# A Bird Eye (Re)view of Key Readings

by José Manuel Mansilla-Fernández

This section of the journal indicates a few and briefly commented references that a non-expert reader may want to cover to obtain a first informed and broad view of the theme discussed in the current issue. These references are meant to provide an extensive, though not exhaustive, insight into the main issues of the debate. More detailed and specific references are available in each article published in the current issue.

**On the determinants of non-performing loans**

A first comprehensive investigation of NPLs in Europe is the IMF staff discussion note (2015). It provides figures for EU and the US and discusses why the secondary market for non-performing loans (NPLs hereafter) is underdeveloped in EU compared to the US market. It also illustrates the impact of NPL on growth which are more relevant for countries that rely mainly on bank financing. Many NPLs reduce profitability, increase funding costs and limit bank capital. This in turn reduces the supply of credit with negative consequences on growth.

The level of NPL were relatively stable until the beginning of the financial crisis in 2008. Afterwards, the quality of banks' portfolio has progressively declined. The response from the governments and central banks to deal with impaired bank assets, recapitalizing and / or restructuring troubled banks, and several actions to inject liquidity into the banking system was significant in

Europe and the US (Avgouleas and Goodhart, 2015, 2016).[14] Nowadays, the level of NPLs remains high and undermines the stability of the European banking sector (Aiyar et al., 2017). Unlike other industries, the impact of a failure of one bank can spread to others, causing a chain effect and jeopardizing the whole sector at home or globally (Demirguç-Kunt, 1989; Barr et al., 1994).

A wide range of reasons may have generated the NPLs problem in Europe including the economic recession, the sovereign debt crisis, government support provided to the financial institutions in the early stage of the crisis, and managerial practices of some banks (Anastasiou et al., 2016; Chiorazzo et al., 2017; Louzis et al., 2012; Jassaud and Kang, 2015; Salas and Saurina, 2002).

The European Investment Bank (2014) and IMF (2015) have shown that Euro Area banks with higher NPLs ratios lend less than other banks, ceteris paribus. Furthermore, these effects tend to affect SMEs more significantly because these firms are more dependent on bank finance. The relevance of macroeconomic dynamics reflects the endogeneity issue that undermines the identification of the adequate transmission channel of NPLs on lending supply: NPLs rise in economies and countries affected by economic stagnation, and consequently (i) creditworthiness is deteriorated and (ii) the demand for lending also tend to weaken (Accornero et al., 2017). Similarly, several studies demonstrate that both NPLs and loan loss provisions ratio -two indicators of the quality of banks' loan portfolio- have a negative correlation with bank lending supply (Balgova et al., 2016; Bending et al., 2014; Cucinelli, 2015). Importantly, deterioration of public finances places a 'ceiling' on the market evaluation of credibility of domestic banks, and therefore they are hard-pressed for liquidity (Reinhart and Rogoff, 2010). As a result, banks are unable to provide new lending and debtors cannot refinance their debts.

## On non-performing loans and moral hazard problems

A rapid credit expansion is considered as one of the most important causes of troubled loans. Agency problems between shareholders and managers may arise

14. See the issue 2016. 2 of this journal for more information about bank resolution policies implemented in Europe and the U.S.

if the formers are interested in business growth which might imply promotion, more power or better status within the organization (Williamson, 1963).

The distinctive features of the banking sector and the efforts of financial institutions to improve efficiency and risk management are found to influence the evolution of NPLs (Durán and Lozano, 2015; Zhang et al., 2016). Berger and De Young (1997) demonstrated that poor managerial skills in credit scoring, appraisal for pledged collateral, and monitoring borrowers may increase the volume of NPL in the future, the so-called *bad management hypothesis*.[15] Additionally, banks should face a trade-off between allocating resources for underwriting and monitoring loans, and measured cost efficiency. The reduction in efforts to ensure high quality loans will make banks more cost-efficient but increasing NPLs in the long term, the so-called *skimping hypothesis* (Luozis et al., 2012).[16] From the regulator's point of view, NPLs ratio is a useful indicator to measure the extent of moral hazard behaviour in order to avoid potential financial instability (Zhang et al., 2016).

Quality portfolio of banks may endogenously induce further risk-taking. Prudential banks would be more cautious when taking on increasing NPLs. However, NPLs above a threshold may incentivize banks to shift risks (Bernanke and Gelter, 1986). Thus, banks showing a higher level of troubled loan portfolio are more likely to assume higher level of risk in the future (Bowman and Malmendier, 2015; Buchner et al., forthcoming; Eisdorfer 2008; Koudstaal and Wijnbergen, 2012). Accordingly, Bruche and Llobet's (2011) theoretical model predicts that efficiency gains from having bad loans foreclosed allows banks with a relatively proportion of NPLs to gamble to increase their chances of recovery.[17]

The 'too-big-too-fail' (TBTF hereafter) banks represent another channel to origin NPLs. Under the TBTF presumption, banks are expected to increase their leverage excessively and extend loans to low quality borrowers, being subsequently affected by adverse selection problems (Stern and Feldman,

15. See Podpiera and Weill (2008) for similar results.

16. Bebchuk and Spamann (2010) and Bebchuk et al. (2010) show that the CEO's system of incentives focussed on short-term results contributed to increasing banks' risk-taking as of the beginning of the financial crisis. Similarly, Pierre (2013) remarks that the CEO's contract contributes to the excessive risk-taking higher than the social optimal level.

17. The optimal contract involves making banks with a small proportion of bank loans foreclose (Bruche and Llobet, 2011).

2004). Thus, moral hazard problems might become more relevant in case TBTF banks take advantage of their higher market power, or they expect to be bailed out in case of capital shortage (Boyd and Graham, 1998; Nier and Baumann, 2006). Consequently, bank risk-taking may be also connected to the characteristics of the government's reaction function due to banks can be members of a deposit insurance network *ex ante* to avoid depositors runs or getting bailouts from the governments, and *ex post* if deemed TBTF or 'too-many-to-fail' (Ashraf, 2017).[18]

## On the theoretical fundamentals of the proposals to deal with NPLs

The debate about government interventions to reduce the weight of NPLs in several advanced and emerging economies is still alive (Ahamed and Mallick, 2017). The creation of a pan-European bad bank or an asset management company (AMC hereafter) has been proposed as a possible solution by several voices (Goodhart and Avgouleas 2015, 2016; Enria, 2016, 2017; Hellwig, 2017). This argument is recently reinforced by Arner et al. (2017) whom demonstrate that in a context of systemic financial crisis, a combination of balance sheet restructuring and the use of AMCs to deal with NPLs is often the best choice.[19] Despite the importance of this phenomenon, the repercussions of establishing an AMC is referred in the policy literature, normally based in empirical evidence from countries which implemented previously these measures such as Spain, Ireland or China, amongst others (Arner et al., 2017; Bending et al., 2014; Zhang et al., 2016).

Luchetta and Parigi's (2016) theoretical model analyses the rational of an AMC and under which conditions it is socially acceptable. They argue that segregating legacy activities in an AMC might eliminate underinvestment, but on the other hand, it might also add value because it gambles on the resurrection of the segregated entities. This contribution explains why risk

18. Dam and Koetter (2012) shows that the expectation of a bail-out, rather than actual bail-outs, may be a precursor of moral hazard. Cukierman (2013) shows that the decision of bailing out financial institutions depends on political ideologies and considerations. Similarly, Antzoulatos and Tsoumas (2014) argue that a substantial part of the expected bail-outs is attributed to a country's institutional environment which might be associated with higher expectations of bail-outs.

19. Similar arguments are found in Hryckiewicz (2014).

transfer through the AMC is valuable for shareholders. However, risk transfer happens at the expenses of debt holders, so shareholders may segregate activities beyond the social optimal. Likewise, Shi (2004) analyses the reforms implemented in China which had registered a long-standing problem with NPLs. The argument is that during the transition period, the government allowed banks for soft-budget constraints to both state-owned enterprises and state-owned banks. Consequently, capital injections could have induced moral hazard because banks might have had incentived to make loans to troubled firms due to the government's implicit guarantees (Jiang et al., 2013).

Securitization involves the legal or economic transfer of assets or obligations by an originating institution to a third party, typically a special purpose vehicle (SPV hereafter). Later on, the SPV issues asset-back securities or other structured finance securities such as mortgage-backed securities, collateralised debt obligations or whole business securitisation, representing claims against specific assets (Agostino and Mazzuca, 2011).[20] According to the *funding hypothesis*, banks securitize in order to obtain funding channels as alternative to deposits (Greenbaum and Thakor, 1987; De Marzo, 2005; De Marzo and Duffie, 1999). Additionally, the *specialization hypothesis* predicts that banks securitize in order to increase their level of specialisation -i.e. in loan origination activities- thus increasing their economic performance. By doing so, banks decompose the traditional lending process intro more sophisticated activities of originating, servicing, guaranteeing, and funding (Greenbaum, 1986). Finally, the *regulatory capital arbitrage* (RCA hereafter) *hypothesis* argue that banks would securitize if they can achieve RCA by transferring to others their best quality assets (Calem and LaCour-Little, 2004). Agostino and Mazzuca (2011) find for an Italian sample of banks that NPLs securitization seems to have been affected to a lesser extent by a funding motivation and to have been conditioned by a specialization incentive, whereas the RCA motivation is apparently irrelevant. During an initial step, banks may have used securitization to clean up their balance sheets, thus causing operations to be collateralized mainly by NPLs. Nevertheless, banks also collateralized

20. At time of writing this note, the Italian government is in the process of creating a state-owned AMC SPV to accelerate the transfer of NPLs without violating the rules of the BBRD. Furthermore, large banks have set up AMC SPVs to dispose of NPLs off-balance sheet. The volume of these NPLs constitute 2-3 billion EUR and the advance is snail because of the NPL market was practically inexistent prior 2015 (Arner et al., 2017).

assets other than NPLs and residential mortgages demonstrating that securitization may provide an alternative to the traditional funding channels.

Recently, Bruno et al. (2016) advocate that a securitization scheme can offer interesting yields for the senior and mezzanine tranches, whilst offering simultaneously a similar price for the stock of NPLs close to the book value. Hence, the issue can be reduced to a manageable volume in two categories: (i) the loss immediately recorded by banks which might not force them to increase capital, and (ii) the risk accepted by investors of the junior tranches.

## Other policy interventions

Several recent papers (Philippon and Skreta 2012, Tirole 2012, Fuchs and Skrzypacz 2013) have clarified that public authorities can efficiently allow for a jumpstart of the market restoring confidence and liquidity. These activities can be particularly effective when buyers and sellers significantly disagree over the value of the assets to trade and related collateral. For example, subsidizing current exchanges and taxing future ones can significantly improve the mix of quality of tradable assets inducing early market entry of owners of better assets. There is in fact a tendency for good assets owners to wait for hopefully higher prices and conversely for low quality assets owners to populate the market immediately.

This adverse mix clearly depresses buyers' expectations and increases the bid-ask gap. A policy of current trade subsidies and future trade taxes may affect the intertemporal trade off, reduces the bid-ask gap and increases exchange prices, thus inducing even more trade.

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