, small banks typically held large volumes of NPLs, while by 2015 NPL exposures largely increased for all banks regardless of their size. Figure 3.6. shows that the correlation between NPLs and capital is fairly weak and changed sign over time and documents that less capitalized banks are generally characterized by a higher concentration of NPLs. Interestingly there seems to be positive correlation between operating costs and credit quality at times of low NPLs, as shown in Figure 3.7.. Although several factors might explain this positive correlation, a higher presence of bank personnel and/or higher investments in IT is likely to enhance intermediaries'capacity of screening and monitoring their clientele. In 2015 heterogeneity across banks with different credit quality has deeply reduced in that cost to income ratios had become less heterogeneous. One possibile explanation for this phenomenon is that the deep recession had largely wiped off longitudinal differences in the relationship between banks' characteristics and NPL ratios.

The main conclusions that can be drawn from this descriptive evidence are the following:

- Balance sheet conditions deteriorated rapidly for most banks, with soaring NPL ratios that also affected profitability;
- mechanisms of a prudential nature, both regulatory and self-enforced, were activated by the banks, such as raising the coverage ratio and strengthening the

capital base, with the aim of increasing resilience, even at the cost of weakening current profits;

- banks with high NPL ratios do not share common balance sheet characteristics.

3.4. NPL effect on supply-side of credit

Given the limited explanatory power of correlations, in order to move from correlation to causation a regression analysis must be performed. The co-movements between banks' NPL ratios and their contemporaneous or future economic performance, including their lending behavior, can be generated by a range of mechanisms many of which do not imply a causal role for the quality of the banks' portfolios. To this end, a credit supply equation has been set: NPLs are used as a potential driver of banks' lending policies and firm-time fixed effects feature as a means to control for changes in observed and unobserved borrower characteristics and for changes in demand. By combining firm-level data and multiple lending relations between banks and firms it is possibile to analize the presence of time-varying effects at the firm level. The starting point of the analysis is the following benchmark regression:

$$\Delta Loans_{ijt} = \propto_{jt} + \alpha_i + \gamma NPL_{i\,t-1} + \sum_k \beta_k X_{ki\,t-1} + \varepsilon_{ijt}$$

The dependent variable is the yearly (log) growth in credit granted by bank i to firm j at time t. The key regressor is of course the bank-specific NPL ratio ($NPL_{i\,t-1}$)[36]: if this ratio matters, banks with high NPLs should have lent less to firm j for any given level of borrower characteristics, leading to $\gamma < 0$. The variable $\propto_{jt}$ represents the time-varying borrower-specific effect that can be included among the regressors with the aim of controlling for shifts in borrowers' characteristics. This is one of the advantage of using a borrower-level dataset that comprises multiple lending relations. Intuitively, as long as the demand-side shocks that affect firm j[37] influence all of its lending relations in the same way, the fixed effect $\propto_{jt}$ guarantees that their influence is removed from the data and that the remaining regressors in the above equation capture exclusively supplyside factors. The

[36] Net of the stock of provisions.
[37] *E.g.* a drop in sales or lack of investment opportunities.

presence of $\propto_{jt}$ is thus essentially what allows us to interpret the rest of the equation as a model of the supply of credit. There are two more variables in the regression: α_i that represents bank fixed effects and $X_{ki\,t-1}$ that corresponds to bank-level controls.

Firstly, a *naïve* version of equation written above has been built, not considering bank and firm controls initially and then, more informative power has been gradually added by inserting more variables. The results are summarized in Table 3.3.

Table 3.3. - Net NPL ratio

VARIABLES	(1) No fixed effects	(2) Firm fixed effects	(3) Firm*time fixed effects	(4) Firm*time FE Relationship ctrls	(5) Firm*time FE Relationship ctrls Bank fixed effects	(6) Firm*time FE Relationship ctrls Bank*firm fixed effects
Net NPL ratio	0.074	-0.287***	0.028	-0.061	-0.065	-0.206
	-0.067	-0.1	0	-0.077	-0.129	-0.133
Drawn over granted				-0.016***	-0.0113***	-0.006
				-0.003	-0.003	-0.005
Share of overdraft				0.099***	0.093***	0.199***
				0.0	-0.004	-0.009
Share of Total Granted				-0.308***	-0.323***	-1.898***
				-0.014	-0.013	-0.027
Constant	-4.203***					
	-0.530					
Observations	911174	910124	897844	897844	897841	845230
R-squared	0.000	0.092	0.351	0.374	0.376	0.579

Robust standard errors in parentheses
$***p < 0.01$, $**p < 0.05$, $*p < 0.1$

By running this standard univariate OLS regression, we get a positive coefficient but not significant (see Column 1). By adding firm fixed characteristics we move to a 'within firm' type of analysis whose results are summarized in column 2. In this case the coefficient turns out to be negative and significant which is in line with what one might expect given the dataset used: for a given firm, high NPLs in the balance sheet of the lender are associated to a decline in credit which is at least consistent with NPLs discouraging bank lending. The relationship between NPL ratios and credit granted is not fully explained by fixed firm effects as the negative coefficient in column 2 shows. This means that the connection between a high level of NPLs and lower credit flows is not entirely due to "bad" firms.

In all the other specifications the presence of firm-level time-varying fixed effects (see Column 3) have been taken into account. Even if any control variable has been added, these dummy variables makes the NPL ratio (the regressor) statistically insignificant. It follows

that the NPL ratios do not have a strong influence on the behaviour of two hypothetical banks towards a common borrower j at any time t. Therefore it is reasonable to argue that variations in borrower characteristics, such as firms' riskiness, profitability and investment opportunities, have a significant impact on the correlation between NPL ratios and credit growth in the estimation sample. Even the role played by credit demand is worth to be considered. In times of economic instability due to fewer investment opportunities for firms the credit demand typically decreases. Furthermore, Alfaro et al. (2016) stress that, when volatility is high (negative economic cycle) financially-constrained firms, whose number increases in bad times, have a precautionary reason to reduce their leverage. Demand for credit therefore changes depending on the particular financial structure of the firm. The correlation between rising NPL and falling credit in column 2 might also be driven by demand factors, which are instead removed by the firm-time fixed effects included in column 3.

Once relationship-related controls have been added in the regression analysis, *i.e.* if some observable characteristic of the bank-firm relationships are considered (Column 4), the remainder of table 3 shows that the conclusion drawn above is confirmed. Moreover, the same results are obtained also in case bank-level time-inviariant heterogeneity has been accounted for, that is, when we plug also bank fixed effects (see Column 5). These effects are relevant in light of their explanatory power: they are indicators of different structural features of banks, such as business models, that might have played a role in affecting level of credit granted. Even when combining the usual firm-time fixed effects and the bank-firm fixed effect (see Column 6) the same conclusion still holds: NPLs ratios are again irrelevant in explaining change in bank credit supply.

This initial descriptive statistics points out that during the 2008-2015 period the balance sheets mostly deteriorated, so the other balance sheet indicators are worth to be analyzed in order to understand their potential impact on the NPL ratios. In Table 3.4. the specification of Table 3.3. has been expanded in that observable bank characteristics such as size, capital ratio and ROE are added.

Table 3.4. - Net NPL ratio and balance sheet variables

VARIABLES	(1) Firm fixed effects	(2) Firm*time Fixed effects	(3) Firm*time FE Relationship ctrls Bank fixed effects
Net NPL ratio	-0.296***	0.002	-0,130
	(0.0923)	(0.0825)	(0.110)
Bank size	0.0734	0.107	-2.250
	(0.0915)	(0.0779	(1.336)
Tier 1 ratio	-0.103	0.180***	0.513***
	(0.0818)	(0.0520)	(0.0701)
Return on Equity	0.102***	-0.0134	-0.00782
	(0.0293)	(0.0233)	(0.0238)
Writedowns/offs over operprofits (lag)	1.202***	0.0565	0.241
	(0.333)	(0.0172)	(0.268)
Mutual Bank dummy	3.116***	1.900***	
	(0.556)	(0.502)	
Drawn over granted			-0.0113***
			(0.00263)
Share of overdraft			0.0927***
			(0.00357)
Share of Total Granted			-0.323***
			(0.0124)
Constant			
Observations	909983	897666	897725
R-squared	0.093	0.352	0.377

Robust standard errors in parentheses
$***p < 0.01$, $**p < 0.05$, $*p < 0.1$

The regression has been run with time-invariant firm fixed effects (see Column 1), with firm-time fixed effects (see Column 2) and with bank fixed effects and relationship controls, to control for structural and cyclical bank heterogeneity and bank-firm non-random matching. The NPL ratio turns out to be statistically insignificant also in this case although time-varying bank features have been included in the regression. Unlike the NPL ratio, bank capital is positive and significant in all three specifications. Finally, when bank fixed effects are included, bank size enters negatively suggesting that banks' willingness to extend new credit is inversely proportional to their growth rate.

However, it is interesting to discuss another version of the regression reported in Table 3. If one replaces the NPL ratio with the flow of new bad loans over outstanding loans (*New*

Bad Loan Rate) that controls for the variation in the lowest-quality segment of the banks' NPLs and should capture some of the exogenous shocks that hit banks' balance sheets. The relevant results are reported in Table 3.5..

Table 3.5. - New bad loan rate

VARIABLES	(1) No fixed effects	(2) Firm fixed effects	(3) Firm*time fixed effects	(4) Firm*time FE Relationship ctrls	(5) Firm*time FE Relationship ctrls Bank fixed effects	(6) Firm*time FE Relationship ctrls Bank*firm fixed effects
Net NPL ratio	0.278	-0.541***	-0.0955	-0.368*	-0.281	-0.0246
	(0.183)	(0.185)	(0.166)	(0.195)	(0.187)	(0.154)
Drawn over granted				-0.0167***	-0.0113***	-0.0576
				(0.00352)	(0.00269)	(0.00481)
Share of overdraft				0.1000***	0.0929***	0.200***
				(0.00431)	(0.00356)	(0.00923)
Share of Total Granted				(0.0134)	-0.324***	-1.898***
Constant	-4.402***					
	(0.512)					
Observations	910274	909188	896492	896492	896490	843790
R-squared	0.000	0.092	0.351	0.374	0.376	0.579

Robust standard errors in parentheses
$***p < 0.01$, $**p < 0.05$, $*p < 0.1$

The figures above show that the Bad Loan Rate is statistically significant even in some of the regressions that include firm-time effects (see Column 4). The other coefficients, instead, do not vary much. This may lead to the conclusion that NPL shocks might matter even if the NPL ratio per se does not.

3.5. Changing levels of NPLs: how does this affect credit supply?

Although high NPL ratios do not lead banks to decrease the level of credit granted, an exogenous variation in these ratios may cause a change in banks' lending policies. In order to investigate the possibility that NPL fluctuations may induce a temporary reduction of credit supply, an 'event study' approach has been adopted by studying lending dynamics around the 2014 Asset Quality Review (AQR) carried out by the European Central Bank. The AQR entails the check of the quality of the assets held by financial insistutions at the end of 2013 on the basis of common definitions. The AQR was included in the Comprehensive Assessment which is a year-long examination of the resilience and positions of the 130 largest banks of the euro area (o/w 15 Italian banking groups). The ECB carried out this analysis with national supervisors, before launching the Single Supervisory

Mechanism (SSM). The Review is focused on a particular loan book and it is aimed at verifying two aspects on a sample of high-risky loans: (i) the accuracy of loans' classification in the performing and non-performing categories; (ii) the adequacy of the related provisions, taking account of the valuations of the assets that guarantee the secured portion of the portfolio. Another task performed by the Comprehensive Assessment was to quatify the capital strengthening measures to be undertaken, on the basis of a stress test involving a baseline and an adverse macroeconomic scenario.

In the following paragraphs two different specifications will be explained in order to examine two aspects of the balance sheet revisions associated to the AQR, *i.e.*: (i) the independency of these revisions with respect to the business cycle conditions to which bank borrowers are exposed in the subsequent year and (ii) the possibility to consider the accounting revisions as exogenous variations in the quality of the balance sheets and consequently understand how banks react to their changes.

3.5.1. First approach

The first way to analyze the issue is to adopt is the so-called difference-in-difference approach[38]. It is aimed at finding the difference between the lending behaviour followed in the aftermath of the review by banks that received the "AQR treatment" and by those that did not. As mentioned, the banks subject to the AQR, which has assumed to be announced on October 23rd 2013, tended to strengthen provisions and requirements after the supervisory expercise. Hence, a systematic downward shift in credit supply for banks that were subjected to the AQR might have been caused by the review itself[39]. The pre- and post-review time windows that have been employed are the following: the 2012-2013 has been regarded as the pre-review period and 2014-2015 as the post-review period. The analysis has been performed by considering the banking lending behavior of the whole set of Italian banks throughout 2014 on the basis of balance-sheet results of end-2013. The results are reported in Table 3.6..

[38] Also in this case the analysis has been carried out using matched bank-firm relations and firm fixed effects on the same dataset that was employed for regressions of Tables 3.3.-3.5..
[39] Moral suasion and competitive pressures might have blunted the actual difference between being inside and outside the AQR list to some extent, but it is unlikely that they made it entirely irrelevant.

Table 3.6. - AQR e non-AQR Banks

VARIABLES	(1)	(2)	(3)	(4)
AQR Bank	5.343***		12.12***	
	(1.543)		(4.032)	
AQR Bank * post AQR	8.702***	8.911***	4.110	0.905
	(2.738)	(2.785)	(5.796)	(6.848)
NPL ratio			0.151	0.779***
			(0.205)	(0.379)
Npl ratio * post AQR			-0.115	-0.253
			(0.161)	(0.197)
Npl ratio * AQR bank			-0.977**	-3.109***
			(0.493)	(1.513)
Npl ratio * AQR bank * post AQR			0.713	1.679*
			(0.651)	(0.943)
Relationship level controls	yes	yes	yes	yes
Firm*Time fixed effects	yes	yes	yes	yes
Bank fixed effects	no	yes	no	yes
Observations	633978	633968	595319	595316
R-squared	0.423	0.429	0.429	0.433

Robust standard errors in parentheses
$***p < 0.01$, $**p < 0.05$, $*p < 0.1$

The dependent variable is the log change in credit growth. The first two columns show the simplest diffence-in-difference approach, comparing the difference in credit growth over the two periods between the two groups of banks (AQR vs non-AQR banks). Credit granted was on average higher for AQR banks even in the aftermath of the review and when taking into account systematic bank differences by including bank fixed effects, as the positive coefficient in column 1 shows. The interaction between the bank dummy variable (AQR bank) and the time dummy one (post AQR) displayed in column 3 and 4 reveals that AQR banks seem to have lent at higher rates on average but not more intensely in the AQR period. The negative interaction between NPL ratios and AQR dummy shows that AQR banks that hold a higher stock of NPLs lent on average relatively less although NPLs *per se* do no weaken lending growth. From the figures of column 4, it seems that a slight decreaseof NPL ratios has been induced by the AQR, since it may have strengthened transparency and

confidence; but this mitigation may also be due to an improvement of macroeconomic conditions or to other exogenous factors.

The difference-in-difference approach leads to consider the following two aspects concerning the impact of NPL level on credit growth:

- in most cases NPL ratios tend to decrease once demand and bank-level aspects are properly accounted for, in line with the results of paragraph 3.4.;
- the AQR subsample sheds light on the role played heterogeneity that will be better explained afterwards.

3.5.2. Second approach

This approach makes use of two alternative measures of credit quality: the flow of provisions over operating profits (μ) and the flow of new NPLs over total outstanding loans (ϑ):

$$\mu = \frac{Provisions}{Operating\ profits}; \qquad \vartheta = \frac{New\ NPLs}{Total\ outstanding\ loans}$$

Since we are after the effect of a variation in credit quality, these flow measures are more informative than the underlying NPL ratios in quantifying how much credit quality deteriorates under a specific time horizon.

The revisions in banks' balance sheets (*i.e.* variations in NPL ratios and the provisions set aside) are particularly useful in order to account for the change in credit quality recorded in 2014-15. The regressions that have been run are the following:

$$\Delta Loans_{ij} = \alpha_j + \gamma\widehat{\mu_\iota} + \beta' X_i + \varepsilon_{ij}$$

$$\Delta Loans_{ij} = \alpha_j + \gamma\widehat{\vartheta_\iota} + \beta' X_i + \varepsilon_{ij}$$

The dependent variable is represented by the log change in credit granted by bank i to borrower j between 2013 and 2014 and between 2014 and 2015. The key regressors are, alternatively, the flow of provisions over operating profits that took place in 2014-15 ($\widehat{\mu_\iota}$), and the new default rate ($\widehat{\vartheta_\iota}$). The variable α_j still represents firm fixed effects capturing the overall change in credit for each borrower over the sampleperiod. The results of both regressions are discussed below:

- *Flow of provisions over operating profits*: the two main revisions in banks' balance sheets have been used in order to examine the exogeneity of the regressor. The results are summarized in the table below:

Table 3.7. - AQR variables used as instruments for provisions

VARIABLES	(1) AQR provisions (basis points)	(2) AQR provisions (basis points)	(3) AQR provisions (over total assets)	(4) AQR provisions (over total assets)	(5) AQR-delta NPL	(6) AQR-delta NPL
Provisions/operating profits	-3.992	-178.3	-5.572***	-11.28*	-7.710*	-10.37***
	(2.881)	(2142)	(1.619)	(5.457)	(1.218)	(2.065)
Bank size		-78.16		-2.939		-0.641
		(957.7)		(2.381)		(1.417)
Tier 1 ratio		6.113		1.481***		0.714
		(59.34)		(0.301)		(0.583)
Return on Equity		-6.329		-0.357*		-0.307***
		(76.56)		(0.199)		(0.0910)
Net NPL ratio		5.130		0.531**		0.212
		(61.97)		(0.192)		(0.185)
Bank balance sheet variables	no	yes	no	yes	no	yes
Firm time fixed effects	yes	yes	yes	yes	yes	yes
Relationship level controls	yes	yes	yes	yes	yes	yes
Observations	157001	157001	157001	157001	157001	157001
R-squared	0.462	-0.632	0.462	0.462	0.462	0.463

Robust standard errors in parentheses
$***p < 0.01$, $**p < 0.05$, $*p < 0.1$

The regression coefficient is negative and significant in 4 specifications out of 6. This reveals that the negative balance sheet adjustments brought about by the supervisory revision did have a negative impact on lending.

- *New Default Rate*: the analysis has been replicated using this variable as the indicator of the variations in provisions that banks had to make. The following table shows the relevant results:

Table 3.8. - AQR variables used as instruments for new default rate						
VARIABLES	(1) AQR provisions (basis points)	(2) AQR provisions (basis points)	(3) AQR provisions (over total assets)	(4) AQR provisions (over total assets)	(5) AQR-delta NPL	(6) AQR-delta NPL
New default rate	-0.827	-1.917	-1.233***	-1.596***	-1.713***	-2.330***
	(0.588)	(1.369)	(0.367)	(0.510)	(0.338)	(0.358)
Bank size		2.625***		2.544***		2.730***
		(0.632)		(0.478)		(0.549)
Tier 1 ratio		-0.591		-0.296		-0.970
		(1.309)		(0.598)		(0.554)
Return on Equity		0.171*		0.150***		0.198***
		(0.0942)		(0.0425)		(0.0436)
Net NPL ratio		0.652		0.580**		0.745***
		(0.373)		(0.204)		(0.171)
Bank balance sheet variables	no	yes	no	yes	no	yes
Firm time fixed effects	yes	yes	yes	yes	yes	yes
Relationship level controls	yes	yes	yes	yes	yes	yes
Observations	157001	157001	157001	157001	157001	157001
R-squared	0.461	-0.463	0.462	0.463	0.462	0.462

Robust standard errors in parentheses
$***p < 0.01$, $**p < 0.05$, $*p < 0.1$

Again, the exogenous variation in new default rates has a remarkable negative effect on lending growth in 4 out of 6 cases. It follows that exogenous shocks to bank NPL ratios can have a negative impact on credit supply.

3.6. Results and conclusions

As pointed out in the academic literature, the analysis carried out reveals that NPL shocks are intuitively similar to other negative "exogenous" shocks that impair capitalization, liquidity or profitability. Hence, they are relevant for credit supply. At the same time, the specification involving firm-time fixed effects discussed in Paragraph 3.5 shows that the connection between NPL ratios and credit growth in the data weakens if the equation properly accounts for changes in observed and unobserved borrower conditions. This finding could suggest that both an increase in NPL stock and a lower credit supply may be due to a decline in firms' profitability, investment opportunities and demand for credit.

Taken together, this evidence suggests that, exogenous NPL shocks must have played in practice a minor role in Italy over the last decade. Since the NPL ratios have not turned out to be a relevant driver of banks' lending behaviours, it follows that exogenous shocks to banks' balance sheets do not have a significant impact on NPL ratios. Hence, NPL ratio *in and of itself* is unlikely to cause difficulties as banks are equipped to deal with non-

performing exposures. The case of Italy has been an interesting one to test the possibility that the rise in NPLs observed since 2008 might have played an important role in depriving European economies of credit: between 2008 and 2015 the aggregate NPL ratio of Italian banks doubled, credit shrunk, and the country – where the structural relations between banks and firms are notoriously strong – experienced two distinct recessions.

In the current conjuncture, improving resilience and rebuilding confidence in the banking sector remains a critical policy objective, both in Italy and elsewhere. Addressing legacy assets is an important part of this process. However, the analysis herein discussed suggests that NPLs are an easy but unlikely culprit for the weak credit flows observed in the past years, and that their role in shaping bank behaviour might be easily overestimated. The results of this analysis also suggest that forcing banks to liquidate NPLs may not be the best option to kick-start credit. It might even be counterproductive; if the liquidation of the NPLs generates losses that are large enough to reduce the banks' capital ratios, then, given that NPLs do not seem to matter while capital certainly does, the net impact of the sale on credit supply might be negative rather than positive.

4. Chapter 4 - Deleveraging strategies of NPLs

4.1. Problems for Italian banks

Nowadays, Italian banks face deep changes pertaining to the technology and the structure of financial markets. The large stock of impaired loans hold by Italian banks weakens profitability and make inadequate corporate governance structures arise, in addition to a weak economic situation and uncertainties due to regulatory changes. Important initiatives have been undertaken with respect to both aspects; intermediaries should quickly and fully exploit the opportunities they offer.

The value of impaired loans, net of the write-downs recorded by banks, is slightly lower than € 200 billion, but more than half of NPL stock refers to situations where the borrower's financial difficulties are temporary. For non-performing loans only, the NBV is less than € 90 billion. This is a significant burden, largely covered by loan collateral whose value has been thoroughly examined during the 2014 in-depth assessment of the balance sheets of the major banks in the euro area; real estate guarantees are generally accompanied by personal guarantees. Overall, the quality of assets of Italian banks has to be seriously considered, without overestimating the extent of the problem.

NPLs are, above all, the direct consequence of the critical and long-lasting economic recession. The moderate economic recovery that has been initiated in 2014 is causing a significant decline in the flow of new impaired loans; in 2015 they amounted to 3.7% of total loans, against 4.9% in 2014; for the household sector, the NPL flow has returned to the pre-crisis levels. The trend towards normalization is still ongoing.

The slow pace of insolvency and recovery procedures has so far contributed to the increase of the stock of impaired loans. However, legislative reforms introduced last year have brought important changes. With the out-of-court assignment of the property[40] given as collateral, the average recovery time may be reduced to a few months, over the estimated three years. The measures requiring explicit contractual agreements are likely to have far

[40] Transparency and fair valuation of assets remain the essential elements to ensure the stability of the banking industry both in the lending process and in issues / acquisitions of securities resulting from securitization operations and guaranteed bank bonds.

greater impact as the parties introduce them into new contracts and renegotiate the outstanding ones. The shortest duration of recovery times can increase the value of impaired loans, facilitating their subsequent disposal on the market.

A significant contribution may arise from improving the efficiency of courts. There are considerable differences in the duration of bankruptcy and foreclosure procedures, sometimes even within the same region. The deleveraging process can be further favored by the public guarantee scheme provided for the securitization of NPLs that will contribute to raising the sale price, by making the senior securitization tranches as attractive investment opportunities for bidders.

Moreover, also the investments of the private Fund Atlante, better explained afterwards, will foster the development of the NPL market by focusing on the most risky tranches of securitization. Although with relatively small resources, the Atlante Fund can prove that significant returns can be obtained by purchasing non-performing loans at a higher price than the one currently offered by specialized investors. It is believed that the fund has the determination, independence and professionalism to face this challenge successfully; the more it will succeed, the more it will be possible to collect new investments, fueling a virtuous circle.

The sale of the assets is just one of the ways to deal with the problem of impaired loans. The efficient and aware management of these loans is asked to become a strategic objective, as it is in the interest of both supervisors and banks. Possible improvements may be fostered by streghtening management internal procedures or by entrusting specialized operators. To this extent, Bank of Italy has recently launched a new periodic disclosure providing detailed information on the stock of NPLs, related guarantees and recovery procedures. It sets the basis for incisive organizational interventions, which in turn constitute the premise for a solution to the problem on a non-immediate horizon, but not even unreasonably long.

European watchdogs are aware that the reduction of NPLs exposure in banks' balance sheet will be gradual. The effective situation of individual banks will be assessed and the most appropriate supervisory measures will be identified taking into account the context in which they operate. At the same time, within the Unique Supervisory Mechanism, the action

is trying to be more aggressive in relation to the other risks that hit banking balance sheets, first of all those related to operations involving structured finance products. Impaired claims are high, profitability is low, but the need is felt to overcome the difficulties and return to profitably serve the economy.

Measures for managing and deleveraging NPL exposures, both those in progress and those yet to be undertaken, are important. Bank of Italy, together with the Government and the intermediaries, is currently engaged in ensuring that these internventions are, technically and regulatively, as effective as possible. However, rapid actions, structural changes, deep organizational reviews, constant attention to the quality of senior management are essential in order to minimize risks of a potential crisis.

4.2. Deleveraging of NPLs

The key rule is to approach deleveraging procedures, not when it is obligatory to implement them as the last remedy, but when it is possible to take advantage of the major value of the transferred asset.

NPLs may be triggered by several factors and this multiplicity of causes has a strong impact on their ease of disposal. The non-performing loans most actively traded on the poor Italian NPL market are those representing consumer credit, mostly unsecured. On the one hand, those who invest in Italian NPL portfolios prefer transactions on consumer credit because they are more confident in the low private debt of Italian households; on the other hand, the banks themselves foster these transactions, because, most probably, consumer credit constitutes a minimum part of the NPL portfolio owned by the entity; hence, the impact on the income statement, due to the difference between the expected value of the seller's realization and the one promoted by the buyer, is lower than what would happen with larger corporate segment positions.

Looking at the banking organization, the driver of adopting deleveraging strategies by Italian banks is to regain competitiveness with respect to European ones. Italian banks are considerably less profitable than European competitors. If the goal of any firm is to create value for shareholders and stakeholders, *i.e.* achieving a profitability level far above the cost of capital, then, in the last years, there has been a clear destruction of value.

The main problems identified concern the increase in risk-weighted assets and the reduction of ROE. The disposal of these assets would allow banks to monetize a fixed investment, anticipate cash flows and, of course, also improve liquidity indicators of cash flows themeselves. Furthermore, the divestiture of NPLs is the best way for banks to refocus on their core business, recreating an identity and safeguarding their image at the same. The credit market is fully interconnected and a mistrust climate regarding the soundness of a financial institution affects the whole system.

Therefore, the question is the following: how to structure a strategy that guarantees the best de-levereging and de-risking of these assets? It is not easy to define it, because there are many aspects that have to be taken into account. The starting point will always be the whole NPL portfolio so that it is possible to define the NPL stock, understand how much it can and should be reduced and which measure best suits the goal to be achieved. However, one should not underestimate the effects that such a strategy may have on the bank's equity capital in that enabling intensive operations on NPLs can have two different consequences on the image of a financial institution. On the one hand, it can improve bank's reputation because it can be regarded as a sign of change and, in this case, it would be likely to be appreciated by the market for its greater transparency and the willingness to tackle the problem. On the other hand, it can have a negative impact when highlighting the bank's financial risks that are likely to be the result of poor credit management performed by the intermediary itself.

Any deleveraging transaction must always entail a market analysis; this latter allows the bank to have an overview of possible buyers, to understand what their needs are, to examine how they prefer to structure the transaction, to identify the goals they have set in terms of performance and the price the potential bidders are willing to pay. The first step is to cluster the portfolio in homogeneous segments: by borrower type (corporate / individuals), secured or unsecured, coverage level, etc. This allows to evaluate individual clusters by analyzing their features and performances in order to identify appropriate segmentation strategies.

The strategic options available relate to a different level of outsourcing that can be adopted. Starting from the lower level it is possible to opt for: *internal management*;

management outsourcing; *sale (*or *disposal)* of the NPL portfolio; *Bad bank*. The first two options essentially entail a reorganization of the internal management process, as better specified below:

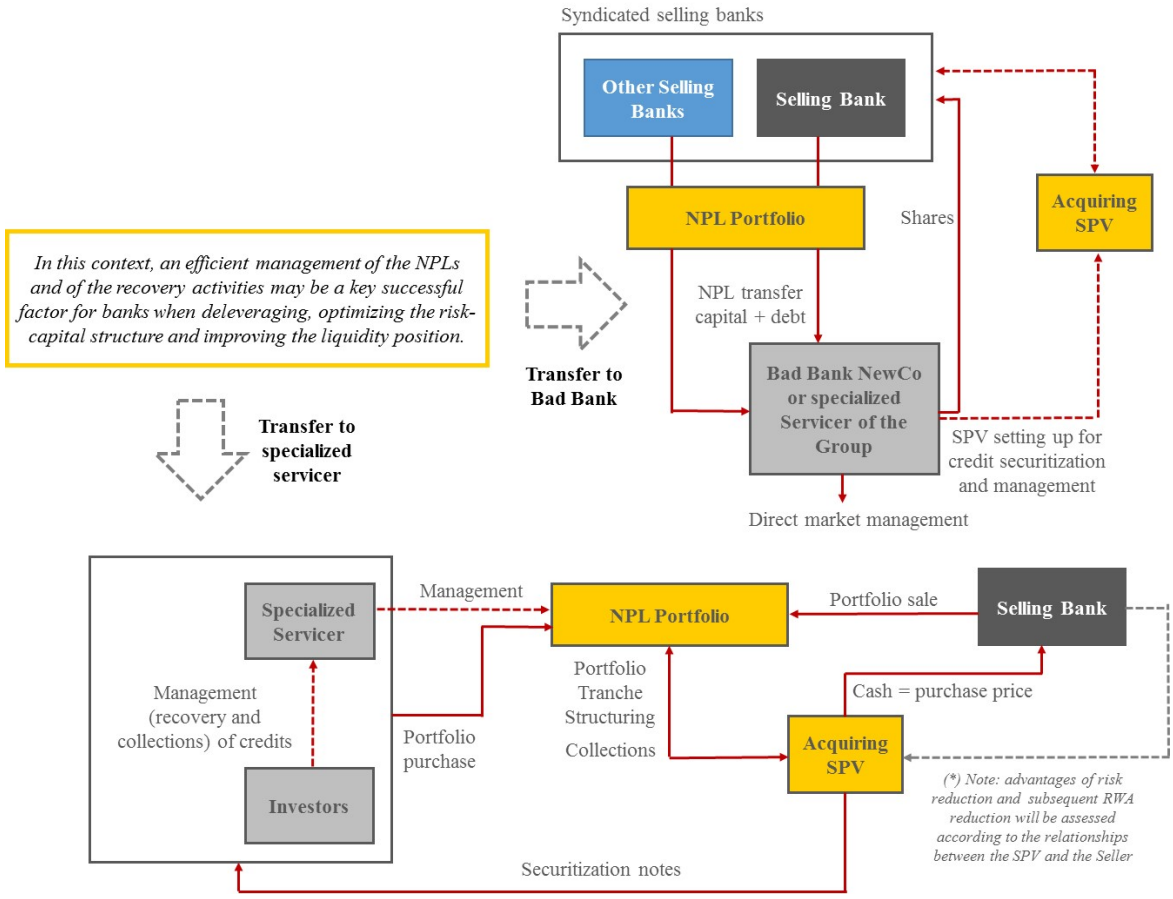
- *Internal Management:* NPL management process will be carried out within the originating bank, often through the activity of an *ad hoc* business unit. The choice of this option is mainly driven by the willingness and the need to directly control the NPLs with the endowment of an efficient organizational structure and appropriate resources.
- *Management Outsourcing:* the financial crisis has called for reshaping the bank role, pushing banks to focus on their core business and on the research of partnerships with specialized operators in order to efficiently manage the NPL exposures. This is the most common practice for Italian banks that usually decide to opt for this alternative when they are not endowed with suitable resources and they are looking for economic efficiency. The main advantages of this bank practice are the reduction of operating costs, the transformation of fixed costs into variable cost and a performance improvement. The most problematic aspect is tied to the organizational set up of the partnership.

For the purpose of this paper, the other two options (*NPL portfolio sale* and *Bad Bank*) have been better analyzed (see next paragraph), in that both are closely related to the real delevereging activity and are the ones that best meet the demand for banking recovery of credibility and profitability.

4.3. NPL Disposal and Bad Bank

In order to better understand these two deleveraging strategies, their mechanisms have been reported in the Figure below:

Figura 4.1. - Transfer to specialized servicer vs Bad Bank



Source: Ernst & Young[41], 2012

NPL Disposal:

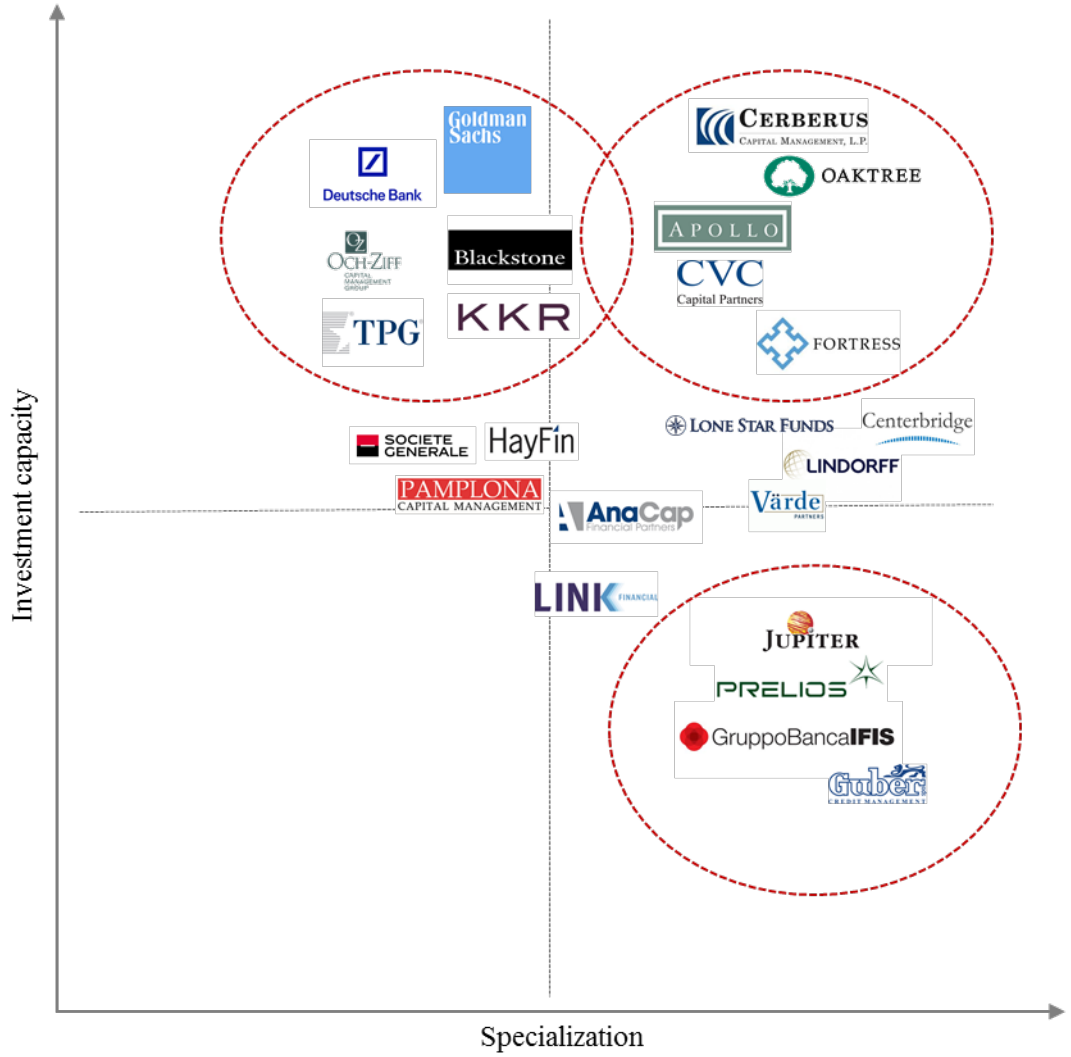
The sale of the NPL portfolio envisages the highest level of outsourcing. It is the best way to solve the accounting and profitable shortcomings of the bank in a relatively brief time span. Through the sale, the portfolio disappears from the intermediary's balance sheet and this in turns translates into an improvement of budget indicators, especially liquidity ratios. It also has a positive effect on risk-weighted assets, as the bank's asset quality would be enhanced following the NPL portfolio disposal. Nevertheless, at least in Italy, this type of transactions has not widely spread out: the crucial issue is the lack of adequate asset information and the huge price gap in the NPL market.

[41] E&Y, *Basilea 3 nell'attuale contesto economico finanziario: approcci operativi all'ottimizzazione del profilo rischio/capitale*, Convegno ABI Basile 3, Giugno 2012

It is interesting to examine the option of selling the NPL portfolio from both the buyer's and the seller's points of view. From the former's point of view NPLs can be seen as an interesting business opportunity; the distressed debt has recently become a real economic sector. Typical investors in the *distressed* industry are the following: *Investment Banks*, *Hedge Funds*, *Private Equity* and specialized traders. These entities undertake NPL investment opportunities since they are attracted by the industry profitability. In recent years the average rate of return on this type of investment has been 13.28%, significantly higher than all the other market segments: the stock market has realized a 11.33% rate of return on average; the market of mortgage backed securities has realized a 8.24% return; the IT industry has been characterized by a 9.53% return; the fixed-income market has realized a 6.54% return (E&Y, 2014). Even if the traded assets are non-performing, foreign investors show their interest in these transactions since they are more aware of the financial products involved and have good reason to believe in greater economic stability in the future. The buyers' assessments reveal that the proposed price for the portfolio too much separates from the related book value. In fact, according to a Deloitte report, in 37% of cases, the main obstacle for entering this investment opportunities is the huge bid-ask spread. Buyers typically apply a discount rate on the nominal value too far from the one of the seller and the direct consequence is a huge pricing gap. Essentially, the reasons for the pricing mismatch are the different expectations of the two parties involved: the entity selling the portfolio wants to minimize losses trying to get the best price, whereas, who buys the NPL portfolio doesn't want to bear excessive risks. The banks, from their perspective, are not willing to accept a price too low since it would otherwise caused an additional capital loss hard to bear.

Nonetheless, in Italy the mismatch between supply and demand seems to be tapering thanks to the reforms that have been implemented requiring major write-downs of non-performing assets in order not to generate excessive loss after the asset sale. The Italian investors generaly engaged in this type of investments can be classified according to two factors: the level of specialization and the investment capacity (see Figure 4.2.).

Figura 4.2. - Overview of Potential Buyers in Italy



Source: Ernst & Young[42], 2012

The matrix represented above reveals that in recent years, more and more financial operators have been attracted by the investment opportunities offered by the NPL market. According to a PwC market research carried out in 2014, investors have great expectations about this kind of deals: roughly € 60 billion of equity seem to be intended for investments in non-core European assets. In the 2011-2013 period there have been several deleveraging initiatives in Europe. Key NPL markets have turned out to be the following: the German

[42] E&Y, *Basilea 3 nell'attuale contesto economico finanziario: approcci operativi all'ottimizzazione del profilo rischio/capitale*, Convegno ABI Basile 3, Giugno 2012

market, with disposals accounting for a face value of €180 billion; the Spanish market with disposal of €170 billion; the British market with NPL sales of €160 billion (PwC, 2014).

Moving to the seller's point of view, the goal in this case is to get a high price, maintain a high financial capacity and safeguard the image. The disposal transaction has to be well-structured by the selling bank. If the NPL management is intended to ensure the maximum level of transparency and properly defines the duration of the whole process and of recovery activities, the sell-off on the market would be eased. By dividing the process in two phases it is possible to identify two steps: the first one entails the portfolio identification and planning and data collection in order to ease the sale process; the second step envisages the preparation of the business plan and management of counterparties involved. The first phase consists of all the operations that have to be carried out prior to the *Due Diligence* phase, such as timetable scheduling, portfolio valuation and portfolio clustering. Once the planning activity has been completed, the investors enters the Due Diligence phase by accurately examining the portfolio consistency through the analysis of all documentation uploaded in the *Data Room*; in case of sale of secured NPL portfolios this step implies an in-depth study of each loan and the relevant guarantees. Then, the investor passes to the portfoflio valuation analysis. When valuing a NPL portfolio the goal is to get its true recovery value.

However, the seller's ultimate aim is to identify and carry on a sale process as most appropriate to the bank's orientation as possible (Berger, 2014). The selling entity may be focued on either the maximization of the NPL stock sold rather than performance maximization or on the minimization of the impact of the deleveraging strategy choosed on balance sheet. Hence, the sale process has to deal with a NPL stock that shows the intermediary's willingness to "clean" its balance sheet due to the trade-off between NPL volume sold and the performance (Berger, 2014).

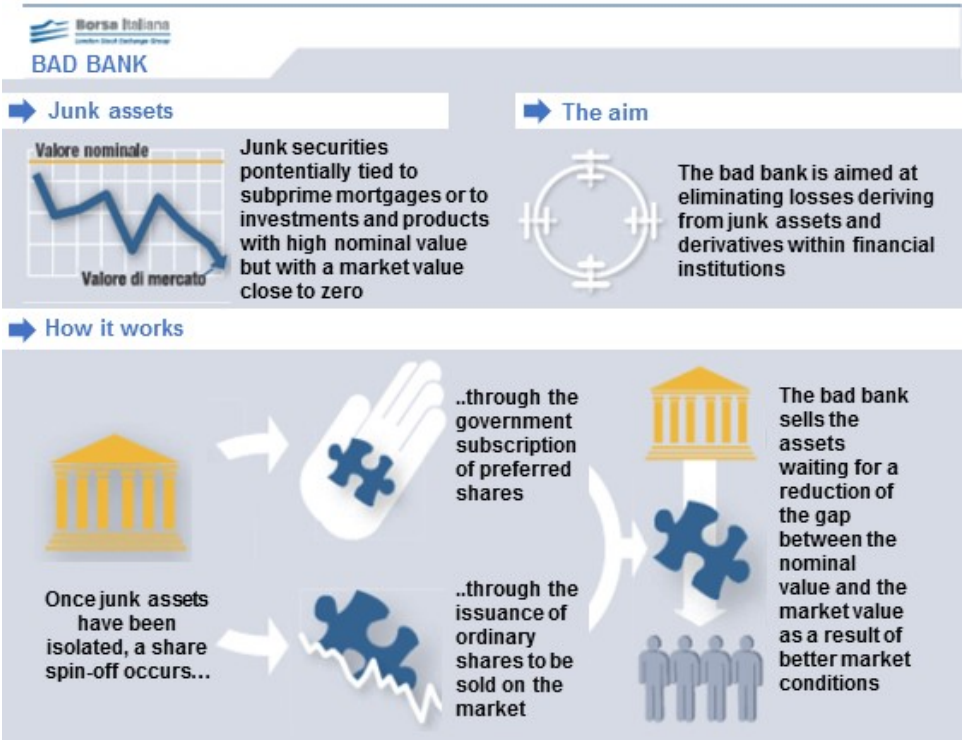
Bad Bank

An alternative solution to the NPL portfolio sale is represented by the establishment of a Bad Bank. It is an Asset Management Company (AMC), *i.e.* an *ad hoc* company aimed at gathering non-performing loans previously held by national banks. As the adjective "bad" suggests, this entity is intended at collecting all the non-performing assets of a credit

institution (Borsa Italiana, 2014). The governor of Bank of Italy, Ignazio Visco, considers this deleveraging option as the best strategy for a quick recovery of the bank financial situation.

On the one hand, banks may benefit from better equity and liquidity ratios resulting from the disinvestment of NPL portfolios in their financial statements. On the other hand, an AMC seeks to recover as much of these credits as possible over a certain time period adopting specific measures. AMCs are typically companies with broad shareholder base, both public and private, characterized by a strong state's involvement. Non-performing securities are transferred to an *ad hoc* vehicle, the so-called Special Purpose Vehicle (SPV) and the deleveraging of these assets takes place through the sovereign subscription of preferred shares and the issue of ordinary securities available for sale in the market. Then, the company will sell the assets once the gap between the NPL market value and the NPL nominal value has decreased.

Figura 4.3. - Bad Bank



Generally speaking, it is referred to as a bad public bank, although in recent years several international intermediaries have opted for a private solution by dividing the non-core part of the institution from the remaining operative structure. As the bad asset spin-off

occurs, the bank immediately records a loss[43], which is often compensated by a bank recapitalization of its shareholders or by a state aid. At best, the AMC does not solely recover part of the NPLs but it does it at a higher price than what it has paid for. However, if the economic scenario does not improve, the AMC may not be able to recover the face value of all the NPLs, making more difficult for the government to recover its investment.

For credit institutions the benefits of this option are the following:

- receiving cash after the disinvestment by improving liquidity coefficients;
- reducing capital outlays by lowering risks and price gap;
- the loss that the bank is forced to record in the balance sheet is lower with respect to the loss that the intermediary would bear in the case of a NPL portfolio sale. Hence, the transfer price is lower than the NPL book value but is above the NPL market value.

AMCs are lenders whose goal is credit recovery and, on the one hand, they allow debtors to negotiate a debt restructuring plan, and on the other hand, allow the originating banks to invest in the AMC itself and share any upside, *i.e.* the profits arising from the AMC's activity. When the State is a shareholder of the bad bank borrowers may benefit from a less stringent rescheduling of the debt due dates, getting more time to restore the debt position.

As far as the Italian reality is concerned, the Italian market has significantly expanded in recent years: at the outbreak of the crisis, the NPL ratio (NPLs / Total Loans) was close to 4%.

Banks have disposed of their non-core assets for only 1% of total assets, compared to the total market size of € 300 billion. The divestments concern the loans that have been in default for more than 10 years - since they had been completely deferred and their disposal would not have caused any losses on the income statement. The main Italian NPL sellers are the big banking groups, whereas the NPL buyers are typically the Anglo-Saxon traders: American and English *Private Equity* and *Hedge Funds*.

[43] The loss is due to the difference between the book value and the transfer value.

Europe as a whole has been particularly involved in NPL transactions, but two different dynamics have been identified: Western areas (England and Ireland) have immediately been active in this market opting for a strategy for the sale of non-core assets; conversely, in Southern Europe, the creation of a bad bank (private or not) has turned out to be the overwhelming solution to ensure a de-risking of banking assets and a reduction of the related price gap. In Italy, however, a limited number of these transactions have been carried out due to the bid-ask spread. Nonetheless, according to a recent survey on the distressed market, Italy appears to be the fifth country in Europe in gauging interest by foreign investors.

In the initial years of the NPL market development, Italian banks preferred to adopt an in-house management of the assets (BNL, Banca Popolare di Milano). In 2014, given the ongoing growth of NPLs, their management costs[44] increased accordingly. Hence, the underlying logic of managing these assets changed too, focusing more on the minimization of the related costs. The sought-after solution was that of the NPL portfolio sale.

In March 2014, six banks (UniCredit, Intesa San Paolo, Banca Popolare di Milano, Banca Popolare, Credito Valtellinese, Carige) presented their new strategic plans for a time horizon from 2014 to 2018. They followed strategies hinged on the profitability recovery and a clear reduction of the cost of risk as a result of a clear strategy of delevereging and de-risking of the assets. Just two of the largest banking groups in Italy (UCG, ISP) have settled non-core divisions.

In the case of UniCredit, UniCredit Credit Management Bank (UCCMB) has been set up: its task is to separate healthy credits from the non-performing ones. This entity collected € 83 billion of impaired loans which were entrusted to a specialized team of 1,100 professionals. The new non-core unit, as in any spin-off, has become a stand-alone company. The choice of UniCredit is based on the desire to recover lost profitability, trying to pass from a 2% profitability ratio in 2013 to a 13% ratio in 2018. The drivers for achieving this goal are two: working on risk mitigation and gaining profitability.

Also Intesa San Paolo through the establishment of *The capital light bank* stimulated the increase in profitability and value enhancement by improving the quality of assets. The

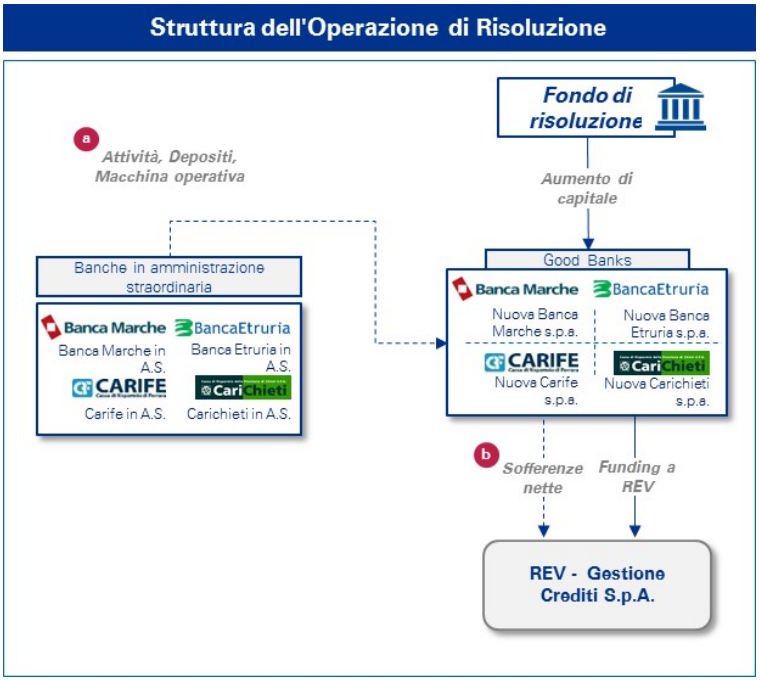
[44] These are the direct and indirect costs associated to the restructuring and monitoring of NPLs.

advatanges of this breakthrough may be the following: first of all, the increase of banking group-wide transparency, surely appreciated by the market; creation of a world-class bad asset pole, ensuring greater focus by managerial resources on the core business; lastly, a 127 bps risk reduction (from 207 bps in 2013 to 80 bps expected in 2017) in order to minimize the funding costs.

4.3.1. Case Study – REV Gestione Crediti S.p.A.

The creation of a real Bad Bank in Italy has happened with the establishment of REV Gestione Crediti S.p.A., fully owned by Bank of Italy. REV Gestione Crediti S.p.A. is the special purpose vehicle that has been set up, in compliance with Italian Legislative Decree no.180 art.45, issued on 16th November 2015, for the management of non performing assets of the four Italian Banks under Special Administration subject to the resolution process started by the Bank of Italy with the Decree of 21st November 2015, and approved by the Minister of Economy and Finance (Banca delle Marche S.p.A. ("Banca Marche"), Banca Popolare dell'Etruria e del Lazio S.c.p.a. ("Banca Etruria"), Cassa di Risparmio di Ferrara S.p.A. ("Carife") and Cassa di Risparmio della Provincia di Chieti S.p.A. ("Carichieti").

Figura 4.4. - Overview of REV Gestione Crediti S.p.A.



Source: KPMG, 2017

REV's main goal is to manage the above mentioned non-performing assets and to maximize their value mainly throughout market disposals. REV is currently managing a non performing loan portfolio accounting for a total GBV of about €10.3bn for which the four good banks are acting as a servicer. In the last few months REV has considered the disposal of a non-performing loan portfolio with a GBV of about €1.0bn represented by the Project Rossini Portfolio whose main feature are the following:

- 38 counterparties with exposure greater than €10m (the so-called "Top Borrowers") for a total GBV of about €865m ("Top Portfolio");
- 78 counterparties, linked to the Top Borrowers by economic group relationships (the so-called "Related Borrowers) for a total GBV of about €89m ("Related Portfolio");
- among the counterparties, 6 of them belong to both portfolios: for these cases, the Top Borrower has also a minor exposure in the Related Portfolio, deriving from a different originating bank.

The procedure involves two-stage blind auction bidding process, composed of an initial Phase I – Non Binding, open to the parties who have expressed an interest in participating in the proposed transaction, and a Phase II – Binding, which is reserved to a selected short list of bidders. For portfolio features and portfolio clustering pertaining to the "Top Borrowers" please refer to the following Figure:

Figura 3.5. – Overview of Top Portfolio

Top Portfolio highlights(3)

€865m *Gross Book Value*

Top Portfolio GBV as at March 31st, 2017

€23m *Average borrower size*

Top Portfolio's average ticket size of about €23m

98% *Corporate GBV*

Almost the totality of the loans included in the Top Portfolio are issued to corporate Borrowers

€703m *Real estate value*

RE value of the collateral securing the Top Portfolio

Top Portfolio snapshot as at March 31st, 2017 as per Real Estate clusters (1)

	A Resi.	B Indus.	C Comm.	D Hotel	E Other(2)	Total
Total GBV	**€352m**	**€95m**	**€83m**	**€79m**	**€256m**	€865m
No. of borrowers (#)	14	6	3	3	12	38
Average borrower size	€25m	€16m	€28m	€26m	€21m	€23m
% of borrower with GBV above €30m (in terms of # of borrowers)	21%	0%	67%	33%	8%	18%
Real estate collateral (#)	38	20	5	8	32	103
Real estate value	€343m	€90m	€58m	€45m	€166m	€703m
Average default year	2015	2013	2013	2013	2013	

(1) RE clusters identified on the basis of the most relevant asset securing the GBV of the borrowers; (2) It includes borrowers mainly secured by plots of land or by mixed assets; (3) The figures do not include the Related Portfolio, which accounts for a GBV of about €0.1bn.

Source: KPMG, 2017

In the following paragraph the drawbacks of deleveraging strategies will be explained.

4.4. Drawbacks of deleveraging

Firstly, let us remember that the NPLs do not produce interest-earning funds but make the year budget operating result worse due to the value adjustments carried forward to the income statement; the disinvestment of these assets would allow banks to monetize a fixed investment, anticipate cash flows and, of course, improve their liquidity ratios. Above all, the deleveraging of NPLs is the best way banks have to refocus on their core business. The credit market is totally interconnected, and a fall in investors' confidence in the soundness of a financial institution has implications for the whole system. The problem of the volume of these hard-to-recover loans has made banks' reputation weaker, questioning their strength and their market values.

Italy, unlike the rest of Europe and the other worldwide states, is the country where the amount of problematic loans keeps increasing because the pace at which write-offs are recorded and the consequent NPL portfolio sale occurs is still too slow (IMF, 2015).

A simulation performed by the International Monetary Fund shows that at the current selling speed of NPLs (about 8%), they would keep growing and reach a peak in 2019.

Examples of "good practices" can be identified in the United States and Japan, where, in the aftermath of the 2009 crisis for the former and of the 2000s banking crisis for the latter, the reduction of NPL ratios lasted three years. This was not the case for the Italian context where the recover of banks' balance sheets had been more difficult due to reasons related to both NPL demand side and NPL supply side. The limitations that prevent banks from selling the non-performing assets to external investors and from buying these types of assets are various. Let us first consider the perspective of the selling bank. In this case, the factors acting against a disinvestment of these assets are the following (IMF, 2015):

- a low level of asset coverage ratios and reserve provisions: in fact, to this end Basel III has called for a significant increase in capital buffers. The presence of insufficient buffers amplifies the price gap between the NPL gross book and the NPL market value. The spread explains why banks are encouraged to hold rather than selling NPLs when the NPL stock is high and capital buffers are low: the aim is to maintain their coverage ratio high.
- strong use of guarantees, both real and personal: in the Italian system the collateral value covers roughly two-thirds of the loans. On the one hand the presence of collateral incentivizes the good outcome of the loan disposal by ensuring at least partial recovery in case the loan obligations are not met by the borrower. On the other hand, it is an incentive for the bank to wait for the best time to sell. The concept is linked to portfolio pricing. When a NPL secured portfolio is to be sold, the starting point for fixing its price is the value of the guarantee itself.
- a tax regime that, until the end of 2013, penalized the banks carrying out aggressive policies on provisions and write-offs of bad loans that were considered tax deductible if a declaration of insolvency had been issued. In this case the provisions on credit losses were deductible for only 0.3% of the loans granted. The remainder was spread over the fiscal years for 18 years. Today, legislation recognizes the deductibility of both parts for five years at a higher rate.

- an accounting system equally unfavorable to the NPL portfolio disposal. The relevant accounting principle is IAS 39, which does not explain when and how to deal with a credit hard to be collected. Financial institutions have therefore adopted the best practice of their cancellation from the balance sheet when they renounce all contractual rights on the loan. A new accounting standard - IFRS 9 - will enter into force in 2018 and it will focus on the write-off accounting.

As already said, limitations do not solely apply to the selling parties but also to the entities interested in buying the NPL portfolio. At the top of the list of reasons that disincentive the NPL portfolio purchase, even for foreign investors, there is the inefficiency of the Italian legal system. It takes about 7 year for a bankruptcy process to complete and additional 3 years for collateral enforcement.

4.5. Securitization of NPLs

First of all, let us recall that the practical realization of securitization is very complex. Impementing a securitization operation requires the combined management of a large number of highly correlated variables. The most important aspects of this process are the following:

- identification of the portfolio subject to securitization and transfer of the underlying risk and related fees;
- definition of the financial structure of the transaction, with particular reference to the characteristics of the securities to be issued and to the forms of credit enhancement;
- valuation assigned by rating agencies;
- operational and organizational aspects related to portfolio management and servicing and monitoring activities (Fabrizi et al., 2006).

In Italy, almost all banks and other financial intermediaries securitize leasing contracts and mortgage and consumer loans, which represent most of transferred assets.

Financial intermediaries, in fact, can transfer both performing and non-performing loans; in case of NPL disposal, the securitization transaction is subject to the existence of a

precise regulatory framework that defines the benefits for the transferor and adequately protects the subscribers: the transfer of this asset class to third parties under favorable conditions depends, in fact, on the availability of effective legal instruments to manage insolvent debts.

In Italy the convenience of NPL securitization is lower than that of intermediaries operating in other countries *ceteris paribus* due to the costs and timing of credit recovery activities. Moreover, in Italy, the seller has to provide higher guarantees since the issues of Asset Backed Securities (ABS) in Europe are intended for international institutional investors interested in subscribing securities issued for securitized assets (mainly for reasons of portfolio diversification, risk profile reduction and appropriate credit rating).

However, despite the non-integral risk transfer to securities subscribers, choosing a NPL securitization may be more advantageous than opting for the NPL portfolio sale, which assumes the existence of a liquid secondary market for the securities issued in order to get a more convenient price.

As the pool of assets consists of non-performing loans, the stability of the portfolio itself is strongly threatened by the higher probability of occurrence of default events that cause dangerous mismatching between the expected cash flows and the amounts to be paid to the securities subscribers. As a results, credit enhancement techniques employed and the ability to recover the transferred loans are essential to the good performance of the transaction.

Differently from the securitization pertaining to loans *in bonis*, *i.e.* loans granted to performing clients for which a regular debt repayment is expected, the securitization of bad loans represents a contingent technique aimed at eliminating this asset class from the balance sheets. For performing loans, instead, securitization is an active management practice of the credit portfolio adopted in the context of a long-term strategy.

Finally, the NPL securitization may affect the ability of the originator to initiate new transactions and, more generally, it can have negative effects on its reputation. Although there are no particular constraints as to the quality of assets to be securitized it is generally agreed that the best receivables to be disinvested are credits *in bonis*.

In order to reduce the risk for the investor, increase the credit rating and lower the rate of return required by the market, it is possible to improve the quality of the underlying portfolio through forms of internal collateral, *i.e.* overcollateralization, establishment of a guarantee deposit, *excess spread* and issue of subordinated tranches. It should be noted that through these guarantees the originator pursues the goal of limiting the issuance risk and the remuneration of ABS but does not free itself from the credit and liquidity risks.

The conversion of non-performing loans into negotiable debt securities facilitates their transfer to other intermediaries or to final investors, by improving the risk-return combination offered.

Bank assets, in order to generate the cash flows required, must be:

- individually identifiable in terms of credits and related cash flows;
- characterized by cash flows to some extent predictable in order to develop, on the basis of historical experience and technical forms of contracts, a forecasting model for revenues;
- legally isolable in that the credit and the resulting rights must be exercisable by the buyer or transferee without any connection with the transferor's situation, in order to limit the subscribers' exposure to the credit risk of the transferred portfolio and not even to the one of the transferor;
- characterized by high homogeneity and standardization in terms of contractual structure but, at the same time, such that to ensure a satisfactory diversification of risks.

In the case of non-performing loans, the identification criteria must be used flexibly to assign to the credit pool the assets object of sale which are required to be consistent with the risk profile of the securities to be issued. In this case, the pool does not generate stable and easily predictable cash flows, even for the poor availability of data related to past performance of similar pools, and collections are not easily distinguishable between the capital and interest shares to be allocated, respectively, to amortization and payment of coupons.

From the operating point of view, the disposal requires the development of some preliminary activities to determine and quantify the consistency of the assets, their value in terms of expected collections and the forecast of cash flows over time.

The analysis and definition of portfolio selection criteria should take into account the borrower type and the geographical and sectoral diversification among debtors as well as the financial characteristics of loans such as the interest rate, the duration, the date of granting the loan, the amortization plan, the statistics pertaining to adopted pratices for both homogeneous asset pools and individual credits, with static or dynamic methodologies.

The completion of the operation requires the use of standard parameters and management control tools to allow the arranger to perform an accurate valuation of the transferred portfolio. The set of loans object of disposal may be characterized by a certain degree of homogeneity: the territorial areas of stipulation, the nominal value above the thresholds, the fact that the necessary judicial actions for recovery have been initiated and the existence of voluntary or judicial mortgages.

The guarantees covering the loans are fundamental since they affect the financial structure of the security. Hence, a NPL securitization cannot occur in the obsence of these guarantees since their presence allows a partial scheduling of the expected cash flows, the assessment of the capability to cover the economic risk of the security in addition to capital repayment and interest payments. If this should not be the case, the level of credit enhancement, required to make the operation both acceptable and provided with an adequate rating, would be very high so that to make the transaction unsuitable for the originator.

A large diversification of the asset pool allows to improve the features of the securities to be issued while reducing the related risks. According to the rating agency practice, diversification is measured by the so-called diversity score that, considering the degree of correlation between the different categories of borrowers, reduces default or downgrading risks. However, this methodology does not apply to securitization of NPLs, since the distressed event has already occurred and diversification is typically tied to environmental or sectoral factors.

4.6. Consequences of securitization on bank management

The effects of NPL securitization on banking management can be understood by analyzing the reasons behind its implementation, generally driven by a number of potential advantages. Transactions on bad loans are typically explained by the bank's tendency for a budget clean-up. It is well-known that securitization allows (i) the transfer of price and credit risks (risk transfer) and (ii) the ability to generate new liquidity (liquidity enhancing), new credit (credit generating) and additional equity capital (equity generating)[45].

Banks can use securitization as a means to control for credit risk, in that, it is possible to transfer the default risk by disinvesting some assets and to enhance portfolio diversification through the purchase of securities on the market. The sale of non-performing loans is much more complicated than the disposal of performing loans, since the latter is mainly driven by income and financial reasons. NPLs are generally sold for economic, financial and management issues: the selling bank takes advantage, in addition to the transfer of credit risk and the increase of financial resources, of the benefits deriving from a reduction of operating costs. On average, the placement of securities within the financial market allows to achieve the goal of stabilizing and diversifying the sources of provision while simultaneously reducing the funding costs: by deleveraging certain asset classes, banks are able to grant new loans to new customers getting the necessary resources from their balance sheet.

With regard to NPLs, the goals of securitization and the relevant effects, closely related to each other, can be classified into[46]:

- economic and financial purposes: deleveraging of NPLs and doubtful claims with immediate availability of funds, increase of the solvency ratio, improvement of balance sheet ratios, rating improvement for the originator and hence greate ease of access to equity markets, dilution, over a multi-year time span, of the losses resulting from the worst performance of the portfolio through the subscriptions of subordinated tranches and finally the collection of servicing fees. In particular, it is noticed that NPL securitization operations

[45] Porzio C., *Securitization e crediti in sofferenza*, Bancaria Editrice, 2001; Crivellari D., *Bad Loans good money - Laboratorio Crediti Non Performing*, Università degli Studi di Macerata, 2014.

carried out by small banks are not welcomed by the financial markets as they tend to worsen the quality of credit portfolios by raising both risk level and price volatility.

- management purposes: improving credit control mechanisms through a more efficient monitoring of non-performing positions, operational cost savings for implementing the recovery activity which, if carried out by a court, takes longer time and requires a considerable amount of interal resources.

The traditional securitization involves the deleveraging of performing loans, which generate less risks on international markets and imply much lower costs since they are qualitatively better than the average credit portfolio. Hence, the disinvestment of impaired loans, low performing positions and exposures with high management costs, has the advantage of reducing the amount of assets and liabilities by improving operating poriftability ratios.

New resources allows the bank to focus on investments in new areas so that the economic and financial equilibrium can be recovered as quickly as possible in terms of capital strength. Along with the assessments made to ensure the convenience of the NPL securitisation transaction, the costs related to the implementation of credit enhancement technique play a very important role. The presence of guarantees at least permits to partially offset the borrower default risk but, at the same time, requires intense external intervention of credit enhancements or major guarantees provided.

The magnitude of the risk to be transferred depends on the efficiency of the administrative and controlling stuctures since securitization allows the disposal of non-performing receivables to third parties by allowing the originator to maintain guidance within the recovery process and thus keep its relationship with the borrower. When credit management is considerably efficient, then the transaction costs are lower and the volume of the transferable assets to third parties at favorable terms is greater. The originator does not have to bear the portfolio managing costs only if the management of the transferred assets is entrusted to an external servicer on the basis of a servicing contract; this is the peculiarity that differentiates the disposal of performing assets from the non-performing

ones. In fact, in the transfer of credits *in bonis* the selling entity keeps the role of portfolio manager facilitating the collection of payments and maintaining customer relations.

5. Chapter 5 – Potential solutions to NPLs

5.1. Overview on possible solutions

As already outlined, in the NPL market, the bid-ask spread depends on several factors although it can be firstly ascribed to the different criteria used when assessing the non-performing loans object of sale. Hence, it is absolutely reasonable to investigate what are the potential solutions that may be implemented in order to reduce the bid-ask spread and foster the creation of a NPL market intended for the sale of this asset class so as to reduce the NPL stocks. The following considerations may suggest possible solutions:

- Better information on "recovery rates": greater information on possible recovery rates would gradually reduce the asymmetry between selling banks and potential buyers of NPLs by reducing the haircuts they apply to the recovery rates of banks.
- Providing information quickly: in the case of guaranteed loans – either covered by mortgages or sureties – being able to quickly provide information in electronic form about the characteristics of the various credit exposures allows buyers to complete their portfolios analysis, reducing the costs and uncertainties of the assessments.
- Reduction of the average cost of capital: the creation of specialized vehicles for the NPL securitization (SPVs) makes it possible to finance the purchase of NPLs by means of a leverage mechanism, *i.e.* by using debt capital in addition to equity (risk capital), which in turns reduces the average cost of capital.

The mechanisms set up by the government with the State guarantee on the senior tranche (*Garanzia Cartolarizzazione Sofferenze* - GACS) and the ones promoted by banks through the *Atlante Fund* incetivize the reduction of the average cost of capital for the SPV with a positive effect on the sale price.

5.2. GACS

The so-called *Garanzia Cartolarizzazione Sofferenze* (GACS) approved with the Law Decree n. 18 of February 18th, 2016 - is aimed at facilitating the deleveraging of NPLs from the balance sheet of Italian banks. It allows the placement of *senior tranches* of NPLs, *i.e.* special bonds issued by the SPV, at slightly higher rates than long-term government bonds. However, the effect of the GACS is not as strong as to compensate the bid-ask spread observed on the market.

How does GACS work? The bank issues a securitized bond with the NPLs. By applying sophisticated statistical techniques, the probability of the recovered credit value is estimated. Then, the credit tranching is carried out by creating of a *senior* tranche, a *mezzanine* tranche and a so-called *equity* tranche, by increasing risk level and return. Losses on the underlying are first deducted from the most risky and remunerative (equity) tranche. If this tranche is reset by leakage, the focus passes to the mezzanine tranche, the one with intermediate risk and return. If this is also avoided by losses, the focus passes to the senior tranche.

The Italian Treasury, however, guarantees the tranche with lowest risk and return (*senior*) provided that the investment grade rating is associated to the tranche itself. In other word, senior notes must not be classified as "junk" assets. The magnitude of the risk and return tranches depends on the quality of the underlying assets: if these are of poor quality the senior tranche will be small at first approximation. However, if there is an "upstream" guarantee pre-established by a third-party entity, the senior tranche may become very large; consequently, it will have a "market" dimension.

Moreover, the guarantee has a price: it is quantified by applying the value of Credit Default Swaps (CDS) to equally rated issuers - for example, if the senior tranche has a single A rating and lasts for 5 years, the value of the five-year CDS of A rated issuers is taken and it is applied to the value of the tranche.

5.3. The Atlante Fund

On April 11th, 2016, a large number of banks, insurance companies, pension funds and other institutional investors jointly decided to launch a private equity investment fund named *Atlante*. The fund was created under the impetus of the Italian government to intervene in the banking crisis that had been caused by the huge NPL stock, supporting their recapitalization and detecting bad loans.

The fund is managed by *Quaestio Capital Management SGR (Società di Gestione del Risparmio) S.p.A.*. All investors participating in the fund are private operators. The Fund Regulation ensures the SGR's formal and substantial independence from investors; therefore, if the fund gains control of one or more banks, the management company may exercise the powers of a shareholder with broad discretion and autonomy.

The resources that the SGR intends to raise with Atlante will amount to at least € 4 billion, which will be invested in two types of assets:

- shares of banks that have to raise capital on request of the supervisory authority;
- securitization of non-performing loans.

Through the first type of investmdnts, a security network is created for the future capital increases of banks, starting from those already planned by Banca Popolare di Vicenza and Veneto Banca. The second component aims at favouring the development of the NPL market, which is still affected by the long and deep recessionary phase faced by the Italian economy. Investments will focus on the most risky tranches of securitization, such as junior and mezzanine tranches, whose market is particularly limited. The market has greatly welcomed the launch of the Atlante fund.

The Atlante fund, is an Italian closed-end real estate fund reserved to professional investors, namely 67 Italian and foreign institutions including banks, insurance companies, banking foundations and *Cassa Depositi e Prestiti*. Up to 70% of the fund can be invested in assets of banks whose capital ratios are lower than the minimum required within the Supervisory Review and Evaluation Process (SREP) and hence are object of interventions of capital enhancement through a share capital increase. Moreover, at least 30% of the fund

has to be devoted to non-performing loans that have been originated from various Italian banks, even guaranteed by some assets through:

- junior tranche, occasionally mezzanine, in NPL securitizations even with some forms of co-investment; the fund will mainly invest in junior tranches with an IRR (Internal Rate of Return) lower than the one traditionally required by specialized investors but in any case in line with the IRR associated to a B-rated security.
- *ad hoc* vehicles (SPV), including investment funds with NPLs as underlying;
- real estate and non-real estate properties.

The medium-term goal of the fund is to cut off part of € 200 billion of non-performing loans in the balance sheets of Italian banks. According to some estimates, Atlante fund could intervene by absorbing NPLs for a counter value of about € 80 billion[46].

Quaestio Capital Management SGR S.p.A. is willing to adopt the best resources, professionalism and knowledge on the Italian and international market for NPL management, by promoting collaboration with banks and fully maintaining strategic and directional control of the investment.

The fund does not want to replace specialized funds, service providers or business banks, but:

- invests (or co-invest) in securitization facilities that meet the performance requirements in order to reduce the impact on banks' balance sheet and accelerate the disposal of NPLs;
- promotes the development of securitization transactions by crossing the best answers from banks, funds and service providers;
- if a bank finds a plausible solution on the market on its own, the fund does not interfere, but its presence still contributes to the enhancement of returns.

NPL disposal also depends on banks' profitability in the near term: the larger the capital buffer with respect to the capital ratios, the easier the absorption of losses deriving

[46] Please refer to www.soldionline.it, *Fondo Atlante e come funziona*.

from the sale of NPLs and the faster the disposal which will lead to slighter capital ratio requirements.

Hopefully, with the help of the Atlante Fund, capital increases will be successful and banks, that will be partially owned by the fund itself, will return to "healthy" conditions in order to guarantees a capital gain for the operation. The same argument applies to impaired loans: the goal is to buy NPLs at a higher value than the price that the market is currently willing to offer to investors, betting on the fact that it will also be possible to earn some gains from managing these assets.

However, if the operation failed, the bad financial situation of the banks involved would be transferred to the fund and the investing companies, *i.e.* the parties in best condition withing the Italian banking system. At best, the work of the Atlante Fund will help to create a calming effect on the financial markets, making for example capital increases more attractive to investors[47].

The success of the operation also depends on at least four crucial exogenous factors:

- the State must make credit and debit procedures easy to modify, as the legal system is one of the cornerstones of any financial system;
- the ability of banks to quickly recover operating profitability in that the NPL disposal time depends on the capability to generate new profits able to absorb old losses without causing capital increases and risk of bail in. Moreover, as net earnings increase and NPLs decrease, the required regulatory capital reduces too, triggering a virtuous circle;
- the low probability of negative shocks over the next two years, such as Eurozone crisis or geopolitical crisis, stagnation and / or deflation, as the amount of NPLs is not only the current one, but also depends on the rate at which the other bad loans turn into NPLs and loans *in bonis* become deteriorated. Therefore, it is needed to look also at the future stock of NPLs and not solely to the current NPL stock. In the absence of a positive economic scenario and taking into account

[47] Please refer to www.ilpost.it, *Cos'è il Fondo Atlante*.

that non-performing loans reach their maximum even after three years of a recession, the future dynamics of NPLs has to be closely monitored;

- real estate cycle[48].

5.3.1. Atlante II

After the first positive experience of Atlante (Atlante Fund I), which focused on the equity capital of distressed financial insistutions and greatly contributed to the capital increases of Popolare di Vicenza and Veneto Banca for a total of € 2.5 billion, the focus of the fund managed by *Quaestio Sgr*, led by Alessandro Penati, has now been passed to the exclusive investment in non-performing loans. The NPL market is still far from being fully developed but it could offer interesting returns to institutional, banking and insurance investors.

The decisive factor will be the purchase price of NPLs which is likely to rise up to 32% of the original value. Obviously this price increase will depend on the due diligence that will be carried out on the NPL portfolios by the specialized operators involved in the transactions. The final value, however, will be primarily a function of the composition of the NPL portfolio and the consistency of secured loans vs. unsecured ones.

Atlante Fund II, set up in August 2016, is aimed at buying the bad loans originated from Italian banks at a price, as said before, up to 32% of the original value; this is a much higher price level than the one investment funds are willing to grant, but it is still considered "compatible" with an expected return of 6%. To achieve this, the fund will have a consistency that will fluctuate between a minimum of € 1.25 billion (already potentially outdated) and a maximum that can rise up to € 5 billion.

An important role for investors will be played by the Atlante Fund I, whose commitment will be "approximately between € 800 million and € 2.25 billion", a figure below € 1.75 billion available following the capital increases pertaining to the two distressed banks of the Veneto region. Atlante I will be able to increase its commitment to the NPL market segment "after June 2017", devoting all remaining resources to this type of

[48] Please refer to the website www.quaestiocapital.com

investment. However, Atlante II should provide the necessary resources to invest in the vehicle intended for the collection of the gross NPLs of Monte dei Paschi di Siena[49].
Atlante II aims at being able to generate return from both securitization investments and investments in financial instruments *ad hoc*. The fund does not exclude the possibility of holding equity capital through any financial instrument if the NPL investment involves a significant re-rating of the bank's value. Finally, among the various hypothesised options, there is also the possibility to create a bad bank in view of a valorization of the NPLs.

[49] Please refer to www.corrieredellasera.it , *Nasce il Fondo atlante 2*.

Conclusions

The issue of Non-Performing Loans has widely spread out in Italy in the last few years, and given the current Italian condition, a new market, new operators, a strict discipline and appropriate regulation in line with the evolution of the phenomenon are highly needed.

Nowadays, the opportunities offered by the market are proportionate to the ability to handle information more or less correctly: revenue expectations on credit recovery operations are closely related to the way in which the new regulations are received by the entities signifincantly active on the market (loan manager, legal entities, servicer, hedge funds, etc.).

However, in the Italian market, there are signs of recovery: credit supply and demand, albeit very slowly, have been returned to the economic system. The latest Abi report documents that in May 2016, the annual change in total lending to the economy - including households, businesses and public administrations – has returned positively to + 0.3. However, it also points to a slight increase in non-performing loans, net of write-downs already made by banks: the net non-performing loans ratio was 4.67% in April 2016 compared to 4.58% of March 2015 and 0.85% of the previous period of the economic crisis.

For the purpose of disposal of bad loans and the development of a genuine NPL market, the measures set in the decree law are effective in addition to the new insolvency procedures and the new legislative measures.

Since summer 2015, the Government has introduced some intervention measures with the Law 132/2015, which allowed the partial removal of legal and fiscal barriers that contribute to curbing the development of a NPL market in Italy, thus facilitating a more efficient litigation management.

In particular, the changes made to the Bankruptcy Law and the Civil Code have contributed to a significant reduction of recovery times (in case of bankruptcy proceedings, recovery time has passed from more than 6 years to a time range of 3-5 years; in case of foreclosure procedures, recovery time has passed from 4 to 3 years) and to an increase of both the effectiveness and transparency of bankruptcy and foreclosure procedures.

Regarding the revisions of the tax system of banks' loan losses, the new write-downs and write-offs will be entirely and immediately deductible for tax purposes (in the previous scheme they were deductible in 5 years). This legislative intervention has removed a competitive disadvantage for Italian banks in the international context, as it has made the adoption of more prudent credit assessment policies less costly for banks.

With regard to government interventions launched in 2016, the set up of *Garanzia Cartolarizzazione Sofferenze* (GACS) is particularly relevant as it envisages the creation of a Special Purpose Vehicle (SPV) and the set up of the Alternative Investment Fund "Atlante".

From an overall perspective, this solution seems to be more "market-driven": it is likely that this mechanism will not entirely solve the problems of Italian banks and that it will solely reduce the stock of non-performing loans held by banks, with the risk of future capital increases, or merging or acquiring larger corporations.

The other financial measure aimed at solving the problem of NPL and supporting the capital increases required by the Supervisory Authority is the launch of a new Alternative Investment Fund called "Atlante", managed by a private company, *i.e.* Quaestio Capital Management SGR S.p.A.. It was created in collaboration with the Italian government and the main financial groups of the country and its set up was thought to contribute to the process of strengthening the capital adequacy of undercapitalised Italian banks and incentivize the development of the NPL market. The issue of finding a solution to the problem of NPLs does not only imply the rescue of the weakest Italian banks in terms of capital buffers, but also a descreaing intensity of the major disruption of the last few years and a redrafting of the economy of the country. For these reasons, it is necessary to develop appropriate rules to fulfil the purpouse that will enable to precisely identify the role of individual operators in the market and the tools with which to solve the problem in the medium term. The write-off of NPL exposures from bank balance sheets (*e.g.*, over five years), the liquidation of non-viable assets (which do not generate cash flow) and the restructuring of those which are considered relevant in terms of cash flow generated in order to cover the interest payments, appear to be an obvious and necessary maneuver. Banks should also be obliged to allocate more funds to bad loans that are not reimbursed in a

reasonable timeframe: higher provisions and more cautious valuation of warrants would prompt banks to manage their NPLs more quickly. The systematic Asset Quality Review and the supervisory inspections should ultimately enable a correct classification of loans so that their book value approaches the related market value. Moreover, the NPL disposals are fostered by the adoption of new structural reforms aimed at: (i) encouraging the judicial and extrajudicial debt-restructuring; (ii) reducing the backlog and accelerating the foreclosure procedure; (iii) simplifying the bankruptcy and debt recovery procedures, shortening long lasting judicial procedures and encouraging, alternatively, extrajudicial agreements. In fact, there are strong differences among the judicial procedures of the various countries: for example, in Italy, the recovery procedure run by a creditor, in order to recover some value of the loan from the disposal of the underlying collateral, following a default on a secured loan, lasts almost five years on average; in Germany and Spain it takes less than one year. Furthermore, it is necessary to reduce the pricing gap between the sellers and buyers involved in the transactions: investors, in fact, require higher returns for bearing a higher level of risk. Valuable solutions could also be represented by the so-called Corporate Restructuring Vehicles (CRVs), mostly suitable for small Italian mid-sized companies. These vehicles invest directly in the insolvent company, restructuring the debt and reorganizing its business, rather than just removing illiquid assets from the banks' balance sheets. The importance of the availability of adequate information on the phenomenon is clear: the bad quality of the credit management service provided by banks suffers from the lack of an integrated information system.

This situation, however, seems to be improving: some banking groups have recently been equipped with more efficient information systems that can handle information on the different procedures in an integrated way and according to homogeneous criteria. Looking at the future, a systematic storage system and timely availability of information on the stock of non-performing loans is crucial for both their "active" management and a potential market disposal. Ultimately, it is necessary to reallocate the entire credit risk management process, develop effective and timely techniques and ontrol tools in order to prevent the onset of the phenomenon, through a prospective analysis - which allows to assess the credit risk and to keep the adequate income levels with respect to the risks to which the company is exposed

– of the industries and of the national context where the company runs its business, and the development of forecasting models suitable for a more accurate valuation of creditworthiness – the so-called foreclosure business models.

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