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Working Paper

2008-23

Northern Rock: The anatomy of a crisis – the prudential lessons

Sonia Ondo-Ndong
Laurence Scialom

UMR 7166 CNRS

Université Paris X-Nanterre
Maison Max Weber (bâtiments K et G)
200, Avenue de la République
92001 NANTERRE CEDEX

Tél et Fax : 33.(0)1.40.97.59.07
Email : secretariat-economix@u-paris10.fr

Université Paris X Nanterre

Northern Rock: The anatomy of a crisis –the prudential lessons [1]

Sonia Ondo Ndong [2] and Laurence Scialom[3]:

In September 2007, the UK experienced its first bank run in over 100 years when Northern Rock encountered funding problems in rolling over its short-term debt. The bank's profile just before the crisis can be roughly described as that of an establishment primarily engaged in property finance activities: residential mortgage loans, commercial lending, personal loans and insurance distribution. The group's lending activities mainly concerned the UK whereas funding activities were carried out more globally. Residential mortgage loans were the core of its business and accounted for about 77% of total assets (Datamonitor, Company Profile, September 2007).

This paper attempts to analyse the main characteristics of the Northern Rock crisis and the responses of the Bank of England as lender of last resort. On the basis of the diagnosis about the causes and the handling of this banking crisis we detect the shortcomings prevailing in the UK prudential device. We therefore try to draw the prudential lessons of this experience. As we cannot claim to present an exhaustive picture of the crisis's implications from a prudential point of view, we chose to focus instead on the points with practical significance far beyond the UK's case. That is why, despite the many criticisms already levelled at the Memorandum of Understanding, we do not analyse the deficiencies of the Tripartite arrangements between the Treasury, the Bank of England and the Financial Services Authority because it seems too specific to the UK.

The anatomy of a crisis

An extreme business model lies at the root of the Northern Rock debacle

Northern Rock was originally a building society which demutualised in October 1997 and became a public limited company. This status change marked a radical change in the company's strategy. From late 1997 to the end of 2006, its consolidated balance sheet increased more than sixfold. Mr Applegarth, the bank's Chief Executive Officer says that

[1] Presented at the North American Economic and Financial Association Conference, June 30 – July 1, Honolulu.
[2] PhD student
[3] Professor of Economics, University of Paris Ouest La Défense, EconomiX, Batiment K, 200 avenue de la république, 92001 Nanterre cedex, France
Laurence.scialom@u-paris10.fr

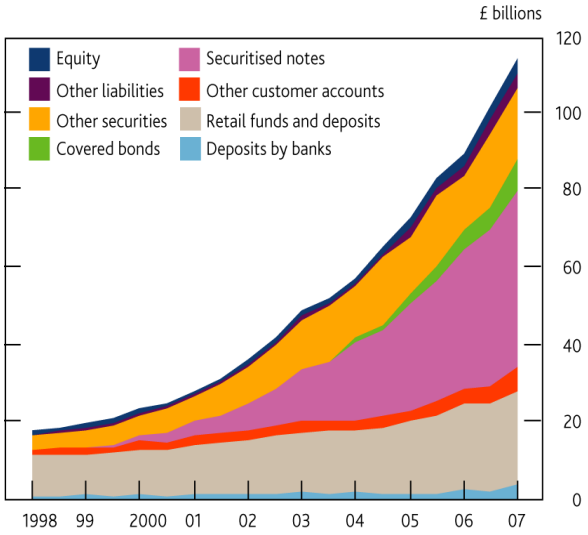
Northern Rock's assets increased "by 20% plus or minus 5% for the last 17 years" (Treasury Committee Report 2008).

In order to sustain high growth in its assets, the bank changed the structure of its liabilities. In 1999, it indeed adopted an "originate and distribute model" whereby the bank originates loans or purchases them from specialized brokers and transfers them to a Special Purpose Vehicle (SVP) which then packages them into collateralized debt obligations (CDOs) for sale to other investors. "Granite", the Northern Rock's Vehicle was located in Jersey and provided around 50% of Northern Rock funding (securitized notes).

In order to meet its growth funding needs, Northern Rock turned to covered bonds as a new funding strategy in 2004. This type of securitization uses Limited Liability Partnership (LLP) rather than a Special Purpose Vehicle to fund assets and transfer risks. With this new financial method, the bank still holds the assets (as opposed to with SVP) and issues the covered bonds which are secured against them. For the investors, the advantage of such a financial product is linked with the fact that the LLP only comes into force in the case of default of the bank that has issued the covered bonds. So it is a more secure investment.

The counterpart of this rapid and huge growth in wholesale funding was a parallel decrease in the ratio of retail deposits in its funding. Thus, as a proportion of the total liabilities and equity, retail deposits and funds declined from 62.7%in late 1997 to 22.4% at the end of 2006.

Chart 1: Northern Rock: balance sheet growth and liability structure-June 1998 to June 2007.



Source: Bank of England, 2007, Financial Stability Report, October 25, issue 22

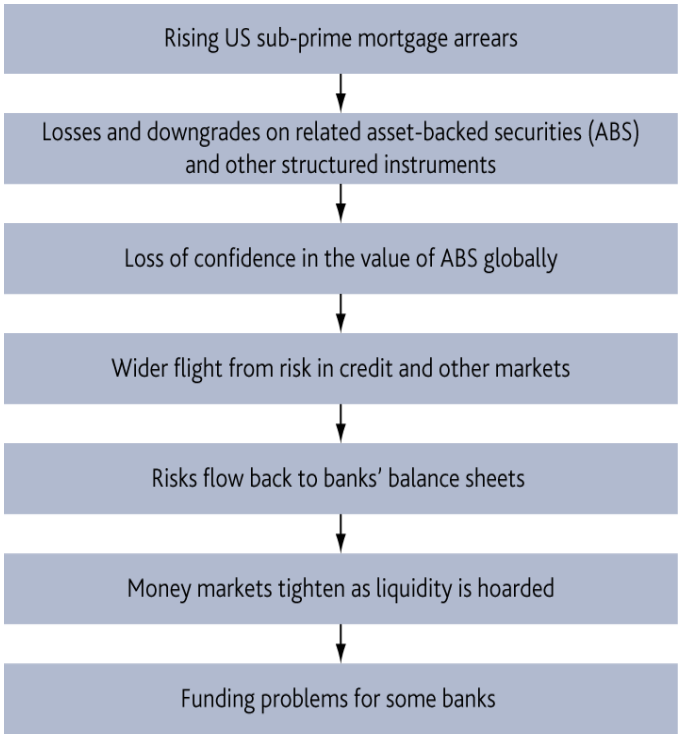
For the banking establishments that adopted it, one of the main advantages of the "originate and distribute" model is that in accordance with bank capital regulation, it allows bank to save capital, increase their lending portfolios and thus sustain profitability. Yet, at the same time, securitisation tends to reduce the bank's incentives to screening and monitoring borrowers. So while securitisation spreads risk, it also has a tendency to raise it. Theoretically, when a bank transfers loans off-balance-sheet, it will assume a loss of reputation if it fails to monitor those loans correctly or if it systematically overstates their quality. Investors who buy non-performing CDOs will blame the bank that has set up the Special Purpose Vehicle. In fact, this reputation mechanism proves inefficient in offsetting the weakening of the incentives associated with the securitisation of loans.

In its response to the Treasury Committee's inquiry, the Building Society Association states that by relinquishing its Building Society Status, Northern Rock conduced to the permissive condition that allowed the adoption of its extreme business model. Indeed, the 1986 Building Society Act requires all Building Societies to attract at least 50% of their funding from members (essentially from the retail market). In practice, the wholesale funding of Building Societies in the UK is around 25 to 30 %.

The Northern Rock debacle is therefore entirely due to the extreme business model of a mortgage bank which mainly funded its loan book on the wholesale market rather than from retail deposits and consequently created strong vulnerability to the market's liquidity squeeze. Securitisation at Northern Rock funded very fast growth lending. In the first half of 2007 lending went up 31% compared to the same period in 2006. The quality of the Northern Rock's loan book obviously became a cause of concern – more specifically with regard to the quality of the lending that underpinned its excessive growth in early 2007- which probably contributed to the strong rationing it faced in obtaining wholesale funding in August. The similarity between the business model of the American subprime lenders and that of Northern Rock is of course one of the main reasons for Northern Rock's collapse. Northern Rock had been a self-designated victim of the subprime crisis and of the subsequent rise in uncertainty which caused an extended period of illiquidity. Indeed, The US subprime crisis was initially a credit shock not a liquidity event. It quickly brought into question the value of a number of asset-backed securities and the related structured-credit products held by a number of financial institutions around the world. The uncertainty was partly due to the inherent structure of securitisation which meant that the holders of assets-backed securities were not party to the information about loan quality and the default rates to which the institutions

which originated the loans had access. This uncertainty gave rise to market illiquidity in these financial instruments and then to funding illiquidity because of the way they were being financed. The timing of the liquidity freeze was disastrous for Northern Rock which was low on cash since its last securitisation had occurred in May and it was planning another in September. Yet, even with better timing, the exceptional length of this liquidity squeeze would have cause funding problems for Northern Rock.

Chart 2: The phases of the crisis.



Source: Bank of England, 2007, Financial Stability Report, October 25, issue 22

Despite several warning signals on the vulnerability of Northern Rock prior to its problems, its aggressive strategy of expanding its market share could be interpreted as a too risky behaviour it resulted in the fall in its share price after the profits warning issued in late June 2007. Yet, the FSA remained passive in the face of the situation.

Chart 3: Northern Rock closing share price, January 1997 to September 2007

Source: Treasury Committee Report « Run on the Rock », january 2008

More importantly, the FSA not only ignored these alarming signals, but on 29 June 2007 it granted Northern Rock a Basel 2 waiver which authorized it to adopt an advanced approach to manage its credit risk. In fact, Northern Rock carried out all the stress testing exercices on which the bank and the FSA had agreed in the first half of 2007. Obviously, the possibility that the bank's funding sources could all dry up at the same time was not one of the considered scenarios… The implementation of advanced approach permitted it to use its own estimation of probability of default, loss given default, exposure at default, and make its own calculation of effective maturity to meet capital minimum standards. The savings in capital provided by this advanced approach allowed Northern Rock to increase its interim dividend by 30.3%.

Crisis management by the Tripartite Authorities

Until late July 2007, Northern Rock remained unaffected by the US subprime problems. Its rapid growth and its dependency on wholesale market funding had little impact on the market's perceptions of its risk as a counterpart, measured by its CDS spread. As previously observed, while Northern Rock's credit spread remained stable, its share price experienced a sharp decline from early 2007.

One major surprise in the summer of the 2007 financial turmoil was the amplitude and the rapidity of its transmission to the very "core" of the financial system, i.e. the inter-bank

market. Two key events triggered the liquidity crunch and the market disruption of August 2007.

On August 2nd, it became public that the IKB's (a German regional bank) financial situation was greatly deteriorated by its US subprime loans' exposure. One week later, on August 9th, BNP Paribas announced that the quotation of three of its funds needed to be suspended for similar reasons. Following those public disclosures, the inter-bank market came under extreme strain. Northern Rock's CDS spread began to rise while its share price weakened further.

The global deterioration in credit and money market conditions had been closely monitored by the Tripartite Authorities. Indeed, in the UK, financial stability is to be achieved through a Memorandum of Understanding (MoU) which establishes a framework for cooperation between the Treasury, the Bank of England and the FSA. This MoU sets out the role of each authority and codifies how they have to work together. So, this Tripartite arrangement is based on the division of responsibilities between the Bank of England which, has to contribute to the preservation of the financial system's stability as a whole., the Financial Services Authority is endowed with the responsibility of authorising and supervising individual banks since the 2000 Financial Services and Markets Act, while the HM Treasury is responsible for the institutional structure of the financial regulatory system.

The main problem with this arrangement is the partition between the supervision (FSA) and the Lender of Last Resort functions (BoE).

According to the Treasury's Committee Report, between 10 August and mid-September, Northern Rock and the Tripartite Authorities essentially implemented a threefold strategy to alleviate the financial difficulties faced by Northern Rock.

The three options pursued were as follows:

- Northern Rock tried to resolve its liquidity shortage by its own actions in short-term money markets and by securitising its debt
- Northern Rock tried to favour a takeover by a major retail bank
- Northern Rock received a support facility from the Bank of England guaranteed by the government.

The three options were highly intertwined.

The first option during the period from August to 10 September aimed to resolve the Northern Rock liquidity crisis through the short term money markets. The underlying idea was that the Bank of England's money market operations might restore liquidity in the short-term markets and thus helped Northern Rock to liquify its assets through securitization. In August, just to

alleviate their liquidity problems, banks asked the Bank of England to modify the characteristics of its liquidity injections. They pleaded for central bank's lending at longer maturities, to avoid the penalty rate and/or an increase of the range in the collateral at which it accepted to lend.

On 12 September 2007, the Bank of England refused these requests. The decision was justified by two main arguments. On the one hand, the money market reform's objectives had been to give the banking system more flexibility in managing their liquidity and therefore improve the ability of the Bank of England to inject liquidity into the banking system in both normal and stress conditions. So, according to the Bank of England, the banking system should eventually be able to build up liquidity in those markets. More precisely, with the reform of the UK's money market operations, banks set their own reserve targets each month, at the beginning of the maintenance period. The Bank of England then supplies the reserves requested by the banking system as a whole. The objective is to allow banks to deal with their own day-to-day liquidity needs and to supply in aggregate the banks' demand for reserves so as to keep the overnight interest rate close to the Bank rate set by the Monetary Policy Committee. So, if an individual bank has misjudged its reserve target and finally needs additional liquidity, it can obtain it through standing facilities against eligible collateral at a penalty rate of 1% above the Bank rate. On the other hand, the refusal to agree with the banks' suggestions is justified by the moral hazard generated by such softening of the Bank's operational liquidity injection conditions.

Consequently, the Bank of England decided first to intervene in the markets by injecting liquidity but only in the overnight interbank market. More precisely, the Bank of England proposed to provide banks with liquidity during the maintenance period [4] which started on 6 September 2007.

Such a lack of reactivity and adaptation to the new market conditions can be interpreted as a policy mistake. Indeed, the Bank of England's collateral requirements were stricter than those of the Fed and the European Central Bank's. Thus, by only accepting UK government, European Economic Area government securities or, a few international organisations' debt like the World Bank's, and under special circumstances, US treasury bonds in exchange of liquidity provision, the Bank of England, in reality, merely accepted to lend against securities that were already liquid. Concerning Northern Rock, this intervention through the

[4] The maintenance periods run from one monetary policy committee meeting to the next. In order to obtain additional funding during this maintenance period, banks have to use the "standing facilities" which allow them to borrow all they need against an eligible collateral but at a penalty rate of 1% above the Bank of England's rate.

maintenance period proved inefficient because Northern Rock had very little collateral eligible by the Bank of England. Thus, the Bank of England strict collateral policy prevented Northern Rock from resolving or even mitigating the problems which affected it. To overcome the liquidity squeeze, the Bank of England ought to lend against illiquid collateral and for longer periods through its discount window or maintenance period.

The contrast between the Bank of England inertial behaviour and the reactivity of the other central banks is impressive. Thus, on 17 August, the Federal Reserve changed its usual practices and allowed the "provision of term financing for as long as 30 days, renewable by the borrower". Moreover, the Board approved a 50 basis point reduction in the primary credit rate to narrow the spread between the primary credit rate and the Federal Open Market Committee's target federal funds rate to 50 basis points. These changes were presented as "designed to provide depositories with greater assurance about the cost and availability of funding" (Board of Governors of the Federal Reserve System, Press release, august 17, 2007). Meanwhile, the European Central Bank modified the time pattern of its supply of funds to overcome the tensions that then occurred in the euro money market. Furthermore, in response to the unusually high spreads in the euro market between the overnight rate and the ECB's policy rate, the ECB reinforced its supply of credit for the August maintenance period and thus injected €94.8 billion on 9 August. This option, in association with other operations, allowed the return of overnight rates to the policy rate in the following weeks.

So, contrary to other central banks which adapted their interventions on money markets to the exceptional dysfunctioning of the inter-bank markets caused by a sharp crisis of confidence, the Bank of England did not adopt emergency measures and refused to meet money demands.

Concurrently, a solution involving the private sector was being considered. Thus, between16 August and 10 September, Northern Rock, began discussions with potential acquirers with the assistance of the FSA.

But, as markets' turmoil was going on -for an unspecified period of time- and since Northern Rock suffered from an enormous lack of liquidity, all the offers received requested financial support. In regard of its official mission to fight against moral hazard, the Tripartite Authorities refused to grant it. For instance, Lloyds TSB, a major retail bank asked the Bank of England for £30 billion loan without penalty rate for two years to take over Northern Rock. Such a request was justified by the £113.5 billion needed to finance Northern Rock's balance sheet in consideration of the reputation prejudice which would have generated losses for the potential acquirer (*Financial Times*, 26 October).

Among the reasons against financial support to a potential acquirer, the Tripartite Authorities argued that it could not be granted to a private retail bank because it would be considered as State aid which is forbidden under the European Community's competition law.

Nevertheless, it must be observed that the relative slowness of the takeover process was also an obstacle to the success of the private option. In the takeover process of a quoted bank, it is legal that the authorities in charge of the operation give shareholders enough time so theycan consider various offers. During this period, the bank is exposed to the depositors' suspicion which can worsen its difficulties. This is partly due to the non-existence of a special insolvency regime dedicated to the treatment of weak bank in the UK.

Given the lack of repurchase proposals, Northern Rock ceased its search for a potential acquirer on 10 September.

On 13 September, noting the failure of the two previous rescue options for Northern Rock and considering that there was a risk of contagion to the whole banking system, the Chancellor of the Exchequer decided to grant Northern Rock a liquidity support facility. This emergency liquidity support was perceived as necessary to avoid other banks depositors to lose confidence in the banking system as a whole. In keeping with the Bagehot's classic doctrine of Lender of Last Resort, Mervyn King, the Governor of the Bank of England, wrote to the Treasury Committee on 12 September 2007: "Central banks, in their traditional lender of last resort (LOLR) role can lend "against good collateral at a penalty rate" to an individual bank facing temporary liquidity problems, but that is otherwise regarded as solvent."

The Liquidity Support Facility was closely related to this conception of lender of last resort. Indeed, it consisted in providing liquidity to Northern Rock against a range of collateral wider than that defined in the standing facilities so the bank could fund its operations during the turmoil period in financial markets, although always at a penalty rate. The penalty rate was justified by moral hazard, as it was supposed to induce a more cautious behaviour in the bank's management of its liquidity risks in the future. The exact terms on which this financial support was made available, or the method for valuing the collateral were never disclosed.

On 13 September, namely prior to the Bank of England's official announcement on 14 September, rumours about the emergency liquidity support facility to Northern Rock started to spread in the markets and the BBC commented on the operation. This premature disclosure of the Bank of England's support stigmatized Northern Rock. Its depositors perceived the emergency liquidity facility as a confession of the bank's dramatic financial situation and it was not viewed as mere support to a solvent institution facing a liquidity problem. Poor communication worsened the situation and contributed to the bank's stigmatisation.

The deficiencies of the United Kingdom's Deposit Insurance Scheme (see part 2) added to the stigmatisation process triggered of a run on Northern Rock's deposits between Friday 14 September and Monday 17 September. During this run more than £2 billion of assets were withdrawn from the bank. The run exacerbated Northern Rock's difficulties and overcame all its efforts to consolidate and redress the situation.

Mervyn King, in his testimony to the Treasury Select Committee (20 September 2007) said that he would have preferred to grant covert aid to Northern Rock without the public being aware of the Bank's intervention but that would have been illegal because of the 2004 Market Abuse Directive (MAD) which acted as a barrier to covert support operations.

Indeed, Northern Rock was supposed -as all listed companies- to conform to MAD's article 6 which provides that member states ensure that issuers of financial instruments inform the public as soon as possible of all inside information of direct concern to them, and that was indeed the case with the emergency liquidity support. Nevertheless, article 6 also states that "an issuer may under his own responsibility delay the public disclosure of inside information…so as not to prejudice his legitimate interest provided that such omission would not be likely to mislead the public and provided that the issuer is able to ensure the confidentiality of that information". This means that MAD gives flexibility to cope with exceptional circumstances. It was all a matter of interpretation.

In order to stop the bank run, the Chancellor of the Exchequer announced the provision of a government guarantee on Northern Rock's deposits on Monday 17 September. This guarantee referred to "all existing deposits at Northern Rock" and was set for the duration of "the current instability in financial markets".

The guarantee's announcement provided Northern Rock with £20 billion of emergency funding so the bank could meet its liabilities and put an end to the run.

After the bailout, Northern Rock engaged in negotiations with private potential acquirers including JC Flowers, Citigroup and the Virgin group. These negotiations were unsuccessful. So, on 17 February 2008, the British government decided to nationalize the bank as it officially claimed it felt obliged to protect British taxpayers'interests.

According to Willem Buiter[5], until Northern Rock's "nationalization", the Bank of England lent the bank about £25 billion through the Liquidity Support Facility and the government's total exposure to Northern Rock was at the time of nationalization in the order of £60 billion. This amount includes the government's guarantee on all retail deposits but also that on

[5] http://blogs.ft.com/maverecon/2008/02/immoral-hazard-and-northern-rock/

wholesale deposits and on most of the unsecured debt other than subordinated debt and other hybrid capital instruments.

The prudential lessons

Northern Rock has been an archetypal case of the drift of the "originate to distribute" model. In the extreme case of Northern Rock, for one pound in collected deposits, 3 pounds were lent, so on the liability side, Northern Rock was hugely exposed to the risk of disruption in wholesale markets. Conversely, in the traditional "originate and hold" banking model, banks transform, extend maturity and create liquidity: banks' liabilities are short term and mainly comprise deposits which are repayable at par on demand whereas their assets are longer term and largely non-marketable. This last characteristic is directly linked with the highly private information contents of bank loans compared to market financing[6]. That is why bank assets are widely perceived as more opaque than those of most non-bank firms. In normal times, the association of these two banks' balance-sheet features does not generate problems but if there is a weakening of confidence in the bank's ability to meet its payments obligations, it can cause a massive withdrawal of deposits (conversion to cash or transfer to other banks) and hence a liquidity problem with the difficulty of selling off assets at a "normal price" (fire sales) and it may also threaten the bank's solvency. As we already know, deposit insurance constitutes a solution to protect small depositors and avoid bank runs (Diamond and Dybvig, 1983).

The shortcomings of the UK Deposit Insurance Scheme

Paradoxically, despite a weak dependence of the Northern Rock financing model on deposits collection, the liquidity problem faced by the bank not only took the form of a drying up of market financing but it also materialized as a bank run, even though the mere existence of a deposit insurance scheme is theoretically sufficient to prevent such a bank run. This episode reveals that the UK's deposit insurance arrangements - which have been in place since 1982 and revised in 2001 with the creation of the Financial Service Compensation Scheme (FSCS)- were not properly designed. They did not prevent the formation of long queues outside Northern Rock branches. What were the structuring problems of this Deposit Insurance Scheme?

[6] The contents of private information on loans is massively weakened in the "originate and distribute" model

Prior to 1 October 2007, the FSCS would cover 100% of the first £2000 of deposits but only 90% of the next £33000. Therefore, UK deposit insurance only pays out a maximum of £31700 to any one individual with a protected claim. This co-insurance device was initially adopted after the collapse of BBCI in 1992 [7]. The idea that a person insured should share some of the risk is very common in general insurance contracts. The rationale for the mechanism in deposit insurance schemes is to create incentives so depositors monitor their banks. It is therefore conceived as a principle for a reduction in moral hazard on the depositors'part. Nevertheless compared to other creditors, small depositors need stronger protection because a large proportion of them have limited financial means and expertise. If we admit the lack of small depositors' means and skills to efficiently assess the financial strength of their banks, the rationale for co-insurance disappears. Indeed, co-insurance is a mechanism adapted to insurance contracts whereby the individual bearing the deductible can reduce the risk and so the probability to lose money, because of a change in his behaviour. That is typically not the case for small depositors. In that instance, it was just an incentive to run. Moreover as underlined by A Campbell and D Singh (2007), co-insurance also presents an added problem, namely that many depositors will not have their claims paid in full and will therefore continue to be creditors of the failed bank. In case of liquidation, these residual depositors'claims will complicate and increase the costs of the winding up process.

In the European Union, the Deposit Guarantee Scheme Directive (DGSD) provides the basic framework for the structure of how deposit insurance guarantees have to be designed, it permits but not requires co-insurance of liabilities. Several European countries' deposit insurance schemes integrate co-insurance mechanisms (like Ireland, the Czech Republic, Poland and the Slovak Republic). The Northern Rock experience pleads in favour of a modification of the DGSD prohibiting co-insurance scheme.

As previously observed, small UK depositors could suffer losses in the value of their deposits (credit losses) because of co-insurance[8], but they can also suffer liquidity losses because they do not have access to their deposits until the winding up of the judicial process. So, it could take months if not years until the depositors of large failed institutions can be reimbursed. As shown by R Eisenbeis and G Kaufman (2006), the delayed access to or the freezing of deposit accounts could be assimilated to a forced transformation of demand and short term deposits into longer-term deposits or even bonds. The inability to promptly mobilize deposits to make

[7] Initially the level of co-insurance was substantially higher, only 75% of qualifying deposits were guaranteed up to £20000.

[8] These credit losses could be transformed into liquidity losses if at the end of the winding up process depositors were fully reimbursed.

payments constitutes a great source of inefficiency in the payment system. Liquidity losses for depositors may be strongly reduced or even eliminated by appropriate provision in the banks' bankruptcy regime. We have to note that under EU legislation, compensation to depositors should be made within at least 90 days, an extension to 6 months is tolerated in exceptional circumstances. So, once again DGSD could be analysed as insufficiently constraining.

Even with a high level of compensation and without co-insurance, it would still be rational for depositors to withdraw their deposits from a financial distressed bank if there were strong uncertainty about repayment delays.

The funding model of the UK Deposit Insurance Scheme also has to be discussed. Indeed, an inadequate funding system can lead to increased delays in resolving failed banks and to a loss of credibility in the deposit Insurance Arrangements. There are two polar cases for funding arrangements: ex ante or ex post funding[9]. Ex –post or "pay as you go" funding requires member banks to pay premiums only after a failure. The motivation for such a funding device is to stimulate inter-bank monitoring. Nevertheless it presents strong disadvantages: it limits the ability of the Deposit Insurance to promptly pay out insured depositors and it is pro-cyclical because it levies contributions precisely at the time when banks experience a period of financial distress and suffer tighter capital constraints. Moreover, failed banks do not contribute to the cost of deposit insurance. On the contrary, ex-ante funding refers to the accumulation of reserve prior to the distress episode[10]. It could be designed in such a way so as to smooth out the amount of premiums paid by banks over the course of the business cycle and could thus alleviate the pro-cyclical problems previously underlined. Furthermore, all the member banks participate to the funding, including those that subsequently fail. The Financial Services Compensation Scheme has been referred to as ex-post funding. During the course of the Treasury Committee inquiry (2008) [11], the British Bankers' Association (BBA) and the Building Societies' Association (BSA) recognised that the FSCS was designed to deal with losses of up to £4 billion. Therefore, if a bank or Building Society were to fail and the potential losses to depositors exceeded £4 billion, the government would need to fund the shortfall to prevent net losses to depositors. So, there was a clear recognition from these two professional Associations that the risk of large scale bank failure was underwritten by the taxpayers and not by the banking community through deposit insurance schemes.

[9] In actual fact, there often is a combination of the two funding systems with a dominance of one of them. The European Commission classifies the different funding systems into 4 categories: high ex-ante funding, medium ex-ante funding, low ex-ante funding and ex-post funding.

[10] This is the model adopted by the Nordic countries.

[11] House of Commons, Treasury Committee, The run on the Rock, January 26, 2008.

So the UK Deposit Insurance Arrangement cumulated the incentive for bank runs: co-insurance, liquidity losses due to long reimbursement delays and ex-post funding which reinforce the payout delays. Such shortcomings are not specific to the UK, they are also permitted by the Deposit Guarantee Scheme Directive. So the lessons of the Northern Rock's experience have to be enlarged to the E.U. Deposit Protection legislation which must reinforce its requirements on national Schemes.

The arguments in favour of a special bank insolvency regime

Bank failures are different from that of other companies in many important aspects that can be mobilized to justify the exemption of banks from general corporate insolvency law and their subjection to administrative insolvency proceedings under the control of regulators. Empirically, bank liquidations are rare (except for small banks) compared to the frequency of bank reorganization. This may be interpreted as an evident sign of the specificity of the banks' bankruptcy process.

A large proportion of the arguments in favour of a special treatment of banks in insolvency proceedings deals with the justification for stronger regulation in the banking sector compared to other commercial or industrial sectors. In some ways, banks and building societies can be assimilated to utility providers and the UK already has special administration regimes for the energy, water and railway industries. These ensure that crucial services to customers remain secure and continuous in the event that company providing those services becomes insolvent.

Why are banks special and may need a special insolvency regime?

- Bank deposits collectively comprise the largest share of the country's money supply and its primary exchange medium. So, banks' liabilities are the most usual medium of exchange.
- Banks perform financial services that are fundamental to the smooth functioning of the economy such as the extension of credit especially to those agents who cannot find alternative funding sources (households, small and medium companies etc.), which includes deposits taking and payment processing. Banks remain the primary source of liquidity for most financial and non-financial institutions. So, potentially, bank failures can cause credit rationing, a substantial reduction in economic activity and eventually, a spiral of commercial failures in the worst cases. Thus, the knock-on effect does not only disturb the financial system through exposure and the informational channel but also the commercial and industrial sectors as well, through the credit channel.

- Bank insolvency may entail a risk to the entire economic and financial system by a propagation process from the defaulting bank's counterparties or by the informational channel. The exposure channel relates to the potentiality of "domino effects" through real exposure in interbank markets and/or in payment systems, whereas the informational channel has to do with the lack of information on the mutual exposure of banks and on the type of shocks affecting banks (idiosyncratic or systematic) which can generate contagious withdrawals by non-informed depositors.

The arguments previously presented are traditionally used both to justify stricter regulation for banks compared to other companies and to advocate a special bank insolvency regime. Nevertheless, there are also other specific arguments calling for special treatment.

The insolvency concept is quite different for banks compared to other companies because the regulator is vested with a central role in the insolvency proceedings. Different reasons can explain this specificity:

- First, under general insolvency law, the trigger point for intervention is the default of the debtor's institutions on their liabilities on due date. Because of banks' balance-sheet specificity, such inability to meet a short-term liability is not necessary a proof of insolvency but can simply result from a temporary shortage of liquidity. By contrast, and still because of the peculiarity of its balance-sheet which provides an on-going source of cash flow, a bank experiencing financial difficulties can continue to honour the payments of its debts in a financial system endowed with a well-designed deposit insurance even though the bank may be potentially insolvent. As they are subject to the special regulations that condition their operations, banks benefit from special proceedings which define their viability. The bank supervisor assesses the adequacy of the bank's capital, he judges the quality of its assets and it is his prerogative to determine the point of insolvency. As remarked by Eva Hüpkes (2003): "a bank is insolvent when the supervisor says it's insolvent!". As per most general corporate bankruptcy codes, bankruptcy may be initiated either by a minimum number of creditors whose claims are in default or by the firm itself in anticipation of default. The proceedings differ for banks. Compared to the general insolvency regime, bank insolvency procedures give a less active role to creditors' committees and insolvency judges but grant a key role to the supervisor. If the supervisor judges that the bank's

capital is impaired, he can intervene in a pre-emptive way and constrain the bank's activities with a view to preventing insolvency. These pre-insolvency interventions are part of the prudential policy that can mobilize a large set of tools, ranging from the informal to the more intrusive. So, operationally, there is some sort of continuum between regular prudential policy and bank insolvency proceedings.

- The main objectives of a general corporate bankruptcy law is to find solutions to collective action problems like coordinating the debt collection efforts of multiple creditors to maximize overall recovery value and/or maximizing the realized value of the bankrupt firm's assets and resolving the creditors' claims in an orderly and collective manner. By contrast, even though these objectives may exist in the case of a bank failure, the principal goal of the bank bankruptcy procedure is to preserve the stability of the financial sector as a whole and to avoid systemic problems. So, in addition to private creditors, debtors and stockholders' interests, a bank insolvency law has to take account of public interest. The bank insolvency regime is concerned with externalities. In certain cases, this may justify the transgression of the principle of equal treatment of all creditors which prevails in general insolvency law. For instance small depositors and creditors may be protected and fully repaid while larger creditors are compelled to engage themselves in the renegotiation of their claims. The same type of argument can justify the special treatment of the collateral and hence the preferential treatment for the collateral taker. Indeed, the incapacity to enforce collateral immediately upon default of the collateral provider may generate serious losses for the creditor and may impair his ability to face up to his own liabilities. This constitutes a non-negligible contagion channel and gives a fair reason for protecting collateral arrangements from the general rules governing corporate insolvency codes. These exemptions seem to conflict with the objective of fairness to all creditors but are consistent with the preservation of financial stability. Similarly, the rules that underlie the orderly and smooth functioning of the payment and settlement systems, which are based on the finality and irrevocability of payments even in the case of a bank failure could be interpreted as conflicting with the rules structuring corporate insolvency laws.

The shortcomings of the legal British device for weak banks

The UK's financial safety net relies upon general takeover and bankruptcy laws in its dealing with weak banks. There is no a specific mechanism for intervening pre-emptively when a bank is in trouble and subsequently ensure the continuation of critical banking functions –like access to the checking account and payment systems. This has been a serious disadvantage in the management of the crisis.

Because of the previously underlined specificities of bank failure, the "closed bank" resolution option has been considered generally unacceptable by leading authorities around the world, for large or multiple bank failures. Consequently, "open bank" resolution options have been favoured instead. Nevertheless, this type of option whereby the bank remains open and continues its normal activities even though it has failed financially, can take different forms which are more or less costly and conducive to moral hazard. When the open bank resolution option implies, as in the case of Northern Rock, a huge transfer of the risks and costs on taxpayers, it also means a weakening of both the internal and external stakeholders' incentive to monitor and discipline the bank in the future. In order to avoid such inefficiencies which lead to a weakening of future financial stability, the risks and costs of bank distress should be clearly taken on by large depositors, junior bondholders and shareholders rather than by small depositors and taxpayers.

The two requirements need to be reconciled. The promotion of the open bank resolution option permits the continuation of critical banking functions and avoids the drawbacks generally associated with official assistance (fiscal burden, weakening of market discipline, and the taking away of responsibility from shareholders etc.). Several authors have proposed different schemes for managing wide bank bankruptcy (Eisenbeis R and Kaufman G. 2006, Harrison I, Anderson S and Twaddle J (2007), Mayes D. and Liuksila A. 2004).

Despite a number of operational differences, these proposals have quite a few similar steps in common.

1) Prompt legal closure to avoid credit losses and prompt customer access to accounts. To avoid liquidity losses, the authorities take control of the insolvent bank [12].

[12] . In the case of Northern Rock, the nationalization was decided too late to alleviate the cost of the resolution to taxpayers. There has been a five-months delay in the search of a private sector's buyer. Eventually, when it noticed that the two private sector proposals (from Virgin group and from the bank's management) failed to offer sufficient value to British taxpayers, the UK government decided to put Northern Rock into temporary public ownership.

2) A prompt estimate of recovery values and assignment of credit losses ("haircut") to uninsured bank claimants when the bank is insolvent. The idea is to promptly divide creditors claims into a portion that will remain frozen and dedicated to the absorption of losses and a portion that will be made rapidly available to insured creditors as soon as the bank reopens. This step aims to enhance market discipline.
3) The quick sale or bridging of insolvent bank and prompt reopening (next workday) particularly for larger banks with full access to bank services for insured depositors and borrowers.
4) Prompt re-privatization in whole or in part with adequate capital.

The US approach to the treatment of weak banks is relatively close to the requirements about good practices in bank resolution procedures. Indeed, in the United States, commercial banks, insurance companies and other financial institutions are exempted from the corporate bankruptcy code. Instead, the statement and resolution of their insolvencies are managed by the provisions of the Federal Deposit Insurance Act and these rules especially designed for banks drastically differ from the general corporate bankruptcy code (Bliss R. and Kaufman G., 2005). The special treatment of banks is no novelty in U.S. banking history. As a matter of fact, since 1933, the newly created FDIC has been the single receiver for insolvent national banks and could be appointed receiver by State banking agencies for state chartered banks. In 1991, the FDIC improvement Act (FDICIA) reinforced the powers of the FDIC and Federal Reserve by enlarging their authority as a bank main federal regulator so they can now legally pronounce the insolvency of a state-licensed bank under their jurisdiction and appoint the FDIC as its legal receiver. The FDICIA clearly includes bank bankruptcy proceedings in the new supervisory policy whose structure comprise two main pillars: prompt corrective actions and the least-cost resolution. The Act specifies five capital/asset ratios (from well-capitalized to critically under-capitalized). The banks are classified in these different categories and each class of capital/asset ratio is associated with mandatory provisions and discretionary provisions. When a bank is downgraded to a lower level of capital zone, the regulatory constraint is consequently reinforced. Supervisors are authorized to close down a bank within 90 days after it has crossed the threshold of critical undercapitalization. At this point, the FDIC is vested with the powers of receiver as liquidator or with the authority of a conservator that acts as administrator in the resolution of the institution's crisis. So, the principle of prompt legal closure (point 1) is at the core of the device. It induces easier compliance with the other previously mentioned principles:

- Under the prompt corrective action scheme, the regulators ought to scrutinize weak banks well before they reach the capital ratio closure trigger. The assessment of the recovery value of the bank as a whole or in part should therefore be made quickly (point 2);
- Legal closure is separate from physical closure. To insure such separation, the FDIC may run the bank through a bridge bank (point 3). It is a temporary chartered bank organized to manage the deposits and secured liabilities and acquire the assets of an insolvent bank until final resolution can be reached. The FDIC was authorized to established bridge banks by the Competitive Equality Banking Act of October 1987. It used this option to solve 114 failed banks between 1987 and 1994. This institutional solution contributes to preserving the business value of the failed bank and it provides the time space needed for a better resolution.

Moreover, "Run on the Rock" reported that: "in the US, tripwires alert the authorities not only when a bank is entering a period of distress, but also when a bank radically changes its business model, or pursues an existing business model to an extreme extent". Indeed, section 39 of FDICIA required the bank regulators to prescribe safety and soundness standards relating to non-capital criteria, which includes operations and management, compensation, asset quality, earnings and stock valuation and allows the regulators to take action if an institution fails to meet one or more of these standards [13].

A recent US Government Accountability Office Report to Congressional Committees[14] evaluates how federal regulators have used PCA to resolve capital adequacy issues at the institutions they regulate and the extent to which federal regulators have used the non-capital supervisory actions of sections 38 and 39 to address weaknesses at the institutions under their supervision. They studied a sample of 18 banks and thrifts that had been subject to PCA from 2001 through 2005. In most cases, regulators responded to safety and soundness problems in advance of a bank or thrift's decline in the PCA capital category. For example, each of the 18 institutions subject to PCA appeared on one or more regulatory watch list prior to or concurrent with a decline in its capital category, 12 of the 18 institutions experienced a decline in their CAMELS ratings prior to or concurrent with becoming undercapitalized. CAMELS ratings are a key product of regulators' on site monitoring. They measure an institution's performance in six areas: capital, asset quality, management, earnings, liquidity

[13] Under section 38 regulators must take increasingly severe supervisory actions as an institution's capital level deteriorates but it also authorizes several non-capital based supervisory actions.

[14] US GAO Report to Congressional Committees (February 2007) "Assessment of Regulators' Use of Prompt Corrective Action Provisions and FDIC's new deposit insurance system"

and sensitivity to market risk. Such a focus on liquidity and sensitivity to market risk would have probably been a fruitful forward-looking warning signal for the British regulator.

The arguments for a reactivation of liquidity regulation

The market turmoil that began in mid-2007 highlighted the crucial importance of market liquidity to the banking sector. The Northern Rock debacle has been a painful and extreme example of the dependency of bank liquidity to the market liquidity in stress conditions.

Bank liquidity is complex. It can be defined as "the ability to fund increases in assets and meet obligations as they come due" (Basel Committee on Banking Supervision, 2008). The banking literature originally focused on funding liquidity, which is a narrow definition of liquidity, as it includes cash and assets easily transformable into cash. The traditional banking intermediation funding illiquid loans with liquid deposits involves the production of funding liquidity (maturity transformation). There is another broader definition of bank liquidity that takes account of the more recent involvement of banks in asset trading. This second definition is closer to "market liquidity" since it describes the cost of selling assets. Commercial and investment banks provide market liquidity when they assume the role of market makers in derivative markets. The securitization of loans which transforms pools of illiquid loans into liquid securities also feeds market liquidity. So, banks provide both funding liquidity and market liquidity (Strahan, 2008), consequently, they are vulnerable to both funding liquidity shocks and markets liquidity shocks. The recent market turmoil emphasised the links between funding and market liquidity.

In the 1980s, as the Basel Committee was working on the capital adequacy ratio (Basel 1), it also attempted to reach agreement on liquidity risk management. The latter was a failure. Since the 1990s, there has been a tremendous gap between the activism of international banking regulators in the improvement and harmonization of bank solvency regulation and the weaknesses of the reflections on bank liquidity requirements. This gap will probably be reduced in the near future. Indeed, in December 2006, the Basel Committee on Banking Supervision established the Working Group on Liquidity to review liquidity supervision practices in member countries.

Banking authorities may be concerned with bank liquidity for several reasons. The main arguments have been previously mentioned here and call for stronger regulation for banks compared to other companies and for a special bank insolvency regime (micro and macro

prudential arguments). Nevertheless there are additional justifications for a refocusing on bank liquidity requirements:

- First, banking authorities have encouraged banks to use real time gross systems (RTGS) for large value inter-bank payments instead of deferred net systems which are more vulnerable to systemic risk. But this choice in favour of RTGS induced a stronger need for liquidity because such payments systems are intrinsically highly liquidity intensive.
- Secondly, there is always the bank's temptation to transfer the responsibility of bank liquidity management to the central bank through emergency liquidity assistance. Such a temptation is currently probably stronger than it was in the past. Indeed, as underlined by Tim Congdom (*FT* September 2007) and C Goodhart (2008), liquid assets typically made up 30% of British clearing banks' total assets (mainly composed of Treasury Bills and short-term government debt) in the 1950s whereas now traditional liquid assets represent about 1% of total liabilities. This sharp decrease in the holdings of liquid assets reflects the shift from the "originate and hold" to the "originate and distribute"model. The first model involved the creation of funding liquidity through asset transformation from loans to deposits. This traditional banking intermediation model has been reshaped by the growth in loan sales and securitization. In the second model, the bank creates market liquidity rather than funding liquidity by the transformation of "hard to sell assets" into funds that are easier to sell like bonds or other securities. This process allows the originating bank to sell assets to investors, recycle the capital and originate new loans which can in turn be securitized, yet it also dramatically increases the vulnerability of the bank to market liquidity risk. Market liquidity conditions can be subject to rapid and large scale regime shifts as the 1997/98 developments or the subprime crisis have demonstrated with more detrimental effects on banking liquidity than ever previously experienced. These complex interactions between banking liquidity and market liquidity risks make a strict quantitative approach to bank liquidity risk rather difficult and probably partly inefficient. Among the regulatory requirements for liquidity risk the distinction must be made between quantitative, qualitative and mixed requirements. Quantitative regulations usually aim to maintain certain liquidity indicators above minimum regulatory thresholds, whereas qualitative approaches focus more on the bank's internal controls and reporting practices. Mixed requirements mobilize both types of approaches.

More precisely, quantitative liquidity regulations can include stock-based approaches, mismatch based and hybrid approaches. Stock-based approaches require the bank to hold a stock of highly liquid assets that are immediately convertible into cash in all market conditions. This stock is weighed against total assets or some measure of liquidity risk. From

a regulatory perspective the higher such quantitative liquidity requirements, the stronger the bank's resilience to severe liquidity shocks. Moreover, these stock-based liquidity regulations make it easier to assess the vulnerability of an individual bank to a liquidity shortage, especially when compared with other banks. Mismatch-based regulations take account of a broader time dimension that assesses a bank's liquidity level by focusing on the predicted net cash position through time. This approach is consistent with banks' risk management practices which widely use mismatch analysis as a metric to assess their level of liquidity risk[15]. More sophisticated quantitative models measure and manage liquidity risk. There are comparable to those used for measuring and managing market risk, such as liquidity at risk (LaR) but they are not widely used at present. Hybrid approaches combine both stock and mismatch approaches.

C Goodhart (2008) showed the overlap between the two components of bank liquidity management – maturity transformation and the inherent liquidity of a bank's assets. The more liquid and instantly sellable- without significant loss of value under any market conditions- a bank's assets, the fewer worries for the bank about maturity transformation. Likewise, the lower the maturity transformation, the fewer worries for the bank about the market risk on its assets since it can hold them until maturity and overcome market disturbances. Moreover, the bank's vulnerability to a drying-up of market liquidity hugely depends on the bank's business model. These remarks plead in favour of fairly flexible liquidity requirements rather than uniform liquidity regulation with an activation of the discretionary power of the regulator through pillar 2. In particular, the liquidity requirements should be related to the bank's solvency. This provision is similar to the prompt corrective action spirit in the pre-announced progressiveness of the regulatory constraints. When a bank is downgraded to a lower level of capital zone, its liquidity requirements have to be reinforced. The bank's business model must also be taken into account for the determination of its liquidity requirements. From a wider macro-prudential perspective exposure, it is necessary go beyond that stage and increase the bank's liquidity requirement in accordance with its specific exposure to several types of macroeconomic shocks. The emergency liquidity assistance provided by the central bank in case of a systemic liquidity squeeze lies behind the rationale for this measure. It could be interpreted as implicit pricing or as some sort of counterpart for the central bank's protection whose aim is to limit the moral hazard induced by central liquidity insurance.

[15] See the Joint Forum Report, (2006), "The management of liquidity risk in financial groups".

Concluding remarks

The Northern Rock crisis constitutes a type of extreme school case of the new challenges for banking regulators and central banks as lenders of last resort in an economy characterized by banking disintermediation. As previously observed, the lessons that can be drawn from this debacle lie far beyond the UK's prudential device. Among others, the collapse strongly underlines the shortcomings of several European Directives which prove insufficiently constraining at national level. That is the particular case of the European Community Directive on the reorganization and winding-up of Credit Institutions that deals with the cross border aspects of bank failure in the European Union. It is consistent with the "single passport" principle. The Directive does not attempt to harmonize Member states' bank insolvency laws but it aims to allocate the powers of bank resolution according to the mutual recognition regime based on both reorganization measures and winding-up procedures. So, the European legislator is agnostic as to what the bank insolvency regime should be like, while the Northern Rock experience underlines the need for a special insolvency regime dedicated to banks. Likewise, the shortcomings of the UK deposit insurance scheme were in fact allowed under the European Deposit Guarantee Scheme Directive. Several European countries actually cumulate the same weaknesses in their own Deposit Insurance Schemes.

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