

A Strategic Approach to Non-Performing Loans Treatment in Banking: Options and Rules for Decision-Making

Sebastiano Mazzù

Corresponding Author, Department of Economics and Business

University of Catania, Catania, Italy

Tel: +39 0957537618; Fax: +39 0957527510

E-mail: s.mazzu@unict.it

Francesco Muriana

NPLs Work-Out Unit of Bank Agricola Popolare of Ragusa, Ragusa, Italy

E-mail: francesco.muriana@bapr.it

Abstract

The study proposes a framework to choose the right non-performing loan (NPL) stock reduction strategy mix, through “on balance sheet” and “off balance sheet” solutions. The study considers as a reference point the European banking supervisory Authorities’ guidelines and regulations issued in the aftermath of the crisis to tackle the deterioration of banks’ loans portfolios. Moving from these references, the study investigates the strategic options that banks can implement to reduce non-performing loans (NPLs), taking into account the evolution of the external context and the bank-specific situation. In this sense, our study proposes some possible operating rules banks should consider when they implement strategic planning procedures and make their decision in the selection of the most suitable NPL reduction options.

Keywords: Non-performing loan reduction strategy, Financial crises, Credit quality.

JEL Classification: G01; G11; G20; G21.

1. Introduction

High levels of NPLs curb business development prospects for banks and constitute a vulnerability factor for the system as a whole. In recent years, banking supervisory Authorities have increasingly focused on this issue, drafting specific guidance with the aim of promoting a more effective management of impaired loans.

This guidance provides banks with useful indications to develop suitable strategies in order to reduce NPL stocks and prevent accumulation of new bad loans. In these strategies, a central role is played by the selection of the most effective option for any portfolio cluster. In doing so, banks have to consider properly advantages and drawbacks of all possible alternatives and choose the most appropriate combination. Traditional approaches based on passive rundown of NPLs, are no longer adequate in the current context, marked by high stocks of bad loans to dispose of. In fact, in the years following the outbreak of the “two crises” (the global financial crisis and the sovereign debt crisis), several European banks suffered a rapid deterioration in credit portfolio quality.

The existence of economic and regulatory constraints encourages banks to implement dynamic strategies and to search for innovative solutions aimed at offloading NPLs in a sustainable way. In particular, banks are focused on limiting negative impacts arising from the gap between book values

and market prices of loans. At the same time, banks need to overhaul their business model as well as credit risk management systems to safeguard their ability to perform the lending function properly in a more complex external environment. It becomes vital to improve their screening and monitoring ability, taking advantage of all sources of information. Problems with high quantities of NPLs, when they are shared by many banks, become a vulnerability factor for the financial system, raising concerns at a macroeconomic level. As a matter of fact, lower credit portfolio quality may lead to loans rationing and so delay the overcoming of negative business cycles, putting the economic system at risk of a recessive spiral. This could explain why the reduction of NPLs' levels has become a key issue not only for banking firms but also for public authorities.

In the following paragraph, we summarize a representative selection of the existing studies and empirical results in this area. Paragraph 3 describes the position of banking authorities with regard to the problem of NPLs. In paragraph 4 we discuss the NPLs stock reduction strategies, while paragraph 5 reports the rules of NPLs reduction. Finally, we summarize our findings in paragraph 6.

2. Literature Review

Several studies have investigated the phenomenon of NPLs from the macroeconomic and microeconomic point of view, highlighting the main determinants and effects. On the other hand, there are few studies about strategic-organizational solutions aimed at reducing the stock of NPLs.

From the macroeconomic point of view, Zeng (2012) describes NPLs as "financial pollution" to underline their feature of negative externality for social welfare. Peek and Rosengren (2003), Barseghyan (2010), Hoshi and Kashyap (2011) explain the harmful effect on the Japanese economy of a long permanence of large amounts of NPLs on the balance sheets of financial intermediaries during the nineties. Krueger and Tornell (1999) and Agung et al. (2001) find evidence of a vicious spiral linking credit risk and credit crunch in Mexico in 1995 and in Indonesia in 1997/1998, respectively. Nkusu (2011), in a study on a sample of 26 advanced countries spanning the period from 1998 to 2009, suggests that NPLs play a central role in weakening macroeconomic performance. A recent study on the Italian banking system, where the NPLs stock is among the highest in Europe (reaching a peak of 18 per cent of total loans in 2015), shows that a high level of NPLs compresses the lending growth rate and slows economic growth (Accornero et al., 2017).

Keeton and Morris (1987), Meyer and Yeager (2000) and Gambera (2000) are among the first authors to have investigated the effects of macroeconomic factors on bank asset quality. They show a significant relationship between the loan quality and the dynamics of some regional and national cyclical variables (such as unemployment rates, per capita income, etc.) in the US. In a more recent work, Beck et al. (2015) study the determinants of NPLs across 75 countries in the period 2000-2010 showing that the real GDP growth is the main driver of NPLs ratios. Furthermore, they find that exchange rate depreciation and a drop in stock prices are important negative determinants for bank asset quality.

Anastasiou et al. (2016) show that, in the euro area, the variables directly related to the level of NPLs are unemployment, growth and taxes. From this perspective, the reduction in the stock of NPLs can only come from a general recovery in the economy, which allows an increase in personal income, a reduction in unemployment and, as a result, an improvement in the borrower capacity to pay back its debts (Fofack, 2005; Jiménez and Saurina, 2006; Khemraj and Pasha, 2009; Dash and Kabra, 2010). A further factor affecting the rise in NPLs is the amount of sovereign debt, which curbs investments (Makri et al., 2014; Ghosh, 2015) and weakens the banking system when it is high, thus accentuating the possibility of a crisis (Reinhart and Rogoff, 2011).

From a microeconomic point of view, literature focused on bank specific factors, trying, on one hand, to outline the main problems arising from high levels of NPLs and, on the other hand, to identify which banks' characteristics and behaviours give rise to credit quality deterioration.

The decay of loans quality is inconvenient for different reasons, especially when NPLs reach a critical mass. In particular, large stocks of NPLs restrain banks' profitability due to: a) the "negative carry effect" related to non-accrual loans funded at non-zero cost; b) losses arising from provisioning and operating costs related to work-out activities (Carpinelli et al., 2016; Albertazzi et al., 2016). Moreover, a poor loan portfolio quality reduces banks' market value increasing their funding costs. Finally, high volumes of bad loans curb business development opportunities, diverting banks' scarce resources from more profitable activities.

In their seminal paper, Berger and DeYoung (1997) examine the relationship between loan quality, cost efficiency and bank capital. They find that banks devoting few resources to credit selection and monitoring, even if they are more cost-efficient in the short term, will have a larger amount of NPLs in the future. The same effect occurs when managers do not have the skills to measure credit risks and to properly assess loans collaterals. Likewise, low capitalization contributes to the growth of NPLs because managers will be incentivized to increase the riskiness of the bank's loans portfolio. In this respect, Gambacorta and Mistrulli (2003) find empirical evidence of the positive relationship between banks' capital and credit quality.

On the other hand, Rime (2001) notes that a high level of capitalization could lead banks to take on more risk in lending activities with the effect of increasing NPLs. Salas and Saurina (2002) find that aggressive bank growth policies (credit expansion, new market penetration) and managerial incentives cause future NPLs. They also find that larger banks, by diversifying their portfolio, are less risky and conclude that there is a negative relation between NPLs and bank size.

Ranjan and Dhal (2003) argue that large banks have greater selective capacity in granting loans and thus have lower NPLs. Stern and Feldman (2004) observe, however, that large banks relying on potential public financial support (too big to fail) may be induced to increase leverage to boost performance by lending to lower quality borrowers. In fact, a high leverage is closely related to the growth of NPLs (Ghosh, 2006). Ongore and Kusa (2013) find that banks more profitable than the others have high asset quality and low NPLs.

Likewise, Birindelli and Ferretti (2015) show that bank profitability is linked to a good efficiency, a low percentage of net loans over total assets, a high growth of gross loans and a high level of loan coverage ratio. Godlewski (2005) finds a negative relationship between ROA (return on asset) and level of NPLs in the emerging market economies. Messai and Jouini (2013) have observed similar results in Italy, Greece and Spain for the period of 2004-2008. Garcia-Marcos and Robles-Fernandez (2008) examine the risk behaviour in Spanish Commercial banks and Spanish Savings banks. They report that high levels of ROE (return on equity) increase the level of risk taking in the future. Foos et al. (2010) show that higher loan growth leads to an increase in loan losses and also leads to a decrease in interest income and in the capital ratio causing a decrease of bank solvency. Louzis et al. (2012), with regard to Greek banks, find evidence supporting the role of bad management in explaining credit quality deterioration.

In the face of the issues related to high stocks of NPLs, each bank is called to develop its own NPL reduction strategy. In this specific field, literature is still scarce. Grodzicki et al. (2015) and Fell et al. (2016) illustrate a range of possible responses to address NPL stocks, by distinguishing between "On-balance-sheet approaches" (based on internal workout processes) and "Off-balance-sheet approaches" (based on the separation between good and bad assets). Aiyar et al. (2015) emphasize the need of a comprehensive strategy, including the removal of existing structural obstacles to NPL resolution, such as deficiencies in the legal framework and underdeveloped distressed debt market. Enria et al. (2017) and Avgouleas and Goodhart (2017) stress the importance of a systemic solution based on a government-backed Asset Management Company entitled to buy NPLs from EU banks. Bruno et al. (2017) propose a securitisation scheme as the most effective way for banks to reduce their stocks of troubled loans.

European banking supervision Authorities have designated NPL resolution as one of the top priorities for the banking system and, in recent years, they have taken a series of measures aimed at strengthening the banks' ability to cope with the problem.

3. The Position of Banking Authorities

At an institutional level, a first relevant measure relates to the establishment of a common framework across EU banking systems for NPL recognition, classification and evaluation. With reference to this, the guidelines draft by the European Banking Authority since 2014 (European Banking Authority, 2014, 2016a, 2016b) play a paramount role. These standards provide harmonised criteria for the definition and identification of non-performing and forborne exposures, enhancing the transparency of credit risk undertaken by European banks.

Banking supervisory Authorities, in preparation of the Single Supervisory Mechanism (SSM) and in the context of the "Pillar 2" activities (SREP), have stressed the importance of a fair assessment and control of asset quality, providing financial intermediaries with specific addresses and methodological tools for NPL classification and provisioning analysis. In particular, the "comprehensive assessment", conducted by the European Central Bank (ECB) and the National Competent Authorities (NCA) in the year preceding November 2014, included, as a key component, the Asset Quality Review (AQR), that is "*a point-in-time assessment of accuracy of the carrying value of banks [...] based on a uniform methodology and harmonised definitions*".

The AQR embraced a review of processes, policies and accounting (PP&A) and a "loan by loan" analysis (Credit File Review). The methodology used by NCA teams - made public - contained useful procedures and indicators, such as minimum triggers for classification purpose and discounted cash flows models (under either a going concern or a gone concern approach) for impairment calculation (European Central Bank, 2014a, 2014b).

Finally, the ECB "*Guidance to banks on non-performing loans*" provided a comprehensive and systematic representation of measures, processes and best practices supervisors expect to be adopted by banks in tackling NPL problem. The guidance was released for consultation in September 2016 and published in its final version in March 2017. It is not binding, but will be a reference point for supervisors in the dialogue with banks, which "*should explain and substantiate any deviations upon supervisory requests*" (European Central Bank, 2017). The document incorporates all methods and procedures already in use by ECB supervisory groups about NPL recognition, forbearance treatment, write-off, etc.

The real novelty of the guidance consists in the proposal of a benchmark model for the "*life cycle*" of NPL management. Key elements of the ECB framework are the definition of appropriate NPL reduction strategies and the implementation of some basic rules concerning the governance and the operating process of troubled loans.

With regard to NPL strategies, the ECB identifies four fundamental components: 1) "*assessing the operating environment*"; 2) "*developing the strategy*"; 3) "*implementing the operational plan*"; 4) "*fully embedding*" the strategy "*into the management processes*" at all levels.

All the above-mentioned building blocks are intertwined. Indeed, in order to elaborate a "*realistic but sufficiently ambitious*" cutback strategy, banks will need to select the most suitable combination of available options in light of the external context, the capital constraints and the internal capabilities to effectively manage NPLs (European Central Bank, 2017, p.9). This process, joined to the recognition of appropriate benchmarks about acceptable levels of NPLs, should lead to: a) the definition of quantitative reduction targets in the short as well as in the medium and long term (European Central Bank, 2017, par.2.3.2); b) the planning of operational and organizational measures to be adopted (European Central Bank, 2017, par.2.3.3). The approval and review of the strategy should be a task of the management body (European Central Bank, 2017, par.3.2), which is bound to

ensure it is implemented in an integrated fashion with the bank's policies, business plan, budget and risk management framework (European Central Bank, 2017, par.2.5).

With regard to the operating model, the guidance identifies the *best practice* in setting up dedicated NPL work-out units, stressing the importance of devoting an appropriate and proportionate amount of resources with adequate expertise and experience to each phase of the process. If it is not possible or efficient to fully implement this solution in-house, banks should resort to external qualified resources (e.g. for specialized duties, such as real estate appraisals or legal advice) or outsource work-out activities to servicing companies (European Central Bank, 2017, p.24).

Another crucial variable for the implementation of strategies is information technology, which must allow efficient access to all necessary data and records, supporting the analysis and the decision-making process. In fact, in order to arrange the most appropriate handling for any feasible cluster of borrowers, the model postulates a deep knowledge of the portfolio's characteristics along with the ability to segment it with a high level of detail.

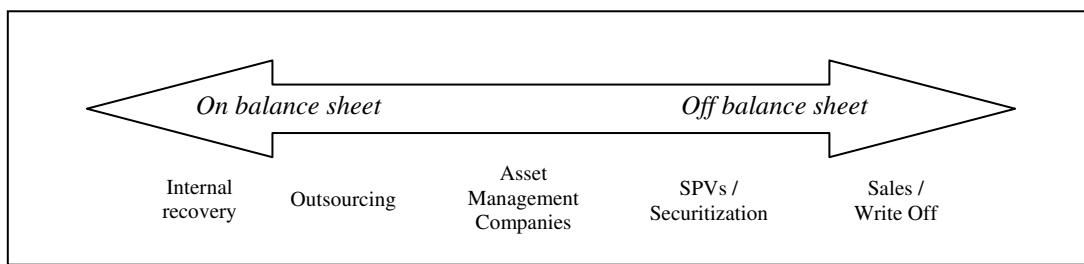
A further key factor of NPL framework is the monitoring of levels and dynamics of impaired loans on top of a systematic check of the efficacy and efficiency of work-out activities. For this purpose, banks should use a suitable set of Key Performance Indicators (KPIs). KPIs should range from measures of credit quality and loss coverage at portfolio level and for different groups of NPLs, to operational performance indicators, gauging the results and the degree of success of each type of action (European Central Bank, 2017, p. 29 et seq. and Annex 3). But monitoring should cover also performing loans with the aim of preventing the rise of new NPLs. For this purpose, banks ought to develop an "early warning system" that enables front office units to promptly identify signals of loans deterioration and perform timely actions with regard to the specific situation of the borrower facing difficulties (European Central Bank, 2017, p.36 et seq. and Annex 4). The new regulatory framework leads banks to reform their loan portfolio management approaches. This requires strategic actions on the components affecting the bank's asset quality. For this purpose, banks need to tackle two basic topics: 1. finding the best strategy mix to achieve NPL stock reduction targets in a reasonable interval of time; 2. preventing the accumulation of impaired loans. The first requirement is urgent for "High-NPL banks", while the latter is a necessity for all banks.

The following paragraph discusses the strategic options and organizational measures that banks can adopt to achieve the stock reduction goals.

4. NPL Stock Reduction Strategies

Strategic alternatives to reduce NPL stocks can be represented on an imaginary axis (Fell et al., 2016), with "internal recovery" options at one extremity and "sales/write off" at the opposite end (see figure 1). In between, we find "outsourcing" to servicers and schemes based on "asset management companies" (AMCs) or on "special purpose vehicles" (SPVs).

Internal recovery and outsourcing are "on-balance sheet" approaches, in the sense they imply keeping the loans on books, whereas "sales/write off" and securitisation through SPVs are "off balance sheet" approaches because they aim at loan derecognition (Martini et al., 2009; Grodzicki et al., 2015). AMCs may be ascribed either to "on" or to "off" balance sheet approaches, depending on their specific (decentralized or centralized) configuration and, ultimately, on the adherence of the scheme adopted by the bank to the conditions ruled by accounting principles for credit derecognition. As we will see, a "one size fits all" solution does not exist, but banks need to find the optimal mix between the available options, by selecting the most suitable strategic alternative for each NPL portfolio segment (Grodzicki et al., 2015).

Figure 1: Strategic options axis

4.1 On-Balance Sheet Strategies

On-balance sheet approaches pursue gradual recovery of NPLs over the medium/long term, through restructuring/forbearance or liquidation/foreclosure activities. However, within this strategy, a sizable distinction must be made between “passive” and “dynamic” recovery styles.

Passive recovery management is driven by an administrative/legalistic logic. Typically, there is not a clear definition of recovery targets and it lacks a performance control system. The process is run by legal offices, aided by a network of lawyers. Activities involve executing standard procedures, shaped on the basis of the requirements and the timelines stated by insolvency and debt enforcement laws. Very low is the commitment to accelerate debt resolutions, e.g. engaging in write off or out-of-court solutions. More broadly, staff are not incentivized to differentiate actions on the basis of the characteristics of the loans, which are prioritized just following a *first-in – first-out* criterion. This means that the bank does not concentrate on the activities and credits with the highest expected values.

Passive strategies are suitable only for well-secured assets and in economic upswings. Besides, their performance is strongly subject to the efficiency of legal framework.

Dynamic recovery management, on the contrary, sees NPLs as a business unit to steer with the aim of optimizing returns. Consequently, NPL recovery activities are part of the global bank’s process of strategic and operational planning. Explicit recovery targets are set and adequate investments on human and technical resources are scheduled.

In most advanced systems, internal capital should be allocated to this area in line with the bank’s risk management framework. This means that aggregate recovery targets ought to be translated into estimates of expected losses, to be covered with provisioning, and unexpected losses, to be covered with internal capital.

Operational process is run by specialized units, separated from loan origination units and dedicated to each phase of the NPL life cycle, from early arrears, to insolvency and liquidation. Moreover, borrowers with similar characteristics (e.g. belonging to the same client segment or operating in the same sector) should be grouped and managed by specialized teams.

The activities of the different units involved in this process should be driven by a decision tree leading to the most suitable solution for the specificities of the borrower. In particular, the workflow should start from a comprehensive analysis of the borrower’s financial position. The analysis should reveal if the borrower:

- Is just experiencing a temporary liquidity constraint that will be overcome in the short period possibly by means of the extension by the bank of a forbearance measure;
- Is facing a permanent downturn in operating cash flow (or in disposable income) that undermines its ability to repay the existing debt in absence of a turnaround plan, encompassing financial restructuring;
- Is definitely unable to serve the financial debts for all creditors (e.g. it is in bankruptcy, has ceased its activity, shows negative financial prospects in all possible scenarios, etc.).

Based on these results, NPL management units should apply the most appropriate approach (Carpinelli et al., 2016), choosing between: soft collection (that is phone or home collection) or short-term forbearance measure (case a); restructuring/long-term forbearance measure/out-of-court

arrangements (case b); liquidation/foreclosure (case c). The “liquidation/foreclosure approach” should also be adopted for borrowers who do not demonstrate willingness to cooperate.

The effectiveness of dynamic recovery management is strengthened by the implementation of a sound incentive system and the execution of a performance control activity on a regular basis. To that end, a useful indicator is based on NPL in-flows and out-flows net present values (see below).

$$\text{Performance Index} = \frac{\sum \frac{\text{In-flows}_t}{(1+r)^{t-t_0}} - \sum \frac{\text{Out-flows}_t}{(1+r)^{t-t_0}}}{\text{Recovery Target}}$$

where: **In-flows_t** = cash recoveries at time t; **Out-flows_t** = expenses at time t (e.g. legal costs); **t₀** = NPL management starting date; **r** = discount rate; **Recovery Target** = net book value+ add-on.

The denominator of the performance index refers to the target recovery value set at time t_0 for the work-out unit (possibly to allocate to each work-team or staff member of the unit). It is calculated on the basis of the credit's net book value, adjusted for an “add-on” that would take account of costs related to the maintenance of the NPLs on balance (capital, funding and staff expenses). The numerator of the ratio refers to the net present value at time t_0 of the cash collected up to time t, net of all recovery expenses. Therefore, a ratio's value of 1 shows the achievement of the goal, whilst values greater (lower) than 1 indicate an over-performance (under-performance).

Dynamic strategies can be performed also with recourse to external servicers. Outsourcing has several advantages. Operational costs are turned from fixes to variables (indeed, servicers remuneration is usually set in percentage of cash collected). Moreover, capacious and experienced staff of servicing companies, with the help of industrialized operational frameworks, can make up for the lack of banks' internal capabilities.

On the other hand, contracting out activities increases organizational complexity and needs coordination and control mechanisms. Besides, banks should select accurately the outsourcer and arrange proper service levels (SLA). The assessment of the servicers' quality can be thwarted by the lack of objective and analytical data about their historical performance. In these cases, “trial and error” approaches might prevail, consisting in assigning, for a short term, small groups of loans to one or more servicers, as a test before a long-term commitment.

In order to keep control of outsourced activities, banks should allocate dedicated resources or set up a specialized unit tasked with interfacing with the external supplier. Moreover, banks should define operational limits and provide for IT platforms to share information about all stages of NPL management process with the servicing company. These measures may also increase the flexibility of servicing activities, allowing the contractor to manage independently and more quickly the closing of deals with borrowers without previously being authorized by the bank.

On-balance sheet approaches can be most effectively applied to selected portfolio clusters. More specifically, large loans are better addressed using internal work-out units as the latter have some institutional knowledge of the borrower, that can be exploited to find the right strategy; in addition, the dynamic recovery management, implying a one-by-one assessment of borrowers' positions, is generally suitable for loans of a minimum size (Kliengebiel, 2000; Grodzicki et al., 2015). On the other hand, the treatment of small tickets, especially if unsecured, being simpler and more standardisable, can prove more cost-efficient if outsourced to servicing companies.

4.2 Off-Balance Sheet Strategies

“Off-balance sheet” approaches consist of carving out a share of the NPL portfolio and removing it from the bank's balance sheet, by transferring the loans' legal ownership to external entities.

The most evident advantage of these strategies is the rapidity with which they perform the clean-up of NPLs. For banks with high levels of NPLs this quickness is definitely a primary goal. However, banks must consider all impacts of these operations. In particular, a key element is the sustainability of losses arising from the NPL bid-ask spread. In fact, in the current context, the average

price offered by investors diverges materially from the book value of loans. The reasons for this difference stem from several factors. Among the most relevant can be mentioned: the different credits' valuation methods adopted by banks and investors; the primary role of capital in financial structures of investors purchasing loans (that leads to higher expected returns); the uncertainty associated with information asymmetries between sellers and potential buyers about the real quality of credits for sale (Fell et al., 2016); the higher perceived risk in dependence of structural elements of vulnerability, such as low-efficiency judicial frameworks, frictions in real estate markets, etc. (Ciavoliello et al., 2016); the characteristics of oligopsony of NPL secondary market, with a limited number of large firms dominating the market (Fell et al., 2016).

In order to manage these problems, banks should define accurately their off-balance sheet strategy. With this aim, they should: a) weigh carefully all types of constraints as well as profit & loss, capital and risk implications; b) meet the requirements of the market about loan characteristics and credit quality transparency; c) select the most appropriate technique for each portfolio clusters so as to minimize the wedge between the prices investors are willing to pay and the prices that banks can afford to sell for.

With regard to constraints and implications, NPL reduction strategies should be formulated in line with the macroeconomic forecasts, the operational framework and more general strategic directions of the bank. In particular, banks should estimate the effects of off-balance sheet strategies on income, capital and risks and make sure they are consistent with:

- dividend policies, that may pursue a given measure of pay-out ratio in order to reduce uncertainty for shareholders and provide them with a constant cash flow; these goals could be inconsistent with operating losses resulting from significant loan write offs;
- capital planning, that may aim at preserving capital buffers with respect to regulatory requirements; this target could be jeopardized by lower profitability due to losses on sales of NPLs;
- provisioning policies, that may tend to respect a minimum level of NPL coverage ratio; achieving this goal may be hindered from selling highly impaired loans.

All these variables affect the extent and timing of NPL divesture's strategies implementation.

Once quantitative objectives and the temporal profile of sales have been established, banks should pay attention to all factors that can have an effect on the performance of the strategy.

From this point of view, a golden rule is: "know your market and know your products". This statement says that banks should both understand the specificities of investors (e.g. favourite asset classes, etc.) and be aware of most granular characteristics of their own portfolio.

Depending on their specific asset allocation policy, some investors may be more interested in certain types of loans (e.g. large corporate secured), while others may require different kind of assets (e.g. retail unsecured). Knowing these distinctive features, banks can adjust the portfolio to offer to each investor on the basis of its preferences. This customisation may prove profitable in terms of higher sale prices.

The absence of sufficient data on the characteristics of NPLs hinders the accurate segmentation of portfolio and the definition of effective NPL reduction strategies. On the other hand, a lack of transparency about credit history, collateral features or legal position of the bank vis-a-vis the borrower prevents precise valuations from investors, increasing uncertainty and leading to higher risk premiums (Scannella, 2015, Fell et al., 2016, European Systemic Risk Board, 2017).

In order to cope with this problem, banks should implement adequate data warehouses and IT systems to make easily available all necessary information about loans, without the need of complex and lengthy research on paper sources. A strong contribution to the growth in clarity around NPLs may come from the creation of an NPL transaction platform, that is an electronic system entitled to collect data from banks and to disseminate them to investors after a proper quality assessment performed by an independent provider (Fell et al., 2017b).

Finally, banks should consider that market prices can vary significantly when off-balance sheet strategies are implemented through direct sales rather than through securitisation. An additional consideration, however, is that costs and time needed for arranging the two types of operations may be considerably different.

In fact, direct sale consists of transferring NPLs straight to investors against the payment of a price agreed-upon. It just implies costs related to the search of the counterparty and to the preparation of loan files and legal documentation serving the purpose of due diligence to be performed by potential buyers. However, the bid-ask spread can be very wide since the internal rate of return (IRR) of the operation coincides entirely with that required by the investor, which reflects the above-mentioned market failures. As a result, expected net cash flows are discounted at a high rate and market prices are low.

Banks, especially small ones, can improve the results of direct sale operations by joining NPL multi-originators platforms. These solutions, in fact, consist in pooling loans originated by several banks (operating in various geo-sectorial markets) with the aim of increasing the probability of matching investors' requirements by composing larger and more diversified portfolios. In addition, bargaining power may as a result be enhanced because a single dealer may be better positioned than a loose cluster of banks when negotiating with the investors.

On the other hand, securitisation schemes entail selling loans to a Special Purpose Vehicle (SPV), which funds the purchase by issuing bonds, usually divided into more classes ("tranches") with different risk-return characteristics (Fender and Mitchell, 2005; Altunbas et al., 2014). The complexity and costs of this kind of transaction can be much higher than those of direct sales because of the need to structure asset-backed securities, arrange loan servicing, solicit external ratings, etc. (Fender and Mitchell, 2005).

Moreover, the originator is often called to grant some form of credit enhancement, by retaining parts of bonds issued by the vehicle or providing to the latter financial support in adverse scenarios. In order to operate the derecognition of the transferred loans, however, banks must obey the rules stated by the accounting principles and the Basel capital requirements. In particular, IFRS 9 prescribes that all of the risks and rewards of the loans must be substantially transferred to third parties (IFRS 9, par. 3.2.6 (a), (b)). Besides, the originator must have relinquished the control of the assets (IFRS 9, par. 3.2.6, (c)).

According to Capital Requirements Regulation (Reg. (EU) No 575/2013, art. 243), credit risk is considered to have been transferred if the bank retains only less risky tranches (that is "senior" tranches), while "junior" and "mezzanine" tranches (that is categories of notes that bear the expected and unexpected losses) are sold to third parties (European Banking Authority, 2017).

Nevertheless, securitisation offers to banks the opportunity of achieving more favourable terms of trade when they perform "off-balance sheet" NPL reduction strategies. There are three ways through which these benefits operate.

First, funding the operation with the issuance of different classes of bonds enhances chances of attracting investors with different financial profiles and risk tolerance (Fell et al., 2017 a). Safer tranches may be suitable for risk averse investors, while riskier securities could be placed to specialized funds.

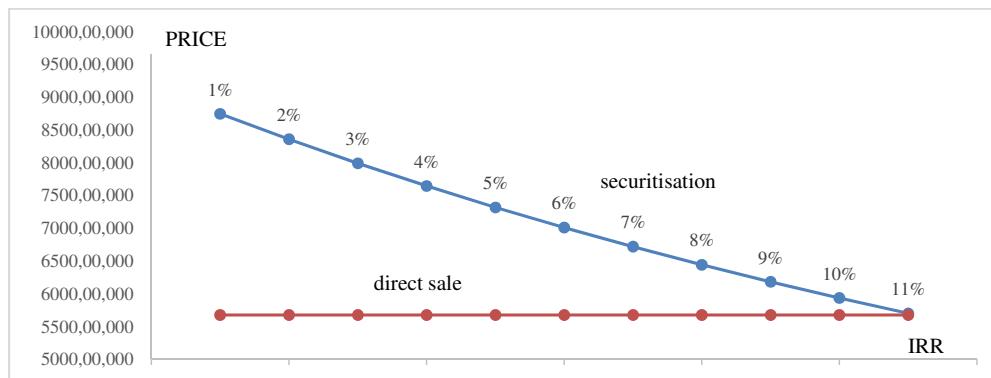
Second, structured liabilities can help address information asymmetries. Indeed, if banks hold part of the first or second loss tranches, financial community may feel more confident about the quality of the portfolio on sale and reduce the risk premiums requested (Mitchell, 2004). In order to take advantage of the last-mentioned point, banks can organize the reduction strategy into two stages: initially, they transfer NPLs to the SPV and retain junior or mezzanine notes; later, at the right moment, they can sell bonds so as to fulfil conditions for loan derecognition.

A third argument is about leverage, which can lower the aggregate internal rate of return of the securitisations. Indeed, bank strategy can be configured in such a way as to retain senior notes and sell the riskier ones to third parties. Depending on the quality of the portfolio transferred to the SPV, junior

and mezzanine components of the issuance can be reduced to a sufficiently slight percentage of the total price. If this is the case, the weight of the IRR granted to tranches placed to investors will be low. On the other hand, the IRR of senior tranches will be the main part. Since the latter is reasonably moderate, because of insulation from default, the IRR of the operation, being calculated as the weighted average of IRR of single tranches, will be significantly lower than that resulting from unleveraged sale.

To make clearer the difference between leveraged and unleveraged sale operations, let us suppose that the IRR required by a specialized fund to invest in a bank's NPL portfolio is 12%. To invest in junior and mezzanine securities backed by the same portfolio, instead, the fund requires an IRR of 18%. These tranches account for 15% of the negotiated price for the portfolio. This price is calculated as net present value of expected cash flows, discounted at IRR. For the sake of simplicity, let us assume that expected cash flows from the portfolio amount to 1 billion euro and will all be collected after 5 years. Costs related to operations are not considered. As we can see in figure 2, under these assumptions, the difference between the portfolio prices achievable with "direct sale" and "securitisation" schemes grows steadily with the decrease of senior notes' IRR.

Figure 2: NPL portfolio price with different values of securitisation senior notes' IRR - comparison with direct sale price



The fulfilment of benefits related to leveraged structures is eased when banks make use of some form of public support provided in accordance with state-aid rules (Fell et al., 2016). An example of such a public scheme is given by the Italian "Garanzia Cartolarizzazione Sofferenze (GACS)", which consists of a guarantee on credit risk of senior tranches granted under the condition that the securities have received from an ECAI (External Credit Assessment Institution) a rating equal or higher than investment grade (see law decree No. 18 of 14 February 2016). Such a State guarantee allows for the issuance of senior notes with very low rate of return (similar to government bonds' yields), increasing the price achievable from NPL securitisation. For a pan-European scheme backed by a form of public guarantee, see Bruno et al., 2017.

The costs-benefits analysis of the different available solutions to implement off-balance sheet strategies may lead banks to select:

- direct sale for small ticket unsecured loans with a high level of coverage ratio; these features allow the bank to reach two goals: reducing the economic impact of the operation, because the difference between the book value and the market value of the portfolio is minimized; getting rid of large quantities of bad loans for which internal recovery strategies are not efficiently feasible; in addition, the value of unsecured loans is more transparent because investors don't need to estimate collateral values; therefore, due diligence is easier to perform;
- securitization for medium/large loans, with an appreciable share of secured credits (e.g. 60 to 70 per cent); these features grant a sufficiently high portfolio quality to allow

financial structures with a small part of junior and mezzanine tranches and senior notes with a low rate of return.

4.3 Asset Management Companies

Banks' NPL reduction strategies can be also based on the establishment of an *Asset Management Company (AMC)*, that is a legally separated entity tasked with purchasing, managing and ultimately disposing the NPLs of one or more banks (Kliengebiel, 2000; Woo, 2000; Martini et al., 2009; Cerruti and Neyens, 2016).

Asset Management Companies can have a decentralised or centralised structure.

Decentralized AMCs, commonly named “bad banks”, are “in-house” structures to which a bank offloads NPLs (Martini et al., 2009). Such schemes have the advantage of: a) focusing the bank’s work-out resources into a single entity; b) increasing transparency on the value of the “good bank” and the magnitude of credit deterioration problem; c) fostering core bank attractiveness; d) enhancing bank strategic flexibility (e.g. easing disposal of bad bank ownership or other M&A transactions).

Centralized AMCs are typically part of a broader tool-kit of measures aimed at resolving banking system crises (Kliengebiel, 2000). Banks’ distressed assets are pooled, on a mandatory or voluntary basis, into a vehicle, usually sponsored and supported by the government. In the past, centralized AMCs have been set up in several countries to tackle NPL problem (Woo, 2000; Kliengebiel, 2000; Cerruti and Neyens, 2016; Medina Cas and Peresa, 2016).

Kliengebiel (2000) identifies two main types of such structures: restructuring agency, aimed at facilitating and speeding up loans and corporate restructuring; asset disposition vehicles, established to liquidate, over time, the assets acquired from banks with the purpose of maximising profits from sale. The use of centralized AMCs can benefit from economies of scale and give rise to synergies due to increased coordination in handling multi-originators troubled loans (Woo, 2000; European Systemic Risk Board, 2017).

Moreover, assets’ disposals can be spread over a longer period of time, preventing the negative effects of fire sales on prices (Medina Cas and Peresa, 2016). However, if loans are transferred at prices higher than book values, the scheme must comply with state-aid rules prescribed by the Treaty on the Functioning of the European Union and with criteria for asset relief measures defined by the European Commission (European Commission, 2009a, 2009 b and 2013).

A growing number of authors have proposed the setting up of a pan-european government-backed AMC, consistent with legal framework, as the main way to solve european banks’ problem with NPLs (Enria et al., 2017; Fell et al., 2017a; Avgouleas and Goodhart, 2017).

In addition to government-sponsored AMCs, banks can resort to private schemes, by affiliating in a company or in a mutual fund, appointed to buy NPLs from shareholders. An example of this solution is the “Fondo Atlante”, founded in Italy in 2016 by a cluster of banks, insurance companies and other institutional investors. It was aimed at underwriting shares of distressed banks and buying junior tranches of NPL securitizations. A former example was the “REV - Resolution Vehicle”, used in 2015 to buy NPLs from 4 Italian banks subjected to resolution plans (Bank of Italy, 2016).

AMC can be a suitable scheme for all kinds of credits, but it has major chances of success if tasked with resolving real estate loans, that can be processed with the aid of specialized tools or “auction facilitations actions” (European Systemic Risk Board, 2017).

5. Rules for NPL Reduction Strategies

In view of the policy options described in the previous paragraph, banks need to select the most suitable strategy mix to achieve NPL reduction targets. In fact, the amplitude and timing of these goals depend on the extent to which available strategies are feasible, in light of the external and internal environment (Porter, 1980).

In particular, along the lines of ECB Guidance (European Central Bank, 2017), the key factors, specific to the bank and the environment, respectively, are listed below:

- operating margins; capital buffers; coverage ratios; portfolio characteristics; internal capabilities;
- macroeconomic outlook; NPL market liquidity; legal framework efficiency; collateral market liquidity; servicing industry maturity.

To provide analytical tools to help banks model all variables involved in NPL strategic planning promises to be a daunting task, though extremely profitable.

In this work, we limit ourselves to suggest some basic rules that may support banks when they approach the definition of NPL reduction strategy. Consistently, we try to identify certain logical relationships between the variables listed above and the types of strategy (on-balance or off-balance) to be pursued. Finally, we summarize the asset classes which, in principle, could be more appropriate to each policy option.

Rule 1. Sustainability of strategies: short term reduction targets require a shared vision of affordable impacts on income, capital and coverage ratio.

As we noticed in paragraph 4, ambitious reduction targets can be pursued in the short term (that is in 12/18 months) with “off-balance sheet strategies”. Indeed, “on-balance sheet strategies” require investments in staff and IT infrastructures as well as work-out process redesign. These interventions are likely to produce their effects in the medium to long term. Outsourcing too involves defining operational details vis-a-vis the servicer company and implementing organizational changes that may lengthen the time to work at full performance.

However, off-balance sheet strategies may impact on bank income, capital or coverage ratios. In particular, selling loans whose impairment’s levels are lower than portfolio average may generate losses arising from larger differences between the price offered by investors and the book value. On the other hand, offloading loans more impaired than portfolio average may shrink bid-ask spread, but it will reduce average coverage ratio of NPLs left on-balance.

Banks should therefore draw up projections of operating profits and answer questions like the following: what is the maximum sustainable loss in light of banks’ targeted pay-out ratio? What margins are available to review the dividend policy? How could any loss be effectively communicated and justified to stakeholders?

Moreover, banks should estimate capital needs related to possible future operating losses and answer questions such as: what is the maximum sustainable capital reduction in light of banks’ targeted buffer? Within what limits may these thresholds be reconsidered? Which actions could be planned to remedy any capital shortage?

Finally, banks should model future dynamics of NPL coverage ratio also considering the impact of expected bad loans’ in-flows. On the basis of this analysis, questions to be answered are: what is the maximum sustainable decrease of the ratio in light of bank risk appetite framework? How quickly could the decline in the ratio be recovered, given the income prospects?

These investigations involve various processes, such as business planning, risk & capital management and provisioning. The matching of these different views should enable the following to be determined:

- direct sale is feasible for a given asset class (e.g. small ticket unsecured) and portfolio size;
- securitisation is sustainable for an alternative segment of portfolio (e.g. a mixture of medium/large secured/unsecured) and a minimum size;
- none of the off-balance sheet options are, in the short term, within the reach of the bank and therefore their implementation should be rescheduled on a longer time scale.

Rule 2. Consistency with the business environment: apart from sustainability, the choice between on-balance and off-balance sheet strategies as well as their timing should be based on the expected evolution of the external context.

Banks may be able to afford off-balance strategies in the short term. However, if forecasts about the evolution of external variables suggest it, banks should consider postponing implementation of these strategies.

In fact, if the macroeconomic outlook is positive, borrowers will probably be, in the foreseeable future, in a better position to pay back their debt. If demand for real estate is expected to rise, it will be easier to liquidate collaterals at fair prices. If reforms in judicial frameworks are going to be put through, time of enforcement's procedures will shorten and recovery performance will improve. If NPL market liquidity is getting better because information asymmetries are going to be mitigated (e.g. by means of transaction platforms), bid-ask spreads will shrink. As a result, NPL market prices will follow a positive trend.

If this is the case, banks will benefit from the deferment of sales and the implementation of internal recovery solutions. Obviously, this strategic decision will prove hard to support when bank NPL ratios are high in comparison to the average of the system. In these situations, pressures by supervisory authorities and other stakeholders to the rapid NPL reduction would be more intense.

On the other hand, the context described above would be best suited to schemes based on centralized AMCs. Such entities would buy NPLs at sustainable prices so as to prevent fire-sales pressures on banks. Having more time to resolve bad loans, AMCs could wait for structural reforms to take effect and postpone sales at the upswing phase of the cycle. Hence, banks should join private initiatives aimed at pooling NPLs.

Rule 3. Preservation of internal capabilities: apart from sustainability and external conditions, banks should maintain the ability to manage NPLs internally.

The problem of high-NPLs must be addressed because of negative consequences for banks' profitability and financial system stability. Nonetheless, it should represent an opportunity for banks to improve the credit process at all stages of loan life cycle. While off-balance sheet approaches are effective for the rapid disposal of NPLs, they are not suited to reinforce internal credit management ability. Moreover, in the presence of market failures, sales may involve transferring part of the NPL intrinsic value to the buyer because transactions are concluded at prices that do not reflect the real economic value of loans.

For all these reasons, banks should carefully consider adopting "on balance sheet" strategies, at least for loans with higher expected value or belonging to specific segments/asset classes (e.g. large corporate or medium/large secured).

The success of these strategies depends on the bank's ability to implement internal capabilities and define an effective operating framework, based on: specialized work-out units endowed with adequate staff; well-designed workflows; a suitable structure of incentives; a sound internal control system. Work-out resources may also be concentrated on separate entities (bad banks), whose ownership could be shared with third parties, such as servicing companies from which banks may draw managerial skills.

Finally, banks should be concerned with preventing the deterioration of credit quality by improving the origination and monitoring phases of the process. In fact, the financial crisis has highlighted risks inherent in an excessive use of originate-to-distribute model and banks should have learned the lesson about the importance of keeping control of the credit process.

Rule 4. Strategy as a dynamic system: banks should harmonize the use of different strategic options over time.

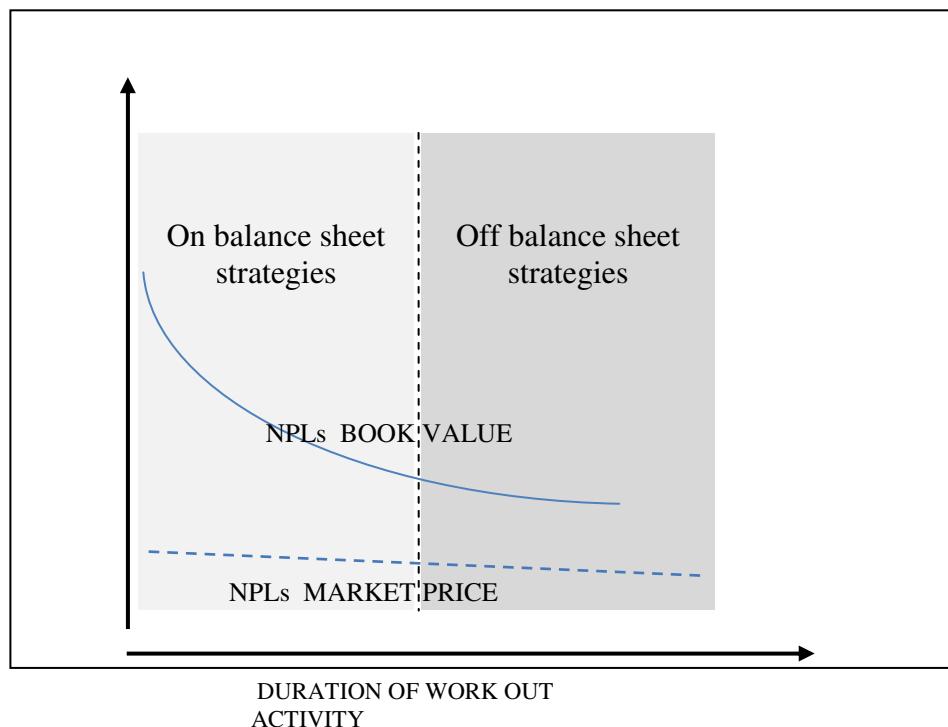
Strategy mix shouldn't be static but evolve over time in a coordinated manner. If current conditions do not allow the implementation of off-balance strategies, banks may focus on on-balance strategies and pave the way for a strategic move in the near future. In particular, this approach involves processing NPLs internally by choosing the most appropriate solution (e.g. dynamic recovery by internal work-out unit for large loans and outsourcing for small ticket). During the working cycle of each loan, banks should pay attention to adequate provisions in line with the evolution of recovery activities. More specifically, if these activities had proved totally or partially unsuccessful for a borrower, loans to the latter should have been impaired accordingly over time.

In this way, as long as the recovery process is performed, estimates of loan recovery value are refined and appropriate provisions are made in order to bring book value and market price closer to each other (see figure 3). As a consequence, on balance-sheet strategies may lead on to sustainable off-balance sheet strategies.

Other examples of such time-lapse vision of NPL reduction strategies are:

- securitisation schemes where the originator bank retains first and second losses tranches with the aim of favouring NPL transfer to the vehicle at higher prices (see paragraph 4.2); in fact, the bank postpones NPLs derecognition to a future time, when internal and external conditions make it possible to transfer junior and mezzanine tranches to third parties;
- bad banks set up to separate good assets from NPLs while waiting to sell, in full or in part, to third investors, the share owned into the capital of the aforementioned companies.

Figure 3: Book value get closer to market value over recovery time



5.1 The Variables of Strategy Planning Process and the Portfolio's Characteristics

The relationships between the variables referred to at the beginning of this paragraph, and their relevance to the strategic options, are explained below. Furthermore, a possible combination of asset classes and strategic options taking into account the characteristics of the portfolio is proposed.

The **operating margin** is a key variable for the sustainability of off-balance sheet strategies. In the presence of significant differences between NPL book value and market price, banks will need to

offset losses arising from sales with sufficient profits. Depending on forecasts about future incomes, banks should define levels of maximum bearable loss in light of internal policies and stakeholders' expectations. Similarly, **capital buffers**, that is surplus of capital vis-a-vis minimum thresholds set by the risk management framework, should be considered in the strategic decision-making process. If operating income is not thick enough, losses resulting from loan sales may erode capital resources and put at risk bank future prospects.

Coverage ratio, that is one minus the ratio of loan net book value over gross book value, is the result of bank provisioning policies and expresses the share of the loan value estimated to be non-recoverable. Since it signals the extent of NPL loss coverage, the average value of this indicator for the portfolio has great importance for risk management policies and banking supervision. Banks should therefore consider the impact of off-balance sheet strategies on coverage ratio. The higher the distance of the ratio from a targeted minimum level, the greater will be the chance to implement sustainable off-balance strategies through sales of highly impaired NPLs.

The quality of **internal capabilities**, that is internal processes, tools, staff and systems dedicated to NPL work-out activities, is a fundamental requisite for the effective implementation of on-balance strategies.

Macroeconomic outlooks are crucial both for on-balance and off-balance strategies. In fact, credit quality dynamics is correlated with economic cycle. NPLs tend to rise in downturn and to fall in upturn. These trends are modelled in business plans drafted by investors to estimate NPL market prices, resulting in higher/lower bid-ask spreads depending on the phase of the cycle.

On the other hand, the prospects of improvement/reduction in recoveries' performance may encourage/discourage banks to adopt on-balance strategies.

NPL market liquidity is a primary condition to boost loans deals and lower bid-ask spread. Then, if markets' failures were addressed, implementing off-balance strategies would be easier. Both on-balance and off-balance strategies would benefit from improvements in **legal framework efficiency**. Indeed, such enhancements would reduce the length of recovery procedures and facilitate out-of-court agreements. Internal recovery performance would ameliorate and investors' feeling of uncertainty about timing of NPL future cash flows would be mitigated, which will result in higher bid prices. Analogous arguments apply to **collateral market liquidity**. If demand for assets is scant, it will be harder to realise collaterals. This will impact on-balance strategies performances as well as NPL market prices.

Finally, **servicing industry maturity** can be decisive for off-balance strategies because servicers usually provide statistics about recovery rates of different asset classes. These analytics are used by investors to formulate business plans at the base of NPL price estimation. Moreover, independent servicers are a key component of securitisation schemes. But servicing companies also play an important role in performing on-balance strategies because they may support banks when they lack the operational capacity needed to process efficiently large quantities of NPLs.

The logical relationships described above between either on-balance or off-balance sheet strategies and most relevant variables involved in the strategic planning process are summarised in the table 1.

Table 1: Relevance of the variables on strategic options

Variables	On-balance sheet strategies	Off-balance sheet strategies
Operating margin		○
Capital buffer		○
Coverage Ratio		○
Internal capabilities	○	
Macro-economic outlook	○	
NPL market liquidity		○
Legal framework efficiency	○	○
Collateral market liquidity	○	○
Servicing industry maturity	○	○

Portfolio characteristics are also relevant for strategy options. Some segments may be more suitable than others for certain approaches. In figure 4 we summarize some possible examples of combinations within asset classes and strategies.

The rationale behind these matchings was explained in paragraph 4 and is proposed again below.

Figure 4: NPL Reduction Strategy mix for different asset classes

NPL recovery strategies <i>On balance sheet (Dynamic recovery approach)</i>	Asset class	Rationale
<i>Internal Work Out Units</i>	Large loans	<i>Concentrate efforts on more complex and promising files, performing a loan by loan analysis with the aim of: selecting viable borrowers and extending forbearance measures or defining restructuring plans; implementing auction facilitation experiments.</i>
<i>External servicers</i>	Small ticket	<i>Process loans with industrialized approach in order to shorten recovery times and maximize cash collected</i>
<i>Off balance sheet</i>		
<i>Sales</i>	Small ticket unsecured with high coverage ratio	<i>Achieve fast NPL reduction while limiting economic impact</i>
<i>Securitisation</i>	Medium/large loans secured and unsecured	<i>Maximize return structuring highly leveraged operations</i>

6. Conclusion

In this study, we analysed the main implications generated by the presence of non-performing loans in banks' portfolios. The literature on this topic has contributed to highlight which macroeconomic variables and what bank specific determinants contribute to the growth of NPLs. Banking Supervisors and Regulators have made clear the urgency of tackling the problem, providing banks with rules and practices useful to correctly identify and assess the NPLs as well as for the design of sound resolution strategies and work out processes. Nevertheless, these guidelines need to be put into practice and banks are called upon to find the right solutions in the face of their own specific situation.

Our study tried to give a contribution to this issue, by adopting the banks' point of view with the aim of providing some operational suggestion on treatment and management of NPLs. To this end, we have examined in depth the options available for the banks, characterizing them as "on-balance sheet" and "off-balance sheet" solutions.

Among the "on-balance sheet" options, we discussed the "internal recovery" solutions, stressing the difference between "passive" and "dynamic" approaches and highlighting the importance of adopting a more proactive style of management in order to get a material reduction of NPL stocks. In this field, we also scrutinized the advantages of outsourcing bad debt collection to external servicers, drawing attention to some critical points that should be overseen with an adequate organizational framework.

With regard to "off-balance sheet" solutions, we identified "direct sales" as the fastest way to get NPL reduction. On the other hand, we emphasized the need for a smart selection of asset classes to be sold as well as careful planning of the operations, in order to minimize their potential negative impact on bank profits, capital and coverage ratios. Then we showed how banks can improve the result achievable from off-balance sheet strategies using securitisation.

Last, we analysed the use of decentralised and centralised Asset Management Companies.

With the belief that there is not a unique solution suitable for all conditions, we proposed some basic rules that, in our opinion, banks should follow when setting the NPL reduction targets and selecting the most appropriate mix of options to reach them.

In particular, the first rule specifies that ambitious goals of NPL quantitative reduction in the short term should be reserved, in the current market condition, to banks with sufficiently good fundamentals in terms of profitability, capital and/or coverage ratios. Depending on their specific situation, banks should set the maximum bearable bid-ask price gap and diversify accordingly the strategic options. The second rule states that the time distribution of NPL reduction should be consistent with forecast about future evolution in macroeconomics, markets and other structural factors. The third rule claims that banks should maintain the ability to manage NPLs internally, concentrate their “internal recovery” activities on assets with the highest expected values and set an organizational framework for achieving the best possible results. The fourth rule stresses the importance of paving the way to future asset disposals, for example, by means of a dialectical relationship between the performance of recovery activities and the asset impairment.

Finally, we illustrated some basic relationships between types of strategy and the most relevant variables playing a role in the strategic planning and showed some examples of combination between asset classes and strategic options.

We envisage some possible research lines for the future:

1. to develop a more formal strategic planning model providing a decision tree for banks approaching the problem of reducing NPL stocks;
2. testing with data samples the relevance of key variables in determining the most effective strategy options;
3. to explore in greater depth the topic of preventing the rise of new NPLs, studying implementation in banks’ business process and risk management tools useful to reinforce credit selection ability and early detection of loan deterioration.

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