

Avoiding Disorderly Deleveraging

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1 Introduction

A prolonged situation of financial distress, which has now lasted for almost a year, is debilitating the financial system, with the risk of a fully-fledged crisis. Some think that the worst is behind us, but it may not be so. Since June last year the market for all structured debt securities has shut down and prices have collapsed, even for senior triple-A rated tranches; credit default swaps have spiked and all spreads have widened; banks have repeatedly reported huge losses; liquidity in money markets has often dried up, with interbank rates at record levels.¹ Central banks have repeatedly intervened, also with innovative procedures, to provide the system with liquidity in unprecedented amounts. The Fed, beside cutting aggressively the policy rates, had to take long-term credit risks on its books to rescue an ailing intermediary. These interventions, while so far preventing worst case outcomes, have cured the symptoms rather than removing the underlying causes of a growing malaise. With the crisis entering its ninth month and strains becoming more acute in the first quarter of 2008, the possibility that the whole financial system may be caught in a vicious circle of falling asset prices and insolvencies has loomed large. Fears that some important financial institutions may not weather the storm², the quest for liquidity, and an increasingly jaundiced assessment of counterparty risk have on some days almost frozen the market for funding. Though the situation has somewhat eased recently, financial intermediaries are still in the process of shrinking their balance sheets, thus activating a channel of transmission of financial distress to the real economy³.

1 For a chronicle of the events in this period see European Central Bank (2007), ch. 1.2, and Federal Reserve Board (2008), part 2.

2 Since September, CDS spreads for the large US broker-dealers have increased fivefold, have tripled for US banks and doubled for European banks, though they have fallen recently.

3 'You have three vicious circles going on simultaneously. A liquidity vicious circle - in which assets prices fall, people sell and therefore prices fall more; a Keynesian vicious circle - where people's incomes go down, so they spend less, so other peoples' incomes fall and they spend less; and a credit accelerator, where economic losses cause financial problems that cause more real economic problems' (Larry Summers, as reported by the *Financial Times*, March 13, 2008).

The purpose of this Policy Insight is to examine possible solutions to these immediate and urgent problems. I shall first list the deep flaws that caused the degeneration of the new 'originate to distribute' banks' business model, and the structural reforms that are under consideration (Section 2). I shall argue that such reforms will, at best, take care of the future, but not of the present, as they cannot undo the effects of the crisis. In Section 3 I shall briefly consider these effects from the unifying perspective of a disorderly deleveraging process causing a dangerous feedback between market liquidity and funding liquidity. Section 4 is devoted to a discussion of some remedies which have been proposed to deal, respectively, with the problem of funding and with that of falling asset prices. As these remedies appear to be either insufficient or unsatisfactory, more radical interventions may be required to sever the link between market and funding illiquidity that is leading to the shrinking of banks balance sheets and possibly to a credit crunch. One has recently been adopted by the Bank of England with its Special Liquidity Scheme. In Section 5 I shall discuss this scheme and propose a bolder alternative similar in nature to the Brady plan of the 1980s.

2 Structural fault lines and medium-term remedies

It is commonly agreed that the current situation of financial turmoil is the end result of deep flaws inherent in the new business model of banks, and in its accompanying financial innovations, which developed at an accelerating pace since the early 1990s; a model in which banks would pool and securitize the credits that they originated to distribute them and transfer their risks to a myriad of investors⁴. In principle, the new model was expected to have beneficial effects on the

4 As Mario Draghi (2007) put it, 'credit is now something that is largely bought and sold on the market, rather than held for the long term on the balance sheets of financial intermediaries'. The exponential growth of the new model is documented by the following figures: issuance of selected structured credit products in the US and Europe grew from \$500 billion in 2000 to \$ 2.6 trillion in 2007 and that of all collateralized debt obligation from \$150 billion to \$1.2 trillion (International Monetary Fund, 2008).

availability and allocation of credit (by lowering the banks' capital requirements for each dollar of additional credit), on the opening of new risk-return opportunities for investors and even more on the stability of financial institutions, now enabled to shed their exposure to tail risks while concentrating on idiosyncratic credit risks.⁵ Apart from almost ritual warnings about excessive risk taking and intermediaries' exposure to counterparties, there was little perception by the market as a whole and even less by stability regulators, whom the crisis took by surprise, of the potential disruptive effects of the fault lines that were developing.

These have by now been extensively analyzed.⁶ The following is an incomplete catalogue:

- Environmental conditions, favoured by permissive monetary policies in the years following the bursting of the dot.com bubble: ample liquidity and availability of credit, low interest rates and strong growth, spurred housing investment, with a rise in real property prices that increased equity/loan ratios, while inducing investors to search for higher yields and an underpricing of risk.
- Loss of information and of monitoring on credit quality, as risks were pooled and transferred.

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- Flaws in the credit rating agencies' models and in general in all risk valuation models: biased estimates of default probabilities, based on the short history of the good years, neglect of non-linearities in situations of stress, unwarranted assumptions of low default correlations.
- Perverse incentive structure, causing a host of agency problems at all stages: origination of credit, with quantity at a premium on quality and a progressive worsening of credit quality; unreliable rating of the structured instruments, with the agencies involved in the structuring of the products to be rated; compensation schemes of bank and investment managers, paid on the

basis 'head I win, tails you lose', which encouraged excessive risk taking.

- Opaqueness and complexity of the new structured and derivative instruments, often impervious to reliable valuations and lacking liquidity in the absence of a proper secondary market.
- The unchecked growth of an unregulated 'shadow financial system', arising from a proliferation of bank-sponsored unconsolidated vehicles, supported by off-balance sheets credit enhancements and liquidity facilities that allowed banks to act covertly as highly leveraged hedge funds with a maturity mismatch between assets and liabilities.
- A deep information gap, affecting supervisors no less than market participants, as to the extent and location of risks: it came as a surprise that at least half of the credit risk that had been ostensibly transferred had directly or indirectly flown back to the banking system through conduits, SIVs, asset management entities, proprietary trading desks⁷.
- Regulatory failures, especially in the US, due both to an unsatisfactory regulatory framework⁸ and to the widespread though implicit assumption that markets could take care of the problems.

Mending those fault lines will not be an easy task. First, a fragmented system of national jurisdictions is ill suited to deal with problems arising in a global market. Though reforms implemented in one country may help (the introduction of some regulation in the origination of real estate loans and the restructuring of the regulatory framework in the US being the obvious examples⁹), most of the measures needed to rebuild a more stable

5 See among others Committee on the Global Financial System (2003), Basel Committee on Banking Supervision (2005), Greenspan (2005), Bernanke (2007), on the opportunities offered by credit market innovations to households, Duffie (2007), on the transfer of tail risk, Fabozzi and Kothari (2007). In the words of Geithner (2007), credit markets innovations "should help make markets better able to allocate capital to its highest return and better able to absorb stress".

6 See among others Buiter (2007), Bernanke (2008a), Financial Stability Forum (2008a and b), Spaventa (2007b). A thorough analysis can be found in International Monetary Fund (2008).

7 No mention can be found in the pre-crisis official literature (Basel, IMF, central banks' financial stability reports) of SIVs, conduits and the like and more in general of the round trip of the credit risk to the banking system, the major worry being the hedge funds' counterparty risk. Geithner (2007) was an optimist when he said: 'We do not have the capacity to monitor or control concentrations of leverage or risk *outside* the banking system' [italics mine].

8 In the US there are five federal deposit insurance regulators, as well as state-based supervisors on top, separate regulation of cash securities and futures, a patchwork of local regulations of real estate lending or insurance, while the regulation of (non depositary) investment banks is allocated to the SEC. In the words of Secretary Paulson (2008), 'few, if any, will defend our current balkanized system as optimal'. In the UK lack of coordination between the Bank of England and the FSA was evident in the Northern Rock case. In the Euro-area the ECB has little or no say on banking supervision. See also Spaventa (2007, a and b).

9 The Federal Reserve Board has already issued for commentary a comprehensive set of new regulations to establish new lending standards applying to all mortgage lenders. Bernanke (2008b) warns, however, that 'the effectiveness of the new regulations...will depend critically on strong enforcement'. On March 31, following the Recommendations of the President's Working Group on Financial markets, the US Treasury released a (much criticized) 'Blueprint for a Stronger Regulatory Structure'.

and resilient financial system require international agreement, which is also needed to avoid regulatory arbitrage. This is, for instance, the case for a reassessment of international reporting standards and of Basel II capital adequacy rules¹⁰; for transparency and disclosure obligations by both banks and non-bank entities; for the role of supervisory authorities in the case of non-depository banks; for a discipline of credit ratings; for the creation of a proper market infrastructure for new financial products; for the solution of some agency problems; and for a reassessment of valuation and risk models. Second, political divides on the respective role of self-imposed market discipline and regulation; the resistance of powerful lobbies; as well as the sheer technical complexity of many of the issues may slow the reform process in spite of the consensus reached at the Financial Stability Forum (2008b) on a detailed, though not exhaustive, list of recommendations¹¹.

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However, the reforms which are envisaged will, at best, take care of the future, but not of the present: they may remove some of the causes that led to the present situation, but cannot, by themselves, undo the effects that have already been produced, remove the wreckage left and insure a smooth transition¹².

3 The immediate problem: forced deleveraging and the liquidity spiral

To assess the nature of the problems and the risks which the financial system is now facing, it is useful to concentrate on the unifying feature of all that has happened since June 2007: a sudden disorderly reaction to the unprecedented growth of the financial system's leverage and (strictly related) of its exposure to perceived and unperceived risk which occurred in the past few years. The credit risk transfer model would by itself cause an increase in aggregate leverage, especially as long as the investors taking up the credit originated by the banks are more leveraged than the banks themselves. All the items in our list of fault lines have acted as multipliers of this outcome, by directly or indirectly increasing the

supply of credit, by reducing the perception of risk, or by enhancing the relative attractiveness of highly leveraged operations, by providing an incentive to setting up entities unconstrained by capital adequacy rules. Financial innovation and, in particular, the unchecked expansion of credit derivative instruments contributed to the growth of leverage in a wider sense. Though precise measures are unavailable and probably impossible, all evidence shows that this growth was phenomenal¹³.

There is a literature on the role of credit in the onset of financial crises. The causation occurs through asset price bubbles (Allen and Gale, 2007, ch. 9), the expansion of the banks' balance sheets (Adrian and Shin, 2007) and, in the reverse, through the distress selling of banks' assets ((Shim and von Peter, 2007), the shrinking of balance sheets and the mutually reinforcing link between market liquidity and funding liquidity (Brunnermeier and Pedersen, 2007). An explicit consideration of credit risk transfer, and of the ways in which risks have flown back to the banking system, would reinforce those links. In this literature crises are systemic, and not confined to an individual bank, as in earlier models of bank runs; in the words of Allen and Gale (2007), they 'are not "sunspot" phenomena', as 'they occur only when there is no other equilibrium outcome possible'; they may be triggered by a relatively minor shock¹⁴; they unfold through a forced and disorderly deleveraging process.

This is exactly what has occurred since the fall of last year. As demand for asset-backed securities has disappeared, prices have collapsed without finding a floor. Many securitisation markets have closed and, transfer having become impossible, inventories of unwanted assets have accumulated on the intermediaries' balance sheets. Banks are reporting losses which strain their capital position¹⁵. Uncertainty and diffidence persist in the assessment of counterparty risk. The loss of market liquidity affecting all classes of debt securities directly or indirectly owned by intermediaries has translated into a

10 This should include also the pro-cyclicality of present rules, as pointed out by Charles Goodhart and Avinash Persaud, *Financial Times*, 31 January 2008.

11 There are 67 recommendations, grouped under five headings, addressed to national supervisors and regulators, to their international fora, to standard setters, and to the financial industry and market participants. A similar list of needed reforms is in International Monetary Fund (2008). For a critical review of the issues at stake see Roubini (2008). On the problems of credit rating agencies see Portes (2008).

12 Moreover, as Secretary Paulson (2008) rightly notes, 'complex long-term issues should not be decided in the midst of stressful situations', lest they may 'add greater burden to a market already under strain'.

13 George Magnus, ('More is needed to unblock the arteries of credit', *Financial Times*, 24 January 2008) estimates that the amount of credit generated per 1% of GDP growth was \$1.5 for decades after 1950, rose in the following decades reaching \$3 in the 1990 and nearly \$4.50 by 2007. Between 2003 and 2007 over 70% of the \$4,500 bn increase in credit market debt was raised by issuers of asset-backed securities, US government agencies and other housing-related entities. In the past three years there has been an almost threefold increase in the average ratio of the hedge funds' leveraged to unleveraged assets. According to another estimate, the assets of banks' conduits reached \$1.4 trillion. Evidence on the rise of balance sheet leverage of global banks, as measured by the ratio of total to risk-weighted assets and by the investment to asset ratio are provided by the International Monetary Fund (2008), box 1.3. It is a fact, in any case, that the extent of leverage and risk exposure of banks, hedge funds, and other investment vehicles that came to light during the crisis was far larger than anybody - market participants as well as regulators - had realized.

14 Such was (or was thought to be) the initial wave of subprime defaults. See for instance Geithner (2007): 'as of now...there are few signs that the disruptions in [the subprime mortgage segment] of the credit markets will have a lasting impact on credit markets as a whole'. He warned however about the possibility of a 'positive feedback dynamics'.

15 According to the estimates of International Monetary Fund (2008) total banks' losses could total \$ 945 billion, lowering capital ratios by 250 points for US banks and 150 points for European banks.

sharp decline of funding liquidity, the more so because short-term debt issued on wholesale markets has become a major component of banks' funding. Distressed selling of securities by, and insolvencies of, non-bank entities exposed to steep increases in 'haircuts' and margins reinforce the feedback¹⁶. Cash has become king: those who have it hoard it. As a result, the unsecured interbank market has remained under severe strain, documented by the 3–6 month spreads and by the excess demand of central bank liquidity for longer maturities. The forced adjustment of banks' balance sheets could, in the worst case, result in a credit crunch with painful consequences on the real economy, as predicted by the financial accelerator models (Bernanke et al., 1999).

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The mutually reinforcing link between the illiquidity of banks' securitized assets, which prevents their orderly liquidation, and the shortage of funding liquidity is the driving force of the negative feedback originating from the process of deleveraging¹⁷. Are there ways to sever this link and alleviate these strains?

4 Stopping the feedback: soft options

I shall first examine some options which, whatever their merit, are in my view inadequate as they do not get to the roots of the current problem. It is useful to distinguish between those laying more emphasis on the provision of funding liquidity, and those instead dealing with the issue of market liquidity.

4.1 Funding liquidity

Emergency liquidity support

Since last fall, as the liquidity crisis has become more pervasive and more acute, central banks have progressively increased the extent and the scope of their emergency operations to provide liquidity support. The ECB was better equipped than the Fed for this purpose, as a larger number of counterparties had access to, and a much wider range of collateral was accepted for, its refinancing operations. The Fed's incremental innovations¹⁸, partly in imitation of ECB practices, have included primary dealers (and not only depository institutions) in some lending facilities, have broadened the range of eligible collateral to include investment grade debt

securities, and have extended the terms of the loans. The ECB has recently lengthened the term of its refinancing operations. The Bank of England moved later than either the ECB or the Fed, but since September has repeatedly intervened to provide liquidity on improved conditions: its Special Liquidity Scheme launched on April 21 will be considered later.

Though generous liquidity provisions on the part of central banks are essential to lower the temperature in the worst moments, they do not offer by themselves a lasting solution. As they have evolved, they have contributed to restoring some short-term liquidity to debt securities for which, under present conditions, there is no market, and hence no meaningful price: insofar as they can be pledged to obtain short-term funds (or liquid securities) from the central bank, they acquire a collateral value which depends on the haircuts applied by the lender. There are, however, obvious limits: central banks' short-term liquidity operations are only effective to overcome a *temporary* liquidity crisis; setting a collateral value of illiquid securities for official financing operations does not provide a market for them and hence does not set a floor to their market prices; the collateralized securities remain on the intermediaries' books, affecting the quality of their balance sheets. In chairman Bernanke's words (2008a), 'although...liquidity-related measures appear to have had some positive effects, such measures alone cannot fully address fundamental concerns about credit quality and valuations, nor do these actions relax the balance sheet constraints on financial institutions'.

Banks' capital

Increases of the banks' capital would relax the funding constraints and are no doubt necessary. But are they sufficient to break the liquidity spiral and are they feasible if disorderly conditions prevail? As long as market illiquidity persists and, as a consequence, asset prices cannot find a floor, injections of capital may prove inadequate only a few weeks after they have been decided. The recent experience with some large banks (e.g. Citi and UBS), where initial investors got their fingers badly burnt, explains why raising fresh capital may be a difficult task. The current crisis, moreover, affects all banks, though to a different degree. It is therefore difficult – the episode of JPMorgan and Bear Stearns being the one exception – to expect that the system as a whole can take care of its ailing members¹⁹.

In the end, relying exclusively on re-capitalization to deal with current difficulties opens the way to a plea for direct or indirect public intervention. This extreme possibility, that was not unsuccessfully pursued both in the Scandinavian banking crisis of the early 1990s, in Japan and more recently in the case of Northern Rock, should not be rejected in principle²⁰. It is fair to ask, however, if there are less intrusive and costly alternatives.

A trickier suggestion to deal with the problem of

16 As highly levered hedge funds are unable to honour margin calls in response to declining collateral values for outstanding repo financing. See Goldman Sachs (2008). For some data, see International Monetary Fund (2008), table 1.2.

17 International Monetary Fund (2008) provides an analysis of this in the current crisis.

18 See Federal Reserve Bank of New York (2008). The theoretical justification for unconventional initiatives of central banks in a situation of financial distress is provided by Mishkin (2008).

19 This makes the current situation different from both the Savings and Loans and the LTCM crises.

20 See the letters to the *Financial Times* by Keichiro Kobayashi, (January 25, 2008) and by Robert Wade (March 13, 2008).

banks' capital (as advanced especially in press commentaries) can be condensed in the following proposition: 'if you cannot find the capital you now need, be allowed to declare that you do not need it'; in more precise terms, it is proposed to allow a (temporary) relaxation of the capital adequacy rules. This proposal (similar in nature to that of relaxing accounting standards, to be examined below) would still meet the above objection of being merely a stopgap as long as conditions of market illiquidity persist. It would moreover run counter to a regulatory trend on which there is wide international agreement: raising capital requirements for structured credit products, introducing capital charges for default and event risk, strengthening the capital treatment of liquidity facilities to off-balance sheet entities (Financial Stability Forum (2008b)). A relaxation – albeit temporary – of existing rules would make the transition to a new regime more difficult and painful.

4.2 Market liquidity and asset prices

Radical disclosure and full loss recognition

In the view of the European Shadow Financial Regulatory Committee (2008), 'a complete recognition of losses as they can be valued today via a radical disclosure policy', mandated if necessary by regulators and central banks, is the key to a satisfactory solution. In the ESFRC view, the elimination of uncertainty allowed by full disclosure would revive funding liquidity in the interbank market and improve market liquidity, thereby favouring a revaluation of the safer classes of securities and commercial paper on which contagion has inflicted undeserved losses.

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Nobody would deny that full disclosure is desirable and important, even though valuation problems and the complex structure of many banks where the existence of large positions was seemingly ignored by, or out of control of, the top management complicates the problem. But here again we face the problem that, unless market liquidity is instantly restored, full disclosure of the situation at time t offers no guarantee that it will be the same at time $t+1$, as shown by the repeated write-offs undertaken by a number of banks.

Mark-to-market rules

This is a much discussed point. US GAAP (Generally Accepted Accounting Principles) and IFRS (International Financial Reporting Standards as established by the International Accounting Standards Board and adopted in Europe) require that financial products available for sale (and hence not to be held to maturity) be valued at 'fair value', marking them to market or, if there is no market, marking them to the firm's valuation model. It

has long been recognized that, while valuation at historical costs is certainly inefficient because it ignores price signals, marking to market risks adding 'a purely speculative component to price fluctuations' (Plantin and Sapra, 2004)²¹. The reason is obvious: under conditions of market illiquidity, 'fair value' as measured by market prices, or worse by an index like ABX in the case of structured credit products, is anything but fair, as it portrays a situation remote from longer term fundamentals; as such, it contributes to illiquidity through its effects on banks' balance sheets. In the words of the International Monetary Fund (2008), 'situations where firms use fair value levels to trigger decision rules, such as asset sales, may produce scenarios that both generate unnecessary realized losses...and simultaneously contribute to a downward spiral of asset prices'. It is not altogether surprising, therefore, that it has been proposed to suspend the marking-to-market rule, or at least to alleviate its effects by temporarily allowing marking to a moving longer-term average of market prices²².

Under conditions of market illiquidity, 'fair value' as measured by market prices, or worse by an index like ABX in the case of structured credit products, is anything but fair.

International standard setters will have to address the issue and revisit the fair value rule in the light of the current experience (as requested by recommendation III:6 of the Financial Stability Forum, 2008b), though it will not be easy to find an intermediate and non-arbitrary solution between the two extremes of historical costs and marking to market or to model. But bending the rules to expediency, even at times of crisis, may not be advisable for several reasons.

First, if there are problems with fair value accounting, these are symmetric. If market prices are not accepted as a standard when they move away from fundamentals this must apply not only to a negative bubble²³, but to a positive bubble as well. As a positive asset price bubble develops, marking to market inflates banks' profits and the returns of the asset management industry, to the advantage of share prices and managers' remunerations. True, the dangers to stability arise when markets are disrupted and asset prices collapse; but it should be remembered that the seeds of disruption are sown in periods of euphoria. Second, suspending fair value accounting for intermediaries would be no more than a

21 See also Adrian and Shin (2007) for the effects on the banks' balance sheets and International Monetary Fund (2008), ch. 2, with reference to the current situation.

22 See for instance Paul De Grauwe, 'Act now to stop the markets' vicious circle', *Financial Times*, 20 March 2008, the views of the CEO's of two insurance companies, as reported by Jennifer Hughes and Gillian Tett in the *Financial Times*, 14 March, 2008 and two seemingly contradictory editorial comments of the *Financial Times* of March 18 and 28.

23 As implied by the Financial Stability Forum recommendations.

cosmetic cure for their balance sheets: it would lower by magic capital requirements, but would not restore market liquidity. Third, would a temporary suspension be left to the choice of individual firms or would it be mandatory for all? In the former case, markets would not be kind to those who choose to opt out as that would signal weakness in their balance sheets. In the latter case, intermediaries in good shape would be unfairly treated, as markets would be denied the information necessary to separate wheat from the chaff. Finally, there is a problem of short-term feasibility: changes in accounting standards require international agreement and national (or Community, in the case of European Union) legislation.

5 More radical solutions

So far the task of dealing with the crisis has been left to central banks, as no other remedies appeared to be available or feasible. To allay financial distress, central banks have repeatedly supplied the system with generous amounts of liquidity. As the crisis grew worse and each intervention proved ineffective, they have followed an incremental approach, bending each time their normal procedures to the needs of the moment. Paul Volcker (2008) may be right when he notes that the Fed has taken "actions that extend to the very edge of its lawful and implied powers". Those unconventional actions however have only served the purpose of removing the constraints to the size and scope of short-term liquidity interventions – a conventional strategy. Growing awareness that this strategy was unable to remove the deep-seated causes of distress – the feedback between market and funding liquidity problems – has prompted the search for more radical pre-emptive solutions. The unpleasant alternative may otherwise be a succession of case-by-case costly and unorthodox interventions to avoid the collapse of institutions "too interconnected to fail": Bear Stearns *docet*.

Growing awareness that this strategy was unable to remove the deep-seated causes of distress – the feedback between market and funding liquidity problems – has prompted the search for more radical pre-emptive solutions.

The common purpose that should inspire any new strategy has been lucidly stated by the Bank of England (2008): as long as "there is no immediate prospect that markets in mortgage-backed securities will operate normally", "the situation will improve only if the overhang of illiquid assets on the banks' balance sheets is dealt with". To achieve this end the Bank set up, on April 21, a Special Liquidity Scheme.

5.1 The Bank of England's Special Liquidity Scheme

When the crisis was still young Buiter and Sibert (2007) were the first to argue that in the new world of securitized credit the traditional function of the central bank

as lender of last resort should be complemented by one of "market maker of last resort": when necessary, the central bank should purchase at suitably discounted prices, or accept as a collateral for financing operations with appropriate haircuts, private sector securities which markets are unwilling to trade but still possess some fundamental value.

Neither the ECB, which was already equipped to do that, nor the Fed, which has gradually moved in that direction, have gone beyond a short-term horizon. With its Special Liquidity Scheme (SLS) the Bank of England has moved almost all the way.

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The SLS (Bank of England (2008)) allows banks and building societies to swap some of their illiquid assets, including debt securities rated no less than triple A, for specially issued Treasury Bills for up to three years. Eligible securities will be valued at market prices, if available, or, if not, at a price calculated by the Bank, with haircuts for private debt securities ranging from 12-17% to 22-29%, according to the maturity and to whether or not there is an observable market price. Changes in market prices or in valuations will require re-margining. A fee will be charged for the swap operations based on the 3-month Libor spread. The credit risk will remain with the banks, so that there will be a loss for the lender only if the borrower defaults and the value of the collateral falls below that of the bills originally acquired in the operation.

The rationale of the SLS is evident. As the bills obtained in the up-to-three-year swap can be readily used to obtain funds at the ordinary repo rate, it breaks to some extent the link between the medium-term funding ability of banks and the illiquidity of their assets. While the risk of forced liquidation at fire sale prices to meet funding requirements is thus avoided, the market liquidity of the assets is on the other hand unaffected and so are the balance sheets and exposure to credit risk of the banks.

The SSL is the first bold initiative undertaken since the onset of the crisis and has the great merit of tackling explicitly the problem of the liquidity feedback in a forced deleveraging process. But is it bold enough?

The "overhang of illiquid assets on banks' balance sheets" is not quite dealt with. Banks' books will still remain burdened with (and hence banks' capital requirements be constrained by) assets which must be marked to market or to model. Contrary to what has been argued, collateral values will not set a floor to the assets' market prices, as the scheme envisages re-margining if the value of the assets pledged as security falls. The SLS thus considers market prices, if they exist, as an independent variable for setting collateral values, notwithstanding the recognized fact that in the current conditions of a negative bubble they do not reflect fun-

damentals. Downward instability may moreover occur if haircut discounted collateral values trigger a convergence process for market prices requiring repeated re-margining. When a market price does not exist, on the other hand, the Bank's independent valuation, probably based on some notion of fundamentals, will set values which may become the market price: would it not be preferable that such valuation be performed for all securities, even if there is a market price? This would allow broadening the range of eligible securities beyond those with the highest rating - a condition which, as has been observed (Buiters (2008)), is unduly restrictive.

Though the Treasury provides the bills swapped with the banks' securities, the SSL will be entirely operated by the Bank of England. The Bank claims that the scheme "will be completely ring-fenced from, and independent of, [its] money market operations". This may be the case, but it must be recognized that managing the scheme requires actions "that [are] neither natural nor comfortable for a central bank" (Volcker (2008), on the much less ambitious innovations of the Fed).

It can finally be observed that, insofar as the eligible participants are (obviously) only British institutions and eligible securities do not (obviously) include those backed by US mortgages, the SSL provides a regional solution to a global problem. Its relevance would have been far greater had it been part and parcel of a global agreement with the other major central banks.

5.2 A bolder solution

To truly get rid of the overhang of illiquid assets on the banks' balance sheets, it may be useful to revisit the successful plan launched in 1989 by the US Treasury Secretary Nicholas Brady for the purpose of dealing with the problem of emerging (mostly Latin American) countries' debt with commercial banks (Luigi Spaventa, 'How a new Brady bond could ease the strain', *Financial Times*, 11 April 2008). At a time when the 'originate to distribute - credit risk transfer' model was still in its infancy, banks' books were stuck with huge amounts of non-performing loans to those countries. With the cooperation of multilateral agencies and the US, the parties involved agreed to replace such loans with long-term 'Brady' bonds: issued at par value and a below-market yield, or at a hefty discount and market yield, they were collateralized by US Treasury securities of corresponding maturities purchased by the issuers and held in escrow at the Federal Reserve (Salomon SmithBarney, 2000). With an issuance surpassing at peak \$150 billion and with traded volumes nearing \$2,500 billion in some years, the Brady bond market became the largest and most liquid segment of the emerging market asset class, allowing banks to diversify away the sovereign risk on their books. Before gradually losing importance at the turn of the century, as under much improved conditions the issuance ceased and the bonds outstanding were bought back or exchanged, the Brady initiative had achieved its objective.

Perhaps we could take a leaf from that experiment to deal with the present situation. The common element is the presence of illiquid assets in the banks' balance sheets. The difference is that now those assets are secu-

ritized pools of myriads of credits originated somewhere within the banking system, so that a workout between precisely identified counterparties, as in the Brady case, is inconceivable. Some form of public intervention would therefore be required to solve coordination problems.

...it may be useful to revisit the successful plan launched in 1989 by the US Treasury Secretary Nicholas Brady for the purpose of dealing with the problem of emerging (mostly Latin American) countries' debt with commercial banks.

Outright purchase of the illiquid credit-based securities in the banks' portfolio would be neither desirable nor necessary. A publicly sponsored entity could instead be mandated to issue guaranteed bonds to be offered to banks in exchange for (and with the same maturity as) those assets. This offer should obviously be confined to securities with a reasonably low default probability. Their valuation should not necessarily rely on market prices or indexes representing the conditions of an illiquid market. It should rather be based on some 'common template' based on discounted cash flows and default probabilities (as the Bank of England will do when accepting as collateral securities for which there is no market price). There would be a haircut which, as in the Brady case, could take the form of a discount or of a low yield.

The new entity would keep the acquired securities to maturity, unless they can be mobilized earlier: if appropriately valued, its portfolio should be sufficient to service the new bonds. The guarantee should be enhanced by either an adequate capitalization, provided by central banks or by Treasuries or (as in Brady) by pledging for the purpose government securities in the required amount. In this scheme central banks would be truly ring-fenced as its operations would be managed by a separate entity. Ideally, such entity would not be regional but have a multilateral nature, possibly sponsored by a multilateral organization.

As a firm floor is set to valuation and illiquid assets otherwise running to waste are replaced by eminently liquid Brady-style bonds, funding difficulties and, at the same time, the market liquidity problems besetting the banks' balance sheets would be removed. It will be objected that in this way banks, unlike in the Bank of England's SLS, would be relieved of the credit risk on the securities replaced by the new bonds and thus left off the hook. The answer is that appropriate independent valuation and haircuts should take care of the problem. In the Brady case the banks accepting bonds in exchange for their credits were adequately penalized: they had to expose relevant losses, but at least their balance sheet position regarding the unperforming loans was finally settled. Shielding the banks' assets from the vagaries of disorderly markets (something the SLS does not do) is a necessary condition to dispel the uncertainty which prevents a proper working of credit markets.

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