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**THE FAILURE OF NORTHERN ROCK:
A MULTI-DIMENSIONAL CASE STUDY**

*Edited By
Franco Bruni and David T. Llewellyn*

Chapters by:

*Tim Congdon
Charles A.E. Goodhart
Robert A. Eisenbeis and George G. Kaufman
Paul Hamalainen
Rosa M. Lastra
David T. Llewellyn
David G. Mayes and Geoffrey Wood
Alistair Milne
Marco Onado
Michael Taylor*

CIP

THE FAILURE OF NORTHERN ROCK: A MULTI-DIMENSIONAL CASE STUDY

Editors: Franco Bruni and David T. Llewellyn; Authors: Tim Congdon, Charles A. E. Goodhart, Robert A. Eisenbeis and George G. Kaufman, Paul Hamalainen, Rosa M. Lastra, David T. Llewellyn, David G. Mayes and Geoffrey Wood, Alistair Milne, Marco Onado, Michael Taylor

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Preface

In August 2007 the United Kingdom experienced its first bank run in over 140 years. Although Northern Rock was not a particularly large bank (it was at the time ranked 7th in terms of assets) it was nevertheless a significant retail bank and a substantial mortgage lender. In fact, ten years earlier it had converted from a mutual building society whose activities were limited by regulation largely to retail deposits and mortgages. Graphic television news pictures showed very long queues outside the bank as depositors rushed to withdraw their deposits. There was always a fear that this could spark a systemic run on bank deposits. After failed attempts to secure a buyer in the private sector, the government nationalised the bank and, for the first time, in effect socialised the credit risk of the bank. It is now a fully state-owned bank. Since then, another British bank (Bradford and Bingley – which was also a converted building society) has also been nationalised. Furthermore, the government has since taken substantial equity stakes in several other British banks as part of a general re-capitalisation programme.

Of course, since Northern Rock failed the world has experienced what is arguably its most serious financial crisis ever and in the US much larger and more significant banks have failed. On the face of it, therefore, the Northern Rock crisis pales into insignificance within the global context. Nevertheless, the Northern Rock is particularly significant because it represents in a single case study virtually everything that can go wrong with a bank. As we argue in the first essay in this compendium, it was a multi-dimensional problem. For this, and other reasons, it will surely become a much-analysed case study in bank failure.

It is also for this reason that the Editorial Board of SUERF decided to invite a selected group of eminent scholars to write short essays on what they judge to be some of the significant issues raised in the Northern Rock case study. We were anxious to ensure that the authors would not be exclusively from the United Kingdom and of the thirteen contributors, six are from outside the country including perspectives from the United States and Italy. All of the authors were given a completely free hand to select their own focus and no attempt has been made to coordinate or edit the contributions.

In the first contribution, **David T. Llewellyn** offers an overview of the multi-dimensional nature of the Northern Rock case study in order to set the

perspective for those who may not be fully familiar with the many different strands of the episode. We also consider the business model of the bank and how, in particular, it exposed the bank to a low-probability-high-impact risk. This contribution also briefly considers some of the reform measures that have subsequently been initiated by the government as a result of the Northern Rock failure. In particular, the crisis revealed a number of fault-lines in the institutional architecture in the United Kingdom and most especially with regard to insolvency arrangements for banks and the resolution arrangements for failed banks.

In their overview of the Northern Rock crisis, **Mayes and Wood** argue that it provides an “almost ideal test” of the effectiveness of safety-net arrangements in a wide range of countries. They suggest that the crisis should induce governments and regulatory authorities to consider the lessons from this particular crisis. They indicate their own interpretation of the lessons to be learned. In particular, they focus on six key issues: (i) deposit insurance, (ii) the “too-big-to-fail” concept, (iii) the role of the lender-of-last-resort facility, (iv) the need for early intervention and the merits of Structured Early Intervention and Resolution and the Prompt Corrective Action models, (v) the need for a special resolution regime for banks, and (vi) responsibility and coordination between agencies. They also consider the potential information value of movements in a bank’s share price.

Paul Hamalainen considers the important issue of the implications of the Northern Rock episode for the role of market discipline and, in the process, reviews two key requirements for market discipline to work effectively: incentive structures and bank transparency. He emphasises the importance of market discipline in giving market signals that emanate from risk monitors.

In the following contribution, **Eisenbeis and Kaufman** give a powerful perspective from the United States by comparing the failure of Northern Rock with that of Countrywide and IndyMac in the US. They argue that there are three common features: serious weaknesses in the structure of deposit guarantee arrangements, supervisory failures, and weaknesses in the legal structure governing bank failures. They argue that the main lessons from the three failures focus on the design of deposit insurance, the need for an institutional architecture that reduces the negative externalities of bank failures and, in particular, a special bankruptcy procedure for handling troubled financial institutions, the importance of timely and accurate accounting and reporting, and the necessity of improving the incentives and

accountability for bank regulators. They also point to the weak role played by market discipline in the case of Northern Rock.

There is a danger of regarding the Northern Rock crisis as one exclusive to the United Kingdom. **Marco Onado** rightly moves us away from this focus and argues that the problems revealed in the Northern Rock case study are far from temporary and that at the core was the business model of the bank and that this model was common to many other banks in many other countries. This provides a useful link to the global financial crisis. In particular, he argues that “while there is no doubt that Northern Rock’s business model was extreme, one can argue that its underlying philosophy was shared by many other banks.” He emphasises the combination of aggressive asset growth, minimisation of capital, and funding risks designed to maximise rates of return on equity as a common denominator. He also argues that the business model of Northern Rock “stretched to the maximum extent the opportunities for regulatory arbitrage induced by Basel 1 and which led to dramatically overlooking the fundamental role of capital in banking”. The central conclusion is that the Northern Rock crisis was a crisis of securitisation and capital.

Michael Taylor offers a different perspective by focussing upon institutional structure of regulation and supervision and in particular on the role of the central bank. He sets the context by explaining that, at the time reforms were made in the United Kingdom to the institutional structure of financial regulation and supervision about a decade before the Northern Rock crisis, little attention was given to crisis management arrangements. In particular, an attempt was made to draw a sharp boundary between bank regulation and supervision on the one hand, and the Bank of England’s role in promoting financial stability on the other. He argues in particular that the Northern Rock episode illustrated that “the new boundary that was erected under the post-1997 arrangements is sub-optimal in crisis management”. He further argues that the Northern Rock case illustrates that monetary stability and financial stability are deeply intertwined and that the conduct of monetary policy must be informed by the central bank’s analysis of financial stability and the information flows it receives through its regular contact with financial markets and institutions.

The issue of banking law reform following what was revealed through the Northern Rock crisis is considered in **Rosa Lastra**’s contribution. Her starting point is that the crisis exposed major deficiencies in the United Kingdom regime to deal with banks in distress. In particular, and in line with the contribution of Eisenbeis and Kaufman, she stresses the problems linked

to deposit insurance arrangements and those for the insolvency of financial institutions. She also detects weaknesses in the workings of the emergency liquidity assistance arrangements. The main focus of the contribution is on bank insolvency and bank crisis management, and the reforms (most especially the Special Resolution Regime) that have been proposed by the government in the wake of the Northern Rock crisis. She also points out that there are international dimensions to many of these issues and discusses various issues related to cross-border bank insolvency.

Charles Goodhart offers a *tour d'horizon* of the regulatory responses to the financial crisis albeit with a particular focus on the UK experience. The point is made that the retail depositors' run was specific to the UK which is another reason why the Northern Rock episode is an important case study. He considers seven key issues: the role and operation of deposit insurance, bank insolvency regimes and the PCA model, money market operations of the central bank, liquidity risk management, the procyclicality of capital requirements, the boundaries of regulation in the context of conduits and SIVs, and crisis management both with respect to individual countries and the cross-border dimension. With respect to the first-mentioned, Goodhart poses the question of what deposit insurance is designed to achieve and highlights the dilemma (raised in some of the other contributions) that there may be a conflict between the requirements of protecting individual depositors and the interests of systemic stability and preventing bank runs. Although, in the UK context, it was never intended to focus on systemic stability, the recent reform in the UK has focussed on this issue. He raises the issue of whether this might be premature in an increasingly cross-border banking system. He further argues that the moral hazard implication of the absence of co-insurance needs to be alleviated by a PCA policy. Regarding the insolvency regime, Goodhart argues that "any bank insolvency regime must involve some expropriation of shareholder rights". Regarding liquidity, Goodhart argues that we need incentives for banks to hold more liquid assets in good times so that they can be run down in bad times and argues that the current Basel 2 regime does not provide us with a contra-cyclical instrument for offsetting major fluctuations in liquidity conditions. More generally, he argues that "the combination of more risk-sensitive methods of applying capital adequacy requirements and mark-to-market valuations are imparting a strong upwards ratchet to the procyclicality of our system".

At the time of the Northern Rock crisis there was discussion about the moral hazard implications of various forms of intervention, and controversy arose over the role adopted by the Bank of England. This issue is addressed in the

contribution by **Alistair Milne**. A distinction is to be made between loans and support for individual institutions and the system as a whole. The scope of the essay is on the provision of liquidity to the market as a whole during a financial crisis and whether this has potential moral hazard implications. Milne argues that any moral hazard dangers arising from central bank liquidity assistance to individual institutions can be addressed by the central bank charging a penalty interest rate. On the other hand, such penalty rates are not required for central bank provision of system-wide liquidity because the potential moral hazard does not apply.

In the final contribution, **Tim Congdon** addresses an entirely different issue and focuses upon how banks' loan margins are determined and the implications of what is termed a "teaser rate" strategy given that Northern Rock's margins were low by industry standards. The purpose of the essay is to set out an analytical framework for the determination of banks' interest margins. This framework encompasses cash and capital ratios. His model suggests that, the lower are the cash-assets and capital-assets ratios, the riskier are the banks' operations. On the other hand, the lower are these ratios the narrower are interest margins and hence the lower is the cost of finance to industry and household borrowers. Congdon argues that, because of this, banking "suffers from an inevitable tension". There may, he argues, be a conflict between the "competitive, low-margin, and customer-orientated banking practiced by Northern Rock" and the interests of depositor safety.

Two dominant themes emerge from these essays: that there are many strands to the Northern Rock crisis, and that many of the issues raised have relevance to all countries. The lessons to be learned are far from being exclusive to the United Kingdom. This is why the Editorial Board of SUERF has devoted this SUERF Study to this important episode in the history of bank failures.

*Franco Bruni and David T. Llewellyn
Milan and Loughborough*

THE NORTHERN ROCK CRISIS: A MULTI-DIMENSIONAL PROBLEM

David T. Llewellyn

Professor of Banking and Finance
Department of Economics
University of Loughborough
Loughborough LE11 3TU
UNITED KINGDOM

Tel.: +44 1509 222700

Fax: +44 1509 223910

E-mail: d.t.llewellyn@lboro.ac.uk

1. Introduction

In August 2007, the UK experienced its first bank-run since Overend and Gurney in 1866. In three days around £3 billion of deposits were withdrawn (around 11 percent of the bank's total retail deposits) from a medium sized bank – Northern Rock. The unedifying spectacle of widely-publicised long queues outside the bank's branches testified to the bank's serious problems. The Northern Rock crisis was the first time the Bank of England had operated its new money market regime in conditions of acute stress in financial markets, and it was the first time it had acted as a lender-of-last-resort for many years. The run of deposits began immediately after it was announced that the bank had sought liquidity assistance from the Bank of England and that the regulatory authorities had declared that the bank was solvent.

In two major respects, the crisis that hit Northern Rock was both predictable and, to some extent, predicted even though this was not related specifically to this bank in particular. Firstly, for well over a year the Bank of England, and to a lesser extent the Financial Services Authority (FSA), had been warning about evolving trends in the markets: sharp asset growth, systemic under-pricing of risk, and some warning signals were given that some of the risk-shifting characteristics of new financial instruments (most especially credit derivatives such as Collateralised Debt Obligations and Credit Default

Swaps) might not be as water-tight as they might seem. There were also warnings that the bank's strategy of relying heavily on wholesale market funding made it particularly susceptible to liquidity risks. Secondly, and more fundamentally, there were certain institutional weaknesses in the UK's regulatory regime that made it susceptible to problems such as those that arose with Northern Rock:

1. A fundamental flaw in the deposit protection scheme,
2. No established special bankruptcy regime for banks,
3. No well-established or predictable Resolution regime for handling troubled banks, and
4. An institutional structure of financial supervision that separated responsibility for systemic stability and lender-of-last-resort (in the Bank of England) from prudential supervision of individual banks (located within the Financial Services Authority). This was always likely to be potentially hazardous in crisis conditions.¹

In particular, there were fundamental fault-lines in the UK's institutional arrangements for handling distressed banks.

Northern Rock (a previous mutual building society) converted to bank status in 1997. On conversion, and stripped of the previous constraints on its business powers under the Building Societies Act, it acquired legal powers to conduct the full range of banking business. However, it opted to remain focussed predominantly on the residential mortgage market. From the outset, it adopted a securitisation and funding strategy which was increasingly based on secured wholesale money (by issuing mortgage-backed securities) and other capital market funding. At its peak, Northern Rock had assets of over £100 billion and a growth rate of around 20 percent for over a decade. Although it was only the seventh largest UK mortgage lender, in the first half of 2007 its new mortgage lending accounted for around one-quarter of the total in the UK. The pace of mortgage lending substantially exceeded the growth of retail deposits with the "funding gap" met through securitisation and other wholesale market funding.

Two particular problems emerged during the summer months of 2007: a generalised lack of confidence in a particular asset class (mortgage bank securities) associated in large part with developments in the sub-prime mortgage market in the United States, and doubts emerged about the viability

¹ See Llewellyn (2004)

of the Northern Rock business model in particular. In September 2007, Northern Rock was forced to seek substantial assistance from a reluctant Bank of England even after the regulatory authorities had given assurances that the bank was solvent. This announcement sparked a run on the bank until the government moved to offer a guarantee to all deposits and that this would not be restricted to the normal limit of the Financial Services Compensation Scheme. Although rumours developed about some other banks, the problem was focussed only on Northern Rock. As the problem was contained, in this respect a true systemic bank run was avoided although what might have happened had the government not announced its full guarantee of deposits at all banks in similar circumstances is open to question.²

² For a detailed time-line on the crisis see Hamalainen *et. al.* (2008) and Treasury Committee (2008).

2. A multi-dimensional Case Study

The Northern Rock episode will become a major case study in the origin and management of bank crises. Our purpose here is to offer an assessment by focussing on the multi-dimensional nature of the episode. The central thesis is summarised as follows:

1. Northern Rock had a unique business model in that securitisation (originate-and-distribute) was a central part of the bank's overall business strategy. While many banks securitized assets at the margin, the uniqueness of Northern Rock was that securitisation, and a reliance on short-term market funding, was the central feature of its business model.
2. An inherent property of this business model was that it exposed the bank to a low-probability-high-impact (LPHI) risk. The bank became heavily dependent on short-term funding in the money and capital markets, while no-one predicted that liquidity in the markets would suddenly evaporate on a large scale. This was the nature of the LPHI risk.
3. While the business model was successful for some years, the LPHI risk eventually emerged in the context of global financial turbulence focussed initially on sub-prime mortgage lending in the US. As the Northern Rock had no part in this it might be claimed that it became an innocent victim of this turbulence. However, the chosen business model exposed the bank to a LPHI risk associated with a drying-up of liquidity in the London financial markets.
4. The Northern Rock crisis was multi-dimensional and revealed several fault-lines with respect to:
 - The implications of securitisation and a consequent over-reliance on short-term market instruments,
 - The management of LPHI risks in banks,
 - The deposit protection regime in the UK,
 - Money market operations of the Bank of England,
 - The institutional structure of financial regulation and supervision,
 - Corporate governance arrangements in the bank,
 - The arrangements for defining insolvency in banks,
 - Resolution arrangements for failing banks.
5. A key issue is whether the post-2000 regime (which allocated responsibility for prudential regulation of banks, oversight of systemic stability, and the

operation of the lender-of-last-resort function to different agencies) needs to be changed, or whether it is the operation of the current model that needs to be improved within the existing structure. Two central issues arise with respect to supervision: (1) whether the supervision of Northern Rock was adequate, and (2) whether there is a fault-line in the separation of powers as noted above.

6. The Northern Rock episode revealed a unique new role of the government in effectively over-ruling the established Financial Services Compensation Scheme (FSCS) by intervening to guarantee all deposits at a troubled bank.
7. Attempts were made to find a private sector solution (Resolution) of the Northern Rock failure. In the end, this proved not to be possible and the bank was taken into temporary public ownership which in turn raises issues regarding competitive neutrality, etc.
8. The Northern Rock episode revealed that reform of a structural nature is needed in five main areas with respect to: insolvency arrangements for banks, Resolution arrangements in the case of failed banks, deposit protection arrangements, a Prompt Corrective Action (PCA) regime, and crisis management arrangements. The government has since addressed four of these in proposed new legislation most especially with respect to Resolution arrangements.
9. If a holistic approach to reform of institutional structure were to be adopted along the lines of the government's consultation paper issued early in 2008, this would represent one of the biggest reform programmes in the institutional arrangements for bank supervision ever adopted by any country in one move.

3. The Context of Financial Market Turmoil

The Northern Rock episode is set in the context of the global financial market turbulence experienced during the summer of 2007. Recent years have experienced an unprecedented wave of complex financial innovation with the creation of new financial instruments and vehicles most especially with respect to the shifting of credit risk (Llewellyn, (2009a)). In the words of the Bank of England, this financial innovation had the effect of “creating often opaque and complex financial instruments with high embedded leverage” (Bank of England, (2007)). Two major instruments at the centre of the financial market turmoil were Securitisation and Collateralised Debt Obligations (CDOs): in both cases issue volumes rose sharply in the years prior to the crisis.

The financial market turbulence during the middle months of 2007 was a particular problem for all banks that had securitisation as a major part of their business strategy. In particular, there was a sharp decline in the appetite for major asset classes, uncertainty increased with regard to counterparty risk in the inter-bank market and other wholesale funding markets, banks became uncertain about their own potential exposure to their off-balance-sheet vehicles and the extent to which they might need to absorb securitized assets on to their own balance sheets, some markets (such as the commercial paper market) closed altogether, and liquidity evaporated in all asset-backed securities markets. Furthermore, while some new financial instruments had the purpose of shifting credit risk, two limitations became apparent during the financial market turbulence during 2007: credit risk was not always shifted as much as had been envisaged, and to some extent the shifting of credit risk came at the expense of enhanced counterparty risk and liquidity risk which can ultimately transform into a funding and even solvency risk.

Above all, both the primary and secondary markets in SPM securities effectively closed and concern developed over the exposure of some banks in the market. There was uncertainty, for instance, about which banks were holding MBSs and CDOs. The Governor of the Bank of England has likened the drying up of wholesale funding opportunities to the equivalent of a bank run. In particular, some banks which were dependent on securitisation programmes encountered serious funding problems because of all these uncertainties. Issuing banks and their conduits faced both a liquidity constraint and a rise in the cost of funding as it became increasingly difficult to roll-over short-term debt issues. Liquidity in the inter-bank markets also weakened

and a tiering of interest rates emerged during the summer. At one time, for instance, the LIBOR in sterling rose to 6.74 percent compared with the Bank of England's Bank Rate of 5.75 percent.

All of this created considerable market uncertainty in the summer months of 2007 which led to sharp price falls in many asset classes, considerable uncertainty as to the risk exposure of banks, credit markets dried up and most especially those focussed on asset backed securities, and liquidity dried up in the markets for MBSs and CDOs. Overall, there was considerable uncertainty regarding the true value of credit instruments (partly because the market had virtually ceased to function effectively) and the risk exposure of banks. As a result, a loss of confidence developed in the value of all asset-backed securities on a global basis. This was the general context of some banks (and notably Northern Rock) facing funding problems.

The liquidity problem became serious because securitisation vehicles such as conduits and SIVs were funding the acquisition of long-term mortgages (and other loans) by issuing short-term debt instruments such as asset-backed commercial paper. As liquidity dried up, banks could not finance their off-balance-sheet vehicles and were forced to take assets back on to the balance sheet or hold on to assets they were planning to securitize. For a time, the London inter-bank market effectively froze as banks began to hoard liquidity. This developed for three main reasons: banks became increasingly concerned about potential counterparty risks, they were uncertain about their own potential liquidity requirements given the lines-of-credit offered to their own off-balance sheet securitisation vehicles, and concerned developed about potential reputation risks in the event that their own subsidiaries would become either insolvent or subject to severe funding problems in the wholesale markets. All this effectively amounted to a process of re-intermediation.

4. A multi-dimensional Problem

The Northern Rock episode will prove to be a major case study in many aspects of financial regulation and supervision and the viability of particular business models. The particularly significant aspect of this episode is that it was multi-dimensional in that several issues at the centre of financial regulation and supervision came together in a single case study. Furthermore, it revealed major fault-lines in each of the dimensions. Several key dimensions are identified:

The low-probability-high-impact (LPHI) risk. As has been argued, Northern Rock had a particular business model that exposed it to a low-probability risk (that liquidity would dry-up in the inter-bank and commercial paper market) but one that would have a high-impact (inability to continue to fund its business operations). Northern Rock had a particularly hazardous business model which seems not to have been sufficiently monitored by the supervisory authority. This model proved to be viable for several years as short-term funding could be rolled-over on normal terms. However, the overall LPHI risk in this strategy was a combination of three micro risks: (1) the bank or its conduits would be unable to roll-over maturing funding, (2) the cost of such funding would rise relative to the yield on mortgage loans that it kept on the balance sheet, and (3) that it would be unable to securitize those mortgage assets that it intended to. In the last-mentioned case, the bank would be forced to maintain the assets on the balance sheet and seek non-securitisation funding. The LPHI risk was, therefore, that it would be either unable to roll-over its short-term funding in the event of a serious liquidity squeeze or that the necessary roll-over funding could be secured only at high interest rates. In the event, all three major wholesale funding markets for Northern Rock collapsed and became effectively closed to it.

Incomplete credit risk shifting. Over the previous few years, various new instruments had developed to enable banks to shift credit risk off their balance sheet and on to others. However, in the financial market turmoil of the summer of 2007, it became apparent that the risk-shifting characteristics of these instruments were less than complete (Llewellyn (2009b)). Allegedly bankruptcy-remote vehicles (Special Purpose Vehicles, Conduits, etc) seemed not to protect securitising banks from the credit risk of securitized assets. This was partly because banks became concerned about the reputation risk associated with allowing such vehicles to default. Furthermore, the potential

liquidity problems attached to such vehicles were under-estimated or not considered at all.

Solvency vs. Liquidity. A distinction is conventionally made between the *solvency* and *liquidity* of a bank. This distinction is more difficult to make in practice than in theory. Northern Rock remained legally solvent and yet was dependent on Bank of England funding because it could not fund its operations in the markets. However, there is a question about this concept of solvency when applied to a bank which: (1) has serious funding problems in the open market, (2) where the cost of funding exceeds the average rate of interest on the bank's assets, and (3) when it is dependent on support from the Bank of England. The distinction between illiquidity and insolvency is, therefore, not always clear cut and, under some circumstances, illiquidity can force a solvent institution to become insolvent. Furthermore, if depositors know that the bank is illiquid they may be induced to withdraw deposits, which, in turn, forces the bank to sell assets at a discount in order to pay out depositors. Given that banks operate with a relatively low equity capital ratio, the fire-sale discount does not need to be very large to exhaust the bank's capital and force it into legal insolvency.

Deposit Protection. Major fault-lines were revealed in the British deposit protection scheme which is part of the Financial Services Compensation Scheme (FSCS). The co-insurance principle (whereby protection was less than complete: at the time, only the first £2000 of a deposit was fully protected and then only 90 percent of the value of deposits up to a limit of £33,000) meant that the FSCS would not prevent what it was designed to prevent, namely the withdrawal of deposits when doubts emerged about the safety of a particular bank. This proved to be the central fault line in the system.

Structural weaknesses. In addition to the inconsistency in deposit protection arrangements, the UK suffered from two other major structural weaknesses: (i) it was almost alone amongst G7 countries in not having a special bank insolvency regime, and (ii) there was no clearly-defined *ex ante* Resolution model in the case of failing banks. A particular problem with the latter is that uncertainty is created, and in the event that bids are invited to "rescue" a failed bank, potential bidders are prone to bid for economic rents against the interests of the tax-payer. This became evident in the case of Northern Rock and the drawn-out procedure the government instigated which eventually led to the rejection of all the bids that were made and the temporary nationalisation of the bank.

Institutional structure of supervision. In 1997, the in-coming Labour government announced a major overhaul of the institutional arrangements for financial regulation and supervision. Since the 2000 Financial Services and Markets Act, the UK has adopted a *unified* supervisory model (Llewellyn (2004)). In particular, the supervision of banks was taken away from the Bank of England and all regulation and supervision of financial institutions and markets was vested in the newly-created Financial Services Authority. Many analysts at the time argued that this could prove to be problematic in times of crisis as, while responsibility for systemic stability and the provision of market liquidity remained with the Bank of England, it was no longer to be responsible for supervising the institutions that made up the system. Although a crisis management structure was put in place (the Tripartite Committee), this clearly did not work well in the first crisis to emerge in the new regime.

The Stigma effect. As the crisis unfolded, it became evident that banks were reluctant to seek liquidity support from the Bank of England because of a fear that this would be interpreted as a bank being in trouble. It was evidently the case that banks could not rely on any such assistance being kept confidential. This Stigma Effect undermined the role of the Bank of England in the performance of one of its basic functions to provide liquidity to the system.

Role of Government. The government intervened in an *ad hoc* manner by guaranteeing all deposits held at Northern Rock (and, by implication, all banks in similar circumstances) which was contrary to the well-established deposit protection scheme.

The significance of the Northern Rock affair is, therefore, that it is multi-dimensional in nature and involves many significant issues related to the regulation and supervision of banks in the interests of financial stability and the protection of depositors. Virtually everything that could go wrong did go wrong. This is the ultimate significance of the Northern Rock case and why it is such an important case study.

5. Institutional Structure of Supervision

A central issue revealed in the Northern Rock episode, and one that needed to be addressed in its various dimensions, was the adequacy of supervisory arrangements and crisis management. This has three main dimensions: (1) the institutional structure of agencies and their responsibilities as between the Treasury, FSA and Bank of England, (2) the actual conduct of supervision in the case of Northern Rock, and (3) the effectiveness and efficiency of crisis management. Serious weaknesses were revealed at each level and reform is needed.

5.1. Institutional structure

With respect to institutional structure, in any regulatory/supervisory regime four areas need to be addressed: prudential regulation of financial firms, systemic stability, the lender-of-last-resort role, and conduct of business regulation and supervision. Always and everywhere the central bank is charged with oversight of systemic stability. It is usually the case that it is responsible for the lender-of-last-resort role though this depends upon the nature of any intervention and specifically whether a failing bank is to be rescued in which case responsibility would be shared with the Ministry of Finance because tax-payer money would be involved.

A key question is the location of prudential supervision, and in particular whether or not the central bank is to be the prudential supervisor of banks and, if so, whether this should also encompass all other financial institutions such as in the case of the Netherlands and Ireland. For reasons outlined elsewhere (Llewellyn (2004)), there is an overwhelming case for having prudential regulation and supervision of all financial firms located in a single agency. A key issue is whether this should, or should not, be the central bank. Virtually all logical options can be found somewhere in the world which suggests there is no obvious single correct model. It has been argued elsewhere (Llewellyn (2004)) that institutional structure (who is responsible for what) is very much of second-order importance in stable market conditions. The key issue is what institutional structure is likely to be optimal in a financial crisis, and most effectively able to undertake crisis management.

The current structure in the UK was established as one of the early initiatives of the in-coming Labour government in 1997. In terms of distress and crisis management, the new model revealed major weaknesses at the first time it was tested in this crucial area. It would appear that the Tripartite arrangement was slow to be activated. It is also clear from some public statements and evidence to the House of Commons Treasury Committee in October 2007, that differences had emerged between the FSA and the Bank of England particularly with respect to the Bank's money market operations: the in particular, FSA seemed to take a different view from the Bank with respect to the moral hazard problem.

One of the central issues is whether the current institutional structure is fundamentally flawed, or whether its operation needs to be refined and streamlined most especially in the area of crisis management. In particular:

- Whether it is optimal to have the central bank responsible for systemic stability while not at the same time being responsible for prudential regulation and supervision of the institutions that make up the system.
- Equally, whether it can act as an effective lender-of-last-resort without having prudential oversight of banks.

In practice, there will be no major changes to the current institutional structure (*unified* agency where the FSA is responsible for both an *integrated* prudential regulation and conduct of business regulation) because there is too much political capital invested in it. Indeed, in evidence to the House of Commons Treasury Committee on October 25th, 2007, the Chancellor virtually ruled this out. Nevertheless, the role of the Bank of England needs to be considered and the possibility of an alternative structure could be an issue for the longer term. What in practice is likely to emerge is a streamlining of the work of the different agencies, a refinement of the crisis-management function, more effective information-sharing, and more clearly-defined procedures, but all within the current overall institutional structure.

5.2. Crisis Management

When the FSA was created, and banking supervision was taken from the Bank of England, it was recognised that there would need to be a formal set of arrangements and procedures for handling failing banks. This was formalised in a MoU between the Treasury, Bank of England and FSA. This Tripartite agreement was based on five main principles: there was to be clear division

of responsibilities, appropriate accountability arrangements, the avoidance of duplication of responsibilities, exchanges of relevant information, and mechanisms for crisis management. In the event, the first crisis to emerge in the new regime revealed weaknesses and flaws in each of these areas. In some areas, there was some uncertainty about the legal position, e.g. intervention powers; whether, in the event that the Bank of England undertook covert intervention in support of the bank, this would need to be made public, and whether such intervention might also infringe EU competition law.

There were several ways in which the crisis was managed badly: there were public disputes between the three agencies, communication arrangements were clearly problematic, there was no clear definition about which agency was responsible for initiating action, and the government delayed announcing its guarantee of Northern Rock deposits until after it was announced that the bank would receive Bank of England support.

6. The Resolution of the Crisis

Initially, the government attempted to find a private market solution and bids were invited. Four particular conditions were set by the government: (1) the government (tax-payer) should share in any upside gain to the buyer, (2) new capital was to be injected, (3) repayment of Bank of England loans was to be made within three years, and (4) bidders needed to present a viable business plan.

Fairly late in the process, the government proposed as an option for consideration that Northern Rock could securitize some of its remaining mortgage assets with the securities being guaranteed by the government. The funds would be used to repay the Bank of England's loans (in the order of £55 billion). In effect, the loans would be replaced by a government guarantee on the securities issued by the bank. In order to limit the risk to the tax-payer, the securitisation package would be "over-securitized", and a fee would be charged for the guarantee.

After a protracted period during which bids were invited to purchase Northern Rock, and against the political instincts of the government, the bank was eventually taken into temporary public ownership. This was one of the biggest nationalisations ever undertaken in the UK and, as argued below, this amounted to an *ad hoc* Bridge Bank mechanism. An independent commission would decide upon an appropriate price to be paid to shareholders though this was required to be made on the basis of excluding the valuation effect of government guarantees and Bank of England support. Clearly, this raises a problem in that, while the bank's assets might have considerable value, the value of the equity could be effectively zero given that the bank could survive only on the basis of the government guarantee of deposits and Bank of England funding.

There are several reasons why, in the final analysis, none of the private bids was deemed to be acceptable: market conditions generally were uncertain and volatile and the demand to buy a mortgage bank was limited; market uncertainty at the time made it difficult to price the bank; the housing market in the UK was becoming considerably weaker than in the past and there were market expectations that house prices could fall quite sharply thereby increasing the probability that some mortgagees would default on their loans; one of the government's conditions (that the loans and support the bank had

received) needed to be repaid within a reasonable period was clearly a serious legacy problem for potential bidders; any successful bidder would be required to inject new capital, and there was some uncertainty over the legal status of Granite (Northern Rock's off-balance sheet vehicle for the securitisation of the banks loans).

There was also public disquiet in that the very small number of bidders were tending to make low bids which meant that tax-payers retained the risk that their own loans would not be repaid (perhaps because of the risks in the housing market that might reduce the true value of the bank's mortgage assets), while at the same time there was a potential (though by no means certain) upside gain to any successful bidder. The concern was that the risks would be socialised while the potential profits would accrue to the successful private sector bidder.

While the tax-payer remained exposed to the risks in the mortgage market, this would also have been the case had one of the private bids (including one from the existing management team) been successful.

7. Structural Flaws in the UK Regime

Four major and long-standing structural weaknesses in the UK regime made a Northern Rock problem inevitable at some stage:

1. The deposit protection scheme was fundamentally flawed.
2. The UK had no special insolvency arrangements for banks but applied the long drawn-out normal insolvency arrangements for other companies.
3. There were no clearly-defined *ex ante* Resolution procedures in the event of failing banks.
4. The institutional structure of regulation (and the split between the Treasury, FSA and Bank of England) proved to be an uncertain arrangement in time of crisis.

The arrangements were fundamentally flawed for several reasons: Firstly, the FSCS would not prevent bank runs because of its co-insurance principle. Secondly, there was no arrangement to ensure that, in the event of a bank failure, there would be arrangements to ensure there was only minimal disruption to customers in the conduct of their normal banking business. Thirdly, and partly because of the lack of a clearly-defined bank insolvency model, the arrangements for deposit protection could not guarantee that payments would be made promptly thus exposing bank deposits to a liquidity risk. In particular, the legal position was that a bank could not be put into administration without freezing deposits.

These were recognised by the government which in January 2008 issued a comprehensive consultation process jointly with the Bank of England and the FSA (*Financial stability and depositor protection: strengthening the framework*) outlining its proposed reforms in each of the flawed areas: see HM Treasury (2008a)

After the Northern Rock crisis, the British government initiated a wide-ranging consultation process on structural reform. Its document (HM Treasury, (2008a)) offered a comprehensive review of various options focussed on the structural weaknesses outlined above. A clear theme has been the need for a clear, smooth and predictable Resolution regime, reform of deposit protection arrangements, a special insolvency arrangements for banks, and a revamped crisis management procedure. It is also recognised that, in any Resolution procedures, depositors needed to be protected which *inter alia*

implies quick action and no disruption of normal banking services. It has come to be recognised that a holistic approach to reform is needed.

After the two substantial consultation documents (HM Treasury (2007) and (2008a)), the final comprehensive reform programme was outlined in July 2008 which also indicated in some detail the specific proposals to be put to Parliament in the Autumn of that year (HM Treasury, 2008b). It specifically addressed two of the fault-lines in supervisory architecture outlined above:

1. The issue of whether there should be a special insolvency regime for banks, and
2. The planned resolution regime to replace the *ad hoc* arrangements that previously applied including in the case of Northern Rock.

The so-called Special Resolution Regime (SRR) implies new powers and tools, and institutional structures and insolvency arrangements for banks, and is designed to produce a more orderly resolution of failing banks. The SRR also gives power to intervene before insolvency is reached. More immediately, the arrangements are designed to maintain the continuity of a failing bank's business for the benefit of customers, and to facilitate (where necessary) a fast payout from the FSCS.

The arrangements outlined for the SRR specify the "tools" available to the authorities with respect to how resolution is to be achieved:

1. a private sector purchase of a failing bank (the first-best option because it is the least disruptive in all respects, and is a standard market solution),
2. transfer of the bank to a Bridge Bank (similar to the model already applied in the US),
3. a partial transfer of some parts of a bank's business by splitting the bank which would have the effect of disturbing property rights and creditor rankings, and
4. Temporary public ownership (à la Northern Rock model).

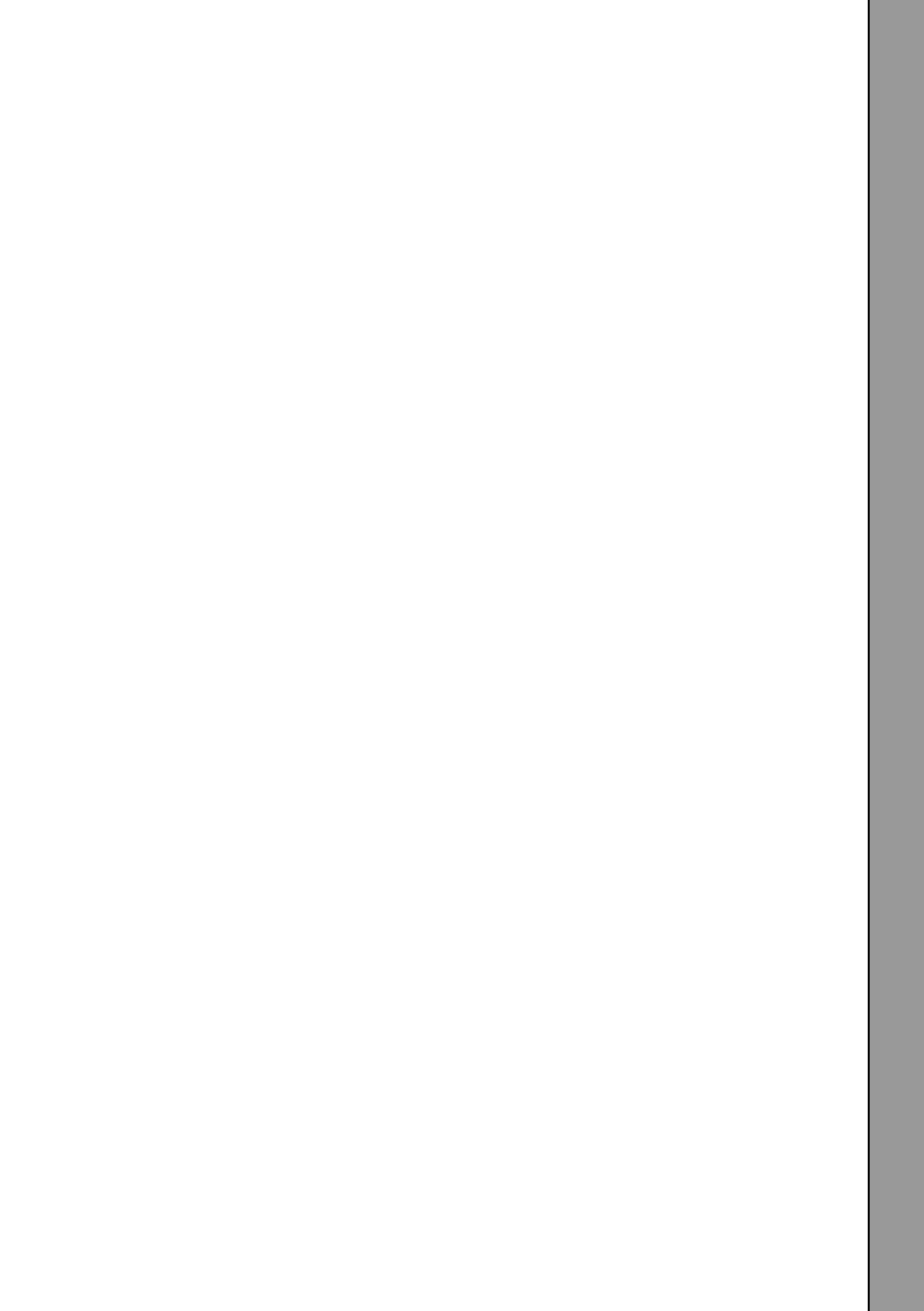
Each of these is to be applied before a bank is technically insolvent. It is stressed that these instruments will be used only when certain basic criteria are met, and after intensive consultation has taken place between the three main agencies (Treasury, Bank of England and FSA).

8. Assessment

Our central theme has been that the Northern Rock episode was a multi-dimensional problem and reflected a complex set of inter-related problems. A second central theme has been that it revealed several fault-lines in several areas. If there is a positive outcome to the episode it is that attention has been drawn to these serious fault-lines. Crises (whether major or minor) often automatically call forth regulatory responses. However, this is often not the optimal response as not all problems can be solved by regulation or without imposing substantial costs. It is not likely that, in the case of Northern Rock, there is any need for more detailed prescriptive regulation. The problem was largely one of institutional architecture, crisis management, and on-going *supervision* rather than *regulation*.

9. References

- Bank of England, (2007), *Financial Stability Report*, London, October.
- Eisenbeis, R and Kaufman, G (2007), “If Northern Rock Had Been in the US”,
- Hamalainen, P, Pop, A, Hall, M and Howcroft, B (2008), “Did the market signal impending problems at Northern Rock?: An analysis of three financial instruments”, Paper presented at the WEAI Annual Conference, Hawaii, June.
- HM Treasury, (2008a), *Financial stability and depositor protection: strengthening the framework*, London, Cm 7308, January.
- HM Treasury, (2008b), *Financial Stability and Depositor Protection: Special Resolution Regime*, London, July.
- Herring, R (2007), “Resolution Strategies: Challenges Posed by Systemically Important Banks”, lecture at Regional Seminar on Financial Crisis Management, Singapore, September.
- Llewellyn, D T (2004), “Institutional Structure of Financial Regulation and Supervision: The Basic Issues”, chapter 2 in, eds. Carmichael, J, Alexander Fleming, and David Llewellyn, *Aligning Financial Supervisory Structures with Country Needs*, World Bank Institute, Washington.
- Llewellyn, D T (2009a), “The Global Financial Crisis: The Role of Financial Innovation”, in ed. P Booth, *The Global Financial Crisis*, London, Institute of Economic Affairs.
- Llewellyn, D T (2009b), “Financial Innovation and the Global Financial Crisis”, in ed. Sandra Mollentze, *Monetary Policy in South Africa*, proceedings of the 2008 South African Reserve Bank Conference, South African Reserve Bank, Pretoria.
- Treasury Committee, (2008), *The Run on the Rock*, The Stationary Office, London, HC 56–1, Fifth Report of the House of Commons Treasury Committee, Session 2007–8, January.



THE NORTHERN ROCK CRISIS IN THE UK

David G Mayes and Geoffrey Wood

Corresponding Author:

Geoffrey E. Wood
Professor of Economics
Cass Business School
City University
106 Bunhill Row
London EC1Y 8TZ
UNITED KINGDOM

Tel.: +44 20 7040 8740

Fax: +44 20 7040 8881

E-mail: g.e.wood@city.ac.uk

<http://www.cass.city.ac.uk/faculty/g.wood/index.html>

1. Introduction

Although those who made losses will not view it this way, the Northern Rock crisis has thus far proven an almost ideal test of the effectiveness of safety nets in a wide range of countries. The bank was large enough that the UK authorities felt compelled to act to avoid contagion and also to set in place a sweeping review that seems likely to result in major changes to the way banking problems are to be handled in the future. Yet at the same time it was small enough that the losses thus far involved are not significant from the point of view of society as a whole. It is not possible to conduct effective simulations of how the safety net might actually operate, except perhaps for small cases; the tests have to be real. However, everyone hopes that the safety net and the system of prudential banking regulation are such that such real tests will not occur.

The UK authorities no doubt thought they had an excellent system, with a unified financial system supervisor, the FSA, that has been a pioneer in risk-based supervision, focusing attention where it is most important, one of the world's most experienced central banks in the home of Walter Bagehot, the authority on the Lender of Last Resort, one of the more generous deposit insurance schemes with a coverage well in excess of the minimum required by the EU and an explicit agreement between the central bank the supervisory authority and the ministry of finance on how problems were to be handled. Yet problems emerged in most aspects of the system, many of them fundamental, and the UK has experienced the first open bank run, with depositors queuing in the streets, since Overend Gurney in 1866. Supervisory intervention was neither early enough nor firm enough; a private sector solution could not be engineered; the agreement to use Lender of Last Resort intervention helped trigger rather than avoid the run; the deposit insurance scheme has had to be heavily revised; and the authorities are well on the way to putting a new Special Resolution Regime for banks in place.

Other authorities round the world will no doubt quietly be giving thanks that this problem did not occur in their own country and wondering what would have gone wrong if the problem had been in their own jurisdiction. Shocks have to be close to home for people to react. The much more expensive savings and loan debacle in the US prompted major changes there including FDICIA (the Federal Deposit Insurance Corporation Improvement Act of 1991) but both that and the horrifically expensive Nordic crises – exceeding the impact of the Great Depression in the case of Finland – around the beginning of the 1990s seem to have had limited impact elsewhere.

The primary purpose of this short paper is therefore to encourage other countries to consider the lessons from the Northern Rock experience and to act on them so that their supervisory and safety net systems are stronger and that the mistakes that they make if they are unlucky enough to experience such an adverse shock are at least different. In what follows therefore we offer our own appraisal of the lessons to be learned. However, it is important not to over-dramatise. The safety net did not fail. The authorities were able to work out a solution, ordinary depositors have not lost, contagion has largely been avoided, the major losses have fallen on those who voluntarily took the risk, the shareholders, and many of those responsible have lost their jobs or had their reputation tarnished. Although taxpayers have taken on some of the risk, they too may not lose if the bank is successfully re-privatised.

2. The implications

2.1. *Deposit Insurance*

According to the established literature (Diamond and Dybvig (1983)) deposit insurance should stop a run by retail depositors on a bank as they are running no risk. If the bank fails they will still get their money back. The Northern Rock episode reveals some very important provisos that must exist for this to apply in practice.

First of all, the depositors need to get the entire deposit back otherwise they will withdraw at least the uninsured portion and possibly the whole sum as this involves no extra effort. This does not mean that all deposits need to be fully insured but that simply enough of them need to be fully insured that the withdrawal of or loss of the uninsured portions neither leads to a general loss of confidence or other threat to financial stability. As is illustrated by the Northern Rock episode, the ‘smart’ money leaves first and it is only when the less informed find out that the bank cannot raise finance on wholesale markets that the overt run starts.¹

The UK’s prevailing limit of £35,000 is thought to cover 100% of at least 90% of bank deposits and more than that in the case of Northern Rock. This is rather more generous than in most of the EU countries (Cariboni et al. (2008)). Hence other countries with similar income levels might find themselves more susceptible to a run than the UK. However, the UK had a particular feature to its deposit insurance that most other EU countries do not – namely, co-insurance. After the first £2,000 only 90% of the deposit up to £35,000 was insured. Thus most depositors had something at risk and the only sensible strategy would be to run down the deposit immediately to below £2,000. Insuring only 90% does not prevent 90% of the run, it prevents none of it. The Northern Rock experience is thus likely to end co-insurance in other countries as well.²

¹ Kane (2008) describes this withdrawal by the informed as a ‘silent run’.

² Co-insurance was intended to help provide incentives for depositors to monitor the banks and in turn therefore to put prudential pressure on the banks, who would know depositors were likely to exit. Like all deterrents they only work if they deter. Once the bank is in trouble their effectiveness has gone.

Secondly, it is clear that depositors require continuing access to their deposits. While a short break may not matter to them, not receiving their pay, having standing orders and direct debits collapse and running out of cash will not be acceptable. The amount of inconvenience does not need to be large to exceeding the switching costs.³ In the United States the aim is to restore access inside a week. In New Zealand, where there is no insurance, the intention is within the value day. In any event the break needs to be sufficiently short such that it is not material to the customer (materiality may vary from one society to another – some countries hold far more cash than others and hence have a larger cushion against shocks).

The UK like the rest of the EU only has an obligation to pay out depositors within three months (extendable twice by a further three months in the case of difficulty). The result in many countries is that they do not know how long it would take to pay out depositors in the event of a substantial failure. But, however long it is, it will not be short. The system therefore has to change; it has to be credible to the ordinary depositor that they will get access to their funds swiftly. If the deposit insurer is not funded or does not have ready access to temporary government funding while new funds are collected from the industry people will not believe that it will work. Similarly if the deposit insurer has virtually no staff (the Finnish insurer has one part time employee and the Swedish insurer two) then a swift payout will not be credible. The insurer has to have detailed knowledge of the structure of the banks' computer systems and it needs to be possible to identify all insured deposits overnight.⁴ This will apply whether the deposits are maintained in some evolution of the existing entity or transferred to another bank.

2.2. Redefining 'too big to fail'.

There is no clearly defined boundary between banks that can be allowed to fail in the sense of being closed and placed in receivership and those that have to be kept operating (even if they are terminated in legal personality and the shareholders wiped out). The Northern Rock episode tells us that the size to be kept operating is smaller than many people thought. In the US perhaps something of the order of 10 banks were thought to be in this

³ In the Northern Rock case depositors did not withdraw from the banking system, they merely switched to stronger banks.

⁴ The UK system has a further element that damages its credibility in that it pays out on the net claim on the bank – thus offsetting any loans against the deposit – thus the other claims have to be identified and matched, again a time consuming process.

category (Stern and Feldman (2004)). In New Zealand the Reserve Bank has made it clear that all of the main banks are categorised in this way and they are forced to organise themselves in such a way that they can operate on their own as viable entities on the following day if they have to be taken into statutory management (the NZ equivalent of receivership).⁵ However, in most countries how big is “how big to fail” is the subject of guesswork. Corporate spreads will give an idea of the market’s judgement on the issue but in general it is clear that in most European countries people do not expect any other than minor banks to fail. This would explain the structure of the deposit insurance system and the lack of special resolution regimes as in the US, Canada, Mexico and elsewhere.

However, there are some grounds for thinking that the Northern Rock case was unusual. It was unexpected and the first test of the new regulatory and money market regimes. It came at a time when there was a new Prime Minister, who was contemplating holding a general election to strengthen his mandate – a bank failure and protesting depositors would not have helped re-election. It would have reflected badly on the new Tripartite arrangements that the Prime Minister himself had put in place as Chancellor of the Exchequer. Northern Rock was headquartered in Newcastle upon Tyne an area of strong Labour Party support and of above average unemployment. It is, however, likely that many looming bank failures in other countries will have ‘special features’ in terms of location, timing and relationships that make them politically sensitive.

2.3. Standing facilities and emergency lending.

Several features of the support by the Bank of England for Northern Rock did not function as might have been hoped but the major problem was that an expression of support and confidence helped precipitate a retail run rather than stop it. The FSA’s determination that the bank was solvent and the Bank of England’s willingness to lend extensively against eligible collateral, albeit at a penalty rate of interest, should have been sufficient. Instead, needing to go to the Bank of England was treated as sign of failure.

This is part of a wider problem. Even use of the standing facilities (for borrowing overnight) has been treated as a sign of serious problems. Earlier in 2007 Barclays twice had to resort to the standing facilities when large

⁵ This concept of a special resolution regime for banks is the subject of subsection 5 below.

transactions failed just before the overnight market closed, and this attracted a very adverse press. (The result is that they and other of the major banks now hold more liquidity overnight than they used, thus making it harder for others to adjust to shocks.) The penalty interest rate is enough to dissuade banks from using the standing facilities as a matter of course before seeking a market solution but it was not intended to offer an adverse signal. Other countries have had the same problem. The Federal Reserve attempted to remove the stigma of using the discount window by asking several of the well-capitalised banks to use it voluntarily – unfortunately an act that the market saw through.

Anonymity in the use of the facility might help. But Northern Rock required greater help than standing facilities could provide or indeed are designed to provide, as the range of acceptable collateral needed to be widened, and such collateral, even with haircuts, needs to be appraised on a case by case basis as it lacks a market price. The Eurosystem eases this problem somewhat by having a much longer list of acceptable collateral, as does the Federal Reserve. Nevertheless it does appear that there are a number of ways in which the stigma can be reduced so that solvent banks in limited difficulty with liquidity can address their problems without triggering a major loss of reputation and effective downgrade. The making of emergency assistance against acceptable collateral an easier and faster process might have helped Northern Rock even if the same interest rate premium and haircuts used subsequently had been applied and the repayment period was short.

2.4. Early intervention

The major lesson the US learnt from the savings and loan debacle was the importance of ‘Structured Early Intervention and Resolution’ (SEIR) and of Prompt Corrective Action (PCA). The authorities need to be compelled to act early as signs of distress emerge and act under a short timetable, with increasing harshness, as the problems worsen – ultimately stepping in before all capital is eroded so as to stop losses mounting.⁶ Having the ability and the requirement to step in is crucial if the earlier stages are to work. The ultimate threat has to be credible not simply to get the bank itself to strive for a private sector solution but for potential purchasers and funders to prefer this as well. If they know that delay will result in the public sector stepping

⁶ The point at which the US authorities can step in and close the bank is when the leverage ratio falls below 2%. Some find the use of leverage ratios controversial but other positive capital triggers could work.

in, shareholders being wiped out, management losing their jobs and the public sector getting all the advantage of the temporary fall in asset values in the rush (the so called ‘fire sale’) then their incentive to act first is increased. When the authorities ‘reprivatise’ the failed bank they are likely be able to achieve much better terms as they are not in a hurry.

What Northern Rock added to this realisation is that the capital triggers for action built into the US system cut in too late. In practice the US has tended to act before the capital triggers bite (Peek and Rosengren (1997)) and have acted on other signals, including those generated in the course of the CAMEL rating system. In the Northern Rock case it would have been possible to do this from the decline in the share price, for example. The share price fell by more than 25% between February and June 2007. In Norway, if a bank’s share price declines by more than 25% between annual general meetings it is required to call an extraordinary general meeting in which the supervisory authority is involved to discuss the circumstances and decide how to act.⁷ While early triggers of this form may be pulled too often they force an explicit appraisal by the supervisor.

There are thus two obvious sources of information to be used in addition to the capital triggers (Basel 2, Pillar 1), namely Pillars 2 and 3, the supervisory review of risks and the information that is publicly disclosed. The exposure of Northern Rock to potential liquidity problems was known by the supervisor and the FSA has (rightly) been self-critical over its failure to act more promptly (FSA (2008)). As problems were encountered with the originate and distribute model in the US so they could have been anticipated in the UK.

2.5. A special resolution regime for banks.

The major conclusion of the tripartite authorities following the Northern Rock experience is that the UK needs a special resolution regime for banks (Bank of England et al.(2008)). At present the UK uses normal insolvency provisions in company law for banks. Thus a bank has to reach insolvency before a receiver can be appointed. Although the courts have both acted swiftly and followed the authorities’ advice (Hadjjemmanuil (2003)), this nevertheless is too late from a practical point of view if the authorities want to keep the bank operating. Thus at present the authorities, if they are unable to engineer or obtain any solution involving private sector recapitalisation, can

⁷ A second EGM has to be called if the share price falls more than 75% where the presumption is that the meeting should arrange closure of the bank unless a credible alternative can be found.

only choose between letting a bank fail and go into insolvency, or buying the bank themselves (nationalisation), which is what they had to do in the case of Northern Rock. It is not clear in the UK whether there is even the option for a Bear Stearns style assisted rescue, without it breaking the EU rules for state aid.

The special resolution regime thus has to be able to handle two eventualities:

- An orderly closure before losses mount if no market solution can be found
- A rapid transfer of the bank as a whole or its key operations into the authorities control without a break in business.

And, of course it needs to enable the authorities to decide which of these two courses should be followed.

The UK proposals make heavy reference to the US arrangements, where just such provisions apply. However, in the US there is a prime objective governing how these decisions should be taken, namely, minimising the losses to the FDIC. There are two steps to this argument. The first is to establish what the welfare objectives of public sector intervention are.

In the event of a non-bank insolvency the objectives are to maximise the value of the insolvency estate, respect the ranking of creditors, and treat creditors with any given ranking equally. Indeed in the US, where insolvency law is relatively ‘debtor friendly’ it is common for a firm to seek temporary protection from its creditors (under Chapter 11) and keep the firm operating while it tries to see if it can get agreement on a reorganisation of the claims, say, by postponing them or writing them down. Thus it is normal to try to decide whether it is in the creditors’ best interests to allow the firm to keep operating under closely restricted terms or to simply close it or dismember it and sell the various assets, including viable subsidiaries, at the best price that can be obtained.

Since the FDIC succeeds to the claims of the insured depositors in the event of a failure managing the resolution in such a way that it minimises the losses to the FDIC would be exactly the same as maximising the value of the insolvency estate – provided that the depositors were in the most junior class of creditors and all members of that class were treated equally. That neat

symmetry does not apply if there is depositor preference or the deposit insurer has a higher priority among the claimants.

The advantage of this scheme is that it preserves as much as possible of the symmetry in treatment of banks and non-banks. The only difference is that the intervention point in the case of banks is likely to be earlier – a disadvantage to the debtors that is matched by the services the authorities provide in assisting prudential management and liquidity assistance.

However, this assumes that there are no spillovers that are thought important, i.e., no threat to financial stability. The US has an explicit ‘Systemic Risk Exemption’ whereby, with the support of the Federal Reserve, the Comptroller of the Currency and the Treasury (effectively the President) the FDIC can take wider concerns into account. This has never been used. Since the case of Continental Illinois no bank failure in the US has been thought large enough to require special action. Both LTCM and Bear Stearns, where there were such concerns, were dealt with by the Federal Reserve. One might argue the same about the operations to assist Fannie Mae and Freddie Mac earlier this year. However, in none of these cases is there an explicit objective for minimisation or maximisation of something.

Northern Rock illustrates that these spill over concerns can occur with quite small institutions. Since much of the concern is over how people might perceive an event, as it tends to be much less expensive to head off a loss of confidence in these circumstances than try to reverse such a loss should it occur, it is very difficult to provide any hard and fast rules. The costs of financial instability can be huge (Hoggarth and Saporta (2001)), so minimising expected losses to society would involve assigning very soft probabilities to large numbers. Nevertheless this is precisely the judgement that has to be made in deciding whether a bank should be allowed to fail or should enter the special resolution process, leading perhaps to the formation of a bridge bank.

It therefore makes more sense to have a formal process, as in New Zealand, where any of the large banks will enter a prescribed resolution regime, irrespective of the circumstances. This gives certainty to all parties about the outcome and process. It reduces the need to make political decisions at the time. (It cannot remove them as it is always possible that the government will see the size of the losses that will occur and decide to use taxpayers’ money, whatever the prior commitment). Nevertheless acting early tends to minimise such losses.

2.6. Responsibility and Coordination

The Tripartite arrangements in place at the time of the Northern Rock problems acknowledged the inherent difficulties of getting three agencies to act in concert. The difficulties that occurred emphasise how much worse it would be if this co-ordination had to be across borders and problems of conflict of national interests were added. The reaction of giving a stronger role to the central bank in times of stress makes sense as it is the organisation responsible for financial stability and in the main such actions can take place without access to taxpayer money, which would require ministerial consent. However, it is the fact some allocation of responsibility has been made which is essential. In the US responsibility seems to have been clear with the FDIC dealing with banking problems and the Federal Reserve handling other parts of the financial system. With much weaker deposit insurers in other countries, responsibility needs to lie elsewhere.

Both the supervisor and the central bank face conflicts of interest. For the supervisor there is the fear that bank failure might be equated with supervisory failure; this can lead to forbearance. For the central bank there could be a conflict with monetary policy. It is unlikely that in future such Memoranda of Understanding as existed among the three authorities will be thought adequate: something sharper is required. At the European level this implies a considerable rethink for the handling of problems with cross-border banks. Simulations may not reflect the harsh reality of crises and the tendency for instinctive action and inaction, which may not be optimal with the benefit of hindsight.

3. Concluding remarks

The upshot of this discussion suggests that the Northern Rock episode has revealed little that leads us to believe that economic analysis was particularly at fault in allowing the problem to emerge. According to House of Commons (2008) the problems emerged from an unfortunate combination of weaknesses in implementation and a major external shock. We therefore draw 5 main lessons from this experience that need to be considered in all countries and not just in the UK:

1. Deposit insurance needs to be designed so that
 - a. the large majority of all individuals' balances are fully covered
 - b. depositors can all have access to their deposits without a material break
2. The activation of emergency liquidity assistance arrangements needs to give confidence that those being assisted will survive, and should be seen as the system working as it should, rather than signalling some breakdown
3. There needs to be a regime of prompt corrective action for supervisors whereby prescribed actions of increasing severity are required within short time periods according to a set of triggers based on capital adequacy and risks of failure
4. There needs to be a legal framework such that the functions of systemic importance in banks that fail can be kept operating without a material break
 - a. such 'failure' should occur before the bank becomes insolvent so that there is little chance of losses to the taxpayer
 - b. this will normally involve a special insolvency regimes for banks
5. Some designated institution needs to be in charge of intervention in failing banks to ensure rapid and concerted action.

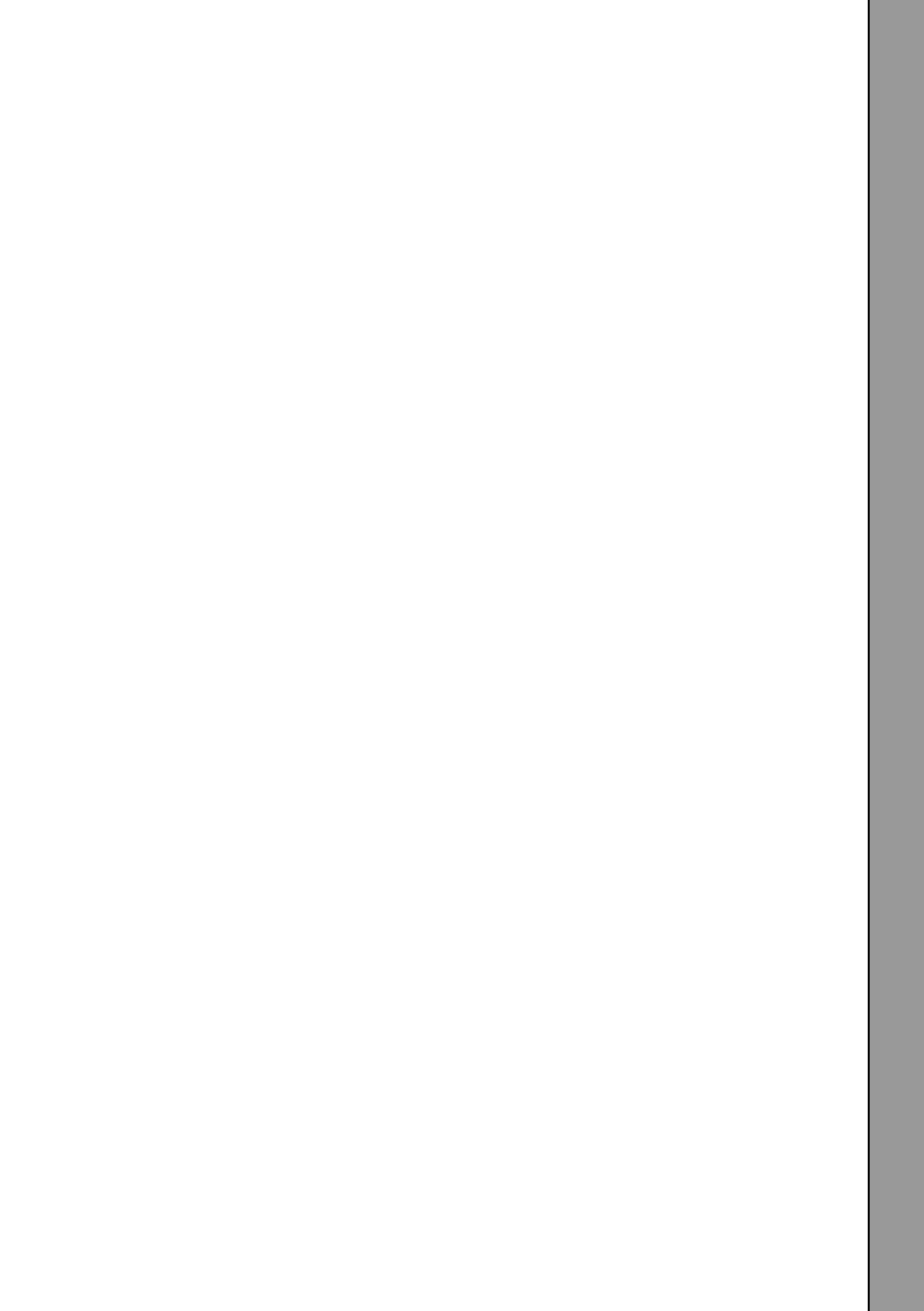
(At a European level far greater coherence among the legislation and authorities of member states is required if these provisions for the handling of problems in domestic banks are to be equally successfully in handling the case of large cross-border banks.)

If these 5 provisions had been in place it is highly unlikely that there would have been a retail run on Northern Rock and the record of over 140 years without a significant bank run in the UK would have been maintained.

Further, Northern Rock was a medium-sized domestic bank. If the problems had occurred in a larger cross-border bank the consequences would have been much more severe. Although it will not feel like it to those who have lost money or their jobs in the Northern Rock episode, it is fortunate that the wake up call to action has been so effective at such limited cost. What remains is to take the action before any such serious crisis could emerge.

4. References

- Bank of England, Financial Services Authority, H M Treasury (2008) *Financial Stability and Depositor Protection: further consultation*, Cm 7436, July
- Cariboni, J. Vanden Branden, K, Campolongo, F and De Cesare, M (2008) 'Deposit protection in the EU: State of play and future prospects', *Journal of Banking Regulation*, vol. 9(2), pp.82–101.
- Diamond, D and Dybvig, P (1983) 'Bank runs, deposit insurance and liquidity', *Journal of Political Economy*, vol.91, pp.401–19.
- FSA (2008) 'The supervision of Northern Rock: a lessons learned review', Internal Audit Department, March
- Hadjimannuil, C. (2003) 'Bank Resolution Policy and the Organization of Bank Insolvency Proceedings: Critical Dilemmas', in D Mayes and A Liuksila, *Who Pays for Bank Insolvency?*, Basingstoke: Palgrave-Macmillan.
- Hoggarth, G., and Saporta, V. (2001). 'Costs of banking system instability: some empirical evidence', June, *Financial Stability Review*, Bank of England.
- Kane, E (2008) 'Regulation and supervision: an ethical perspective', Judge Business School, Cambridge, conference on 'Principles v Rules in Financial Regulation, 10–12 April.
- Lastra, R (2008) 'Northern Rock, UK bank insolvency and cross-border bank insolvency', *Journal of Banking Regulation* vol.9(3), pp.165–86.
- Peek, J and Rosengren, E (1997) 'Will legislated early intervention prevent the next banking crisis?', *Southern Economic Journal*, vol. 64(1) (July), pp. 268–80.
- Stern, G and Feldman, R. (2004) *Too Big To Fail: the Hazards of Bank Bailouts*, Washington DC: Brookings Institution.



FALLOUT FROM THE CREDIT SQUEEZE AND NORTHERN ROCK CRISES: INCENTIVES, TRANSPARENCY AND IMPLICATIONS FOR THE ROLE OF MARKET DISCIPLINE

Paul Hamalainen

Senior Lecturer in Finance
Essex Business School
University of Essex
Wivenhoe Park
Colchester CO4 3SQ
UNITED KINGDOM

Tel.: +44 1206 874558

Fax: +44 1206 8736429

E-Mail: pkhamal@essex.ac.uk

<http://www.essex.ac.uk/afm/staff/hamalainen.shtm>

1. Introduction

The aim of this chapter is to explore the implications for the role of market discipline as a result of the Northern Rock crisis. Given the modern phenomenon for globalisation in financial institutions and financial markets, and the interconnectedness between the crisis at Northern Rock and the turmoil in global markets, the chapter also examines the market discipline issues surrounding the global credit crisis. In that way, the paper discusses the two key avenues in the market discipline debate - incentive structures and transparency - both of which are viewed as essential in encouraging successful market discipline.

After a brief introduction as to the benefits of market discipline in banking regulatory design, the layout of the paper is as follows. The first section analyses the market discipline implications from the Northern Rock crisis, and, in particular the Tripartite Committee's proposals to restructure UK banking regulation. The focus is on whether the new regulatory regime will enhance the incentive structures for bank stakeholders to monitor and discipline bank risk-taking. The second section explores the role that enhanced disclosures

can provide in improving transparency and thus the potential for successful market discipline. The discussion covers both the existing Pillar 3 policies to enhance bank transparency and the recent disclosure policy initiatives that are in response to the credit crisis. Finally, the chapter will combine the two themes to provide some observations on how the market discipline debate can progress in light of the recent turmoil in both UK domestic, and international, banking and financial markets.

The academic literature has regularly espoused the benefits of enhancing incentive structures in bank regulatory design to encourage market discipline, and how this can support regulatory authority discipline to redress some of the moral hazard and efficiency problems in banking and improve financial stability (Berger (1991); Evanoff and Wall (2001); and Flannery (1998)). For example, market monitors can sanction banks whose financial condition or risk profile is considered, in some sense, unsatisfactory (Linsley and Shrive (2005)). This can be either through withdrawing, or failing to rollover, funding (termed as quantity based discipline) or through demanding increased interest rates or yields (termed as price-based discipline). Equally, the regulatory authorities can use these forward-looking market prices to assist in their identification of institutions that are most at risk of failing.

Hamalainen et al. (2005) emphasises that there are two aspects to the successful introduction of market discipline. First, investors must have incentives to monitor and signal increased bank risk taking. In other words bank stakeholders must consider that they are at risk in the event of bank default. Secondly, in order to successfully monitor bank risk-taking adequate bank disclosure structures must be introduced. These two elements for successful market discipline frame the subsequent discussion.

2. Tripartite Committee proposals and market discipline implications

This section examines the current proposals for a new banking regulatory framework in the UK and its implications for the role of market discipline within that framework. The market discipline literature suggests that three classes of bank stakeholder could impose market discipline: depositors, bondholders and equity holders, because they are all at risk of loss in the event of bank failure. The discussion on the current proposals, therefore, will be framed around the three different types of stakeholders. In addition, this section will examine the incentive structures that are proposed for the regulatory authorities and credit institutions within the current consultation stage and the market discipline implications thereof.

Following the run on Northern Rock, the UK regulatory authorities have conducted extensive consultations with all financial market stakeholders to address the numerous weaknesses in the current banking regulatory regime. In written form, these consultations have resulted in one discussion paper issued in October 2007¹ and two further periods of consultation (in January 2008 and July 2008)². The second consultation stage is due to end on the 15th September 2008. Following this, the Government intends to present legislation to parliament in late 2008. The proposals, if implemented, would represent a substantial overhaul of the existing UK banking regulatory arrangements for resolving bank failures and compensating depositors.

2.1. Depositors

One of the most prominent features in the debate on reforming the UK's banking supervisory framework, in no small part due to the pictures of queuing depositors outside Northern Rock branches, is that of the deposit insurance arrangements. Under the existing scheme, the UK was quite unique in having a co-insurance element. The aim was to incentivise depositors to undertake market discipline through monitoring bank risk-taking and reflecting this in their investment decision-making; in other words, sharing

¹ Tripartite Committee, (2007)

² Tripartite Committee, (2008a, 2008b and 2008c)

the risk of excessive bank risk-taking through accepting higher deposit returns. Hamalainen (2008b) conducted interviews with queuing Northern Rock depositors during the first four-days of the crisis. One of the conclusions from his evidence is that depositors had invested in Northern Rock because of the extremely competitive interest rates on offer. Furthermore, his evidence highlights that the co-insurance element in the deposit insurance scheme meant that depositors were not willing to lose a penny of their hard-earned savings. His findings suggest that retail depositors cannot be relied upon as a source of market discipline, because they do not consider the risk-taking elements surrounding deposit interest rates.

In the aftermath of the run on Northern Rock, the Tripartite Committee's swift decision to remove the co-insurance element was a welcome move. Looking ahead, the current suggestion to raise the deposit insurance coverage limit to 100% of £ 50,000 is a sensible decision, but from a market discipline perspective the incentive for depositors to undertake any risk-sensitive monitoring of deposit interest rates is further removed. In addition, a by-product of this new and higher coverage limit is the increased moral-hazard potential for banks to "gamble for resurrection". Furthermore, raising the deposit insurance limit and providing 100% coverage may reduce the market discipline behaviour of depositors, but, rather worryingly, it does not remove the potential for rapid bank runs. The evidence from Hamalainen (2008b) is that Northern Rock depositors wanted to obtain immediate control of their funds from the troubled bank and they were not willing to be without access to their funds for any time period. Any delay in receiving a payout represented a liquidity risk for these depositors. Therefore, in order to achieve credibility and prevent damaging bank runs the new UK deposit insurance scheme must be able to payout insured depositors within one day (Hamalainen (2008a)). For similar reasons, the revised scheme must also apply gross payments to insured depositors.

Uninsured depositors (i.e., those who have funds in excess of the deposit insurance coverage limit or those who are excluded from any compensation payments, such as wholesale depositors) carry a stronger incentive to exert market discipline compared to those whose funds are insured. The academic literature argues that in order for investors to have the incentive to impose market discipline, they must not only be at risk of loss in the event of bank failure, but they should also perceive that they could incur losses if the bank fails. In the case of depositors the current Tripartite Committee proposals for resolving bank failures create a potential anomaly that could affect market discipline behaviour. Under the proposed Special Resolution Regime (SRR), the private sector or bridge bank transfer tools (either in full or in part) would facilitate the transfer of

liabilities and sufficient assets to cover those liabilities. The proposals specifically state that Tier I, II and III regulatory capital instruments would be unlikely to be transferred; however there is no mention of uninsured deposits. In fact, the proposals do state: “if only a relatively small proportion of a bank’s balance sheet poses a risk to financial stability (such as the retail deposit book or, potentially, such deposits as are protected by the FSCS) it may only be necessary in order to stabilise the situation to transfer this portion of the bank³. This suggests that retail depositors with sums above the 100% coverage limit have the likelihood of being transferred to the new (acquiring or bridge) bank.⁴

This treatment should be contrasted with the proposals for a failed bank that is resolved under the SRR insolvency mechanism. In these circumstances retail depositors with funds in excess of the insured limit would find their uninsured portion being treated as general uninsured creditors and so the likelihood of receiving all of their funds is significantly diminished (especially given subordinated debt holders are included under the same category). The United States has overcome this problem by applying the depositor preference rule, whereby uninsured depositors rank in advance of general uninsured creditors in the event of bank insolvency proceedings. The UK regulatory authorities should consider introducing a similar concept so that the insolvency tool is consistent with the likely treatment of uninsured depositors under one of the other SRR tools. In this way, uninsured depositors would be left in no doubt as to their risk ranking in advance of bank failure and from a market discipline perspective can therefore price bank liabilities consistently. As things stand if depositors perceive that failing credit institutions may be treated under different SRR tools, for example based on the size of the institution, then uninsured depositors would be attracted to larger institutions where the likelihood of their deposits being transferred to an acquiring or bridge bank is heightened. The United States experience also shows that the introduction of a Least-Cost Resolution Policy, whereby the resolution agency must pursue the resolution method that produces the least cost to the deposit insurance fund, has alleviated the expectation that uninsured depositors at large credit institutions would not incur losses. The UK Tripartite SRR proposals do indicate that a code of conduct will be introduced, outlining, amongst other things, “how the choice between the different SRR tools will be made”⁵. This introduces a degree of accountability into the future SRR arrangements and this must be welcomed.

³ Tripartite Committee, 2008c

⁴ The total transfer of a deposit book can be appealing to an acquiring bank because it provides a relatively cheap source of funds and provides access to a new set of customers for the marketing of banking products.

⁵ Tripartite Committee, 2008c

2.2. Subordinated debt holders and equity holders

The market discipline literature argues that subordinated debt holders and equity holders provide the most appropriate channels for conducting effective market discipline. Comparing the two, subordinated debt holders have a natural aversion to banks that seek increased profits through greater risk-taking. From a regulatory authority perspective, SND provides the same cushioning effect to the deposit insurance scheme as equity, but without the risk-taking incentive of equity holders. Thus, the incentive of SND holders to monitor and limit bank risk-taking is accordingly more aligned with those of the regulatory authorities (and hence taxpayers).

As previously mentioned, an important aspect in ensuring adequate market discipline by bank stakeholders is clearly outlining in advance their probability for incurring losses in the event of bank failure. In the case of debt holders and equity holders it is particularly important to dispel any suggestion that they will be bailed out under the “too-big-to-fail” doctrine. Only then will these investors be encouraged to monitor and price risk accordingly. Prior to the Northern Rock crisis, the UK regulatory authorities approach was one of “constructive ambiguity”. In other words no-one can rely on being bailed out, whatever the size of the credit institution. The Northern Rock crisis has highlighted the weaknesses in the existing UK banking regulatory regime with shareholders bargaining for economic rents and the final resolution being ad hoc and unpredictable in nature. Following the Northern Rock crisis, the Tripartite Committee has been consistent in their treatment of both equity holders and subordinated debt holders and thus their market discipline potential. The government’s announcement on September 17th 2007 of a guarantee for all Northern Rock depositors explicitly excluded subordinated debt instruments. In line with the House of Commons Treasury Select Committee’s (2008) recommendation that shareholders and subordinated creditors should bear the costs of bank failure and not the taxpayer, the Tripartite Committee’s proposals on the SRR clearly implement this philosophy. For example, concerning the transfer of liabilities of a failing bank to a Bridge Bank, the document states; “It is unlikely that the Bank of England would decide to transfer the failed bank’s capital instruments (that is, all debt instruments that qualify as Tier I, II or III capital)”. Equally, the SRR’s share transfer powers to either a private sector purchaser, or to take the bank into temporary public ownership state: “The powers would allow for the transfer of all, or specified classes, of the securities of a bank. Securities would be defined widely to reflect the diverse nature of banks’ capital instruments and extend to preference shares and

debt instruments with equity characteristics potentially conferring control (for example, innovative Tier 1 capital resources).” In both instances the arrangements are so wide-ranging as to capture the vast array of capital bearing instruments currently available in the market place. The references to regulatory capital bearing instruments provide some insulation against future capital instrument developments. Therefore, the expected implementation of these ex ante risk-bearing philosophies on subordinated debt holders and equity holders should encourage these investors to undertake enhanced monitoring and disciplining of bank risk taking in the future. At the same time such philosophies emphasise the importance of implementing regulatory measures at both the pre-crisis and post-crisis stages that complement one another.

2.3. Regulatory authority and financial institution incentives

Market monitors’ incentives to impose market discipline can be affected indirectly by the incentive structures imposed on the regulatory authorities and regulated institutions themselves. Therefore, it is necessary to examine these aspects of the Tripartite Committee’s proposals as well. An especially important aspect is the possibility for regulatory authority forbearance. Modern regulatory theory argues that incentive mechanisms should be created that prevent the regulatory authorities from deciding too late if an institution should be allowed to fail, and by which time the institution has negative franchise value. A solution to the forbearance problem is some form of Structured Early Intervention and Resolution supervisory approach, a common derivative of which is the Prompt Corrective Action (PCA) mechanism that is in operation in the United States. A PCA approach formalises specific ratio tripwires which when breached serve as the basis for mandatory intervention by the supervisory authorities.⁶ The typical reluctance by regulatory authorities to move towards some form of PCA is that they wish to retain regulatory discretion. However, in contrast, a more structured approach to intervention can enhance the credibility of the supervisory authorities in that all market participants have a high degree of certainty that action will be taken and at what stage. At the same time, by removing any prospect that a bank in difficulties might be treated leniently, bank managers have every incentive to manage their banks prudently so as to reduce the probability of distress (Llewellyn and Mayes (2003)). Complementing this structured resolution approach with a clear uniform order for distributing

⁶ Such prompt corrective actions include increased monitoring, raising additional capital, withholding interest and dividend payments to subordinated debt holders and equity holders respectively, requiring acceptance of an offer to be acquired, and closure of the institution.

the assets of failed credit institutions (as previously discussed in this section) ensures that, *ex ante*, all bank investors are fully aware of their risk position, that action will be taken and at what stage and, therefore, reduce opportunities for bargaining of residual economic rents.

A popular misconception with PCA mechanisms is that it exists to prevent banks from failing and therefore creates moral hazard behaviour. A suitably structured PCA tool aims to ensure that the functions of a failing bank are maintained, by identifying as early as possible that a bank is failing. The regulatory authorities can, therefore, begin to put in place mechanisms to deal with insured depositors in case the bank does eventually become classified as failed. Equally, PCA imposes actions on a failing bank that will not leave uninsured investors and bank management immune from financial losses, thereby further reducing the possibility of moral hazard behaviour.

The current proposals from the Tripartite Committee include the conditions for taking a bank into the SRR regime. They are: that a bank is failing, or is likely to fail to meet its Threshold Conditions; and that having regard to timing and other relevant circumstances it is not reasonably likely that (ignoring the stabilisation powers) action will be taken by or in respect of the bank that will enable the bank to satisfy the Threshold Conditions⁷. Unfortunately, these so-called Threshold Conditions lack sufficient clarity and certainty in comparison with the trigger mechanisms under, say, the United States PCA model. The UK proposals, therefore, leave market participants with a high degree of uncertainty as to when action will be taken on a failing bank and at what stage. Equally, these conditions appear to have only one dimension to them before a failing institutions enters the SRR, whereas PCA has a set of increasingly stringent tripwires that only involve the instigation of resolution procedures once a bank has fallen through the last of the tripwires. The key concern is that the lack of clarity within the UK proposals may encourage investors to assume that the regulatory authorities will treat larger financial institution differently and so such institutions are less likely to enter the SRR regime. In turn, this will impact on investors' risk perceptions across different credit institutions. Equally, these proposals do not appear to overcome the issue of eradicating regulatory forbearance, because there is still a wide degree of discretion as to when a bank would enter the SRR regime.

⁷ The Threshold Conditions are set out in Schedule 6 to the Financial Services and Markets Act 2000. The Threshold Conditions with greatest relevance to entry into the SRR are those of adequate resources and suitability.

To overcome potential uncertainties as to when the SRR mechanism would be invoked on a failing bank, the Tripartite Committee has promised a Code of Conduct for the operation of the SRR. Ironically, the Code of Conduct is attempting to deal with some of the gaps that have been created by not having a clear set of SRR condition triggers. For example, one of the areas that the Code will cover is how to determine that the second condition which the FSA will make an assessment against in determining that a bank enters the SRR is satisfied. Implementing a set of regulatory triggers, such as those in the US, would be a far simpler approach and leave all market participants clear as to the regulatory structure and pre- and post-resolution approaches from the outset.

Analysing the incentive structures for banks within the Tripartite Committee's proposals, the FSA intend to publish a consultation paper setting out proposals on the provision of additional information by banks to demonstrate that they are meeting Threshold condition on an ongoing and forward basis. At this stage there is little clarity as to what these additional information requirements may be and, importantly from a market discipline perspective, whether they may be available publicly. An additional risk containing mechanism would be to fund the deposit insurance scheme using risk-based premiums so that banks judged to be at higher risk of default would pay higher levies. The current proposal is to consult further on this issue in due course.

2.4. Conclusions to the Tripartite Committee's proposals

The Committee's proposals overcome some of the market discipline weaknesses in the existing regime. In particular, the position of the most appropriate sources of market discipline, equity holders and subordinated debt holders, is no longer uncertain. The new regime clearly explains that these two types of bank stakeholder should not expect to be protected in the event of any bank going into the SRR regime. Therefore, market signals from these investors should now provide a cleaner representation of market perceptions of the likelihood of bank default.⁸ However, one outstanding area of weakness, and where the new proposals do not go far enough, is in clearly outlining the conditions that will lead to a failing institution being treated

⁸ Hamalainen et al. (2008) analysed the predictive qualities of different financial instrument prices in advance of the failure at Northern Rock in September 2007. The paper found that Equity indicators illustrated a clear negative reaction for Northern Rock compared to peer banks following the profit warning in late June 2007. In contrast, SND spreads and CDS spreads began to indicate clear concerns, if at all, only once the credit crisis had begun, which was only a month before Northern Rock required liquidity assistance.

under the SRR. Therefore, ambiguities remain as to how credit institutions of different sizes may be dealt with prior to the imposition of the SRR. A stringent set of criteria in a similar vein to the US PCA regime would alleviate any such uncertainty and enable investors to signal bank-risk taking consistently across all types of credit institution. At the same time, failing to lay down a stringent set of criteria to initiate the SRR regime means that the potential for regulatory forbearance remains.

In contrast to the clear stance on subordinated debt holders and equity holders in the event of a bank entering the SRR regime this paper has argued that the new proposals do not appear to clearly define the risk-position of uninsured depositors. This could lead to such investors anticipating differing treatment for large institutions, where there may be systemic risk concerns, compared to similar investments in smaller banks or building societies.

The Tripartite Committee's position on enhancing bank transparency as a mechanism for improving market discipline has been to provide regular comment on international developments. This is because the UK government, along with other national governments, have been encouraging international action on this issue, both prior to the onset of the credit crisis and subsequently⁹. The following section will explore in greater detail the current issues surrounding enhanced disclosure and its implications for market discipline.

⁹ Darling (2008) and G-8 Finance Ministers (2008)

3. The nature of risks in a changed financial landscape and implications for transparency

The financial system and its constituent financial institutions have witnessed a rapidly evolving environment in the past 30 years. This section examines how this is impacting on the transparency of financial institutions and discusses the current challenges concerning credit institution's public disclosures and the market discipline implications thereof. Furthermore, this section explains how the events of the past year have served to highlight the importance of further reducing information asymmetries.

Essentially two environmental aspects have manifest themselves in the financial system to make the market monitoring of financial institutions increasingly challenging. First, financial risks have become increasingly complex and thus difficult to understand. The deconstruction process, through derivative instruments and securitisations, enables financial institutions to buy or sell specific forms or tranches of risk to match their risk appetite. However, deconstructing risks does not eliminate them; they are simply transformed and transferred¹⁰. Although from a risk perspective, individual financial transactions may be easily understood, outside investors are faced with the perspective of negotiating financial institution's Annual Report and Accounts in which a myriad of complex financial transactions are housed. Information opacity, in the form of limited public disclosures, means that it is extremely difficult for market monitors' to accurately assess a financial institution's overall underlying risks.

The second environmental aspect concerns the modern day phenomenon of the interconnectedness of financial institutions and financial markets. Knight (2004) neatly encapsulates the issue: "On the one hand, financial institutions rely more and more on markets for their funding, for their investments and, crucially, for the management of risks ... On the other hand, markets rely more and more on institutions for their liquidity, drawing on market-making services and backstop credit lines ... Globally, the ongoing consolidation in the financial sector has created a smaller number of very large financial firms that are engaged in both types of intermediation ... [this] raises potential concentration risks for the financial system, despite apparent diversification of intermediation channels ... In these large, internationally active financial

¹⁰ Knight (2004)

institutions, a common capital base underpins on-balance sheet intermediation, capital market services and market-making functions ...[therefore] losses in one activity can put pressure on the entire firm, affecting its activities in other areas.” Market monitors are, therefore, faced with the daunting task of deciphering the vast array of operations within financial institutions to identify the latest high risk events that may damage financial condition and/or performance. Like the first environmental issue information asymmetries make this an extremely challenging task.

On top of these two environmental developments, the combination of the interconnectedness of financial institutions and financial markets, and financial innovation has a further implication for financial institution’s risk profiles. The extent to which complex financial products have permeated around the world has enabled medium- and small-sized financial institutions to have exposures to complex risks that originate many thousands of miles from their base. This means that market monitors of any credit institution require an extensive knowledge toolkit in order to identify the latest global source of financial risk. The challenge for financial reporting is to create a framework whereby appropriate financial disclosures enables investors to decipher, and compare, the underlying financial condition and performance, and risk profile of credit institutions.

3.1. Risk disclosures in a changed financial landscape

The international regulatory authorities identified the aforementioned environmental concerns and their affect on the transparency of credit institution’s risk-taking as early as 1998, when the Basel Committee on Banking Supervision issued the paper ‘Enhancing Bank Transparency’. As the foreword states: “Improved public disclosure strengthens market participants’ ability to encourage safe and sound banking practices.” The importance of adequate disclosure in empowering market discipline was recognised by the inclusion of Pillar 3 in the new Basel Capital Accord¹¹.

The objective of Pillar 3 is: “to encourage market discipline by developing a set of disclosure requirements which will allow market participants to assess capital, risk exposures, risk-assessment processes and hence the capital adequacy of the institution.”¹² As Linsley and Shrives (2005) state: “The overriding disclosure

¹¹ Basel Committee (2006)

¹² Basel Committee (2006)

principle is that a bank's disclosures need to be consistent with the approaches and methodologies that the directors use to assess and manage the bank's risks." They also note that the disclosure requirements are both quantitative and qualitative in nature and are highly detailed and prescriptive. The latter is desirable for a number of reasons. First, the contribution of international regulatory authorities has been to speed up the process of disclosure convergence, which, in the absence of external stimulus, may have been lengthy. Secondly, prescriptive requirements provide comparability on a global scale, which is consistent with today's environmental challenges; and finally, credit institutions do not have a history of disclosing more than is legally necessary. For EU banks the Pillar 3 requirements come into force, via the Capital Requirements Directive, for reporting dates after 1st January 2008.

Although the introduction of a disclosure regime using a common language is very welcome and should improve transparency, there are a few market discipline implications in the requirements that will have to be closely monitored. First, the disclosures err towards being backward-looking or historical in nature and in this respect they may, therefore, be deficient¹³. In addition, the frequency with which credit institutions have to present these disclosures is only on an annual basis, although certain capital disclosures are encouraged to be disclosed more frequently. Finally, as bank capital requirements move towards process-orientated capital allocation via the Internal Ratings Based approach to credit risk and the use of models to measure market risk, investors require information on internal risk management procedures in order to evaluate capital adequacy. Pillar 3 attempts to facilitate this through the introduction of qualitative disclosure requirements. However, such information is inherently less transparent for investors to analyse and harder for auditors to verify, undermining the markets ability to discipline bank risk-taking.

Alongside the international banking regulatory authorities' aims to enhance bank transparency, the International Accounting Standards Board issued IFRS 7: Financial Instruments: Disclosures in 2005. This applies to credit institutions reporting after the 1st January 2007. The new standard brought together the existing standards on financial instrument disclosures and at the same time provided the opportunity to introduce some additional disclosure requirements. To this end, the Standard requires an entity to disclose: information on the significance of financial instruments to the entity's financial position and performance; the nature and extent of risk

¹³ Linsley and Shrivs (2005)

exposures arising from financial instruments (quantitative disclosures); and the approach taken in managing those risks (qualitative disclosures).¹⁴ There is overlap with Pillar 3 disclosures, most particularly concerning qualitative disclosures, but it must be remembered that Pillar 3 is focusing on prudential reporting whereas IFRS 7 is focusing on statutory reporting. However, compared to existing accounting regulations IFRS 7 is bringing accounting treatment further into line with the Basel Capital Accord.¹⁵ Furthermore, the continual development of a common set of International Financial Reporting Standards in pursuit of financial convergence is a worthy market discipline goal.

3.2. Transparency developments in light of the credit crisis

In spite of the major initiatives to improve credit institution's risk disclosures, opacity has been posited as a key reason for a lack of market confidence and the manner in which the recent crisis transmitted through global financial markets¹⁶. Unfortunately, at the commencement of the credit crisis the new IFRS was in its infancy and the Pillar 3 disclosures were not yet mandatory. Nevertheless, the Bank of England (2007) identifies some weaknesses in the current Pillar 3 requirements that question whether its adoption would have prevented market-wide concerns over bank transparency. For example, the Basel Capital Accord stops short of requiring detail on exposures to specific off-balance sheet vehicles and whether or not the so-called first-loss piece on any specific securitisation has been retained, sold or hedged. Equally, the Capital Accord provides no additional disclosure requirements concerning the measurement and management of liquidity risk. Finally, and crucially from a market discipline perspective, the frequency of disclosures under the Capital Requirements Directive is on an annual basis (although the Basel framework does propose a minimum of semi-annual frequency).

Following the market turmoil, international developments on transparency have rapidly progressed on a number of fronts. The two most prominent reports are produced by the Financial Stability Forum (FSF), and the Institute of International Finance (IIF)¹⁷. The FSF were asked by the G7 Finance Ministers and Central Bank Governors to undertake an analysis of the causes and

¹⁴ Koekkoek (2007)

¹⁵ PriceWaterhouseCoopers (2005) provide a very useful diagram representing the commonalities and differences between the two disclosure regimes.

¹⁶ Financial Stability Forum (2008a)

¹⁷ Financial Stability Forum (2008a) and Institute of International Finance (2008)

weaknesses that have produced the turmoil and to set out recommendations. In contrast the IIF, which are an association of leading financial services firms, have proposed Principles of Conduct together with Best Practice Recommendations on a number of critical issues. In both cases enhancing transparency, through improved disclosures and valuation practices have featured prominently. Without going into technical detail, there is considerable overlap between the two reports in their coverage and recommendations for promoting transparency and improving valuation practices. Particular disclosure areas that have attracted attention in both reports are off-balance sheet risks, structured products, and valuation processes and methodologies. The FSF report also recommends that the Basel Committee on Banking Supervision issue further guidance to strengthen disclosure requirements under Pillar 3 in each of these areas.¹⁸ Recently, the FSF have announced that work is in progress concerning the development of accounting and disclosure standards in these areas through the International Accounting Standards Board¹⁹.

In addition to these topical areas, and just as crucially, both reports highlight the importance of fluidity in the transparency process, namely in providing risk disclosures that are most relevant to the market conditions at the time of disclosure. Whether this will continue once global market conditions improve one will have to wait and see. An area that is not covered in either report is the requirement for more timely disclosures. The FSF report does encourage international financial institutions to issue robust risk disclosure concerning instruments that the marketplace currently considers to be high-risk or involve more risk than previously thought (for example, Collateralised Debt Obligations and subprime exposures) in their mid-year 2008 reports. However, there is no mention of continuing this policy into 2009. Given the wide consensus on improving risk disclosures by all market participants, it is disappointing that a requirement to introduce Pillar 3 risk disclosures on a timelier basis (i.e. semi-annually) is not being pursued by statutory authorities. Both this measure and implementing quarterly bank capital disclosures would greatly enhance the potential for market discipline.

¹⁸ Separately, the Basel Committee has published a consultation paper on Principles for Sound Liquidity Risk Management in June 2008, which includes principles on regular public disclosures, both quantitative and qualitative, of a bank's liquidity risk profile and management.

¹⁹ Financial Stability Forum (2008b)

3.3. Conclusions on developments in enhancing bank transparency

Prior to the credit crisis the international accounting and banking regulatory bodies had been responding to concerns over opacity in credit institutions and a number of important policies were currently being phased in. The credit crisis has highlighted that the bank risk environment has moved on and, as ever, the regulatory authorities are now attempting to plug gaps in the disclosure regime. The current round of initiatives will not lead to the identification of tomorrow's risks, but in some instances, such as the accounting treatment and disclosure of supposedly off-balance sheet entities, recent developments will have long lasting benefits for market discipline. Furthermore, these current initiatives should not detract from the fact that the international regulatory authorities are currently introducing a global disclosure policy for credit institutions. Although there are weaknesses in the agreement (some of which have been identified rather earlier than anticipated) its release represents a fundamental milestone in enhancing the market's ability to monitor and discipline bank risk-taking. This is particularly pertinent at a time when the conduct of credit ratings agencies, as designated market monitors, has again come into question.

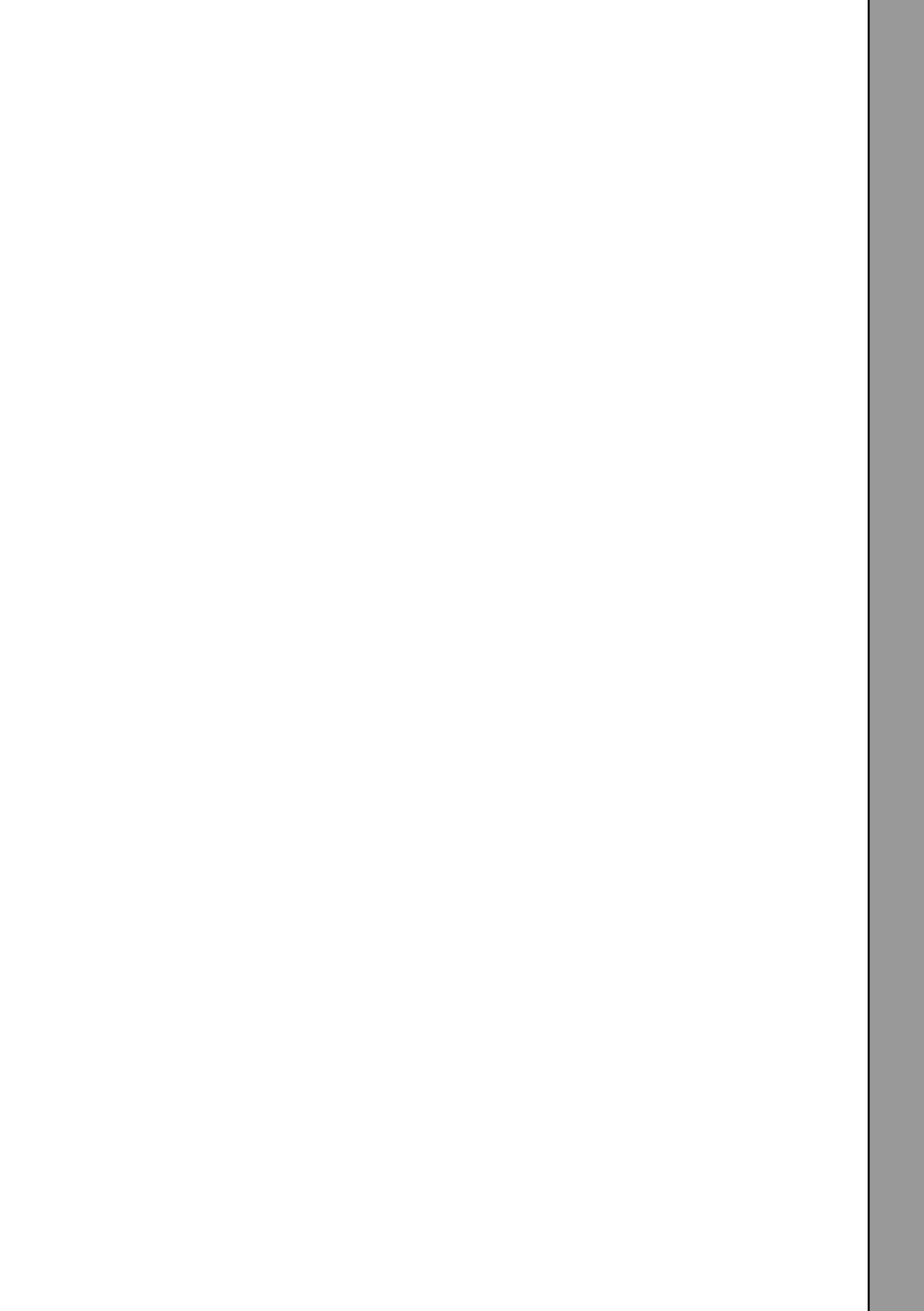
4. Conclusion

Recent developments on two fronts are encouraging a significantly enhanced role for market discipline in UK banking. First, in response to the Northern Rock crisis the regulatory authorities are introducing clearer incentive structures for most of the key bank stakeholders that should be encouraged to impose discipline. Secondly, the international regulatory authorities are currently phasing in an international disclosure agreement for credit institutions, which will enhance the other key facet for effective market discipline; bank transparency. However, the UK regulatory authorities have passed on the opportunity to follow some of their international partners and introduce additional incentive structures at this time, and which have considerable market discipline appeal. A notable example is some form of PCA-style regime. Such a policy could have clearly outlined to all market participants *ex ante* the pre-SRR stages as well as the resolution regime. In addition PCA could have imposed greater incentives on bank management to operate the bank prudently and restrict regulatory forbearance. Concerning bank transparency, the long-overdue international developments should be given some time to settle into the regular reporting regime. Thereafter, one area where the UK financial marketplace could significantly improve its disclosure policies and enhance market discipline is through requiring credit institutions to produce more detailed interim and, especially, quarterly reports. In addition, the US model of bank's producing quarterly 'call reports', which are publicly available after a short delay should be encouraged. From an international perspective, a growing market consensus in improving accounting and regulatory disclosure is welcomed. Hopefully, the turmoil of the past year will encourage all market participants to mandate Pillar 3 level disclosures for both interim and annual financial reports.

5. References

- Bank of England (2007), Financial Stability Report, No. 22, October.
- Basel Committee on Banking Supervision (1998), Enhancing Bank Transparency: Public disclosure and supervisory information that promote safety and soundness in banking systems, Basel, September.
- Basel Committee on Banking Supervision (2006), International Convergence of Capital Measurement and Capital Standards: A Revised Framework, Comprehensive Version, Basel, June.
- Berger, A. (1991), 'Market Discipline in Banking', Proceedings of a Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, May, pp. 419–437.
- Darling, A. (2008), Speech by the Chancellor of the Exchequer at the Brookings Institute, Washington, 11th April.
- Evanoff, D. and Wall, L. (2001), 'Reforming Bank Capital Regulation: Using Subordinated Debt to Enhance Market and Supervisory Discipline', Contemporary Economic Policy, Vol. 19, pp. 444–453.
- Financial Stability Forum (2008a), Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience, April.
- Financial Stability Forum (2008b), Update on the Implementation of the FSF's Recommendations: Report by the FSF Chairman to the G-8 Finance Ministers, June.
- Flannery, M. (1998), 'Using Market Information in Prudential Bank Supervision: A Review of the U.S. Empirical Evidence', Journal of Money, Credit and Banking, Vol. 30, pp. 273–305.
- G-8 Finance Ministers (2008), Statement of the G-8 Finance Ministers Meeting, Osaka, 14th June.
- Hamalainen, P. (2008a), Written evidence to the House of Commons Treasury Committee on Financial Stability and Transparency. Available in House of Commons Treasury Committee, The run on the Rock, Fifth Report of Session 2007–08, Vol. II, HC56-II, Ev253.
- Hamalainen, P. (2008b), 'Empirical evidence on depositor behaviour during the Run on Northern Rock and its implications for banking regulatory policies', working paper. Available directly from the author.
- Hamalainen, P., Hall, M. and Howcroft, B. (2005), 'A Framework for Market Discipline in Bank Regulatory Design', Journal of Business Finance & Accounting, Vol. 32, pp 183–209.
- Hamalainen, P., Pop, A., Hall, M. and Howcroft, B. (2008), 'Did the market signal impending problems at Northern Rock? An analysis of three financial instruments', paper presented at the IBEFA session on Northern Rock, WEAI 83rd Annual Conference, 30th June, Hawaii.
- House of Commons Treasury Committee (2008) The run on the Rock, Fifth Report of Session 2007–08, HMSO, Vol. II, HC56-II, Ev253.

- Institute of International Finance (2008), Final Report of the IIF Committee on Market Best Practices: Principles of Conduct and Best Practice Recommendations: Financial Services Industry Response to the Market Turmoil of 2007–2008, July.
- Knight, M. (2004), ‘Markets and institutions: Managing the evolving financial risk’, speech at the 25th SUERF Colloquium, Madrid, October.
- Koekkoek, R. (2007), IFRS 7 and Basel II – Pillar III: Similarities, differences and synergies, Ernst & Young. Available at: http://www.ey.nl/download/publicatie/IFRS_7_and_Basel_II_-_Pillar_III_2007Oct_1.pdf, accessed 8th August 2008.
- Linsley, P. and Shrivs, P. (2005), ‘Transparency and the disclosure of risk information in the banking sector’, *Journal of Financial Regulation and Compliance*, Vol. 13, No. 3, pp. 205–214.
- PriceWaterhouseCoopers (2005), IFRS: A step towards Basel II and Solvency II implementation’, November 2005.
- Available at: [http://www.pwc.com/extweb/pwcpublications.nsf/d"ocid/C4C2D56A3C0A2241852570BA006E1C35/\\$file/ifrs1105.pdf](http://www.pwc.com/extweb/pwcpublications.nsf/d), accessed 8th August 2008.
- Tripartite Committee (2007), Banking Reform - Protecting Depositors: A Discussion Paper, HMSO, October.
- Tripartite Committee (2008a), Financial stability and depositor protection: strengthening the framework, Cm. 7308, HMSO, July.
- Tripartite Committee (2008b), Financial stability and depositor protection: further consultation, Cm. 7436, HMSO, July.
- Tripartite Committee (2008c), Financial stability and depositor protection: special resolution regime, Cm. 7459, HMSO, July 2008.



LESSONS FROM THE DEMISE OF THE UK'S NORTHERN ROCK AND THE U.S.'S COUNTRYWIDE AND INDYMAC

Robert A. Eisenbeis¹ and George G. Kaufman

Corresponding Author:

George G. Kaufman
John Smith Professor of Banking and Finance
Loyola University Chicago
1 East Pearson St.
Chicago, IL 60611
UNITED STATES OF AMERICA

Tel.: +1 312 915 7075
Fax: +1 312 915 8508
E-mail: gkaufma@luc.edu
<http://www.luc.edu/faculty/gkaufma>

1. Introduction

In September 2007, the UK experienced its first visible bank run in over 100 years. Lines of depositors formed outside the Northern Rock Bank, a large mortgage lending institution. The run followed news of the bank experiencing funding problems in rolling over its short term debt and ended when the authorities pledged 100% guarantees for deposits at Northern Rock and other possibly troubled UK banks. This essentially meant that all UK banks temporarily had 100% deposit insurance. Many of the problems at Northern Rock appear similar to those that faced two large US mortgage lenders – Countrywide and IndyMac (Independent Mortgage Corporation) – at the same time and that were merged or closed in 2008 as a result of problems in the U.S. mortgage market.² These events all occurred before

¹ Chief Monetary Economist, Cumberland Advisors

² This paper does not consider a number of smaller depository institutions that have also failed in recent months in the US.

many other insolvency problems were recognized in other large international commercial and investment banks and exploded in a global financial crisis.

The problems leading to the ultimate demise of these three institutions in large measure were similar and resulted from serious weaknesses in the structure of deposit insurance guarantees, in regulatory oversight, and in the legal structure governing banking failures. This is true in the UK as well as in the US, where the reforms enacted following the S&L debacle of the 1980s were supposed to have insulated the US financial system from undue risk taking and costly failures. To some extent, the reforms enacted by the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991 have worked as designed. But the current experience also exposes weaknesses long pointed to by critics that weakened the provisions and need correction as additional reforms are evaluated. When considered together with the UK's experience with Northern Rock, the three episodes provide valuable insights as to how deposit guarantee systems and the monitoring and regulatory structures that support them failed and should be restructured for a non-crisis or "normal" period in which many large banks are not simultaneously endangered.³

The main lessons concern the design of the deposit insurance contract, the need for a legal structure that reduces the negative externalities associated with banking failures, the importance of accurate and timely accounting and reporting, and the necessity to improve the incentives and accountability for regulators to act as intended by the legislation. We begin by providing some factual background and comparisons of the failure experience of the three institutions and then turn to the lessons learned and need for further reforms.

³ We exclude from consideration here extraordinary measures to deal with systemically important institutions, such as those that have been put in place in essentially an ad hoc way as the global crisis of 2007–09 has unfolded.

2. Background

In the last years before their demise, all three institutions – Northern Rock (NR) in the UK and Countrywide and IndyMac in the US – largely pursued the recently popular “originate and distribute” business model. They originated mortgage loans, securitized and sold most of them to other parties collecting fees for these services. Until sale, they funded the warehousing of their longer term mortgage assets with shorter term liabilities obtained primarily on the wholesale market. As interest rates began to rise and mortgage markets began to weaken, all three institutions were subject to significant market chatter about their deteriorating financial condition.⁴

Northern Rock began as a mutual building society but converted into a stock bank in 1997. Two years later it changed its business strategy from a traditional thrift and mortgage lender that “originated and held” mortgages to one that relied upon mortgage origination, servicing, and re-packaging through securitisation. Thereafter, it grew rapidly. Its assets doubled from \$16 billion in mid 2005 to \$32 billion at year end 2007 and it more than tripled its share of the UK mortgage market between 1999 and 2007 from 6% to 19% (Bank of England, 2007). At the same time, the bank increased both its capital leverage and its dependence upon short term wholesale funding as part of its mortgage warehousing process until the individual mortgages could be packaged and sold. Funding was diversified in domestic and foreign capital markets. But liquidity (in this case, the need to constantly roll over its maturing short-term debt) became a problem, as was the fact that its growth was accompanied by narrowing spreads. Despite this, the institution was well regarded by rating agencies.⁵

Its regulator, the Financial Services Authority (FSA), saw it as being well-run and well-capitalized in early 2007. It was not seen as being exposed to the sub-prime mortgage problems that had surfaced in the US and were affecting Countrywide, in particular. However, the Bank of England’s Financial Stability Report of 2007 painted a different picture when it summed up the Northern Rock’s financial condition succinctly as follows. “By mid-September it had become apparent to Northern Rock that longer-term funding markets were closed to it. Rollovers were largely continuing but at shorter and shorter

⁴ Details of Northern Rock’s condition are explored in the other papers in this volume. For a detailed description of the securitization process see Gorton (2008).

⁵ See Shin (2009, pg. 113).

maturities. Unlike Countrywide, NR lacked the option to draw on sufficient prearranged contingency liquidity lines of credit and did not benefit from a third-party injection of capital. Instead, the Northern Rock board sought an assurance of liquidity support from the Bank of England (BOE).⁶ Northern Rock issued a warning about its profits on September 14, 2007. This was reinforced by a joint statement by the Bank of England, the Financial Services Authority (FSA), and Chancellor of the Exchequer (Treasury) that the Bank of England would provide liquidity support to Northern Rock and any other UK bank that needed funds.⁷ Far from calming concerns, the announcement confirmed the public's worst fears and triggered a retail run on the NR. The government responded by extending deposit guarantees to all deposits at NR, putting the taxpayers at greater risk. When no private buyer could be found, the bank was finally nationalized in February 2008.

Countrywide and IndyMac shared many common features with Northern Rock. Countrywide was a conglomerate holding company with four main activities conducted in largely separate subsidiaries – mortgage banking, general banking, institutional broker-dealer activities that specialized primarily in trading and underwriting mortgage-backed securities, and mortgage servicing. Until 2005, Countrywide was a designated “financial services holding company” and its bank was a chartered national bank. The bank was also a primary dealer with the Federal Reserve Open Market Desk. However, in December 2006 it converted the commercial bank to a federal savings bank and it became a savings and loan holding company. The change switched the primary regulator from the Comptroller of the Currency for the bank and the Federal Reserve for the holding company to the Office of Thrift Supervision (OTS) for both. This move is a clear example of regulatory arbitrage since the OTS was widely perceived to be a less stringent supervisor.⁸

Countrywide was the largest home mortgage originator in the U.S. and had originated about 17% of all the mortgage loans in the country in 2007. The freezing up of the short-term asset-backed commercial paper market in August of 2007 made it extremely difficult for Countrywide to finance its mortgage warehousing business. This, combined with growing delinquency and default problems in its non-prime mortgages, resulted in a downgrade in its credit ratings and increased its costs of funds sharply. Its stock price took a substantial hit, falling more than 50% during the first three quarters of 2007 to \$21 per share as investors began to price in a significant probability of

⁶ Bank of England (2007)

⁷ HM Treasury, Bank of England and Financial Services Authority (2007).

⁸ See Financial Week (2007).

default. The firm's funding problems intensified and in mid-August it began drawing on its outstanding bank credit lines to replace its lost funding in the commercial paper market.

The Federal Reserve, responding to the broader disruption in the commercial paper market and in capital markets more generally, lowered the discount rate 50 basis points in August 2007 to a spread of 50 basis above the target Fed funds rate and lengthened the term of discount loans from primarily overnight to up to 30 days.⁹ But more importantly from Countrywide's perspective, the Federal Reserve began accepting mortgage backed securities as collateral for repurchase agreements from primary dealers one of which was Countrywide. At the same time, Countrywide also increased its collateralized advances from the Federal Home Loan Bank of Atlanta from approximately \$30 billion to over \$50 billion at the end of September 2007. These advances accounted for nearly a quarter of its total liabilities and were over collateralized. The Home Loan Bank claims stood ahead of the claims of both the uninsured depositors and the FDIC.¹⁰ When it finally became apparent to the federal regulators that the institution might not be viable, a sale was encouraged by the Federal Reserve to Bank of America, which assumed all the assets and liabilities of the holding company without government assistance at a price of approximately \$4 billion in January 2008.

Ironically, IndyMac was initially organized as a subsidiary of Countrywide and spun off as an independent entity in 1997. Its original purpose had been to securitize jumbo residential mortgage loans that were too large to be sold to Freddie Mac or Fannie Mae. In 2000, it became a thrift holding company with a Federal savings bank subsidiary. The institution specialized in the origination, servicing and securitisation of Alt-A (low documentation) mortgage loans. Similar to Countrywide, IndyMac grew rapidly and nearly doubled its size from \$16.8 billion to \$32.5 billion between March 2005 and December 2007.¹¹ Its funding depended heavily on Home Loan Bank advances, which accounted for from 32% to 45% of its total liabilities in any one quarter.¹²

Like Countrywide and Northern Rock, IndyMac's critical problems began to surface in a June of 2007. Reported book value capital declined over the period from its peak of \$2.7 billion in June of 2007 to \$1.8 billion at the

⁹ The spread was subsequently lowered to 25 basis points.

¹⁰ The FDIC has the same priority as the uninsured depositors.

¹¹ Data from FDIC Quarterly Reports of Condition and Income.

¹² Data from FDIC Quarterly Reports of Condition and Income.

end of March 2008. Uninsured deposits began to run off in mid 2007 , and earnings turned negative in the fall of 2007. The bank replaced these funds by actively bidding for fully insured brokered deposits. At about the same time the bank's stock price began to plummet, dropping from a high of about \$35 per share to about \$3 per share in June 2008.

OTS's January 2008 examination indicated IndyMac was in financial difficulty. Despite remedial actions taken by the institution to change its business strategy, its capital position continued to decline and the bank's negative earnings continued. Despite this deteriorating situation, the OTS maintained that the institution was adequately capitalized. Indeed, the OTS went so far as to even permit the institution to backdate to March 31, 2008 \$18 million of a \$50 million capital contribution from the parent holding company in May so as to enable it to meet OTS criteria for being "well capitalized."¹³ IndyMac touted its capital position in its SEC filing. In fact, in the bank's March 31, 2008 10Q filing, it stated that its Tier 1 capital leverage ratio stood at 5.74%, above the minimum 5% regulatory requirements for the bank to be classified as "well capitalized". Risk-based Tier 1 capital was 9% and total risk-based capital was 10.26%, compared to minimum required ratios of 6 and 10 percent respectively for "well-capitalized". Had IndyMac's capital position on March 31, 2008 declined below 5%, the OTS would have been required to impose sanctions limiting its ability to accept brokered deposits, which made up a significant proportion of its deposit base.

On June 30, US Senator Charles Schumer released a letter to the press that he had sent to the Office of Thrift Supervision dated June 26th questioning the viability of IndyMac. An outflow of an estimated \$1.3 billion in funds followed. As a result, the OTS concluded that Indy was experiencing a liquidity problem and would be unable to meet its obligations in full and on time. It closed the bank on July 11, 2008 and turned it over to the FDIC as conservator. An accompanying release by the OTS intimated that its efforts to remedy IndyMac's problems through a sale were frustrated by the release of the Senator's letter and caused the demise of the institution. The FDIC's estimated that it could stand to lose between \$4 and \$8 billion in the resolution process. This estimate was quickly raised to \$8.9 billion and even higher.¹⁴ Given that IndyMac was supposedly adequately capitalized and

¹³ See Thorson(2008 and appendix A.). Thorson is the Inspector General in the U.S. Department of the Treasury and is required by FDICIA to review all resolutions which incur a material loss to the OTS, which is housed in the Treasury. In his report, Thorson notes that the backdating of capital injections with OCC approval for IndyMac may not have been an isolated case. Thorson's letter to Senator Schummer is included in the Appendix.

¹⁴ See Paletta and Holzner (2008) and App (2008)

was done in by a relatively small \$ 1.3 billion of deposits run off, it stretches credibility that the bank's closure on a more timely basis would have lead to losses in excess of \$ 8 billion.¹⁵

Although there are many similarities among these three episodes, there are also important differences in terms of how they were resolved, the risks that have been assumed by the taxpayers both in terms of cleaning up the particular cases as well as how the systems will function prospectively. Furthermore, a number of weaknesses have been exposed in the legal and regulatory structure of the guarantees and how failing institutions are handled.

¹⁵ It is likely, given estimates of the amount of deposits in the institution in excess of \$100K that most of this runoff was largely uninsured deposits

3. Similarities and Differences Among the Three Cases

At first, the most striking difference between the UK and US cases were the lines that formed outside the offices of Northern Rock, which resembled the scene from the Jimmy Stewart famous 1946 movie “It’s a Wonderful Life.” The evidence of public panic was widely publicized on national TV and demanded immediate attention by the authorities. It culminated in what proved to be a soap opera involving the Bank of England, the Financial Services Authority and Chancellor of the Exchequer over the management of the financial crisis that had surrounded the institution. In Countrywide’s case, there was no visible run. In IndyMac’s case, there was an outflow of funds, but it remains unclear whether this was evidence of retail depositor panic. The pictures of lines that appeared in the public media largely post-dated the legal closing of the bank and should be viewed more correctly as a run on the FDIC. The paucity of bank failures over the previous 15 years had likely reduced the public’s familiarity with the operation of the FDIC in failed bank cases the FDIC quickly initiated a publicity campaign to remind the public of the strength of its guarantee. As a percent of the institutions assets, both runs were quite small.

However, there were other differences that are also noteworthy. There was no extension of a blanket deposit insurance guarantee at IndyMac as was the case in the UK. Although this occurred in the U.S. later. The UK’s response lies in part in the nature of the UK deposit insurance contact at the time. In addition, there were differences in the quality of the supervisory processes and in the misplaced reliance in the UK placed on the courts and general bankruptcy procedures to resolve problem institutions in a timely manner. These differences in measure reflect different legal and regulatory structures between the U.S. and UK and generally favor the U.S.’s reliance upon separate bankruptcy procedures for insured depository institutions. This is not to suggest, however, that the U.S. structure always fosters better outcomes. Indeed, the U.S. structure through the prompt corrective action (PCA) and least cost resolution (LCR) provisions of FDICIA frequently work better in theory (words) than in practice (application). But that is in part because the provisions have been implemented using flawed accounting principles and in part the fault of the regulators practicing forbearance stemming from flawed regulatory incentives to make the regulators enforce the regulations rather than due to the legislation per se.

3.1. The Deposit Insurance Contract

At the time of the NR retail run, the UK deposit insurance contract only covered 100% of the first £ 2,000 (about \$4,100) and 90% of the next £ 33,000 (about \$67,500). This structure was based on the principle of co-insurance and reflects efforts to design a deposit protection scheme that would discourage moral hazard behavior and encourage market discipline. By forcing depositors with funds in excess of \$4,100 to bear part of the risk by covering only 90% of their insured claims, it was believed that those depositors would have an incentive to monitor the performance of the institutions in which they placed their funds and to serve as a source of market discipline by demanding higher deposit rates or withdrawing their funds if they perceived the bank to increase its risk exposure. This insurance contract contrasts sharply with that of the US, where there is no co-insurance for small depositors and at the time full coverage per account for the first \$100,000, which, was considerably larger.

Importantly, unlike the case with US institutions, UK depositors of NR also could not count on receiving their insured funds quickly if NR had been legally closed and placed in receivership and faced possible waits of many months in being fully compensated. For these reasons, even fully insured depositors in the UK had a significant incentive to run both to avoid credit losses (possible 10% loss from par value) and liquidity losses (delays in gaining full access to their fully insured funds).

In the U.S., Countrywide was sold to the Bank of America, and customers experienced no major disruption in their access to deposits or other banking services. IndyMac was closed on a Friday (July 11, 2008) and reopened on Monday (July 14) as a newly chartered, temporary FDIC operated bank. Again, most customers were only minimally inconvenienced, although large depositors received immediate access to only 50% of their uninsured funds and could expect to suffer large losses.

The Northern Rock experience suggests that it is unrealistic to believe that small depositors would be a significant source of market discipline. Retail depositors were late in perceiving the difficulties in Northern Rock, doing so only well after large depositors engaged in a less visible but larger and earlier electronic run.¹⁶ In part, this reflects that they have neither the knowledge nor

¹⁶ See Shin (2009).

the resources to adequately monitor a complex institution like Northern Rock. It is likely that the same was true in the cases of Countrywide and IndyMac, but the incentive to run on the part of insured depositors was far less.

Market discipline is more efficiently exercised in the money and capital markets by large, uninsured depositors, other creditors, and shareholders. For example, the stock prices of all three institutions declined significantly long before retail depositors began to be concerned about their funds.¹⁷ Similarly, concern about the solvency of NR by uninsured creditors began long before small depositors began to line up in front of Northern Rock's offices.¹⁸ For several years, Northern Rock has increasingly financed its very rapid asset growth mostly in the short term wholesale money market. Milne and Wood (2008) report that retail deposits fell from 62.3% of total liabilities in 1997 to only 22.2% at year end 2006. A substantial portion of the wholesale funding was in maturities less than a year. That growth continued into 2007, despite the fact that real estate and mortgage markets in many countries had begun to slow in mid-2006. Similarly, as pointed out earlier, beginning in mid-2007, Countrywide and IndyMac experienced outflows of uninsured funds and restrictions on access to the short term commercial paper markets.

The problems, however, in Northern Rock extended far beyond the deposit insurance contract design and the failure of small depositors to provide effective market discipline. They include regulatory failures and accounting problems that also were endemic to the cases of Countrywide and IndyMac and problems in the failure resolution process. These latter difficulties were peculiar to Northern Rock. But interestingly, there are also parallels that have arisen in the U.S. when the need to deal with the investment banks Bear Stearns and Lehman Brothers, the insurance company AIG and quasi government mortgage lenders Freddie Mac and Fannie Mae were thrust upon U. S. regulators.

¹⁷ The British Bankers' Association (BBA) also highlighted the fall in the share price: During the course of 2007, the market had become increasingly aware that there were issues surrounding Northern Rock's business model. In its profit warning of 27 June 2007, Northern Rock stated it was suffering from a "structural mismatch" between LIBOR (London Interbank Offered Rate) and bank base rates' and its share price fell by 10% on that day. This was therefore a very clear signal both to the market and to the authorities that Northern Rock was experiencing increasing difficulties in respect of its funding as the 'credit crunch' speedily impacted interbank lending arrangements generally. By mid July the share price was some 30% lower than at the start of the year.

¹⁸ House of Commons (2008).

3.2. Failure Resolution Process

The relatively small amount of full insurance coverage and the existence of co-insurance were not the sole reasons for the run on Northern Rock. Should a UK depository financial institution get into financial difficulty, regulators lack appropriate authority either to legally close such troubled institutions, or put them in receivership before their net worth drops to zero or below. Instead, even if accounts were 100% insured, the resolution of insolvent institutions falls under the general corporate bankruptcy procedures administered by bankruptcy courts. The result is potential significant delays in terms of both when and under what terms depositors will gain access to their funds. UK law provides only that insured deposits are paid at par within three months, and additional stays are possible under both UK and EU protocols if the bankruptcy courts determine it is necessary. In the meanwhile, the bankruptcy process determines the rights of depositors and creditors as well as shareholders.

Because delays in gaining access to their funds are potentially long and costly and the negative externalities in terms of loss of access not only to deposits but also to loans and lines of credit, are large, it was rational and understandable for UK depositors seek to withdraw their funds if there is a likely chance that a bank might fail, notwithstanding the extant insurance coverage. Moreover, the high cost of freezing accounts not only risks incurring significant depositor anger and but also can engender possible disruptions to the payments system and gives regulators little choice but to guarantee all deposits fully and keep insolvent banks open and operating under government ownership.

In contrast, the US has a special bankruptcy procedure for chartered banks that empowers the chartering authority, the primary federal regulator, or the Federal Deposit Insurance Corporation, to legally close a bank whenever its book value equity declines below 2% of its assets or other threats to its safe and sound operations arise. The FDIC has the authority to liquidate the failed institution, sell it to another bank, or fold it into a government-owned temporary bridge bank.

Because the prompt corrective actions provisions of FDICIA encourage bank regulators to monitor institutions more closely as they encounter difficulties and to intervene as the troubles intensify, the legal closing of a bank need not be a sudden, out-of-the-blue event for which a regulator is unprepared. The FDIC

arranges for insured depositors at failed banks to have access to insured depositors at failed banks the par value of their insured deposits effectively the next business day after legal closure and is empowered to provide advance payments of the estimated recovery value of uninsured depositors' funds to them. As a result, a troubled institution can typically be closed over the weekend and reopened the following Monday as another entity, minimizing any disruptions to customers. This is exactly what happened in the case of IndyMac.

As noted, IndyMac was closed on Friday afternoon, July 11, 2008 and reopened on Monday, July 14, 2008 as a newly chartered bridge bank (in this case technically a conservatorship federal savings bank) operated by the FDIC. Insured depositors were transferred in full to the new bank on Monday. At the same time, uninsured depositors were paid an additional advanced dividend of fifty cents on the dollar equal to the estimated recovery value of their uninsured deposits.¹⁹ Any additional recovery amounts, if any, will be distributed later when received. The large loss, however, suggests that the regulators waited far too long to legally close the institution, contrary to the intent of FDICIA.

These same options were not available to U.S. regulators in the case of Bear Stearns, Lehman Brothers and AIG, when the Treasury and Federal Reserve believed it necessary to intervene to prevent its insolvency and reduce the systemic risk that its failure might have entailed. This was because these institutions were, not federally insured depository institutions and not subject to the bank bankruptcy regime. As a result, rather than being able to close them, wipe out the equity holders, have creditors share in the losses, and reopen them the next day with no or little interruption, exigent circumstances resulted in a primarily Federal Reserve-financed takeover of Bear Stearns by March 2008, the failure of Lehman Brothers and the injections of significant government funds into AIG in September 2008. At the same time, discount window access was granted to other primary dealer investment banks.²⁰ A similar problem existed later when the two huge government sponsored mortgage financing giants, Freddie Mac and Fannie Mae, become insolvent. The US Treasury was forced in the midst's of the financial turmoil to explicitly guarantee their liabilities and the Federal Reserve indicated a willingness to

¹⁹ On July 17, 2008, the FDIC finalized requirements for large banking organizations to modify their computer and record keeping systems to provide deposit account information in a common format, to enable the FDIC to quickly identify insured deposits in the event of a failure and to place and remove holds on accounts. "Large-Bank Insurance Determination Modernization: Final Rule," FIL-65-2008, July 17, 2008.

²⁰ Primary dealers are large commercial banks and investment banks authorized by the Federal Reserve to engage in daily open market transactions with the System Open Market Account.

provide discount window access if needed. At the same time, the Treasury requested and received Congressional authority to purchase equity or lend directly to these entities to protect the creditors. The two institutions were placed in conservatorship. The taxpayers will be burdened with most of the cost of the institutions' losses.

3.3. The Breakdown in Supervision

A number of problems surfaced as the events surrounding the demise of Countrywide, IndyMac and Northern Rock played out that have revealed serious, continuing weaknesses in banking supervision. In the case of Northern Rock, supervisory deficiencies led to UK taxpayer exposure to losses from Northern Rock. In the US, contrary to the intent of FDICIA, supervisory failures have exposed the FDIC to large losses from the failure of IndyMac. These problems include reliance upon seriously deficient accounting and capital adequacy standards; failure to monitor institutions in a timely, effective, and on-going fashion; failure to intervene appropriately when problems were identified; and promoting the welfare of the regulated institutions and the regulatory agency rather than the insurance fund or the taxpayer.

For example, hearings by a committee of the UK House of Commons on the problems surrounding Northern Rock have focused on the actions at that time of the BOE, the FSA and the Treasury, who collectively share responsibility for financial stability in the UK. The hearings clearly revealed that the FSA didn't perform as it should have, failed to monitor the institution and, and even allowed Northern Rock to increase its dividends despite its troubled financial position.

The UK politicians looked, with some justification, to blame regulators for their failure to identify Northern Rock's problems and to deal promptly and adequately with the crippled institution. The FSA's own internal audit of the experience and compilation of the lessons learned from the NR failure contained a broad litany of problems within the FSA. These included the lack rigor in the analyses conducted and failure to devote insufficient resources to monitoring what are regarded as high impact institutions.²¹ The Report points to internal organizational problems, to skill gaps in its supervisors, and to problems in how the supervision of large institutions was conducted. It also

²¹ See FSA Internal Audit Division (2008).

describes process problems and deficiencies in the flow of information from the NR to the FSA and within the FSA itself. The FSA supervisory reviews of Northern Rock paid too little attention to liquidity issues, were inconsistent in their application and coverage, and were spaced too far apart.

The Report concluded that too little time and effort was devoted to stress testing Northern Rock's financials and the testing that was done in connection with Basel Pillar 2 did not consider tail events appropriately. In addition, insufficient attention was given to challenging the Bank's governance programs and risk mitigation processes. Finally, not only was it clear that the FSA ignored numerous early warning signs of troubles with Northern Rock, it apparently also ignored a breach of required minimum capital standards early in 2007. Nor did the bank notify its shareholders of this breach. Reportedly the bank was accorded "light touch" regulatory treatment by the FSA in 2007.²²

The parliamentary hearing also suggested that the regulators remained in a partial state of denial as far as the causes of the problems at Northern Rock. The Wall Street Journal quoted Chancellor Darling as saying that "The reason that Northern Rock got into this problem in the first place is because of problems in the U.S."²³ However, as the FSA and Parliamentary reports both document, the problems principally were excessive institutional leverage and risk taking in highly leveraged UK mortgages. When excessive risk taking occurs, it sometimes happens that the risks are realized!

In the cases of Countrywide and IndyMac, both were supervised by the Office of Thrift Supervision. As mentioned previously, Countrywide engaged in regulatory arbitrage shortly before its demise when it converted its main institution from a commercial bank supervised by the Comptroller of the Currency to a federal savings bank and itself to a savings and loan holding company. Its switch of regulators may have extended its life. But it failed to recover and its acquisition by Bank of America before possible insolvency likely spared the FDIC and uninsured depositors from losses. Likewise, as noted earlier, the OTS permitted IndyMac to report higher than actual capital positions at times, which may have delayed the imposition of sanctions and enlarged its losses.

²² See TimesOnline (2008).

²³ Wall Street Journal, February 19, 2008.

4. What the US and UK Should Have Learned from the US S & L Crisis and Subsequent Failures of Northern Rock, Countrywide and IndyMac

It is often the case in banking and elsewhere that changes in laws and regulations that are designed, correctly or not, to mitigate or even prevent future crises are adopted during or shortly after a crises. While it may be difficult in practice to change US or UK lawmaker and regulatory behavior, it would appear reasonable that they study and to learn from similar crises earlier or elsewhere.

The United States savings and loan and banking mess of the 1980s and early 1990s should have served as an important laboratory from which both UK and US officials could have learned regulatory lessons in structuring a regime and methods both for reducing failures and their consequences and for resolving financial institution failures. Some 1,200 savings and loan associations failed at a cost to US taxpayers of about \$150 billion. Out of fear that commercial banks would go the way of the S & Ls and the FDIC the way of the late Federal Saving and Loan Insurance Corporation (FSLIC), Congress in 1991 enacted the FDIC Improvement Act. This Act enacted over the opposition of most bankers and regulators, introduced provisions for regulatory actions to attempt to turn troubled banks around before insolvency and, if this failed, to legally close and recapitalize, sell, or liquidate a bank before its capital is fully depleted. The underlying theory was that, if successful, losses would be confined to shareholders; depositors and other creditors would remain whole. The structure of FDICIA reflected the experience that as they approach insolvency troubled banks tend to overstate their revenues, income and capital, understate their expenditures and loss reserves, and to blame their problems on lack of market liquidity. Thus, FDICIA assumed that both low levels of capital and so-called liquidity problems frequently masked underlying insolvency problems that required prompt regulatory actions, including resolution. Moreover, because regulators frequently delay taking necessary actions, FDICIA makes some of these actions mandatory rather than discretionary. But to be effective, FDICIA requires the willing cooperation of the regulatory agencies to comply with the provisions.

The United States also realized that insolvent banks needed to be legally closed more quickly than other firms to reduce both depositor runs and losses

and to maintain uninterrupted operation of the payments systems, and that the closure decision should be made by regulators and not by the courts. Thus, Congress had earlier enacted a special bank bankruptcy code separate and different from the general corporate bankruptcy code (Bliss and Kaufman, 2007). Legal closure powers to cancel a bank's charter and place it in receivership were given to the bank regulators, not the courts. In addition, in the late 1980's the FDIC also received authority to charter a temporary bridge bank to assume the activities of an insolvent large bank if a buyer could not be found sufficiently quickly. The UK had no such provisions in place in the first half of 2007. Nor had the regulators requested such powers.

Were Northern Rock and IndyMac solvent at the time, at the time the regulators acted to resolve them, or were they victims of short-term liquidity crises and only suffering temporarily depressed asset values? The answer depends on the capital measures and accounting procedures applied. Clues can be gained from several pieces of evidence which ex post at least suggest the answers. For example, the inability of UK regulators to find a buyer for Northern Rock without the need for substantial governmental support implies that, at least in market value terms, NR was not solvent. On the other hand, in terms of Basel I risk-based book value capital, it was quite solvent. Because residential mortgages are assigned a low risk weight in this protocol, risk based capital measures showed home mortgage lender NR to be highly capitalized. However, at the end of June the NR reported a capital-to-assets leverage ratio of only near 2%. This level is defined in the US law as "critically undercapitalized" and the level at which US regulators are required to invoke legal closure within 270 days. In addition, the bank's assets grew by nearly 30% over the previous year at a time that the mortgage market was showing signs of stress, and this should have served as a red flag. Yet the UK regulators not only failed to take notice, but effectively rewarded Northern Rock by permitting it to compute its minimum capital requirement by the Basel II advanced internal rating approach rather than Basel I. This action further reduced its risk-weighted assets by over 40% and reduced its risk-based minimum capital requirement substantially. Much of the "excess" capital was scheduled to be paid out as dividends.

Similarly, IndyMac reported leverage and risk-based capital ratios well above the minimum requirements. Yet, like NR, the US OTS had a difficult time finding a buyer for IndyMac when it tried shopping the institution. This supports the argument made earlier that as a bank approaches insolvency it tends to overstate its revenues and understate its expenses, thereby overstating both its income and capital. The delay caused by the search for a buyer

enlarged the losses substantially. On the other hand, the successful sale of Countrywide to the Bank of America without financial assistance suggests that it was perceived to be market value solvent or close enough to it to make it attractive to at least one potential buyer.²⁴

The problems of reliance upon book value accounting and regulatory accounting standards, such as those contained in both the simple leverage ratio and the Basel I and Basel II standards, also plague effective US implementation of the PCA and FDICIA closure rules. Some proponents of the FDICIA PCA procedures argued that the capital tranche triggers for regulatory intervention and closure rules should be based upon fair market values rather than book values, which lag changes in market conditions.²⁵ That OTS could claim that IndyMac was not only adequately capitalized, but well capitalized only a few days before its closure and yet the FDIC could estimate at closure that it would lose between \$4 billion to \$8 billion is *res ipsa loquitur* and points to the critical need for further evaluation of how FDICIA should be implemented.²⁶

Given the lines of UK depositors in the street and no feasible alternatives to promptly close or otherwise resolve Northern Rock's problems, the government was forced to guarantee all deposits and then to attempt to broker a merger or acquisition of the troubled institution. However, uncertainty about the value of the bank's assets reduced their value and made brokering a deal acceptable to current shareholders, who, unlike in the US, have a strong voice in the resolution process, doomed to failure. Nationalization with full guarantees is a heavy price to pay for the design of a faulty bank deposit insurance and regulatory system. Losses will surely also be visited upon taxpayers. These actions introduce potential serious moral hazard and time inconsistency problems that promise to increase the magnitude of problems in the future with higher costs of resolution.

²⁴ However, recent mortgage losses imply that even Bank of America may have had an inflated sense of what the true quality of Countrywide's assets was.

²⁵ Shadow Financial Regulatory Committee (2000).

²⁶ With the final sale of IndyMac the actual reported loss experience by the FDIC was USD 10.7 billion.

5. Proposals to Remedy the Problems and Reform the Regulatory System

In 2008, the UK Treasury put forward discussion proposals to, among other options, introduce a US style prompt corrective action and structured early intervention system, modify and extend the deposit insurance guarantee, and reform the UK bankruptcy procedures. Because the devil in all such programs is in details and, as the analysis above has suggested, significant flaws remain in the U.S. system that need to be recognized and addressed in any changes that the UK and also the US makes. We believe that to maximize their effectiveness, any proposals should consider several key features:

- Full deposit insurance guarantee for retail deposits. The basic purpose of the guarantee is to take the small depositor out of the game. Small depositors provide little in the way of market discipline, but when they show up on television, the public response would likely reinforce any tendency for a crisis to develop. There is no magic amount of coverage that would accomplish this end. The objective should simply be to set the limit so as to cover a large percentage of the smaller depositors. After the run on NR, all insured deposits were guaranteed at par value and the coverage amount increased first to £35,000 and then to £50,000 (£100,000 for joint accounts).
- A special bankruptcy procedure for handling troubled bank and bank-like financial institutions. This would permit legal closing an insolvent institution and placing it in receivership quickly and resolving it on the basis of an administrative rather than a judicial process.
- Providing for legal closure at some low but positive capital ratio based upon fair market values. Concern is frequently expressed over the taking of investor property by government. This can be rationalized by establishing a system of prompt corrective action. Under such systems, shareholders have the ability to inject needed capital as an insured institution's capital ratios and other measures of performance deteriorate. But, if they do not and capital is dissipated to the point where it becomes problematic that there is any accurately measured positive equity left, they have effectively decided to put their institution to the government for resolution. If there is any value left after higher priority claims are paid it is returned to the old shareholders. Deposit insurance agencies like other insurance companies should have the legal right to impose covenants on insurees.

- Criteria for triggering supervisory interventions and possible closure should be based to the extent feasible on fair market values of assets and liabilities and not book or regulatory accounting standards.
- The resolution process should include the option to establish a government capitalized bridge institution that can temporarily take over most of a large, hard-to-sell failing bank's remaining assets and liabilities and continue its strategic operations seamlessly so as to ensure prompt access by depositors and borrowers to legally available funds. There should be rather short limits established to the life of such an institution, however, to ensure that the institution is privatized as quickly as is practicable. Reprivatization should be with sufficient capital to ensure its longer term viability.
- Incentives to ensure supervisory/regulatory performance and accountability. A critical defect in the current US system is that insufficient incentives are in place to ensure adequately that regulators act promptly and properly when an institution experiences financial difficulty, that regulators not engage in forbearance, and that they attempt to avoid use of taxpayer funds to resolve problems. Such incentives might include a requirement for an outside post mortem and published forensic investigations of all costly failures, and appearance before appropriate government oversight committees before any public funds are employed.
- Risk-based deposit insurance premiums. Because it is difficult to resolve a troubled institution without loss quickly even if it is legally closed at positive book value capital, as in the US system, the deposit insurance agency requires funds to make insured deposits whole in addition to meeting operating costs. These may be attained from the insured banks through insurance premiums either on an ex-ante or ex-post basis or from a combination of the two. A ready pool of funds is also useful in advancing funds to insured and uninsured depositors before proceeds are received from the sale of the assets of failed banks. The premiums may also be risk-based to reduce cross-subsidization and moral hazard behavior, but should be based upon estimates of loss given default as well as the probability of default. The probability of default is a function of the insured bank's behavior and lending standards whereas the loss given default to the insurance agency is determined primarily by how promptly the bank is legally closed by the insurer after the closure capital ratio is breached. Thus, the premium should be scaled to the past performance of the insurer. The poorer the performance in terms of the more delayed the closure, the higher should the premiums be as the losses are likely to be greater. In addition, this will encourage the insured banks to exert pressure on the insurance agency to legally close troubled institutions more promptly after they breach the regulatory closure requirements to minimize its and their losses.

6. Summary and Conclusions

The combination of poorly designed deposit insurance, poor regulatory supervision, and a poor insolvency resolution regime for banks led to a very visible and disruptive run on the Northern Rock in the UK and larger-than-necessary losses in the failure of IndyMac in the US. The run on Northern Rock has resulted in a broadly based reconsideration of the nature of the existing UK insurance contract, the supervisory structure, and the bank bankruptcy code. The recent failure and large losses at IndyMac and other insured banks in the US as well as the near failure of Countrywide, have also accelerated a reconsideration of its supervisory and regulatory systems. This paper has described the more important faults in the existing structure processes in both countries and the provisions that would enhance the efficiency of the structure so as to reduce both the number of bank failures and the cost to the taxpayers, if banks do fail. Inefficient or unlucky banks should be permitted to fail, as in any other industry, but at low cost to the economy. But regardless of how well any regulatory legislation is drafted, without the support of the regulators in implementing the required actions effectively, the promised favorable outcomes are unlikely to be fully achieved. Regulators have often been poor agents for healthy insured banks and taxpayers. It should, however, be noted that these recommendations work best in non-crisis periods when large number of banks are not simultaneously endangered. In crisis periods, game books are generally thrown out in favor of quick, intuitively appealing ad hoc actions.

7. References

- App, Steven O., (2008), "Second Quarter 2008 CFO Report to the Board," FDIC, August 21.
- Bank of England, (2007), Financial Stability Report, October
- Robert R. Bliss and George G. Kaufman, "U.S. Corporate and Bank Insolvency Regimes: A Comparison and Evaluation," *Virginia Law and Business Review*, Vol. 2, No. 1, Spring 2007, pp. 143–177.
- Financial Week (2007), "Bank-to-Thrift Shift Helps Countrywide Sneak By," *Financial Week*, July 30.
- FSA Internal Audit Division (2008), "The Supervision of Northern Rock: A Lessons Learned Review," March.
- Gorton, Gary (2008), "The Panic of 2007," Prepared for the Federal Reserve Bank of Kansas City, Jackson Hole Conference, August.
- HM Treasury, Bank of England and Financial Services Authority (2007), "Liquidity Support Facility for Northern Rock PLC," 14
- House of Commons (2008) "The run on the Rock" Vol. 1, Fifth Report of Session 2007–08," Treasury Committee, Jan. 24, see chart 1, p. 23.
- Milne, A. and G. Wood (2008), "Banking Crisis Solutions: Old and New," *Review* (Federal Reserve Bank of St Louis), September/October 2008, pp. 517–530.
- Shin, Hyun Song, (2009) "Reflections on Northern Rock: The Bank Run that Heralded the Global Financial Crisis," *Journal of Economic Perspectives*, Vol. 23, No. 1, Winter 2009, pp 101–119
- Paletta, Damian and Jessica Holzer, "FDIC Weighs Tapping Treasury as Funds Run Low," *Wall Street Journal*, August 27, 2008, p. A-11.
- Thorsen, Eric, "Letter to the Honorable Charles Grassley," Inspector General, Department of the Treasury, December 2008
- TimesOnline 2008.
- U.S. Shadow Financial Regulatory Committee, Reforming Bank Capital Regulation (Policy Statement No. 160), Washington, D.C.: American Enterprise Institute, March 2000
- Wall Street Journal, February 19, 2008.



INSPECTOR GENERAL

DEPARTMENT OF THE TREASURY
WASHINGTON

December 22, 2008

The Honorable Charles Grassley
Ranking Member
Committee on Finance
United States Senate
Dirksen Senate Office Building, SD-219
Washington, D.C. 20510-6075

Dear Mr. Grassley:

On July 11, 2008, the Office of Thrift Supervision (OTS) closed IndyMac Bank and appointed the Federal Deposit Insurance Corporation (FDIC) receiver. FDIC estimated the loss to the Deposit Insurance Fund for the failed bank at \$8.9 billion. As required by law, my office began performing a material loss review of IndyMac to determine the cause(s) of the thrift's failure and assess OTS's supervision over the institution. That review is ongoing. As is common with the failure of a publicly-held insured financial institution, other Federal agencies including the Securities and Exchange Commission (SEC) and FDIC also conduct reviews. In the case of IndyMac, SEC reviewed workpapers prepared by IndyMac's auditor, Ernst & Young (E&Y). One such workpaper reported a telephone discussion involving IndyMac's Chief Executive Officer (CEO), E&Y auditors, and OTS's West Region Director, Darrell Dochow, regarding an infusion of capital to IndyMac from its holding company, backdated to the first quarter of 2008. Because of its potential relevance to our material loss review, FDIC's Inspector General in turn provided the E&Y workpaper to our office.

At Secretary Paulson's request, I initiated an inquiry into the matter and am providing you with a status of what we have learned. Specifically, I am addressing whether:

- the Director of Office of Thrift Supervision's (OTS) West Region approved a capital infusion received by IndyMac Bank, F.S.B. (IndyMac), from its holding company after March 31, 2008, to be recorded as capital of the thrift as of March 31, 2008, and
- if so, the effect of recording the transaction in this manner.

The E&Y workpaper referred to review differences (proposed adjustments)¹ identified by the auditor during its review of IndyMac's interim financial statements for the quarter ending March 31, 2008. It also referred to proposed adjustments identified by E&Y during its audit of IndyMac's calendar year 2007 financial statements. Had the proposed adjustments identified by

¹ It is not unusual for an auditor to propose adjustments. It is also not unusual for management to waive the recordation of those adjustments. In practice, the auditor keeps track of the total effect of any unrecorded adjustments and if that total effect becomes material to users, the auditor will insist that the adjustments be recorded. Failure to do so by management will result in a modification of the auditor's opinion.

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the auditor during its 2007 audit and 2008 review been recorded, IndyMac's capital ratio as of March 31, 2008, would have fallen below the 10 percent "well-capitalized" minimum threshold.²

According to the workpaper, on May 9, 2008, E&Y participated in a conference call with OTS West Region Director Dochow and IndyMac's CEO, Michael Perry. During the call, CEO Perry asked if OTS would allow IndyMac to record an April 2008 capital contribution from IndyMac's holding company to IndyMac Bank as of March 31, 2008. If so, that would enable IndyMac to meet the "well-capitalized" threshold as of March 31, 2008. The workpaper indicated that West Region Director Dochow acknowledged the issue of the review differences and agreed to IndyMac's proposal. As a result, IndyMac's total risk-based capital ratio was restored back over the 10 percent "well-capitalized" minimum threshold for the March 31 report.

We confirmed through inquiry and review of additional supporting documentation that the circumstances occurred essentially as represented in the E&Y workpaper. The one exception is that the capital contribution in question occurred on May 9, 2008, not in April 2008 (nearly 6 weeks after the end of the quarter and the day of the conference call between E&Y, West Region Director Dochow, and IndyMac CEO Perry). The circumstances and accounting of this transaction as described by OTS are unclear and the documentation provided by OTS was ambiguous and incomplete. For example, OTS provided information indicating that the IndyMac holding company made a \$50 million capital contribution on May 9, 2008, of which \$18 million (the amount necessary for IndyMac to be "well-capitalized") was recorded by the thrift as capital as of March 31, 2008. OTS also stated that IndyMac had recorded this amount as a receivable at March 31, 2008. OTS, however, did not provide documentation showing the recordation of the receivable. Furthermore, based on other documentation we obtained, the capital contribution of \$50 million was intended by the holding company's board of directors to be for the second quarter (quarter ending June 30, 2008).

The impact of West Region Director Dochow's approval to record the capital infusion in the quarter ending March 31, 2008, was that IndyMac was able to maintain its "well-capitalized" status, and avoid the requirement in law to obtain a waiver from FDIC to accept brokered deposits.³ It also solved another problem in that E&Y indicated that without IndyMac's acceptance of several proposed adjustments relating to the bank's capitalization, it would not have signed the interim review. IndyMac needed the signed interim review in order to file a complete quarterly report (10Q), as required, with the SEC on May 15, 2008.

During our inquiry, we also discovered that OTS had allowed other thrifts to record capital contributions in an earlier period than received. While there is some support in authoritative accounting literature for recording capital contributions in one period that were received in a

² When an institution falls below "well-capitalized," certain restrictions automatically take effect.

³ There are five established capital classifications for insured financial institutions: well-capitalized, adequately capitalized, undercapitalized, significantly undercapitalized, and critically undercapitalized. The use of brokered deposits is limited to well-capitalized insured depository institutions. Adequately capitalized institutions are required to obtain a waiver from FDIC in order to accept brokered deposits.

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later period,⁴ that support is limited.⁵ Basically, IndyMac could record the capital infusion as of the quarter ending March 31, 2008, provided there was an actual note, a board resolution, or some form of communication showing the intent of the holding company at the time to infuse the capital (we also would expect that the holding company would have the capital available at March 31). However, in our work thus far, we have neither found nor been shown any indication that this intent existed. It is unclear what information OTS had at the time and what its basis was for allowing the capital infusion to be recorded for the quarter ending March 31, 2008. A separate inquiry as to a motive for approving and recording this transaction in the manner it was recorded is still ongoing. We are also continuing to obtain additional documentation to assess the accounting treatment of the capital contribution as of March 31, 2008. Our findings in that regard will also be discussed in the separate audit report.

An identical letter has been sent to the Honorable Max Baucus, Chairman. Should you or your staff have any questions, you may contact me at (202) 622-1090 or Marla A. Freedman, Assistant Inspector General for Audit, at (202) 927-5400.

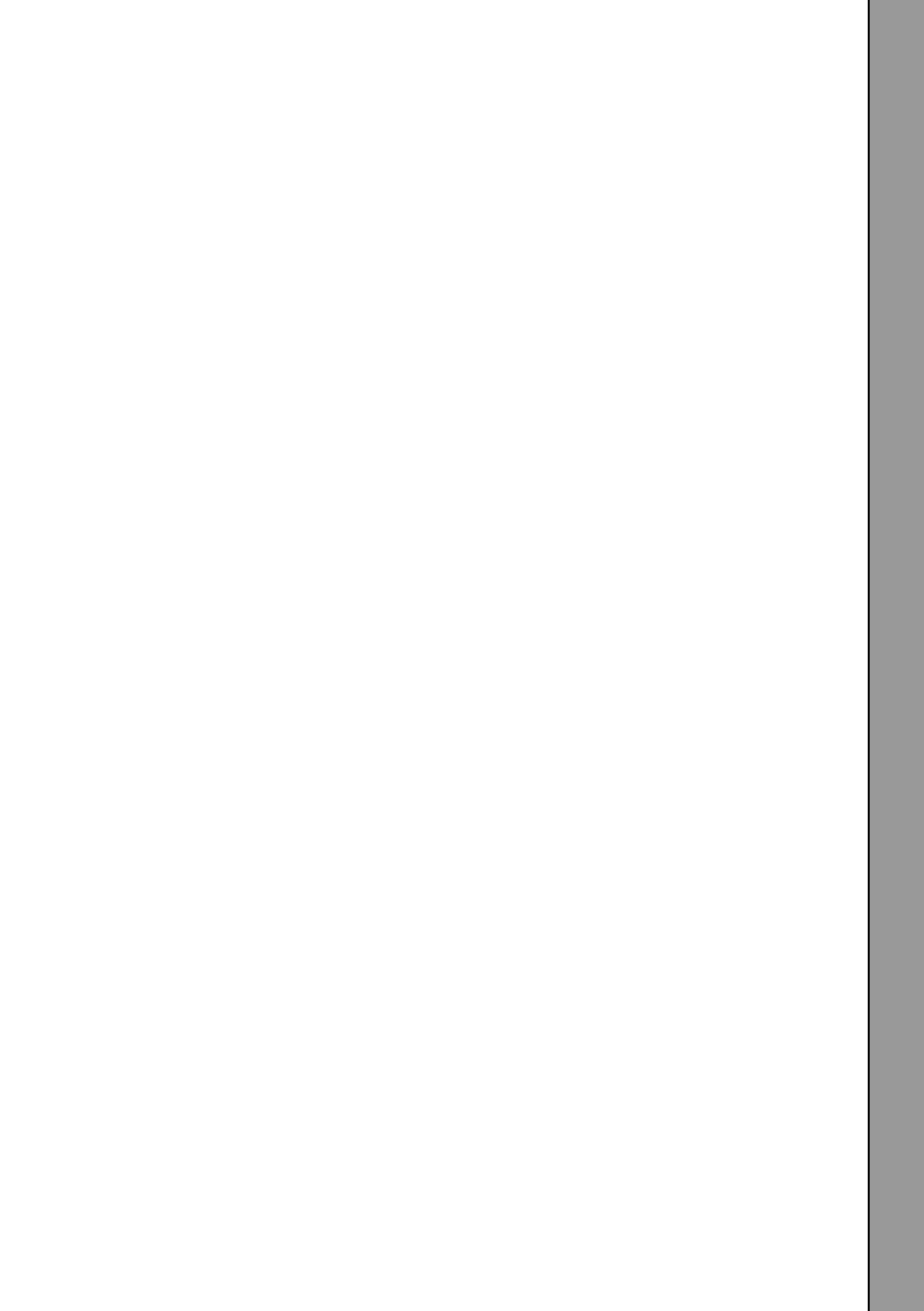
Sincerely,



Eric M. Thorson
Inspector General

⁴ Financial Accounting Standards Board (FASB) Evolving Issues Task Force Abstract 85-1, *Classifying Notes Received for Capital Stock* (Abstract 85-1).

⁵ In recent discussions with a FASB staff representative regarding Abstract 85-1 and the applicability of it to these circumstances, the reporting of a note as an asset is generally not appropriate, except in very limited circumstances and when there is substantial evidence of the ability and intent to pay within a reasonably short period of time.



NORTHERN ROCK: JUST THE TIP OF THE ICEBERG

Marco Onado

Professor of Financial Institutions
Department of Finance
Bocconi University
Via Roentgen 1
I-20136 Milan
ITALY

Tel.: +39 02 5836 5865

Fax: +39 02 5836 5901

E-mail: marco.onado@unibocconi.it

<http://www.unibocconi.it>

1. Foreword

The Northern Rock collapse has been a tremendous blow to the stability of the financial system and to the credibility of financial regulation and supervision. During the crisis and in its immediate aftermath, the case has been analysed mainly as a British problem, looking at the British regulatory model in general and the handling of the case in particular. From this perspective, the conclusions seemed rather reassuring: it was partly a mistake of national regulators, partly a failure of the national regulatory mechanisms. If only it were so simple. The spreading of the crisis (\$ 500 billion of asset write-downs already accounted for by major banks and counting), and the worsening of the situation of Northern Rock after the nationalisation show two bitter truths about Northern Rock's case: its difficulties were far from temporary; its risky business model was common to many other banks in all major countries.

From this point of view, it is true – as Tolstoy would put it – that every unhappy bank is unhappy in its own way, but there is a *fil rouge* connecting the appalling performance of so many financial institutions in the last twelve months: the lack of capital. Northern Rock overlooked the importance of bank

capital both as a cushion against unexpected losses and as a funding source. Its business model was focused on irreproachable objectives: maximisation of the market value of the company and of the return on equity. However, having already reached very satisfactory results at the beginning of this decade, the bank felt itself “condemned” to maintain high growth rates for revenues and profits, while keeping capital close to the minimum level, i.e. the level sufficient to comply with Basel-1 ratios. The result was a dramatic increase of overall risks against an almost constant capital base. No wonder that Northern Rock has been judged as “an accident waiting to happen”¹. The point is that this accident was far from being unique.

This article aims to show that the rise and fall of Northern Rock epitomises an extreme business model adopted by many banks in the last years which has stretched to the maximum extent the opportunities for regulatory arbitrage induced by Basel-1 and which led to dramatically overlooking the fundamental role of capital in banking. Next section will review the key data on Northern Rock’s performance over the past years and their relationship with the overall business model. Section 3 will show that similar trends can be observed in other banking systems and in most international banks. The final section draws a few conclusions on the overall efficiency of capital adequacy rules.

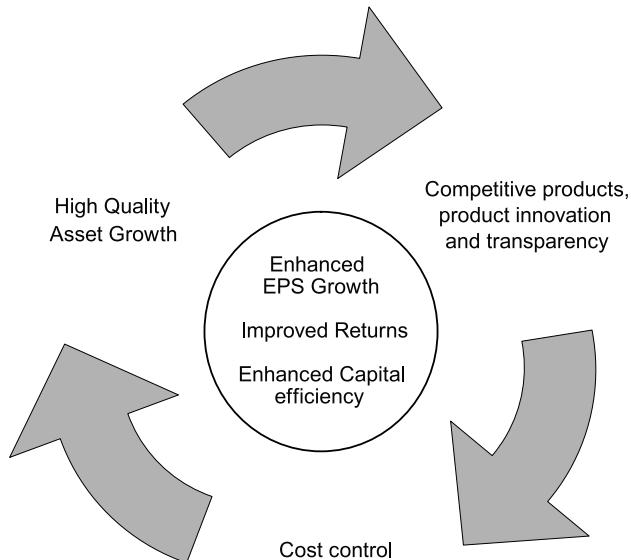
¹ Martin Wolf, *The big lessons from Northern Rock*, “Financial Times”, 15 November, 2007

2. The rise and fall of Northern Rock

Almost all has been said about the fast growth of Northern Rock since its demutualisation in 1997 and in particular since 2001, when it entered the FTSE100 index (being one of only two companies based in North East England to be member of this élite). The only traditional feature that the “new” bank had retained was its absolute specialisation in the mortgage business: 90 per cent of its assets were residential mortgages.

Growth, profitability and market value have been the drivers of this golden period: total assets grew 30 per cent per year, significantly faster than the market; ROE; return on equity remained steadily above 20 per cent; market value grew from £2.7bn (end of 2002) to £4.9bn at the end of 2006. The bank was praised as a success story for the benefit of its shareholders and also the local community. The management proudly informed that its business model was hinged on the “virtuous” circle depicted in the following graph².

Figure 1: Northern Rock – the “virtuous” circle



² Annual Report for 2002. With the benefit of hindsight the use of quote and unquote seem mandatory.

It is important to stress the relationship between the outer circle (where asset growth appears to be the most important component) and the inner circle, focused on shareholders' returns and in particular the growth of EPS (earnings per share). Given the high levels of shareholders' profitability and market capitalisation already reached at the beginning of the decade, the growth of profits (which could be seen as a combination of growth of assets and control of credit losses and administrative expenses) were the only solution to the increase of the market value of the company. By the same token, keeping relatively constant the level of capital was the only solution to keep the return on equity well above 20 per cent.

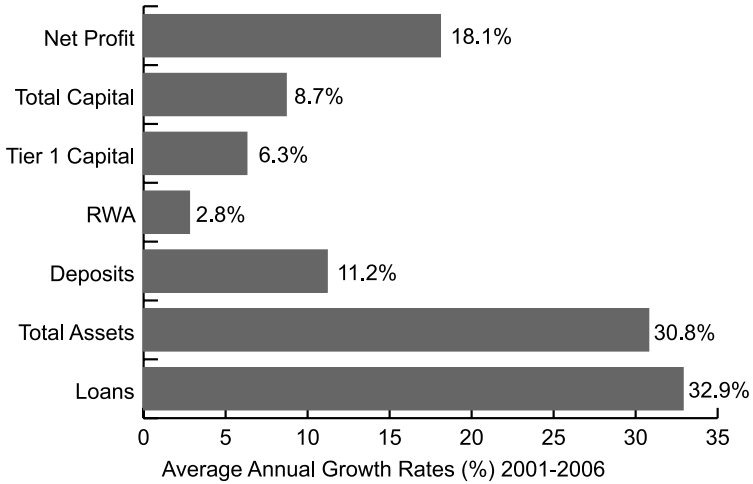
As a matter of fact, the quality of Northern Rock assets can be questioned. In the Treasury Report³, Willem Buiter was critical of this expansion and said (p. 12): "I like healthy growth but it is hard to believe that the quality of the asset portfolio and the ability to vet the credit-worthiness of your borrowers does not suffer when you take 20% of the net increase and 40% to 50% of the gross increase in activity in this half year period, so I think they were an organisation that was clearly engaged in high-risk behaviour". As a matter of fact, in the summer of 2008 the quality of the bank's loans began to decline, showing that Buiter had a point. But it is true that when depositors ran on the bank and when the bank was nationalised, the quality of the loan portfolio looked still unscathed. Both the FSA and the Bank of England were adamant on this point⁴. Growth per se was the fundamental cause of the crisis.

The following graph summarises the key growth rates for the years 2001–2006.

³ House of Commons - Treasury Committee, *The run on the Rock*, Fifth Report of Session 2007–08 Volume I, January 2008

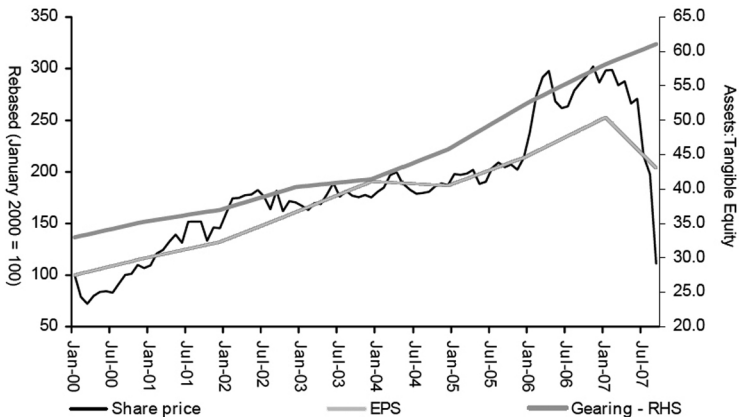
⁴ Run on the Rock, cit., p. 14: "Mr Sants said that Northern Rock 'had high quality assets—there is no suggestion here this is an organisation taking on poor quality assets'. The Governor of the Bank of England, Mervyn King, was also supportive of the quality of the asset book of Northern Rock, telling us that: [...]The lending side was handled extremely well".

Figure 2: Northern Rock – Average Annual Growth Rates 2001–2006



The only conclusion one can draw is that the level of capital was the “dependent variable” of the management’s equation. The huge gap between total assets and risk weighted assets makes crystal clear that this was made possible by an extensive regulatory arbitrage which widened the gap between total assets and risk-weighted assets, the only variable that counts from a Basel-1 perspective. Capital efficiency in the “virtuous” circle meant capital minimisation. A research analysis from Deutsche Bank⁵ (after the crisis broke, alas) summarises the importance of extreme leverage in the Northern Rock’s strategy.

Figure 3: Northern Rock: Earnings per share, stock price and leverage.

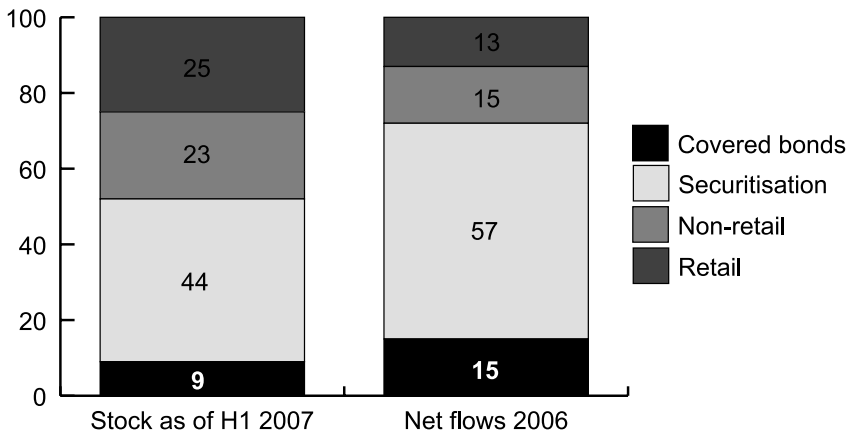


⁵ Deutsche Bank, (John Sheridan - Jason Napier), Northern Rock. Between a rock and a hard place, 17 September 2007.

The close relationship between earnings per share, stock price and leverage are more than evident. From this point of view, the picture echoes what Chuck Prince, former Citi's CEO, said a few days before the crisis: "until the music stops, we have got to dance". For the British bank this meant continuously increasing total earnings (therefore total assets) and leverage. But the latter, as is taught in basic financial courses is a double-edged sword. The aggressive Northern Rock's policy ended up in a leverage judged in the research as "the highest in the European sector (58x assets:equity)".

So capital, the main cushion against unexpected losses, was spread thinner and thinner to cover a growing area of activity and risks. But this is only half of the story. As the "virtuous" circle picture shows, the bank had to keep at the minimum level its funding costs: in a period of low interest rates and abundant liquidity, this meant not only disregarding capital as a source of permanent funds, but also relying more on wholesale markets than retail markets. As the following graph taken from another research analysis shows⁶, at the eve of the crisis, retail deposits were only 23 per cent of total funds. In the last year they accounted for a bare 13 per cent. These figures are higher than the industry's average, but all main peers had at that time a ratio of retail deposits to loans lower than 50 per cent⁷.

Figure 4: Northern Rock Funding Sources



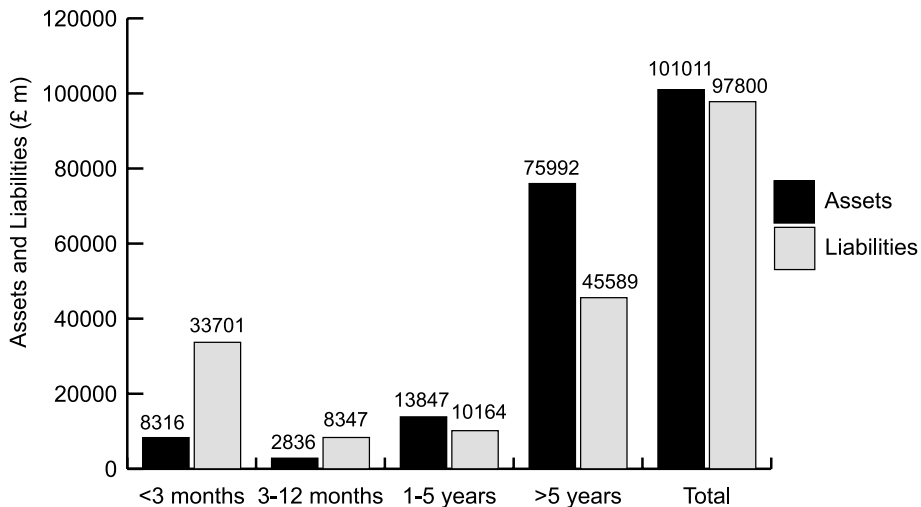
The bank had discovered the magic of securitisation and stretched that model to the maximum extent, both through the creation of special purpose vehicles

⁶ Credit Suisse (Jonathan Pierce et al), Northern Rock. Funding, 6 August 2007.

⁷ Run on the Rock. cit. p.17.

and the issuance of covered bonds.⁸ The liquidity risks implied in this funding strategy was tremendous as the following graph shows.⁹

Figure 5: Northern Rock Liquidity Gap at Various Maturities as of September 2007



The liquidity gap within 3 months was more than £ 25 billion. In less than one year, Northern Rock had to refund £ 30 billion, with all the ensuing market risks involved.

There are three important points about this risky funding policy that are worth stressing. First, it was perfectly compliant with the existing regulation. Capital, including Tier-1, was above the requested level. The securitisation technique was correct.¹⁰ Second, the funding strategy implied an unlimited supply of liquidity in the wholesale markets to creditworthy banks. As long as the loan portfolio sounded good, Northern Rock was confident it would always get the funds needed to refinance its huge short-term gap at the same price. So much so that, it did not deem necessary to buy at least some form of

⁸ Run on the Rock, cit. p. 16: “The main difference between securitisations through SPVs [special purpose vehicles] and LLPs [limited liability partnership] is that, in the latter structure, the banks themselves (rather than the SPVs) continue to hold the assets and issue the so-called covered bonds which are secured against them. The LLP effectively only comes into operation in case the issuing bank defaults, thereby providing additional security to investors in the bonds”.

⁹ Data are taken from UBS (Stephen Andrews et al.), *Northern Rock. Fog on the Tyne thickens* September 2007.

¹⁰ Run on the Rock, cit. p. 13: “The Financial Services Authority stated that ‘The structure of the Granite securitisation meets industry norms and there is nothing to suggest that the Granite structure is not functioning as intended’”

insurance against this risk.¹¹ Third, the FSA had identified the risks implied in the bank's financial position at least since April 2007¹². We will get back on this point in the final section.

¹¹ Run on the Rock p. 16, "One aspect of Northern Rock's financing raised by the Governor of the Bank of England in a speech was Northern Rock's lack of insurance against the troubles it faced. [...] Mr Applegarth explained that Northern Rock had taken out insurance, but that he felt its wide funding base did not merit purchasing too much insurance"

¹² Run on the Rock, cit. p. 14: "In its April 2007 Financial Stability Report, Sir John Gieve told us that the Bank of England had "identified the increasing wholesale funding of banks as a potential risk if markets became less liquid"

3. Northern Rock as a paradigm

While there is no doubt that Northern Rock's business model was extreme, one can argue that its underlying philosophy was shared by many other banks. In particular, the dangerous combination of aggressive growth, minimisation of capital and significant funding risks as intermediate objectives to support very high levels of return of equity seem to be an important common denominator. The "virtuous" circle has been the driver of many banks' strategy, not surprisingly those that deployed the most aggressive growth rates and/or the highest return on equity.

The research prompted by the crisis has shown that during boom periods banks tend to increase their total assets faster than their liabilities, because they feel to have a surplus capital (which can be considered the equivalent of the surplus capacity of a manufacturing firm) and look for profitable ways to employ it.¹³ At the same time, borrowers are more willing to increase their debt, both in absolute terms and in proportion to their income. This makes bank credit highly procyclical, for reasons connected both to the supply and the demand side¹⁴. Moreover, in the last long period of abundant liquidity, the wedge between the growth of assets and liabilities (in particular traditional deposits) has not been covered with capital, but with funds provided by central banks. As the authors point out, "a closer look at the fluctuations in balance sheets reveals that the chief tool used by institutions to adjust their leverage is collateralized borrowing and lending - in particular, repurchase agreements (repos) and reverse repurchase agreements (reverse repos), transactions in which the borrower of funds provides securities as collateral".

As a consequence, bank capital tends to be very procyclical, decreasing, as a percentage of total assets, during booms and increasing during recessions. The mechanism described in Adrian-Shin is focused on the demand and supply of credit, therefore to the assets and liabilities of banks' balance sheet) is compounded by the willingness to maximise shareholders' return and by the relationship between growth of revenues and Roe, which leads to find ways to "economise" capital.

¹³ Tobias Adrian - Hyun Song Shin, *Liquidity, Monetary Policy, and Financial Cycles*, in "Federal Reserve Bank of New York. Current Issues in Economics and Finance" Volume 14, Number 1 January/February 2008.

¹⁴ Marco Pagano, *The subprime lending crisis: lessons for policy and regulation*, in "Unicredit Group Finance Monitor", 2008, n. 2.

The long period of abundant liquidity and low interest rates allowed banks to reach levels of profitability, in particular in terms of return on equity, abnormally high by any historical standard. Since then, also because of the burst of the Internet bubble, banks felt somehow obliged to keep and even to improve their profitability. Aggressive growth and capital minimisation were the necessary ingredients to this otherwise unresolvable equation. To understand the importance of this driving force (the “motive” as they say in the mystery books) it is sufficient to look at the group of “large and complex financial institutions” analysed by the ECB¹⁵. The following table shows data on profitability in the last years before the crisis.

Table 1: European Banks: Return on Equity and Return on Risk-Weighted Assets

		2004	2005	2006	2007 H1
ROE	Min	4.3	9	7.24	5.11
	1 st quartile	10.39	14.88	16.7	17.9
	Median	16.35	17.4	18.53	21
	Average	16.78	18.74	18.75	20.19
	3 rd quartile	20.48	23.13	21.2	22.5
	Max	33.2	37	37.6	36
Return on RWA	Min	0.2	0.81	0.77	0.81
	1 st quartile	0.92	1.06	1.11	1.51
	Median	1.11	1.38	1.42	1.84
	Average	1.13	1.4	1.48	1.86
	3 rd quartile	1.49	1.73	1.84	2.2
	Max	2.03	2.26	2.66	3.22

Not only the median and the average levels appear very high throughout the period, but also the minimum and first quartile figures are astonishing, implying in all categories abnormal premiums to the risk-free rate. As for the maximum, it is difficult to say whether these are levels bankers should be proud or ashamed of.

The ECB data do not give information on the underlying growth of banks’ assets and capital. However, another research from the same source regarding all Euroland banks has shown that during the period 2000–2004 the ratio of capital to total assets has remained fairly stable for both US and European

¹⁵ European Central Bank, *Financial Stability Review*, December 2007, table S5. (2007 data annualised)

banks¹⁶ but also found a “surprisingly large dispersion of banks’ capital ratios, warranting further investigation”. The high dispersion found by the ECB (which was not further investigated) seems to confirm that a significant number of banks allowed their capital to lag behind total assets even significantly, exactly as Northern Rock did. This hypothesis is confirmed by the last IMF Report¹⁷ which shows that the 10 largest publicly listed banks from Europe and the United States, doubled in aggregate assets in the last five years to 15 trillion euros, while risk-weighted assets, which drive the capital requirement, grew more moderately to reach about 5 trillion euros. The average growth rate are significantly lower than Northern Rock’s but are all the way in the two-digit range and the gap to the growth of risk-weighted assets looks ominously similar.

The conclusion of the IMF is that (p. 31): “regulatory capital requirements did not constrain asset growth. The banks continued to meet the Basel I capital requirement with relative ease. The banks showed on average a Tier 1 capital-to-risk-weighted-asset ratio of between 7 and 9 percent—well above the 4 percent minimum. With the high capital ratios, many of the large banks were able to engage in stock repurchases through the third quarter of 2007”. But “real” leverage is what matters when difficulties arise. Not surprisingly, the IMF report (fig. 1.17 p. 19) finds a close relationship in a sample of major banks between the fall of stock prices and the leverage ratio (measured by total assets and not by risk-weighted-assets).

Official data do not allow for a detailed analysis of the willingness of banks to exploit the gap between total assets and risk weighted assets. The findings mainly coming from analysts, can be summarised in the following way:

1. There was a high dispersion in the change of leverage among European banks;
2. A few banks such as Deutsche Bank, Barclays, UBS, RBS increased their leverage significantly;
3. Generally French, Spanish and Italian banks have reduced their leverage over the last six years, while the UK, Swiss and Deutsche show significant increases¹⁸;

¹⁶ See Bank *Capital in Europe and the US*, in “Ecb, Financial Stability Review”, cit, p. 155 and ff. Unfortunately the research published at the end of 2007 covers only the years 2000–2004.

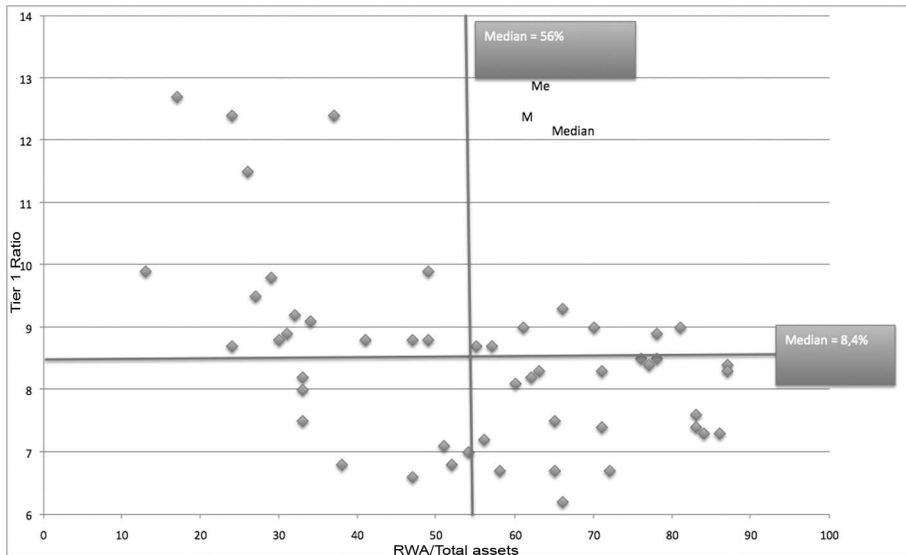
¹⁷ International Monetary Fund, *Global Financial Stability Report*, April 2008, p. 31.

¹⁸ Merrill Lynch (Stuart Graham), *Remaining cautious for 2008: Increased risks to business models*, 20 December 2007.

4. In the US, strong increases of leverage are to be found in the investment banking business, i.e. where difficulties such as Bear Stearns' arose.

The following graph, based on data published in a recent research analysis¹⁹, shows the combination of the ratio of risk-weighted assets to total assets and the Tier 1 ratio for a sample of 51 large European banks.

Figure 6: Ratio of Risk-weighted Assets to Total Assets in a sample of European Banks



The horizontal axis is a good proxy of the extent of regulatory arbitrage by individual banks, while Tier 1 is the target variable from a regulatory point of view. It is worth stressing the extreme dispersion of the values. If Northern Rock was allowed to minimise its capital base, it was not left alone.

Also as regards the funding strategy, Northern Rock's policy was similar to many other cases, at least on two grounds: the decreasing reliance on customer deposits and the maturity mismatch.

In most major financial systems, banks' deposit base grew at a slower pace than banks' assets, as implied in the Adrian-Shin model. The Merrill Lynch research cited above, finds a "funding jaws" (gap between loan and customer deposits) for a sample of European banks in the range of 200–300bn per year

¹⁹ Goldman Sachs (Christoffer Maimmer), Capital and credit concerns stand in the way of a sustained recovery, July 3, 2008.

in the period before the crisis. But, like we have seen for capital, individual banks' positions are even more interesting than aggregate figures. The ratio of loans to deposits, at the end of 2007 was significantly above 100 per cent for most British, Spanish and German banks (and a few French banks as well). Some banks showed ratios above 150 per cent.

The crisis has also shown tremendous maturity mismatches both in most banks' trading portfolios (particularly large universal banks and American investment banks) and in the special purpose vehicles of the securitisation processes. As for the funding strategy of the financial system at large, it is sufficient to remember the case of the special investment vehicles. As the ECB pointed out²⁰ when the crisis broke, the market began to look at the nature of the funding liabilities of these vehicles as well as the fact that some of these structures did not have their own equity capital. At the end of the day there is always a dramatic lack of capital.

²⁰ ECB, Financial Stability Review, p. 87.

4. Conclusions

The collapse of Northern Rock has been mainly examined as a failure of the British mechanisms of intervention (in particular, the lender of last resort facilities, the deposit insurance scheme and the division of responsibilities between the three main regulators). This perspective led to important policy conclusions, but risks to cast shadows on the many points that Northern Rock's crisis shares with many other ailing banks: the lack of capital.

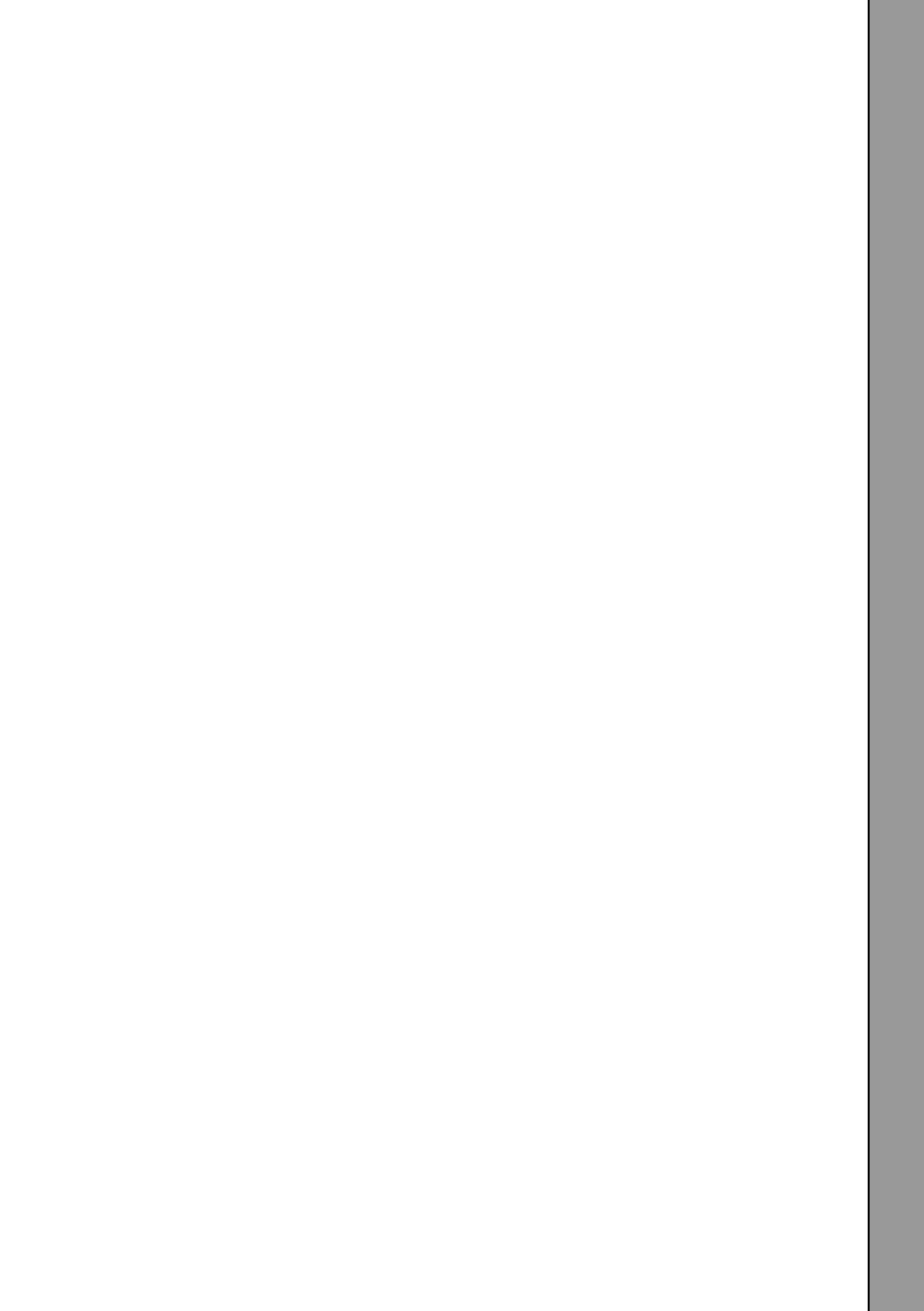
The simple data we have examined for Northern Rock and other banks, shows that capital did not grow at a pace proportion to the accumulation of credit and financial risks. In other words capital was not adequate both for Northern Rock and so many other banks of the international élite of large universal banks. There has been a failure of business models based on aggressive growth and maximisation of the return on equity.

If this is the crisis of securitisation, it is also the crisis of capital adequacy. No matter if we consider Basel-1 or Basel-2, the disturbing conclusion is that the overall prudential regulation failed to attain its fundamental objective. Most banks were allowed to increase their leverage beyond any reasonable capacity to absorb the increasing credit and liquidity risks. Of course, one can argue that the Basel framework allows individual regulators to force banks to have capital above the minimum level in special cases, i.e. in case of a very risky business model, such as Northern Rock's. But the evidence seems to confirm that this special treatment was not applied by a few national regulators, including the UK's. In other words, cases such as Northern Rock's grew both in the UK and in other European countries. The asymmetry of regulatory approach within the European Union and even within Euroland is a problem of the utmost importance in the future debate on European issues.

This raises the problem of competition through regulation. The UK authority, and in particular the FSA is universally praised for its legendary light touch²¹. It is very hard to reconcile this merit with regulatory requests of increasing the capital base of individual banks, which eventually would depress shareholders' returns.

²¹ *Soft-touch regulation*, "The Economist", 11 October 2007.

The main policy implication of our analysis is that capital adequacy rules must be restored. This means applying Basel-2 fixing immediately the problem of procyclicality and understatement of liquidity risks. Second, a more uniform regulatory approach looks badly needed. In global markets, the dividing line between the competitiveness of a market place and a race to the bottom in regulation is thinner and thinner.



BLURRING THE BOUNDARIES IN FINANCIAL STABILITY

Michael W. Taylor¹

Adviser to the Governor
Central Bank of Bahrain
PO Box 27
Manama
BAHRAIN

Tel: +973 17547575

E-mail: michaeltaylor@cbb.gov.bh

1. Introduction

When the UK's current regulatory arrangements were put in place a decade ago, their justification was the blurring of boundaries between different segments of the financial industry. The reforms were primarily a response to perceived regulatory inefficiencies resulting from the changing structure of the financial industry – most notably the emergence of financial conglomerates and functional despecialisation. However, in part because of the circumstances in which reform took place, comparatively little attention was given at the time to crisis management arrangements. To the extent that these issues were considered there was an attempt to draw a sharp and precise boundary between banking regulation on the one hand and the central bank's role in promoting financial stability on the other. The Northern Rock episode has illustrated that the new boundary that was erected under the post-1997 arrangements is sub-optimal in crisis management. This paper will argue that it is now this boundary that needs to be blurred.

¹ The opinions expressed in this paper are the author's alone and should not be attributed to the Central Bank of Bahrain

2. Justification for regulatory consolidation

The chief argument advanced in favour of the regulatory consolidation represented by the FSA was that the financial sector had experienced a “blurring of boundaries” between banking, securities, and insurance. It was most succinctly stated by Britain’s Chancellor of the Exchequer in his speech to Parliament of 20th May 1997, in which Gordon Brown argued that

[I]t is clear that the distinctions between different types of financial institution - banks, securities firms and insurance companies - are becoming increasingly blurred. Many of today’s financial institutions are regulated by a plethora of different supervisors. This increases the cost and reduces the effectiveness of supervision.

One manifestation of the blurring of boundaries was the emergence of financial conglomerates, a trend that rose to prominence in the first half of the 1990s. Group structures were starting to become more complex, involving a diversity of institutions operating in a range of different sectors and geographical locations and subject to different supervisory regimes. Banks were becoming increasingly involved in asset management and broker-dealing activities, while securities houses had increasingly taken on bank-type financial risks. Banking/insurance linkages were also becoming commonplace, usually under a common holding company structure. Given these developments the Tripartite Group of G10 banking, securities, and insurance supervisors argued in a 1995 report that a “group-wide” perspective was required to obtain an adequate supervisory overview of these financial conglomerates. (Tripartite Group, (1995))

A second manifestation of the blurring of boundaries was what might be termed “functional despecialisation”. Different financial institutions were increasingly carrying out the same functions or types of operations. Technological innovation had also created products which could not be easily accommodated within the traditional contractual forms (debt, equity, and insurance) - an example being the emergence of credit derivatives. Financial innovation had increased the marketability and standardisation of financial products while, at the same time, it had allowed the creation of more complex products and the unbundling of certain types of risk into their separate components. In addition,

contract standardisation and the unbundling of risks had permitted different financial institutions to take on exposure to risk which were previously outside their sectoral domain. Securitisation was an example of this trend. As a result, securities houses had increasingly become exposed to the type of risk that is typical of traditional banking business, as their assets came to include, for example, mortgage-backed securities or securitized bank loans. Similarly, bank balance sheets – previously characterised by their stability – were subject to much greater volatility, as assets could be securitized and sold, and trading activities came to account for a much larger share of profitability².

The emergence of financial conglomerates and the process of functional despecialisation had undoubted implications for the structure and practice of regulation. As Borio and Filosa noted in an early attempt to assess this trend, “conglomeration and the blurring of distinctions between activities... raise the question of the appropriate allocation of responsibilities between different supervisors.” (Borio and Filosa, (1994)). One possible conclusion was that since the boundary lines between financial sectors were being eroded, regulation itself should follow suit. (Financial System Inquiry (1996, 1997); Goodhart (1995); Taylor, (1995)). A single financial regulator seemed to be better adapted to the realities of modern financial markets than the traditional tripartite structure of regulation divided between banking, securities and insurance. It would have the advantage of being able to monitor the activities of a complex group in exactly the same way as the internal management of a conglomerate monitor its activities. As a result the regulatory process would be able to mirror the management process, an important reason why the industry fell so quickly behind the proposal to establish a single regulator.

A decade later, these arguments for establishing a single regulator remain powerful. Although there are some signs that the trend towards financial conglomerates has passed its peak and financial services firms are again focusing on core competencies, functional despecialisation has continued apace. Northern Rock’s business model was constructed around its ability to distribute in the form of securities the mortgages that it originated. The bank’s extraordinary growth, in which its balance sheet expanded from £15.8 billion in 1997 to over £100 billion by the end of 2006, had been fuelled by wholesale funding and an active asset securitisation programme. As such, Northern Rock’s business model was constructed on functional despecialisation and hence was exactly the sort of financial innovation to which the FSA had been presented as the answer.

² OECD (1996)

3. The lender of last resort

Nonetheless, some critics of the FSA's performance in its supervision of Northern Rock have argued that the episode illustrates the folly of removing banking supervision from the central bank. As Professor Willem Buiter argued in evidence to the House of Commons Treasury Select Committee:

The notion that the institution that has the knowledge of the individual banks that may or may not be in trouble would be a different institution from the one that has the money, the resources, to act upon the observation that a particular bank needs lender of last resort support is risky. It is possible, if you are lucky, to manage it, but it is an invitation to disaster, to delay, and to wrong decisions. The key implication of that is that the same institution—it could be the FSA or it could be the Bank of England—should have both the individual, specific information and the money to do something about it.³

This argument is essentially a reprise of the chief argument that was advanced in favour of retaining banking supervision within the central bank at the time the FSA was established. It was argued then that the information acquired in the capacity of the bank supervisor was essential to the central bank performing the lender of last resort (LoLR) function, and that therefore the best arrangement was for LoLR and banking supervision to be located in the same institution. A subsidiary argument was that the central bank needed to be concerned with the financial condition of the banking system as this was the conduit through which its monetary policy was transmitted to the wider economy. Against these arguments, proponents of separation argued that theoretical considerations and empirical evidence indicated that central banks with banking supervision responsibilities tended to err on the side of laxity in monetary policy; as Goodhart and Schoenmaker argued in a widely cited paper⁴, monetary policy aimed to be countercyclical, whereas regulatory policy was pro-cyclical. Concerns were also expressed that banking supervision “failures” – which it was generally accepted were almost inevitable – would damage the reputation and credibility of the central bank as a monetary policy institution. Since the theoretical arguments were very finely balanced, ultimately it may have been the Bank of England's rather

³ Select Committee on Treasury Minutes of Evidence. 13th November 2007, Q854.

⁴ Goodhart and Schoenmaker (1993)

undistinguished performance as a bank supervisor, especially in relation to BCCI and Barings, which proved decisive.

In assessing Buitter's criticisms of the post-1997 arrangements, the first point to note is that through much of its history the Bank of England did not have formal statutory responsibility for banking supervision; it was a relatively late addition to its functions that occurred only in 1979 (Schooner and Taylor, (1999)). Prior to that time the Bank of England had been able to perform its role as lender of last resort perfectly adequately without having any formal statutory powers or responsibilities. In its role as lender of last resort it had been able to exert significant moral suasion over the banking sector, and the Discount Office was able to obtain information from banks on a purely informal basis. Failure to provide the Bank with information, or failing to take heed of the Bank's discretely phrased warnings, was tantamount to the institution putting itself in the position of being denied access to discount facilities when they were most needed. This was a powerful deterrent.

Moral suasion and the Governor's eyebrows have long since ceased to be effective in a modern financial system. Nonetheless, the evidence from other jurisdictions is that even when the central bank does not have the formal statutory responsibility for banking supervision, it can still obtain the information it needs to act as lender of last resort. A variety of models are possible. In some jurisdictions with a banking or financial services regulator separate from the central bank, the relationship between the two institutions is particularly close with the regulatory agency staff being employees of the central bank and with many IT systems and platforms shared between them (Abrams and Taylor, (2002)). Typical examples include the relationship between the Banque de France and the Commission Bancaire and between the Bank of Finland and the Finnish Financial Services Commission. In other jurisdictions where the relationship between the central bank and the regulatory agency is more arms-length, the central bank is able to collect data and to conduct examinations of banks in its own right. The Bank of Japan continues to enjoy these powers despite the Financial Services Agency being the single unified regulator in Japan.

In short, the relationship between the Bank of England and the FSA was not flawed because there was a separation between lender of last resort and the formal statutory responsibility for banking supervision. The flaw was, rather, a consequence that the relationship between the two institutions was conceived in terms of a sharp and clear boundary between their respective responsibilities. Either the Bank of England was the bank supervisor, or

the FSA was. If the FSA was to be the banking supervisor, it followed that the Bank of England should have only a general role in relation to overall financial stability, and did not require the ability to gather institution-specific information. Perhaps because one stated objective of the 1997 reforms was to reduce regulatory duplication and overlap – a major selling point with the industry – only the FSA was given information-gathering powers. The examples both of history and of other jurisdictions should have shown that even without the formal statutory responsibility for banking supervision, the central bank still needed to have access to substantial amounts of institution-specific information and ideally its own capacity to go about gathering that information.

4. Monetary policy and financial stability

If the first boundary was drawn between the Bank and the FSA, the second appears to have been drawn within the Bank itself. Despite initially investing significant resources in its financial stability wing, and despite its work in developing a world-leading *Financial Stability Report*, the Bank's financial stability role inevitably took on secondary importance when compared to its monetary policy responsibilities. This is hardly surprising given that the latter, but not the former, was a statutory responsibility, but it also appears to have arisen because the Bank may have neglected the aphorism that Charles Goodhart has said was oft repeated to him when he joined it in 1968: "The Bank is a bank and not a study group." Goodhart has parsed this phrase to mean "that the heart of the Bank then lay in its operational links with financial markets and institutions, and not in its contribution to macroeconomic analysis and policy." Alongside the other changes in the Bank's role and mandate, it is these operational links that appear to have been relatively downgraded under the post-1997 dispensation, particularly given that the Bank now conducts its monetary policy operations through open market operations rather than through lending to specific institutions.⁵ As a result the Bank seemed unprepared for a situation in which market rates (particularly LIBOR) started to diverge significantly from its policy rates due to the hoarding of liquidity and the virtual collapse of the interbank market.

⁵ The Bank does, however, also provide standing facilities which allows banks to correct liquidity errors (either shortfalls or surpluses) on a daily basis.

The resulting divergence of market and policy rates illustrated quite vividly how financial instability can have an impact on the central bank's ability to implement its monetary policy. Those who have argued that a central bank should remain responsible for banking supervision as banks are the conduits through which policy is transmitted to the wider economy may believe that these events provide vindication for their position. However, as with its last resort lending, the central bank does not need to be the bank supervisor to ensure that a concern with financial stability is incorporated in its monetary policy mandate. Indeed, developments in the financial industry over the past decade have meant that a concern with financial stability cannot end with the banking sector – the central bank's remit to monitor industry developments must go much wider, as is recognized in the US Treasury's proposal to assign the Federal Reserve the role of the "market stability regulator." The fallout from Northern Rock has provided a powerful reminder that monetary stability and financial stability are deeply intertwined and that even if the central bank is not the bank supervisor its conduct of monetary policy must be closely informed by its analysis of financial stability and its contacts with markets and institutions. A concern with financial stability is, in a phrase coined by Tommaso Padoa-Schioppa, in the "genetic code" of central banks, and does not disappear along with the formal statutory responsibility for banking supervision.

5. Policy prescriptions

If the foregoing analysis is correct, there is a need to blur some of the boundaries that have been drawn under the post-1997 dispensation. The first policy response should be that the Bank of England must have a clear and unambiguous statutory responsibility for financial stability in parallel to its statutory responsibility for monetary stability (as the Banking Act 2009 now provides). Such a statutory responsibility will help ensure that this function is able to enjoy an appropriate profile both internally within the Bank and externally in its dealings with other stakeholders. It will be particularly valuable in underpinning the Bank's future relationship with both the industry and the FSA. The Bank will need to rediscover some of the relationship

with the financial industry – not just the banking industry – that it formerly enjoyed. It will also need to play a greater role in the assessment of individual banks, and other systemically important institutions, even if this results in encroaching on some of the FSA’s responsibilities.

A second lesson is that the arrangements should not seek to replace one set of boundaries with a different set. This is particularly important when the boundary is redrawn between the responsibility for financial stability and for the supervision of individual institutions. At a purely intellectual level it is possible to conceive the distinction quite clearly: between risks which are idiosyncratic to a particular institution and those which arise from correlations between markets and institutions or from herding behaviour. At a practical level, however, the distinction is never quite so clear cut, and it is better to err on the side of caution by giving the Bank a broader remit rather than allowing gaps to appear in financial sector surveillance. Not only will this result in some duplication of effort between the Bank and the FSA, but it will inevitably increase the regulatory burden, especially for the larger firms in the industry. Given the costs of inadequate surveillance, this is a price that will need to be paid.

The third lesson is that the Tripartite Memorandum of Understanding will need to be redrawn. It refers generically to “support operations” (paragraph 14), without clearly distinguishing between those that relate to emergency liquidity assistance and those that would involve solvency support; in both cases the Treasury sits at the apex of a pyramid with both the Bank and FSA in subordinate roles. This contrasts with the practice of most other countries in crisis management which is to ensure that as long as the issue remains one of liquidity the central bank will be in the lead. It alone has (or should have) the information and the ability to react sufficiently promptly to emerging problems. In this case the FSA’s role would be clearly established as that of a handmaiden to the Bank, under an explicit obligation to provide it with any and all information required by for the discharge of its duties. Only in the event that the issue becomes one of providing solvency support should the Treasury take the lead, with both the Bank and the FSA in supporting roles.

The Norwegian Kredittilsynet was the first unified regulatory agency to be established and it provides an example of the place that a stand-alone regulatory agency should occupy in crisis management arrangements. (Taylor, (1997)). During the 1991 Norwegian banking crisis the leading role in crisis management was taken by the Ministry of Finance, the Central Bank of Norway, and ultimately by the parliament (as the source of supply.)

The decision-making power, for example regarding public administration or ownership of a troubled institution resided with the Ministry of Finance, while the Central Bank of Norway was able to act as lender of last resort without MoF approval. The role of the Kredittilsynet during the crisis was to advise both the MoF and the Central Bank on the extent of the problem, and of the measures needed to restore troubled banks to an adequate level of capitalisation. Thus the Kredittilsynet participated in the crisis resolution process “as a factfinder and in an advisory capacity” which involved “ascertaining and assessing the actual situation and by advising the decision-makers” (Selvig (1997)). It was not, however, a decision-maker itself and played an ancillary role as the provider of information and expert assessment. A revised MoU should clearly assign the FSA a similar role to avoid any confusion of responsibilities in future.

The final question concerns whether a MoU is really adequate to govern the relationship between the financial safety net players, or whether some deeper institutional connection needs to be forged. At the time that the FSA was established a great deal of emphasis was placed on the fact that many of its staff would be drawn from the Bank of England, thus creating a close working relationship between the two institutions. However, instead of being recognized as a temporary, short-term expedient that would work only as long as the same staff stayed in post, this became a substitute for constructing the institutional arrangements that would have ensured that the relationship remained a particularly close one on a continuing basis.

The Northern Rock experience has shown that if the bank regulator is not the central bank, the relationship between the two institutions must be a close one. This was potentially one of the merits of the so-called ‘Twin Peaks’ model that involves separate agencies for prudential and conduct of business regulation⁶. Although it was rejected in Britain in favour of a single unified authority, it has been adopted elsewhere (notably in the Netherlands and Australia). Its critics have argued that a single unified regulator possess the advantage of avoiding duplication and overlap between the two agencies and reducing the potential for damaging turf disputes⁷. However, the benefits of a single regulator are obvious mainly in the routine work of regulation, particularly where economies of scale benefits can be secured, rather than in the management of a financial crisis where the closeness of the relationship with the central bank becomes the key factor.

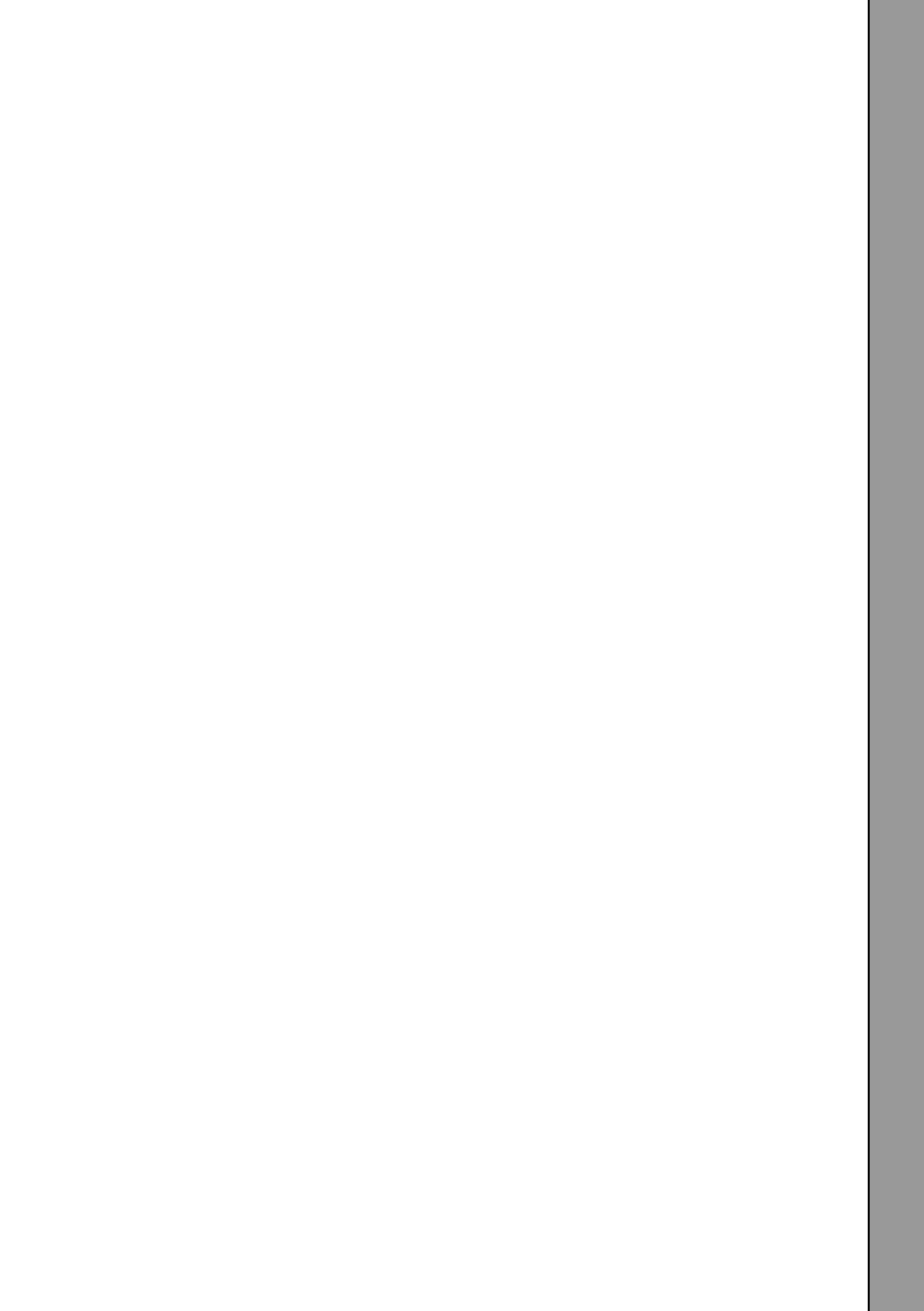
⁶ Goodhart (1995), Taylor (1995)

⁷ Briault (1999)

Because of the circumstances in which the UK's regulatory reforms took place – as a reaction to perceived regulatory failures in consumer protection – it was perhaps inevitable that this aspect of regulation should have been their main focus. The overarching desire on the part of policy-makers was to establish a strong consumer protection regulator that would be independent of the industry. One consequence was that the importance of ensuring effective crisis management arrangements did not receive the attention that it might otherwise have done. Fortunately, the Northern Rock episode has provided the impetus to restore some balance to the post-1997 arrangements. The Bank of England has now been given both formal statutory responsibility for financial stability and for handling bank resolutions under a much-overdue new legislative framework. These are both important steps in the right direction. The important issue will be to avoid attempting to draw any new sharp boundaries. Instead, the relationship between the safety net players is one that cries out for the traditional British art of compromise and muddling through. Sometimes tidiness is not a virtue.

6. References

- Abrams, R. and Michael Taylor (2002) "Issues in the Unification of Financial Sector Supervision" in C.Enoch, D. Marston and M. Taylor (eds) *Building Strong Banks: Surveillance and Resolution*, Washington D.C. IMF, 2002.
- Borio, C.E.V and Filosa, Renato, (1994) *The Changing Borders of Banking: Trends and Implications*, BIS Economic Paper, No. 43, December.
- Briault, Clive (1999), "The Rationale for a Single National Financial Services Regulator", London, Financial Services Authority, *Occasional Paper* No. 2, 1999.
- Financial System Inquiry (1996), *Financial System Inquiry Discussion Paper*, Commonwealth of Australia, 1996.
- Financial System Inquiry (1997), *Financial System Inquiry: Final Report*, Commonwealth of Australia, 1997.
- Goodhart, Charles, P. Hartmann, D. Llewellyn, L. Rojas-Suarez, S. Weisbrod (1998), *Financial Regulation: Why, How and Where Now?*, London, Routledge, 1998.
- Goodhart, Charles (1995), *Some Regulatory Concerns*, London School of Economics Financial Markets Group Special Paper, No.79, December 1995.
- Goodhart, Charles and D. Llewellyn, (1997), "A Blurred Outlook", *Financial Times*, June 1997
- Goodhart, Charles and D. Schoenmaker (1993), "The Institutional Separation between Supervisory and Monetary Agencies", Ch 16 in Goodhart, *The Central Bank and the Financial System*, London, MacMillan Press, 1995.
- OECD (1996), *The Changing Financial Landscape*, Paris, OECD, 1996.
- Selvig, Erling (1997), "Regulatory and Supervisory Measures to Prevent Financial Crises", mimeo
- Schooner, Heidi Mandanis, (1998) "Regulating Risk, Not Function", *University of Cincinnati Law Review*, 66, 1998.
- Schooner, Heidi Mandanis and Michael Taylor (1999), "Competition and Convergence: The Case of Bank Regulation in Britain and the United States", *Michigan Journal of International Law*, Vol. 20, No. 4, Summer 1999.
- Taylor, Michael, (1995), *Twin Peaks: A Regulatory structure for the New Century*, London, Centre for the Study of Financial Innovation, December, 1995.
- Taylor, Michael, (1997), "Norway's Kredittilsynet: An Export Model?", *The Financial Regulator*, Vol. 2., No.2, 1997.
- Tripartite Group (1995), Report of the Tripartite Group of Banking, Securities and Insurance Supervisors on the Supervision of Financial Conglomerates, Basle, 1995.



NORTHERN ROCK AND BANKING LAW REFORM IN THE UK

*Rosa M Lastra*¹

Professor of International Financial and Monetary Law
Centre for Commercial Law Studies
Queen Mary University of London
67-69 Lincoln's Inn Fields
London WC2A 3JB
UNITED KINGDOM

Tel: +44 (0)20 7882 3458
Fax: +44 (0)20 7882 5791
E-mail: r.lastra@qmul.ac.uk

1. Introduction

Northern Rock exposed the deficiencies of the UK regime to deal with banks in distress. Some of those deficiencies concern the workings of emergency liquidity assistance, some others the workings of deposit insurance and some others the insolvency and pre-insolvency arrangements. This paper deals with bank insolvency and bank crisis management in the light of the Northern Rock episode. Following a brief narrative of the events from September 2007 (with the run on Northern Rock) to February 2008 (when the government announced its nationalization), the paper examines the legislative and regulatory responses in the UK, and assesses some features of the new Special Resolution Regime (SRR) introduced by the Banking Act (2009) to deal with banks in distress (including both pre-insolvency measures, as well as actual insolvency).

This paper also examines some of the international and European initiatives with regard to cross-border bank insolvency. Though financial markets and institutions have become international in recent years, regulation remains

¹ This paper substantially draws on an article, Northern Rock, UK Bank Insolvency and Cross-Border Bank Insolvency, published in the Journal of Banking Regulation, Vol. 9, No. 3, pp 939–955, May 2008.

constrained by the domain of domestic jurisdictions. This dichotomy poses challenges for regulators and policy makers. If at the national level, bank crisis management is complex (with the involvement of several authorities and the interests of many stakeholders), this complexity is far greater in the case of cross border bank crisis management. In any financial crisis, it is necessary to have a clear and predictable legal framework in place to govern how a financial institution would be reorganized or liquidated in an orderly fashion so as not to undermine financial stability. We do not have such a framework yet with regard to cross-border banks, neither at the European level nor at the international level.

Banking crises are a recurrent phenomenon in the history of international finance. Bank crisis management comprises an array of official and private responses that extends beyond the insolvency proceedings that are the only tool typically available to deal with corporate bankruptcy in other industries. As regards the official responses, when confronted with failed or failing banks, public authorities have at their disposal: (1) the lender of last resort role of the central bank; (2) deposit insurance schemes; (3) government policies of implicit protection of depositors, banks (the ‘too-big-to-fail doctrine’) or the payment system; (4) insolvency laws (*lex specialis* vs *lex generalis*), (5) prompt corrective action, and other preventive measures (including supervision). A well-designed legal framework is important for the functioning of financial markets, particularly in times of trouble.

2. Northern Rock, an English ‘bank run’ in the twenty-first century

Northern Rock, the UK mortgage lender, has become a household name which will forever be associated with old-fashioned bank runs, following the events of September 2007. Northern Rock was not a major bank (i.e., it was not systemically important nor too-big-to-fail) nor an international bank (i.e., it had no significant cross-border operations).

The announcement of the emergency liquidity assistance by the Bank of England on 13 September 2007 (revealed by the BBC),² coupled with an ill-designed and insufficiently publicized deposit insurance scheme, led to a ‘bank run’ from September 14 to September 17, with queues of anxious depositors wishing to withdraw their money forming outside Northern Rock branches around the country. This bank run brought headlines not only in the Financial Times or in the Times, but in all tabloids and TV stations around the world. It was claimed that the UK had not witnessed such an event since Overend, Gurney & Co. in 1866. Certainly the UK had never witnessed such a publicized bank run, one in which the media played a magnifying role. It was embarrassing for the City and embarrassing for the Government. The tripartite arrangement (an otherwise sound structure when supervision is transferred from the central bank to a supervisory agency) involving the Treasury, the Financial Services Authority and the Bank of England³ did not function smoothly nor promptly nor efficiently. On 17 September 2007, the Chancellor, Alistair Darling, agreed to guarantee all deposits held by Northern Rock, bringing the bank run to a halt.

The Northern Rock bank run caught the authorities by surprise. Political considerations always come into play in a banking crisis. The authorities are keen to stop problems in one bank from spreading to other parts of the banking system, acknowledging the real risk of contagion. The offer of

² On 14 September, Northern Rock announced that ‘extreme conditions’ in financial markets had forced it to approach the Bank of England for assistance. The bank’s website collapsed under the strain. See http://www.bbc.co.uk/blogs/newsnight/2007/09/friday_14_september_2007.html, Accessed 24th April 2008.

³ See Memorandum of Understanding of 1996 revised in 2006 between HM Treasury, Financial Services Authority and the Bank of England, http://www.hm-treasury.gov.uk/documents/financial_services/regulating_financial_services/fin_rfs_mou.cfm, Accessed 20th April 2008.

guarantees (in itself a distortion of competition) is sometimes warranted on the basis of public interest considerations.

Northern Rock was offered all sorts of public assistance since September 2007: emergency liquidity assistance, guarantee of all deposits (including new deposits made after September 19), and eventually nationalization. This despite the fact that a private market solution was the preferred solution from the beginning by the bank and by the government.

On 17 February 2008 the Chancellor of the Exchequer, Alistair Darling announced that nationalization of Northern Rock, bringing forward legislation ‘to take Northern Rock into a period of temporary public ownership’. The Banking (Special Provisions) Bill was summarily introduced to the House of Commons on 19 February 2008 and received the Royal Assent on 21 February 2008.⁴ This culminated in the Banking Act 2009, which received Royal Assent on 12 February 2009 and came into force on 21 February 2009.⁵

⁴ The Banking (Special Provisions) Act 2008 http://www.hm-treasury.gov.uk/consultations_and_legislation/banking/banking_specialprovision_bill.cfm

⁵ Banking Act 2009: available at http://www.opsi.gov.uk/acts/acts2009/pdf/ukpga_20090001_en.pdf

3. The regulatory and legislative responses to Northern Rock

Parallel to the actions specific to Northern Rock the authorities embarked in a program of legislative reform which has led to a major overhaul of banking law in the country including the introduction of a Special Resolution Regime (SRR).

Before the summer of 2007, the FSA's "principle-based" approach to regulation was commended for attracting financial activity to London. This approach contrasts with the "rules-based" approach of US financial regulators (Securities and Exchange Commission, SEC, and others). The costs of compliance with Sarbanes-Oxley and SEC rules are cited as driving some foreign companies and investors away from US capital markets.

After the summer of 2007, in the light of the handling of Northern Rock (a banking crisis), the FSA has been the subject of criticism (together with the other two members of the tripartite arrangement, the Bank of England and the Treasury). The reputation of London as a sophisticated financial centre has become tarnished. Further comparisons between the US and the UK have been made to the detriment of the UK following the speedy rescue package the Federal Reserve Bank of New York arranged for Bear Stearns in March 2008,⁶ which contrasts with the lengthy, slow and rather inefficient resolution procedure for Northern Rock.

A review of the regulatory responses that have been put forth in recent months is presented in the ensuing paragraphs.

On 1 October 2007, the FSA announced an increase in the coverage of deposits up to £35,000 equal to 100% of the loss incurred. Partial insurance was deemed to have been a major flaw in the design of deposit insurance in the UK and a contributor to the bank run.

⁶ See www.newyorkfed.org/markets/Understanding_Fed_Lending.html See also 'Actions by the New York Fed in Response to Liquidity Pressures in Financial Markets', Testimony by Timothy F. Geithner, President and Chief Executive Officer of the Federal Reserve Bank of New York before the U.S. Senate Committee on Banking, Housing and Urban Affairs, Washington, D.C., 3 April 2008, <http://www.newyorkfed.org/newsevents/speeches/2008/gei080403.html> and Federal Reserve Announces Establishment of Primary Dealer Credit Facility, at <http://www.ny.frb.org/markets/pdcf.html>

A first discussion paper on *Banking Reform: Protecting Depositors* was published on 11 October 2007 by the Bank of England, the Financial Services Authority (FSA) and HM Treasury.⁷

The House of Commons Treasury Committee published a report on 26 January 2008 entitled “The Run on the Rock”⁸, recommending that a single authority, akin to the US FDIC, be created (the Deputy Governor of the Bank of England and Head of Financial Stability and a corresponding Office), with powers for handling failing banks (chapter 5) as well as the Deposit Insurance Fund (Chapter 6).

The Chancellor of the Exchequer launched on 30 January 2008, a consultation document outlining proposals to strengthen the current framework for financial stability and depositor framework.⁹ This is a joint publication by HM Treasury, the Financial Services Authority and the Bank of England and the Government intends to follow this consultation (which ended 23 April 2008) by introducing legislation into Parliament later in this session.

The objectives of the reform, according to the January 30 consultation document, *Financial stability and depositor protection: strengthening the framework*, are: (1) to strengthen the financial system (risk management, liquidity management, functioning of securitized markets); (2) to reduce the likelihood of bank’s failing (by introducing ‘heightened supervision’ and strengthening the ability of the Bank of England to provide covert emergency liquidity assistance inter alia); (3) to reduce the impact of failing banks (by introducing a special resolution regime (SRR) and a sufficient range of tools within this SRR); (4) to create effective compensation schemes in which the consumers have confidence (designing such schemes in a way that foster credibility, introducing a one-week payout and increasing consumer awareness); (5) to strengthen the Bank of England (by anchoring in statute its responsibility for financial stability and by reforming and empowering the Court of the Bank of England) and (6) to improve coordination between the

⁷ See Banking Reform - Protecting Depositors: a discussion paper, 11 October 2007 at http://www.hm-treasury.gov.uk/consultations_and_legislation/bankingreform/consult_banking_reform.cfm, Accessed 20th April 2008. The consultation period for this paper ended on 5 December 2008.

⁸ The Treasury Committee published its fifth report of Session 2007-08, ‘The run on the Rock’ (HC 56-I) on 26 January 2008. See <http://www.parliament.the-stationery-office.co.uk/pa/cm200708/cmselect/cmtreasy/56/5602.htm> Accessed 20th April 2008.

⁹ ‘Financial Stability and Depositor Protection: Strengthening the Framework’, Bank of England, HM Treasury and Financial Services Authority, Cm 7309, 30 January 2008, http://www.hm-treasury.gov.uk/documents/financial_services/financial_stability_framework.cfm, Accessed 20th April 2008.

authorities in the tripartite arrangement on the one hand, and between national and supra-national and international authorities on the other hand.

On July 1st, 2008, HM Treasury, Bank of England and FSA published a further consultation document on financial stability and depositor protection.¹⁰ This consultation paper provides feedback on the January consultation exercise and sets out more clearly the UK proposals for the new framework. It also seeks views on some key outstanding questions. The Authorities (HM Treasury, Bank of England and FSA) will publish detailed draft clauses for the special resolution regime before the summer Parliamentary recess. Subject to the outcome of these consultations, the Government intends to bring forward legislation later in 2008.

The salient features of the proposed new framework are the introduction of a special resolution regime for banks (SRR), the granting of new powers to the Bank of England as well as the Financial Services Authority (FSA) and the reform of the compensation arrangements for depositors. Improvements are to be made to the Financial Services Compensation Scheme (FSCS) to facilitate faster pay-out in the event that a bank becomes insolvent.

A credible deposit insurance system requires *inter alia* prompt payment of depositors (next business day as in the US is ideal, though a one-week payout may be more feasible in the UK in the light of international practice) and a reasonable amount of coverage (neither too meagre to be non-credible nor too generous to incur into moral hazard incentives). As part of the plans to increase depositor confidence in the banking system, the July 1st, 2008 document states that there will be an increase in the compensation limit for protected depositors from £35,000 to £50,000 on a per person per bank basis. In my opinion, only deposits ought to be covered. The Financial Services Compensation Scheme (FSCS), set up under the Financial Services and Markets Act 2000 (FSMA) as the UK's compensation fund for customers of financial services according to the Directives on Deposit Guarantee Schemes and Investor Compensation Schemes, also covers insurance policies and investment business. (FSCS has no real 'powers' as opposed to FDIC in the US insurer, supervisor and receiver of failed or failing institutions). Now that co-insurance has been abandoned in the UK, market discipline can be enhanced by having a system that is at least partially pre-funded. However, the

¹⁰ The document is available at http://www.fsa.gov.uk/pubs/cp/jointcp_stability.pdf and at http://www.hm-treasury.gov.uk/media/E/1/consult_depositorprotection010708.pdf Comments on the proposed framework outlined in the consultation document are welcome by 15 September 2008.

July 1st document does not require banks to pre-fund the new compensation arrangements. The document states that it could still introduce pre-funding in the future but it has reservations because of the adverse conditions banks have been experiencing lately. This is regrettable since banks and their clients are the main beneficiaries of deposit protection schemes.

Subject to parliamentary approval, the legislation will give new powers and responsibilities to the Bank of England with regard to a financial stability statutory objective and the introduction of a special resolution regime for banks. The Bank will also gain new powers for covert liquidity support. So as to ensure proper governance and accountability, the government will legislate for the Bank of England's financial stability role to be the oversight of the Bank's court. A financial stability committee (FSC) will be established as a committee of the court, chaired by the governor.

The Chancellor recognized in a letter to the Treasury Committee on June 19, 2008 that for the Bank to exercise its responsibilities for financial stability, it needs appropriate tools and powers, including an improved framework for the provision of liquidity, the oversight of systemically important payment systems and, most importantly, a leading role in the implementation of the new special resolution regime. Though the Bank will oversee the SRR, the FSA will be the authority in charge of triggering such SRR, in line with its supervisory role. The July 1 document defines the responsibilities of the authorities involved in bank crisis management: the FSA will be responsible for the ongoing supervision of any firm while it continues to operate in the SRR, the Bank of England will be responsible for liquidity support and for the operation of the SRR, the Treasury will be responsible for public finances and the overall public interest and the FSCS will also be involved in the assessment of the readiness of a bank for payout of its depositors.

Supervision and crisis management are a seamless process. Supervision of healthy institutions can quickly become supervision of troubled or even failing institutions, thus leading to crisis management. The FSA published details of a supervisory enhancement program in March 2008 in response to the weaknesses identified in the supervision of Northern Rock.¹¹ The axiom of assisting on rainy days but monitoring on sunny days ought to be remembered.

¹¹ See FSA Internal Audit Review, 26 March 2008, <http://www.fsa.gov.uk/pages/Library/Communication/PR/2008/028.shtml>, Accessed 20th April 2008.

The SRR enables the authorities (Bank of England and Treasury) to take decisive action to resolve a failing bank in a more orderly manner than previously possible. It allows people to have continued access to banking functions and a faster and more orderly deposit payment.

The Banking Act 2009 – briefly analyzed with regard to the SRR in the ensuing section - culminates the reform process in the United Kingdom.

The SRR according to the new UK Banking Act 2009

The last eighteen months have shown how important a functioning banking system (access to credit, continuity and integrity of payments and depositor protection) is for the well-being of the nation. Like in the case of public utilities, the government must step in to ensure their continuous provision.

In the United Kingdom, the new Banking Act 2009¹², which was introduced by the government into parliament on 7 October 2008, received Royal Assent on 12 February 2009 and came into force on 21 February 2009. Acknowledging that the UK authorities were ill-equipped to deal with bank failures, the Act establishes for the first time a permanent statutory regime for dealing with failing banks. One of the most significant features of the new Act is the establishment of a Special Resolution Regime (SRR) for banks, which gives the Authorities (the Bank of England, the Financial Services Authority and the Treasury) the powers to adopt early intervention measures (pre insolvency), referred to as 'stabilization options' in the new Act, comprising transfer to a private sector purchaser (section 11) and bridge bank (section 12), as well as temporary public ownership (section 13). The first two options can be exercised by the Bank of England (transfer to a private sector purchaser and bridge bank), while the Treasury has the power to take a bank into temporary public ownership. The Act also introduces a new bank administration procedure and a bank insolvency procedure.

The objectives of the SRR (section 4) are the stability of the financial system (and, in particular, the continuity of banking services), the protection of depositors and public funds, and avoid interfering with property rights in contravention of a Convention right (within the meaning of the Human Rights Act 1998).

From the point of view of insolvency law, the move towards *lex specialis* for banks in the United Kingdom is a significant development. Yet, some commentators argue that not only banks need *lex specialis*, but also systemically important

¹² See http://www.opsi.gov.uk/acts/acts2009/pdf/ukpga_20090001_en.pdf

financial institutions (an issue which was considered during the consultation process). In the United States, under the Financial Stability Plan announced by the Secretary of the Treasury on 10 February 2009, the FDIC's powers are expected to be expanded with regard to non deposit taking troubled financial institutions. A legislative amendment to establish a receivership and liquidation process for systemically significant non-bank troubled financial institutions similar to the system for banks is likely in the near future.

The Banking Act 2009 gives also for the first time a statutory mandate for financial stability to the Bank of England. The tripartite authorities will continue to have a relevant role in crisis management: the FSA will continue to supervise financial institutions (the term micro-supervision has become fashionable in this context), the Bank of England will continue to provide liquidity assistance and play a key role in the SRR and the Treasury will be involved whenever public funds are at stake. The extension of the powers of the Bank of England with regard to financial stability, oversight of inter-bank payment systems, and the Special Resolution Regime, are in my opinion, an implicit recognition that the transfer of supervision from the Bank to the FSA had gone too far and that the Bank of England, by having monetary policy powers (monetary stability mandate), is the best institution to undertake macro prudential supervision (financial stability mandate). However, it remains questionable whether the Bank of England is the best institutions to be in charge of the SRR.

The Act also introduces changes to deposit insurance (increases in the amount covered, a faster pay-out period) and introduces some changes to the Financial Services Compensation Scheme.

A safe and sound banking system is essential for the health of the economy. The new Banking Act is a step in the right direction. However, banking law reform needs to be accompanied by financial institutions' corporate governance reform and needs to be aligned with European and international efforts. The boundaries between the role of the state and the role of markets have been redrawn. And yet only a recovery in markets can help bring the economy back to health. The danger of stifling market innovation is always present and should be avoided. Legislators and policy-makers should keep this in mind and not rush in their decisions.

4. The case for *Lex Specialis*

Banks are still special as the current credit turmoil amply evidences. They are special given their unique role as providers of credit, deposit takers and payments intermediaries (no chain is stronger than its weakest link). Bank failures are also special, since they create externalities (contagion to other healthy institutions; under a fractional reserve system a bank will be unable at any time to honour the convertibility guarantee) and affect the stability and integrity of the payment system. They often become a matter of public interest. Bank resolution procedures ought to take into account the specialty of banks and the specialty of bank failures. This is the background behind the case for a special resolution regime.

The case for *lex specialis* with regard to bank insolvency can be further supported by the existence of specific goals. Corporate insolvency laws typically seek to fulfil two principal objectives: fair and predictable treatment of creditors and maximisation of assets of the debtor in the interests of creditors. However, the main goals in a bank insolvency proceeding are the safety and soundness of the financial system at large and the integrity of the payment systems. Furthermore, the prompt payment to depositors as well as minimising the costs to the insurance funds, are also mentioned as important considerations (certainly in the USA¹³).

The role of creditors is more active in general insolvency (see Eva Hüpkes, 2003)¹⁴. They can initiate the insolvency proceeding and can act individually (right to be heard) or collectively (creditor committees). Bank supervisors typically have the powers to commence the insolvency proceedings.

In banking, the definition of insolvency (the trigger point for an insolvency proceeding) is sometimes a matter of controversy. As acknowledged, there are two traditional definitions of insolvency in commercial bankruptcy laws: failure to pay obligations as they fall due (equitable insolvency) and the condition when liabilities exceed assets (balance sheet insolvency). As stated above, in banking the line of demarcation between illiquidity (lack of liquid funds) and insolvency is not always clear (indeed, a situation of illiquidity can

¹³ FDICIA Section 131 on PCA says, “The purpose of this section is to resolve the problems of insured depository institutions at the least possible long-term loss to the deposit insurance fund.”

¹⁴ See Hüpkes, E. (2003), ‘Insolvency – Why a Special Regime for Banks’, in *Current Developments in Monetary and Financial Law*, Vol. 3, International Monetary Fund, Washington DC.

quickly turn into insolvency). An economically insolvent bank is not always declared legally insolvent by the responsible authorities and may be offered instead financial assistance.

A bank is considered to have failed when the competent authorities order the cessation in its operations and activities. However, the authorities are often wary of liquidating a bank (in part because an ‘orderly liquidation of assets’ is not always easy, due to the possible contagion effect on other institutions) and therefore choose instead to rehabilitate the bank. As a matter of ‘good policy’, the bank should be closed as soon as the market value of its net worth reaches zero, because at this moment, direct losses are only suffered by shareholders. If the bank is declared legally insolvent when the market value of its net worth is already negative, losses will accrue not only to shareholders, but also to uninsured creditors and/or to the insurance fund/the government.

In recent years PCA (prompt corrective action) rules, including SEIR (structured early intervention and resolution) have been advocated. In the USA, these rules (including the trigger ratios) are mandatory and legally binding since the enactment of FDICIA (Federal Deposit Insurance Corporation Improvement Act) in 1991. PCA rules are only effective if they are enshrined in the law, in particular the mandate to initiate early closure when the bank still has capital (even if it is critically undercapitalized). As Goodhart (2004) points out, ‘the window of opportunity between closing a bank so early that the owners may sue and so late that the depositors may sue may have become vanishingly small’.¹⁵

Insolvency proceedings typically imply liquidation or reorganization (some times they are carried sequentially, that is liquidation proceedings will only run their course if reorganization is unlikely to be successful or if reorganization efforts have failed). Since the failure of a bank is often a matter of public interest and can cause a disruption in the payment system if not properly handled, and since the bank supervisor has the power to initiate insolvency, bank insolvency proceedings exhibit idiosyncratic features.

Though liquidation is the simplest resolution procedure, it is not necessarily the least costly, as a valuable depositor base gets dissipated, vital banking services in a community may be disrupted, and confidence in the banking system may be seriously damaged. In banking, liquidation some times entails a system of depositor preference, i.e., depositors’ claims are typically paid

¹⁵ See Goodhart, C., “Multiple Regulators and Resolutions” paper presented at the Federal Reserve Bank of Chicago Conference on Systemic Financial Crises: Resolving Large Bank Insolvencies, 30 September – 1 October 2004.

before those of general creditors. If the country has a deposit guarantee scheme, the insured depositors are paid off up to the insurance limit; uninsured depositors and other creditors are likely to suffer losses in their claims.

In the case of bank rehabilitation, reorganisation or restructuring, the laws and the terminology vary widely from country to country. Sometimes, failed banks may be placed under special administration, in the form of bridge banks, new banks, special funds or other arrangements. This is often meant to be a temporary solution in order to take over the operations of a failed bank and preserve its going-concern value while the government fiduciary seeks a more permanent solution to the problems or until an acquirer is found.

In some cases an implicit or explicit ‘too big to fail’ policy is applied. That was the case in Continental Illinois in the USA and in Credit Lyonnais in France. Government-led rescue packages may not only induce moral hazard behaviour, but may also pose questions of fair competition, particularly when the too-big-to-fail doctrine is applied, as other smaller or less troubled institutions may have to navigate through crises or problems on their own. In the US, FDICIA (1991) requires the resolution of bank failures on a ‘least cost basis’ to the insurance fund, unless it threatens to trigger a payment system breakdown or serious adverse effects on economic conditions or financial stability (systemic risk exception, Section 141 FDICIA) in which case FDIC and Fed may recommend a more costly solution (FDICIA, 12 USC 1823 (c)(4).

In the recent case of Bear Stearns in the US (and leaving aside the fact that Bear Stearns was an investment bank rather than a commercial bank), the test applied by the Federal Reserve Bank of New York was not ‘too big to fail’ but ‘too inter-connected’ to be allowed to fail suddenly at a time when markets are fragile. This ‘new’ test brings about important considerations for European and international policy-makers and regulators working on cross-border issues in a single market in financial services.

The Basel Committee on Banking Supervision acknowledges that in a market economy, failures are part of risk-taking and that a prompt and orderly liquidation of institutions that are no longer able to meet supervisory requirements is a necessary part of an efficient financial system, as forbearance normally leads to worsening problems and higher resolution costs. However, the Committee explicitly states that “in some cases the best interests of depositors may be served by some form of restructuring, possibly takeover by a stronger institution or injection of new capital or shareholder. Supervisors may be able to facilitate such outcomes. It is essential that the end

result fully meets all supervisory requirements that are realistically achievable in a short and determinate timeframe and, that, in the interim, depositors are protected".¹⁶

5. Who is to blame for the Northern Rock episode?

To apportion blame, one needs to look at the general credit turmoil on the one hand and to the specific problems of Northern Rock (or specific problems of other institutions) on the other hand. With regard to the former, some economists say that the mis-pricing of risk (Greenspan put) is the *causa remota*. Others would point to macro-economic imbalances. The credit turmoil, though certainly related to under-pricing of risk and macro-economic considerations, is also the result of the folly and greed of bankers and the impotence (and some times incompetence) of regulators. This of course, becomes aggravated in a general downturn of the business and economic cycle, when a banking crisis is not an isolated event, but becomes a generalised credit crisis.

5.1. The Bank of England

Mervyn King in his testimony in front of the Treasury Select Committee (20 September 2007) cited a number of legal obstacles that had made it impossible for the Bank to act as lender of last resort in the way the Bank would have preferred. In particular, the City Code on Takeovers and Mergers and the 2004 Market Abuse Directive (as implemented under section 118 of the FSMA) were cited as significant reasons why the Bank had been unable to avert the run on Northern Rock.¹⁷ The governor said that he would have

¹⁶ Basel Committee on Banking Supervision. Core Principles for Effective Banking Supervision (Basel Core Principles), <http://www.bis.org/publ/bcbasc102.pdf>, Accessed 20th April 2008.

¹⁷ See *The Times*, 21 September 2007 pages 6– 7. The claim that the assistance could not be covert is questionable in my opinion. A different interpretation of the Market Abuse Directive (in particular Article 6) and a dispensation of its more stringent implementation in the UK would have rendered the covert assistance possible in my opinion and in the opinion of other commentators, such as Charles Proctor. As Proctor (mimeo, 2008) points out: “The core provisions of the Directive have been transposed into UK law by the Disclosure Rules and Transparency Rules (“DTR”) of the FSA’s Handbook. (...) It should be emphasised that the disclosure requirements do not directly apply to the Bank of England; they only apply to publicly listed entities – such as Northern Rock-- and those responsible for arranging the issue of such securities. They do not

preferred to give covert aid to Northern Rock, without the public being aware of the Bank's intervention, but that would have been illegal. He pointed to Article 6 of MAD, which states that "an issuer [such as Northern Rock] may under his own responsibility delay the public disclosure of inside information [such as support from the Bank of England] ... such as not to prejudice his legitimate interests 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". Legitimate interests include "the event that the financial viability of the issuer is in grave and imminent danger". 'In any event, and whatever the merits of the competing views on the Directive, it is singularly unfortunate that a measure designed to promote investor confidence has apparently helped to precipitate blind panic and the first run on a UK bank for over a century'. (Charles Proctor).

With regard to emergency liquidity assistance (ELA), it is important to differentiate between market liquidity and lending to individual institutions (collateralized credit lines at penalty rates for illiquid but solvent banks, 'lender of last resort').¹⁸ Back in August-September 2007 the Bank of England was somehow more reluctant than the Federal Reserve System and the European Central Bank to extend liquidity to the markets and to widen the range of collateral acceptable in its lending policies. However, with the announcement by the Bank of England of a Special Liquidity Scheme on 21 April 2008¹⁹, offering to swap mortgage-backed and other securities (around £50Bn) for UK Treasury Bills, the Bank has arguably gone further than the Federal Reserve or the European Central Bank in extending liquidity to the markets. The swaps represent purchases of the assets from banks with a legally-binding commitment from the banks to buy them back after one year, extendable by the Bank to three years.²⁰

therefore directly inhibit the Bank of England in the conduct of its "lender of last resort" function. Nevertheless, the point would clearly have been a concern to the Board of Northern Rock. The difficulty here is that, whilst the FSA's guidance allows an issuer to delay release of information about negotiations to restructure its debt, it does not allow it to defer disclosure of the fact that it is in financial difficulties. If this distinction appears curious, it must be recalled that the spirit of the rules is to promote early disclosure. The FSA has power to modify the disclosure rules in particular cases, and it may well be that a short-term dispensation could have been granted on the basis that a run on Northern Rock might have wider consequences for the financial system. It is not clear whether this option was considered or could have been used in this particular situation'.

¹⁸ See Lastra, R. (1999), 'Lender of Last Resort, an International Perspective', *International and Comparative Law Quarterly*, Volume 48, pp. 340–361 and Lastra (2006), *Legal Foundations of International Monetary Stability*, Oxford University Press, pp 304–307 and 117–120.

¹⁹ See Bank of England, News Release, Special Liquidity Scheme, 21 April 2008 <http://www.bankofengland.co.uk/publications/news/2008/029.htm>, Accessed 20th April 2008.

²⁰ See *Financial Times*, 22 April 2008. However, it is worth pondering about the following warning: 'Public liquidity is an imperfect substitute for private liquidity', that Federal Reserve

5.2. *The FSA*

In its report, the Run on the Rock, the Treasury Committee says the Financial Services Authority was guilty of a ‘systematic failure of duty’ over the Northern Rock crisis and that the FSA should have spotted the bank’s ‘reckless’ business plan.

In its own internal audit of 26 March 2008, the Financial Services Authority admits failures in its supervision of Northern Rock (*mea culpa*). The Internal Audit review identifies the following four key failings specifically in the case of Northern Rock: (1) a lack of sufficient supervisory engagement with the firm, in particular the failure of the supervisory team to follow up rigorously with the management of the firm on the business model vulnerability arising from changing market conditions; (2) a lack of adequate oversight and review by FSA line management of the quality, intensity and rigour of the firm’s supervision; (3) inadequate specific resource directly supervising the firm, and (4) a lack of intensity by the FSA in ensuring that all available risk information was properly utilized to inform its supervisory actions’.²¹

An operational review will address these weaknesses, The main features of the FSA’s supervisory enhancement program are the following: (1) A new group of supervisory specialists will regularly review the supervision of all high-impact firms to ensure procedures are being rigorously adhered to; (2) The numbers of supervisory staff engaged with high-impact firms will be increased, with a mandated minimum level of staffing for each firm; (3) The existing specialist prudential risk department of the FSA will be expanded following its upgrading to divisional status, as will the resource of the relevant sector teams; (4) The current supervisory training and competency framework for FSA staff will be upgraded. (5) The degree of FSA senior management involvement in direct supervision and contact with high-impact firms will be increased. (5) There will be more focus on liquidity, particularly in the supervision of high-impact retail firms. (6) There will be raised emphasis on assessing the competence of firms’ senior management.²²

Governor Kevin Warsh was quoted saying. See Financial Times of 15 April 2008, ‘Fed warns of slow healing for fragile markets’.

²¹ See FSA Internal Audit Review, 26 March 2008, <http://www.fsa.gov.uk/pages/Library/Communication/PR/2008/028.shtml>, Accessed 20th April 2008.

²² *ibid.*

5.3. Northern Rock

In its Report, the Run on the Rock, the House of Commons Treasury Committee stated that the directors of Northern Rock were ‘the principal authors of the difficulties’ that Northern Rock has faced since August 2007. ‘The high-risk, reckless business strategy of Northern Rock, with its reliance on short and medium-term wholesale funding and an absence of sufficient insurance and a failure to (...) cover that risk, meant that it was unable to cope with the liquidity pressures placed upon it by the freezing of international capital markets in August 2007’.²³

Northern Rock was not a victim of the subprime crisis but of its own funding structure. The credit squeeze in August 2007 following the sub-prime mortgage crisis in the United States²⁴, caused serious liquidity problems in many banks that had come to rely on wholesale capital markets (markets for securitized assets) for their funding needs. Northern Rock suffered more than others because it was heavily reliant on such markets at a time when they were drying out.

5.4. Tripartite arrangement

Why did the Tripartite arrangement fail in Northern Rock? Certainly the three authorities involved should share the blame. The lack of effective and timely communication, the apparent lack of a clear leadership structure (shared power leading to muddled policy), together with the uncertainties surrounding the resolution procedures (questions of EU law, timing etc) and an ill-designed deposit insurance system contributed to the debacle.

The Tripartite arrangement is a good structure to respond to the problems of transferring supervision from the central bank (Bank of England) to a separate supervisory agency (FSA), while keeping the Treasury involved. However, the

²³ See *The Run on the Rock*, above note 7, paragraph 31, pp. 19–20.

²⁴ It can be argued that the relaxation of the clear boundaries between commercial banking and investment banking that the 1999 repeal of Glass-Steagall (via the Gramm-Leach-Bliley Act) in the US, paved the way for banks to engage in a broader range of activities in the capital markets. See Randall Wray, L., ‘Lessons from the Subprime Meltdown’, 2008 at www.levy.org/pubs/wp_522.pdf

Securitisation allowed banks to earn income on the mortgage loans they originated, by moving these [some times risky] mortgages off their balance sheets to their affiliated investment banks (not subject to reserve and capital requirements) or to Special Purpose Vehicles (SPVs).

wisdom of separating the monetary and supervisory responsibility of the central bank remains a matter of controversy. Given that supervision is a key instrument in the maintenance of financial stability, depriving the central bank of this instrument, makes the pursuit of the goal of financial stability more difficult.

5.5. International Rules on Insolvency²⁵

Though there is no international treaty on insolvency law, there have however been some attempts at reaching some commonly agreed international rules (mostly ‘soft law’). The Basle Committee has addressed throughout its 33 years of existence various issues concerning the allocation of supervisory responsibilities (home-host), capital regulation and other principles for the effective supervision of international banks. However, the Basel Committee provides little guidance concerning bank exit policies and the problems involved in the resolution of cross-border banking crises.²⁶

UNCITRAL (the United Nations Commission on International Trade Law) adopted the Model Law on Cross-Border Insolvency in Vienna in May 1997. However, this model law contains an optional clause whereby special insolvency regimes applicable to banks may be excluded from its scope.²⁷ The Model law deals with the recognition of foreign insolvency proceedings, the co-operation between judicial authorities and administrators and other issues concerning the coordination of concurrent insolvency proceedings in multiple jurisdictions.

In 1999, UNCITRAL commenced work on the Legislative Guide on Insolvency Law, considering corporate insolvency. Work proceeded through a joint colloquium with INSOL (a world-wide federation of national associations for accountants and lawyers who specialize in insolvency) and the IBA. The Legislative Guide was completed in 2004 and adopted by the United National General Assembly on 2 December 2004.²⁸

²⁵ See generally Lastra, R., ‘Cross Border Resolution of Banking Crises’ in Evanoff, D., LaBrosse, R., and Kaufman, G., *International Financial Instability: Global Banking and National Regulation*, Vol. 2, published by World Scientific Publishing Company Pte Ltd, Singapore in 2007, pp. 311–330.

²⁶ In 1992, the Basel Committee published a document on The Insolvency Liquidation of a Multinational Bank.

²⁷ Article 1(2) of the Uncitral Model Law.

²⁸ The text of UNCITRAL Legislative Guide on Insolvency Law is available at http://www.uncitral.org/uncitral/en/uncitral_texts/insolvency/2004Guide.html.

The World Bank has coordinated the effort of the UNCITRAL Legislative Guide with its own Global Bank Insolvency Initiative to articulate a set of standards on insolvency and creditor rights for the purposes of the Bank/Fund initiative on Standards and Codes. Accordingly, the World Bank, in collaboration with staff of the Fund and UNCITRAL (United Nations Commission on International Trade Law) and other experts, has prepared a document, setting out a unified Insolvency and Creditor Rights Standard (the “ICR Standard”), which integrates the World Bank Principles for Effective Creditor Rights and Insolvency Systems (one of the twelve areas under the joint World Bank and International Monetary Fund initiative on standards and codes) and the UNCITRAL Recommendations (included in the UNCITRAL Legislative Guide on Insolvency). This document was published on 21 December 2005.

UNCITRAL Working Group V on insolvency has started working on the treatment of corporate groups in insolvency in 2006, examining both domestic and cross border issues. This could be the right forum to develop common principles concerning bank insolvency.

A recent welcome development is the establishment of a new Basel Working Group – set up in December 2007 – and co-chaired by Michael Krimminger and Eva Hüpkes to study the resolution of cross-border banks. This group working together with UNCITRAL could provide a degree of harmonization (legislative convergence) with regard to some key issues such as: the definition of triggers for commencement of proceedings, the role of supervisors, minimum rights and obligations of debtors and creditors, right to set-off, netting, treatment of financial contract and the protection of the payment system.

6. Regional rules: The EU Insolvency Regime

The EU insolvency regime consists of one regulation on insolvency proceedings (Council Regulation (EC) No. 1346/2000 of 29 May 2000) and of two directives: a directive on the reorganisation and winding up of credit institutions (Directive 2001/24/EC of 4 April 2001), and a directive concerning the reorganisation and winding-up of insurance undertakings (Directive 2001/17/EC of 19 March 2001).

The EU insolvency regime is binding for all EU Member States. As such, the EU regime is the clearest example of binding supranational/regional rules in the field of insolvency law in general and of bank insolvency law in particular. However, the EU rules are mainly of a private international law character. They introduce the principles of unity and universality of bankruptcy, conferring exclusive jurisdiction to the home Member State, but they do not seek to harmonise in a substantive way national legislation concerning insolvency proceedings, which remain different across the Member States of the EU.

Under Directive 2001/24/EC, where a credit institution with branches in other Member States is wound up or reorganised, the winding up or reorganisation is initiated and carried out under a single procedure by the authorities of the Member State where the credit institution has been authorised (known as the home Member State). This procedure is governed by the law of the home Member State. This approach is consistent with the principle of home Member State supervision pursuant to the EU Banking Directives.

The Directive does not aim at harmonising national legislation, but at ensuring mutual recognition of Member States' reorganisation measures and winding up proceedings as well as the necessary cooperation between authorities. Due to the mere coordinating nature of the Directive, Member States have different reorganisation measures and winding up proceedings. Consequently, insolvency proceedings for credit institutions differ. Some Member States use the same general company and insolvency law for the reorganisation and winding up of credit institutions as for other businesses, while others have special reorganisation proceedings for credit institutions.

The Directive covers only the insolvency of branches of credit institutions in other Member States, but does not cover subsidiaries of banking groups in other Member States.

Directive 2001/24/EC is limited to procedural aspects concerning each legal entity within a cross border banking group. This limited scope does not allow taking into account synergies within such a group, which may benefit all creditors in case of reorganisation. This lack of group-wide approach to winding up and reorganisation could lead to the failure of subsidiaries or even the group, which could otherwise have been reorganised and remained solvent in whole or part.

The October 2007 ECOFIN conclusions called for an enhancement of the arrangements for financial stability in the EU and a review of the tools for crisis prevention, management and resolution, including a revision of the Directive reorganization and winding up of credit institutions²⁹ and a clarification of the Deposit Guarantee Directive. The aim of the ongoing public consultation launched by the Commission with regard to the Winding Up Directive for credit institutions is to examine whether the Directive completely fulfils its objectives, whether it could be extended to cross border banking groups, and how obstacles related to asset transferability within such groups can be addressed.

Given the differences in bankruptcy laws in the Member States of the EU, large banking institutions and financial conglomerates could be incorporated as *Societas Europaeae* (as Nordea proposed) and a special insolvency regime could apply to them.

²⁹ Consultation on the re-organisation and winding-up of credit institutions http://ec.europa.eu/internal_market/bank/windingup/index_en.htm, Accessed 20th April 2008

7. Recent International Initiatives

A number of international initiatives have addressed the current credit crisis. The Financial Stability Forum published a report on 12 April 2008 on actions to enhance market and institutional resilience,³⁰ including the use of international colleges of supervisors for each of the largest global financial institutions. The IIF (Institute of International Finance) released on 9 April 2008 a Report of its Special Committee on Market Best Practices, an effort in self-regulation.³¹ The Basel Committee announced on 16 April 2008 a number of steps to strengthen the resilience of the banking system.³² Other efforts stem from the USA (the cradle of the sub-prime mortgage crisis), such as the [US] President's Working Group, a committee of US regulators and financial officials that recently issued a policy statement with recommendations to improve future state of financial markets.³³ US Treasury Secretary Tim Geithner has outlined in recent months a number of supervisory and regulatory reforms. The G-20 in its meetings in November 2008 and April 2009, proposed reforms of the International Monetary Fund and Financial Stability Forum (renamed after the G-20 London meeting as Financial Stability Board) in response to the crisis. These proposals were all published after this contribution was substantially completed and, thus, they will not be analysed further here. The author of this paper has been acting as Specialist Adviser to the House of Lords Sub-Committee A of the European Union Committee since November 2008 with regard to its inquiry into EU financial regulation and supervision and responses to the financial crisis. The report to be published in June 2009 covers the most relevant EU and international initiatives over the last months (including M de Larosière Report).

All these initiatives are commendable. They should lead to an overhaul of the regulatory system. A final note of caution, though, against the temptation to over-regulate. It is important to establish a system of incentives that corrects

³⁰ Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience, 7 April 2008 http://www.fsforum.org/publications/FSF_Report_to_G7_11_April.pdf, Accessed 28th April 2008.

³¹ IIF Committee on Market Best Practices Interim Report, 9 April 2008 <http://www.iif.com/> Accessed 28th April 2008.

³² Basel Committee on Banking Supervision BCBS press release on steps to strengthen the resilience of the banking system, BIS Press Releases 16 April 2008, <http://www.bis.org/press/p080416.htm>, Accessed 28th April 2008.

³³ President's Working Group Issues Policy Statement To Improve Future State of Financial Markets, 13 March 2008 <http://www.ustreas.gov/press/releases/hp871.htm>, Accessed 28th April 2008.

the excesses of the last years (in a system in which gains were privatized while losses have become socialized³⁴). However, it is also important to preserve innovation and flexibility.

8. Postscript

The Financial Services Authority (FSA) published on 18 March 2009 the Turner Review of global banking regulation. Lord Turner, chairman of the FSA, was asked by the Chancellor of the Exchequer to review the events that led to the financial crisis and to recommend reforms. The Review identifies three underlying causes of the crisis - macro-economic imbalances, financial innovation of little social value and important deficiencies in key bank capital and liquidity regulations. These were underpinned by an exaggerated faith in rational and self correcting markets. It stresses the importance of regulation and supervision being based on a system-wide “macro-prudential” approach rather than focusing solely on specific firms. It recommends fundamental changes to bank capital and liquidity regulations and to bank published accounts; more and higher quality bank capital, with several times as much capital required to support risky trading activity; counter-cyclical capital buffers, building up in good economic times so that they can be drawn on in downturns, and reflected in published account estimates of future potential losses; much tighter regulation of liquidity; regulation of “shadow banking” activities and increased reporting requirements for unregulated financial institutions such as hedge funds, and regulator powers to extend capital regulation; regulation of Credit Rating Agencies to limit conflicts of interest and inappropriate application of rating techniques; national and international action to ensure that remuneration policies are designed to discourage excessive risk-taking. Though the Review largely endorses most of the recommendations of the De Larosière Report, it proposes one authority instead of three to exercise pan-European supervisory duties.³⁵

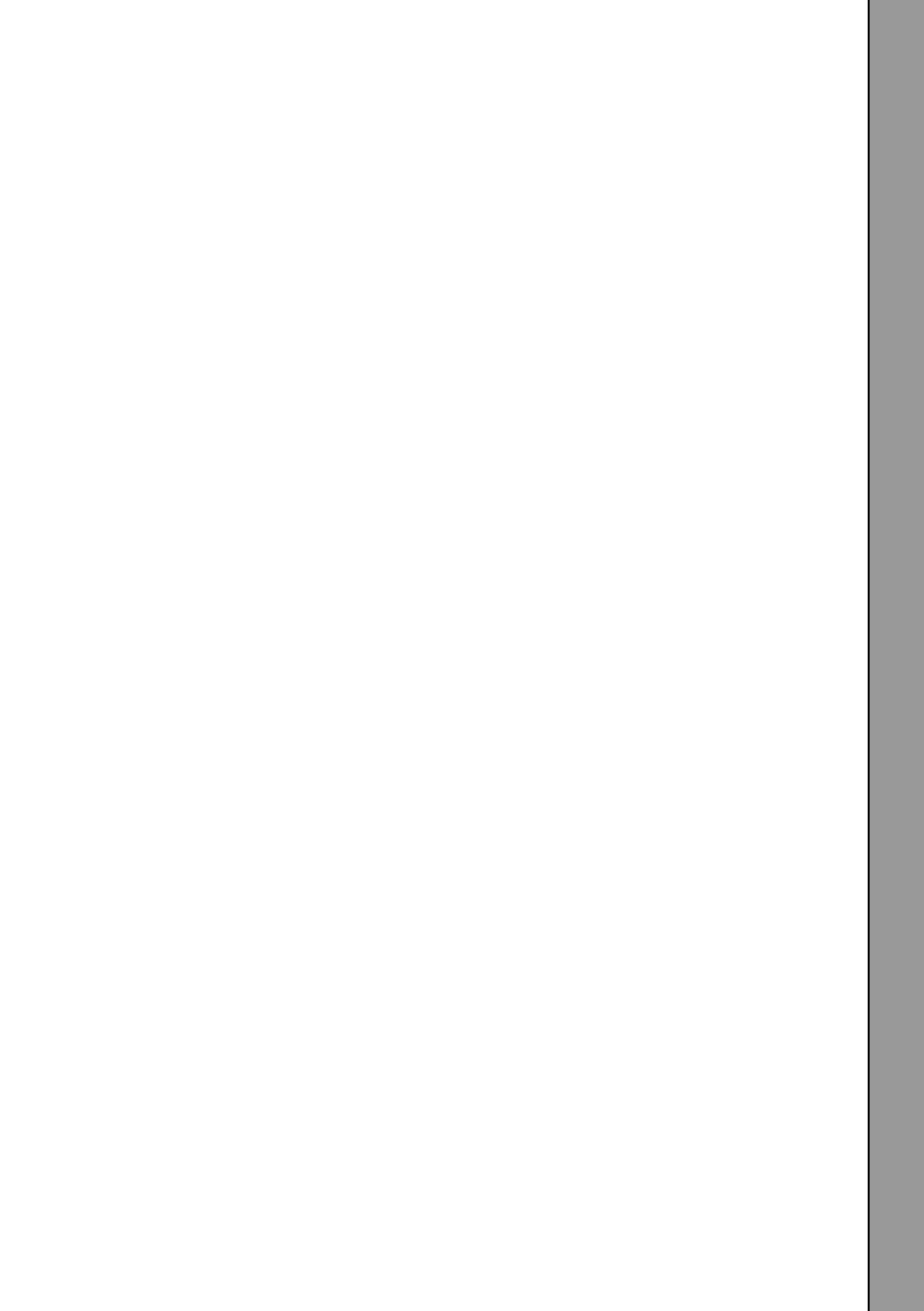
On 30 March 2009, the Bank of England announced that core parts of Dunfermline Building Society were being transferred to Nationwide Building Society. Dunfermline’s retail and wholesale deposits, branches, head office

³⁴ See Martin Wolf, ‘Bankers’ pay is deeply flawed’, *Financial Times*, 16 January 2008.

³⁵ See http://www.fsa.gov.uk/pubs/other/turner_review.pdf

and originated residential mortgages (other than social housing loans and related deposits) had all been transferred to Nationwide. This followed a sale process conducted by the Bank of England over the weekend of 28-29 March under the Special Resolution Regime provisions of the Banking Act 2009.³⁶

³⁶ See <http://www.bankofengland.co.uk/publications/news/2009/030.htm>



THE REGULATORY RESPONSE TO THE FINANCIAL CRISIS

Charles A E Goodhart¹

Financial Markets Group
London School of Economics and Political Science
Houghton Street
London WC2A 2AE
UNITED KINGDOM

Tel: +44 20 7955 7555

Fax: +44 20 7852 3580

E-mail: caegoodhart@aol.com

1. Introduction

In this paper I shall take the causes, developments and economic consequences of the financial dislocations of the last six months as given and generally understood, having already written extensively on this subject, in a more academic vein in the Journal of International Economics and Economic Policy and in a more popular format in the February, 2008, issue of Prospect. Instead I want to turn to the regulatory implications, and official responses, of this continuing event. Being British, this inevitably focuses primarily on issues pertaining to the UK.

Anyhow, I reckon that there are at least seven fields of regulatory concern where the recent turmoil has thrown up major issues for discussion. These are:

- Deposit Insurance;
- Bank Insolvency Regimes, a.k.a. ‘prompt corrective action’;
- Money market operations by Central Banks;
- Liquidity Risk Management;
- Procyclicality in CARs, i.e. Basel II, and general lack of counter-cyclical instruments;
- Boundaries of regulation, Conduits, SIVs and reputational risk;
- Crisis management:
 - within countries, Tripartite Committee
 - cross-border

¹ Financial Markets Group, London School of Economics

2. Deposit Insurance

A question that is too rarely asked is “What is the purpose of deposit insurance?” In fact there are two quite distinct purposes. The first is to allow an insured institution (a bank) to be closed by the authorities with less social hardship and less consequential political fuss. This can, it is widely thought, be done by insuring all small deposits 100%, and medium-sized deposits with some partial co-insurance up to some limit, or cap. The second is to prevent (politically-embarrassing) runs by depositors. This latter requires both 100% deposit insurance, and a very rapid pay-out, preferably next working day, to succeed.

If a deposit insurance scheme of the second kind is introduced, it will also serve to meet the objectives, i.e. facilitating closure, of the first type of insurance. But it also carries with it an extra disadvantage, in that it makes the character and conduct of her bank of no consequence whatsoever to the depositor. Any such 100% insured bank, irrespective of how awful its reputation may become, can always meet its bills and stay in business, simply by paying marginally over the odds for extra deposits. The moral hazard becomes enormous, whereas the partial co-insurance system does not suffer, at any rate, to nowhere like the same extent, from that serious disadvantage. And it is a serious disadvantage as experience in the USA during the S&L crisis and empirical studies from the World Bank have clearly shown, see Demirgüç-Kunt and Detragiache (2002), Demirgüç-Kunt and Huizinga (2004), and Demirgüç-Kunt and Kane (2002).

Anyhow the UK system was clearly of the first kind. It was first introduced in 1982, and then revised in 1995 in the aftermath of the BCCI crisis of 1991, a bank which clearly had to be shut, but for which the political and legal reverberations continued for many years. It was never intended, nor expected, to prevent runs, since that was not its purpose. Indeed the likelihood of a bank run occurring in this country was not then perceived as a realistic possibility. When, nevertheless, such a run occurred, the current deposit insurance scheme was immediately dismissed as faulty and insufficient, and the plan now is to jump directly to the second kind of scheme, 100% insurance, though issues remain on the coverage and possible cap of the scheme.

There are two problems with this. The first is that the question of what kind of DI scheme to have, and its coverage, cap and speed of pay-out, really ought

to be European, if not world wide, in answer and resolution. Yet the UK has been rushing towards a unilateral conclusion for itself. Apart from being, typically, non-communautaire, this is likely to cause grief in the context of an increasingly cross-border banking system.

The second is that the, seriously disturbing, impetus to moral hazard that the switch from type 1 to type 2 DI scheme brings with it makes it absolutely imperative to introduce at the same time arrangements to allow the authorities to close 'bad banks' before they can pile up potentially huge losses and debts to the insurance fund, that is early closure schemes which go under the generic name of 'prompt corrective action'.

Particularly in view of the switch in the category of DI scheme, but even without that, Mervyn King, the Governor of the Bank has stated, see House of Commons Treasury Committee (January 2008, p. 81, Q1608), that the introduction of such an early closure, prompt corrective action, scheme is the most important reform that needs to be introduced now, and it is to that that I now turn.

3. Bank Insolvency Regimes

Bank insolvency is commonly, perhaps usually, triggered by illiquidity, when it fails to meet some contractual payment obligation. But a bank with 100% DI can always raise more funding, and only needs to offer a slight premium to do so. Alternatively banks, as any other company, become bankrupt when an auditor proclaims its liabilities to be in excess of its assets. But before that happens, (and a bust, and/or a crooked, bank can defer that lethal audit for some considerable time), such a bank will have considerable scope to gamble for resurrection, so much so that if the gamble fails – as it usually does – it will become a shell, or zombie, bank, and a huge drain on the insurance fund.

But even if the information on such a bank's failed gambles and woeful state should become public knowledge, the equity value of the shares, subject to limited liability, must remain positive. There is always some, however small, upside potential, and the downside is fixed at zero. In the past our ancestors dealt with this problem by requiring either unlimited shareholder liability or

that all bank shareholders accept an obligation for an extra call equivalent to the par value of their shares. Quite why such historical precedents have been totally ignored now is not entirely clear to me, but the fact that a large proportion by number of Northern Rock shareholders were either bank employees or bank clients, or both, suggests that this route would not be politically propitious.

This means that a key feature of any bank insolvency regime must involve some expropriation of shareholder rights, and, whatever the compensation arrangement for shareholders, it is bound to generate either a claim that they were robbed of their property, or that the taxpayers were bilked, or, quite often, both at the same time. So the key for closure, and the treatment of shareholders, is a central issue.

It is, surely, hardly fair to close a bank by fiat without giving those in charge an opportunity to rectify the bad state of affairs. In the USA, whose PCA system we are largely copying, the trigger is a decline in the capital ratio, on a simple leverage basis, below 2%. Under the FDICIA Act of 1991, the bank is then allowed a fairly short space of time to recapitalise itself before the curtain is brought down.²

Since the European representatives on the Basel Committee of Banking Supervision have consistently denigrated the use of simple leverage ratios, in favour of more risk-weighted capital adequacy ratios, the UK could hardly import that feature of American practice as the trigger. But the example of Northern Rock unfortunately underlines just how poorly the Basel II CAR would function as a sole trigger. Instead the joint, (Treasury, Bank, FSA) White Paper (Cm 7308, January 2008), proposes a more subjective test (Paragraph 4.10), covering enhanced risk of failure, exhaustion of earlier attempts at rectification, and present danger to the financial system and depositors.

² “In the extreme, once a bank’s tangible equity ratio falls to 2% or less, they are considered to be critically undercapitalized and face not only more stringent restrictions on activities → than other undercapitalized banks, but also the appointment of a conservator (receiver) **within 90 days**.” (From Aggarwal and Jacques, (2001) p.1142)

“Regulators have even less latitude in dealing with critically undercapitalized (Group 5) institutions. The appropriate agency **must appoint a receiver or conservator for such firms within 90 days**, unless that agency and the FDIC decide that prompt corrective action would be better served by other means. Institutions cannot make any interest or capital payments on their subordinated debt beginning 60 days after being designated critically undercapitalized. Furthermore, regulators can prohibit Group 5 entities from opening new lines of business.” (in Pike and Thomson, (1992))

While such a subjective test is surely sensible, it does carry with it on the one hand dangers of forbearance, especially if shareholder litigation is an ever-present threat, and on the other concern that bank managers and shareholders need to be protected against the uncertain deployment of subjective tests. This latter danger is, however, capable of being met by the application of FSA Own Initiative Variation of Permission powers as set out in Sections 3.3 – 3.13 of the White Paper, whenever the bank's decline is perceived in advance and relatively slow-moving. There may well, however, remain a difficulty if, and when, a sudden change in a bank's condition, caused for example by an abrupt adverse shift in markets or by some major fraud, causes that bank to move suddenly from 'alright' to becoming a systemic risk, without having passed through a period of escalating concern. This possibility is partly addressed in Sections 3.17 – 3.22, but these relate primarily to the FSA obtaining extra urgent information, rather than to the question of respective managerial/shareholder rights in such circumstances.

The more that the judgment to remove the management, and take control away from the shareholders, has to be subjective, the greater must be the concern about due process and judicial review. It is certainly right that the basic decision should be taken by the FSA, but only after consultation with the Bank and the Treasury, (Section 4.9), and that there are satisfactory appeal mechanisms (Section 4.18). That same latter Section states that the Government would "also provide the arrangements to ensure the fundamental rights of shareholders – including the shareholders and counterparties of the failing bank – [would be] protected", but how this might be done is not yet spelt out. My own recipe would be to require the authorities to auction off any such bank within five years, or less, and then allocate the proceedings to stake holders in order of seniority. If circumstances plausibly prevented such an auction, the government would be required to pay debt holders in full and shareholders the value of their equity as of the day of the transfer of ownership.

There are some consequential operational issues. Thus, under most circumstances, such a failing bank will not be liquidated and closed, but will rather continue and live on in a government-recapitalised bridge bank format. This raises the issues of how the authorities can set up such a successor bridge bank, and obtain appropriate management for it, quickly enough to provide continuity of essential banking functions. Sections 4.20 – 4.32 of the January White Paper contain some interesting proposals. Both US and Scandinavian experience, in the latter's crisis in the early 1990s, suggest that such operational problems should be manageable.

There is also the tricky question of running such a, government-owned, bridge bank efficiently and profitably, but without triggering accusations of public-sector subsidy or of taking unfair competitive advantage from its default risk-free status. On this topic, I welcome the proposal “to consult with the European Commission and the Competition Commission to ensure that any new [special] resolution [regime] proposals are compliant with state aid rules and competition law”.

Finally there are some administrative issues. In the USA bank closure is handled by a separate institution, the FDIC, but this has no counterpart in the UK, with the Financial Services Compensation Scheme (FSCS) being a post-box rather than an administrative body. The question then arises whether a new institution to manage such bank restructuring should be established, perhaps by building up the FSCS, or whether such extra tasks should be allocated either to the FSA or the Bank. In the event the government has decided to choose the FSA for this responsibility, and that strikes me as the obvious solution within the UK context.

4. Money Market Operations

The retail depositors’ run on Northern Rock was specific to the UK, and hence has led to an immediate regulatory response here, on deposit insurance and bank insolvency regimes. But the drying-up, in some extreme cases the closure, of inter-bank and other wholesale funding markets has been common amongst virtually all developed countries. Particularly given the erosion, almost evaporation, of bank holdings of easily saleable assets, notably public sector assets, this rapidly forced the banking system into the arms of their respective central banks to obtain the liquidity, previously provided by the wholesale markets.

This led to several difficulties. First, the closure of the wholesale markets impacted differentially on banks, depending on whether they were intrinsic net borrowers or net lenders on such markets. The standard mechanism of Central Bank liquidity injection had them using open market operations of various kinds to provide sufficient cash on average to maintain the short-term policy rate of interest. Thereafter banks still short of cash could obtain additional

funds at the upper band of the corridor, the discount window, or standing facility, typically 1% above the policy rate, (while banks replete with cash could deposit with their Central Bank at a rate typically 1% below the policy rate). The problem that arose, though more so in some monetary areas than others, was that in these circumstances such borrowing at the upper bound, if and when perceived, was taken by commentators as a serious signal of weakness, and thereby carried a stigma of reputational risk. Such reputational risk was even greater when using Emergency Liquidity Assistance or Lender of Last Resort actions.

This stigma effect has serious consequences for the continuing conduct both of the corridor system, and for individual ELA/LOLR actions. The suggestion that the Bank of England's support exercises be made less transparent (White Paper Sections 3.36 – 3.49) is hardly consistent with the temper of the times, and is anyhow of uncertain success. The question of how to neutralise this stigma effect remains largely unanswered at present. Since it is of international concern it is being considered, I believe, by the Committee on the Global Financial System (CGFS) at the BIS in Basel.

The next problem was that the main shortage of funding occurred at the one to three month horizon. The authorities' usual task is to provide enough cash to meet immediate needs, and this, with a few hiccups, they did throughout. On average overnight rates were kept below the policy rate. Indeed, at times the banking systems were characterised as being 'awash with cash'. Instead, the main problem was that banks could see additional funding requirements falling on them in coming months, e.g. the need to replace withdrawals of asset-backed commercial paper, at a time when they could not raise such term-lending in wholesale markets. This meant that banks wanted to borrow from Central Banks at such longer maturities; this was a novel situation. After a short learning period, the Central Banks responded by offering some version of longer-term auction facility (TAF). Another wrinkle was that the banks' wishes for such term lending often exceeded the cash requirement to keep overnight rates in line with the policy rate. So the term lending injection of cash had to be combined by mopping-up, withdrawing cash at the very short end, an 'Operation Twist' indeed. Since the main Central Banks intervened in somewhat different ways in this respect, we can look forward to analysis of what worked and what did so less well.

In my view a more serious issue is what collateral a Central Bank should accept? During the crisis several such Central Banks were pressured by events, and by the fact that commercial banks had drastically run down

their holdings of public sector debt in recent decades, into accepting private sector assets, such as residential mortgages, of somewhat lower quality as collateral. Does this matter? What limits the collateral that a Central Bank should accept? Commercial banks benefit from liquidity transformation; is it proper for commercial banks to take all the upside benefit from such liquidity transformation leaving the Central Bank to protect against all downside liquidity risks?

One aspect of liquidity is the extent of price impact arising from sales of that asset on its secondary market. One reason why public sector debt is liquid is because their secondary markets are resilient with little price impact. In so far as secondary markets for property-based assets, whether underlying or derivative, exist at all, they are less liquid is because the potential price impact is much greater. This raises the question of what extent of hair-cut, or discount, a Central Bank should require in order to accept such lower-grade private sector assets as collateral. If the hair cut would need to be massive, in order to protect a Central Bank from any credit risk, then either a Central Bank has to assume some such risk or be able to offer relatively less assistance when such paper is proffered as collateral.

Anyhow the financial turmoil was initially perceived as almost entirely a function of illiquidity, though illiquidity and insolvency are always intertwined, usually inextricably so. The conclusion that has been widely drawn, and which I share, is that commercial bank liquidity has been run down too far. A problem here is that regulatory requirements to hold more liquid assets, especially with the designation of minimum standards, are largely self-defeating, since assets which are required to be held, and cannot be run down in a crisis, are not liquid. A minimum required liquid assets ratio is an oxymoron. What we need instead is incentives for banks to hold more liquid assets in good times so that they can be run down in bad times. But how do you organise that?

Overall, as I have noted elsewhere, this crisis was fairly well forecast. For various reasons systemic liquidity had been excessive for most years, since about 2002, allowing a credit pyramid to develop. At some point an abrupt reversal was likely. Central Banks and international financial intermediaries, such as the BIS, issued warnings, but were, or felt, otherwise unable to do anything about it. What we do not need is more early warning systems, more or alternative institutions to the existing Financial Stability Forum (FSF) at the BIS. What we do need is contra-cyclical control mechanisms, instruments,

that allow the monetary authorities to do something about fluctuations in liquidity conditions.

The policy interest rate is predicated to the control of goods and services prices in the medium run. A feature of the years 2002-6 was that such goods and services prices remained restrained, at a time when liquidity was seen to be becoming excessive. In the euro-zone the monetary aggregates, the much derided Pillar 2, did perhaps provide a measure of that in the years 2004-6, but not so in the USA. Anyhow the short-term idiosyncrasies of the demand for money function are too great for comfort. Meanwhile risk-weighted capital adequacy requirements, i.e. Basel II, are, as I shall remark next, pro, not contra, cyclical. So neither interest rates, nor Pillar 2, nor Basel II, provides us with a contra-cyclical instrument for offsetting major fluctuations in liquidity conditions. I have myself tried my hand at devising such an instrument. It is perhaps too wacky and idiosyncratic to be discussed here, but something like it, only much better, is badly needed.

5. Procyclicality in CARs

Several of the main trends in the regulatory and accounting systems of the last decade have served to exacerbate the pro-cyclicality of our financial system. The risk of default undeniably worsens in a recession. More companies and mortgages will go bust in 2008 than in 2006. Credit ratings, whether internal or set by ratings agencies, will become downgraded, and rightly so. Meanwhile asset prices fall, both on primary and secondary markets. Where no such market exists, auditors, scared of future legal challenge, may feel forced to take a more conservative view. The combination of more risk-sensitive methods of applying CARs and mark-to-market valuations are imparting a strong upwards ratchet to the procyclicality of our system. Attempts to mitigate this syndrome, e.g. by proposing that credit ratings be made on a through-the-cycle basis, are unlikely to help much, if only because during the boom years it is to everyone's current benefit to adopt a point-in-time approach, and competition will ensure that that happens. Of course, for some time stress tests, re-running the 2007/8 experience, will prevent an exact re-run of that occurrence, but the range of potential self-amplifying financial

crises is not only beyond the range of imagination, but if extended indefinitely in multitudes of stress tests could stifle financial intermediation.

These current developments, Basel II and mark-to-market accounting, have many eminent virtues. They clearly give each bank a much clearer, and better defined, picture of its own individual risk position. They will serve, and have served, to make banks more conscious of risk analysis. The problem is that the purpose of regulation should be to contain the systemic risks, the possibility of contagion, the externalities of the system as a whole, not so much to make each individual bank address risk more sensibly. The systemic problem is that the actions of each individual bank impinges on all other banks. For reasons that Keynes expounded, there is a natural tendency anyhow towards herd-like behaviour, and this is now only further encouraged by regulatory requirements. My colleagues here at the Financial Market Group, Jon Danielsson and Hyun Shin, have coined the phrase ‘endogenous risk’ to cover the self-amplifying nature of interactions amongst banks, investment houses and other intermediaries. Our warning is that these recent regulatory and accounting measures have, despite having the very best of intentions, inadvertently but significantly reinforced such endogenous risk.

The need is to make the system as a whole more stable, not so much to enhance risk awareness amongst individual banks. As you may have read in the FT in early February, the proposal that Avinash Persaud and I put forward was to switch the basis of CARs more from levels of risk-weighted assets to their rates of growth. Thus our aim is to lean against both the bubble and the bust, both of the system and of individual institutions, by requiring additional capital and liquidity when bank lending and asset prices were rising fast, and relaxing such requirements in the downturn.

That proposal certainly has numerous technical problems, for example over what periods should such applicable growth rates be calculated. But there is one immediate issue that I want to consider now. This is that our proposal would significantly raise the capital charge on banks for keeping assets on their own books during periods of confidence, perhaps even euphoria, and during asset price bubbles. Thus it could greatly reinforce the present, somewhat pernicious, tendency towards bank disintermediation during upturns and re-intermediation during downturns.

6. The Boundaries of the Banking System

We should, however, ask ourselves why that tendency has been so pernicious. My own answer to that is that the banking business strategy known as ‘originate and distribute’ should have been better re-entitled as ‘originate and pretend to distribute’. What surprised, and should have shocked, most of us was the extent to which banks transferred their assets to vehicles closely related to themselves, conduits and SIVs of various kinds, to which they were bound, either by legal commitment or by reputational risk, to support whenever funding, or other, financial conditions become adverse.

The larger problem, however, is that a key role of banks is to provide a whole raft of contingent commitments to clients, in the form of unused overdraft facilities, and contingent obligations to capital markets more generally, which work on the basis of bank back-up lines. What should be the treatment of such contingent commitments, ranging all the way from those to off-balance-sheet subsidiaries to rather general commitments to the market as a whole? In short what are the boundaries between bank-connected tight relationships and more general, looser, commitments to help, always remembering that the correlations between calls on such contingent obligations will rise sharply in adverse conditions.

It is a large question. One useful approach would be to examine in great detail the extent to which legal and reputational requirements did actually force certain banks into support actions during the recent turmoil, and what happened in other cases. Let me end this Section, however, by noting that, whether, or not, our suggestions about applying CARs to growth rates, rather than levels, should find favour, the questions of the boundaries of the banking system and of the application of CARs to contingent commitments needs careful reconsideration in any case.

7. Crisis Management

7.1. *The UK*

Let me end with a few thoughts on the administrative conduct of the management of this crisis, turning first to the UK. There is a rather unfortunate tendency to assume that if something goes wrong it must involve a design fault in the administrative machinery set up to prevent such failure. Lack of foresight, lack of information, and human error can overwhelm any administrative design, however excellent. Many of the criticisms levelled at the UK's Tripartite Committee seem to me to be unwarranted. Since the burden of any recapitalisation has to fall on the Treasury, it must be in charge. The idea that this somehow might reduce the independence of the Monetary Policy Committee in setting interest rates is ludicrous.

The original establishment of the Tripartite Committee appeared to me to be based on the notion that the main danger to be avoided was excessive forbearance and an undue willingness to rescue, or bail out. So, as the Committee was originally structured, it seemed that each player, FSA, Bank and Treasury, was given a separate, individual veto against bail-out. What may have happened, though I do not know, was that the Bank was more reluctant to assist Northern Rock than the FSA or HMT, but that under the existing arrangements the latter two had no clear power to force the Bank to adopt their viewpoint. In these kinds of cases it is clear that the elected politicians should have ultimate control, but that the action of over-ruling the independent technical expert should be constrained by checks and balances.

In Canada there once was such a dispute between Governor Coyne of the Bank of Canada and the Treasurer. This was eventually resolved by a new legal clause empowering the Treasurer to write a public, open letter to the Governor requiring some such, previously disputed, action to be done as the Treasurer wishes. On receipt of that letter, the Bank does as it is told, and the Governor would be expected to resign immediately. In fact, however, no such letter has ever been written. Given the damage it would do to both sides, the process serves as an incentive to reach agreement, while nevertheless leaving ultimate power to the politicians. That strikes me as a good idea.

The Treasury Select Committee (op. cit, 2008) has put the major blame for recent regulatory short-comings on the FSA, for failing to assess the funding/

liquidity risks in the Rock's business plan. That did not surprise me. Any primarily supervisory body, like the FSA, is bound to find that the bulk of its work involves conduct of business issues, and the dominant professions on its staff will be lawyers and accountants. The key issue, however, in systemic, contagious externalities will be the interactions via financial markets of the banks, the process of endogenous risk. Here the need is for market expertise and professional economists, which the Bank has, and partly because of its stingy funding base, which the FSA does not, increasingly so as those Bank of England staff originally transferred to the FSA retire.

The Treasury appears minded, in the January White Paper, to give the bulk of the new proposed powers to the FSA. In the light of the above institutional considerations, I wonder if this is wise. I also wonder whether it is sensible to put so much emphasis on efficiency in the use of human resources in a field, such as systemic financial dislocation, where the costs of getting it wrong can be so enormous. Two heads can be better than one. In the USA and in Japan, there are overlaps between the supervisory roles of the Central Bank and of the specialised supervisory agency. How about the idea of having the major banks and investment houses supervised both by the FSA and the Bank, with the former concentrating on conduct of business and the latter focussing on systemic issues? It might not be tidy, but it could be more effective, perhaps especially because it could add some wholesome competition into the scene.

7.2. Cross-Border Issues

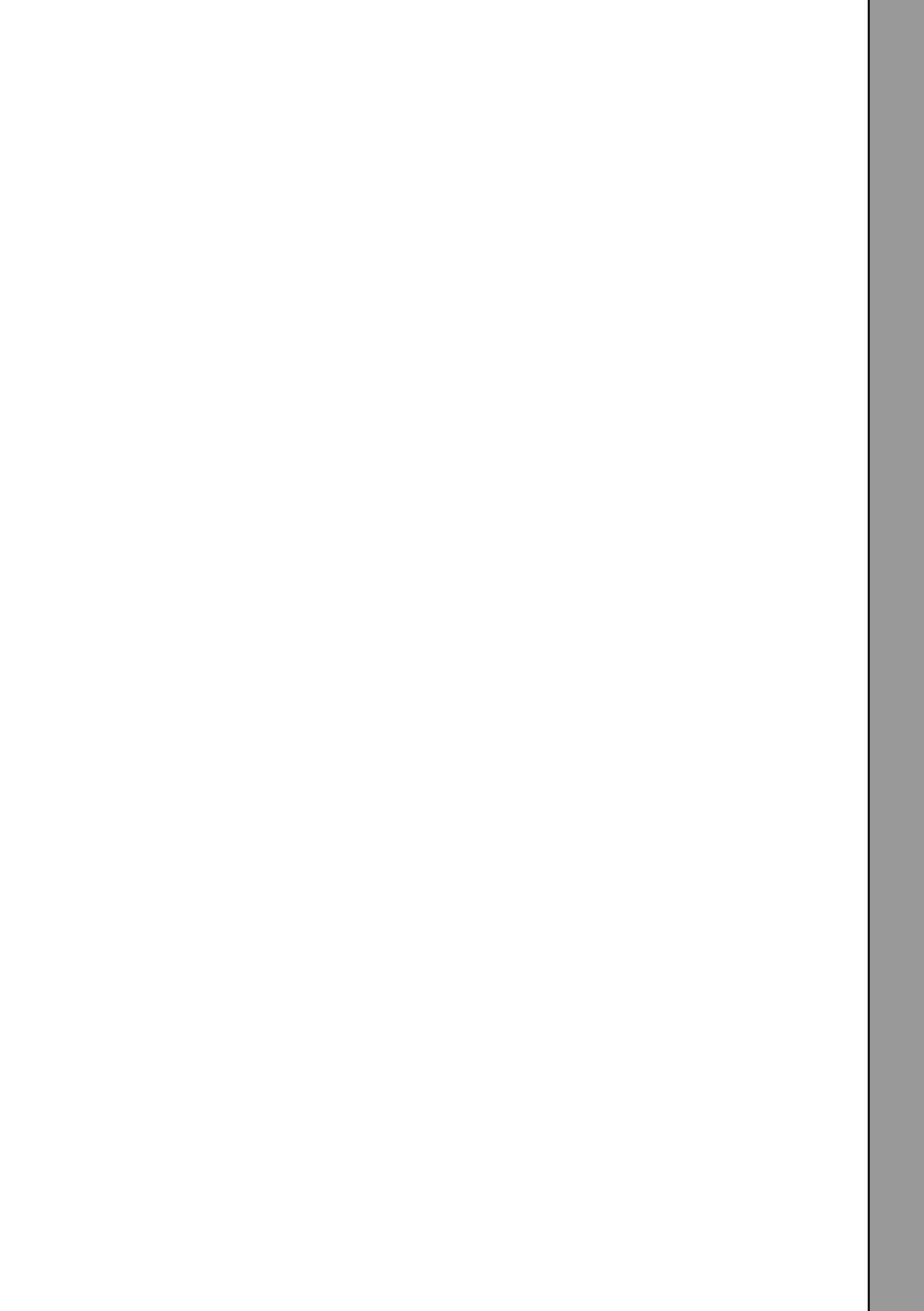
The developed world, and especially its financial regulators, have been fortunate that there has been no failure of a bank, nor other financial institution, involving significant cross-border consequences, at least so far. Northern Rock, IKB and Sachsen were all primarily domestic. Since the only funding available for recapitalisation remains domestic, no one knows how the loss burden arising from the failure of an international, cross-border financial institution might be handled. 'War games' have led us to believe that the exercise could be difficult, messy and protracted, and in a crisis speed is usually essential.

It is in this particular field, the treatment and resolution of cross-border failure, that we need political understanding and momentum, not in additional early warning systems, or further rearrangements of the international administrative entities such as the FSF and IMF. Exactly what more could these latter have done in the recent turmoil?

The problem of how to handle cross-border financial failures in a world of national fiscal and legal competences is understood, but not resolved. Dirk Schoenmaker and I put forward the idea of countries committing in advance, *ex ante*, to some particular scheme of burden sharing. Some have found that too difficult to accept. Again within the European context, in the early 1990s, I took part in an exercise to expand the EU's federal fiscal resources, one use of which could have been for the purpose of financing crisis management. But that too was turned down flat by several large member countries. I have done my best to provide answers to this conundrum; and it has not been good enough. Are there other potential answers, or do we have to wait for a bad experience to teach us better?

8. References

- Aggarwal, R. and K. T. Jacques, (2001) “The impact of FDICIA and prompt corrective action on bank capital and risk: Estimates using a simultaneous equations model”, *Journal of Banking & Finance* 25(6) , pp. 1139–1160.
- Bank of England, H.M. Treasury, FSA, (2008), *Financial stability and depositor protection: Strengthening the framework*, (London: H.M. Treasury Cm 7308), January.
- Demirgüç-Kunt, A. and E. Detragiache, (2002), ‘Does deposit insurance increase banking system stability? An empirical investigation’ *Journal of Monetary Economics*, 49 pp.1373–1406.
- Demirgüç-Kunt, A. and H. Huizinga, (2004), ‘Market discipline and deposit insurance’ *Journal of Monetary Economics*, 51 pp. 375–399.
- Demirgüç-Kunt, A. and E.J. Kane, (2002), ‘Deposit Insurance Around the Globe: Where Does It Work?’ *Journal of Economic Perspectives*, 16(2), pp.175–195.
- House of Commons Treasury Committee, (2008), *The run on the Rock*, (London: The Stationery Office Ltd.), HC 56–1, Fifth Report of Session 2007–8, January.
- Pike, C. J. and J. B. Thomson, (1992) “FDICIA’s prompt corrective action provisions,” *Economic Commentary*, Federal Reserve Bank of Cleveland, issue Sep 1.



CAN CENTRAL BANK PROVISION OF MARKET LIQUIDITY CREATE A PROBLEM OF MORAL HAZARD?¹

Alistair Milne

Reader in Banking and Finance
Faculty of Finance
Cass Business School
106 Bunhill Row
London EC1Y 8TZ

Tel: +44 20 7040 8738

Fax: +44 20 7040 8881

E-mail: a.k.l.milne@city.ac.uk

<http://www.cass.city.ac.uk/faculty/a.milne/index.html>

1. Introduction

Public authorities from the US, the UK and Germany provided or coordinated support to a number of financial institutions, since the eruption of the credit crisis that erupted in August of 2007. The major central banks, the Federal Reserve, the European Central Bank and the Bank of England have also all in various ways extended their provision of market liquidity, for example by widening the range of assets accepted as repo collateral for secured central bank lending, reducing the cost of standing borrowing facilities, and increasing the available stock of reserves. This essay explores the relationship between a central bank's provision of market liquidity to the market as whole during a financial crisis and incentives for banks to manage their own risk and liquidity.

The emergency liquidity support provided to Northern Rock was a loan to an individual institution, not a loan open to any bank at a market determined price. But episodes such as that of Northern Rock, and the subsequent support

¹ The argument developed in this paper draws on Alistair Milne *The Fall of the House of Credit*, Cambridge University Press (2009), Chapters 9 and 10, and on Perry Mehrling and Alistair Milne (2008) *The Government's role as credit insurer of last resort and how it can be fulfilled* <http://www.cass.city.ac.uk/cbs/activities/bankingcrisis.html>

given to many banks around the world on an even greater scale that followed in October of 2008, are associated with considerable liquidity strains in banks and money markets and require central banks to provide a great deal of additional market liquidity. Therefore the authorities, in coping with such episodes, need to be aware of any potential problem of moral hazard that the provision of such market liquidity might create.

The central bank certainly has a responsibility to provide market liquidity during a financial crisis. This was recognized in the doctrine of ‘lender of last resort’, as conceived by Thornton and promulgated by Bagehot, drawing on the experience of 19th century London banking markets.² This doctrine was designed to stem a banking liquidity panic, when bank customers lost confidence in the banking system and sought to exchange bank liabilities, either deposits or notes, for non-bank liabilities, coin or central bank notes. London’s experience of that time confirms that such panics could be prevented as long as the central bank stood ready to lend to banks at penal rates of interest against good collateral.

In modern markets retail customers have no practical alternative to bank liabilities and the main alternative to bank liabilities for wholesale customers are government liabilities such as T-bills or short term bonds. In this context the traditional function of lender of last resort is to a substantial degree subsumed by the central bank’s routine procedures for the conduct of open monetary operations and for automatic provision of credit to individual banks through ‘standing facilities’. However in times of financial stress, such have recurred since the summer of 2007 and intensified in the autumn of 2008, the central bank may need to take additional actions to provide liquidity to the market as a whole.

It is better not to describe the emergency facility provided to Northern Rock as ‘lender of last resort’. In modern discussions the usage of this phrase has been extended so far as to make it almost meaningless, having been applied also to discretionary provision of central bank secured credit to individual institutions, in order to prevent their failure, and sometimes even to discretionary loans by government to individual institutions for the same purpose.

Such discretionary loans to individual institutions are ignored here. The scope of this essay is the provision of liquidity to the market as a whole during a financial crisis and the question of whether this can have an adverse impact

² Much of the key literature on lender of last resort, going back to the late 18th century, is collected in Forrest H. Capie and Geoffrey E. Wood *The Lender of Last Resort*, Routledge, 2007

on the incentives of private institutions to manage their own risk. Section 2 refers to some prominent views on this question. Section 3 describes the routine provision of liquidity to the market in the 'orthodox' implementation of monetary policy and how this is altered when central banks shift as they are now doing to 'unorthodox' monetary implementation. The following two sections look at the current crisis, section 4 describing the dislocation of money markets, and section 5 the steps taken in response to the intensification of the crisis in September and October 2008.

The final section considers the adequacy of these measures and their impact on incentives, arguing that the risk of a systemic liquidity crisis involves an externality that cannot be fully internalized by individual banks determining their own liquidity decisions in their own interests. There is a moral hazard but it needs to be dealt with through an appropriate charge for this systemic risk, not by limiting the provision of market liquidity when a systemic crisis unfolds

2. Are incentives an issue when providing liquidity to markets?

The incentive impact of interventions to support individual institutions is well understood. There is a concern over ‘moral hazard’ whenever public support is given to an individual institution. This applies not just in the emergency loan and eventual nationalization of Northern Rock, but in all the other recent examples of public support to private institutions, for example the conservatorship of Fannie Mae and Freddie Mac and the effective nationalization of the insurance giant AIG. If such intervention to support a financial institution is anticipated then these institutions have much weaker incentives to manage their own risks. In all these cases the public authorities have provided new capital, at the same time imposing substantial losses on shareholders. Shareholder losses help improve incentives, but even when shareholders interests are written down to zero there is still a moral hazard because institutions protected by such a financial safety net can borrow at low rates of interest that do not fully reflect the risks they are taking.

This concern applies even in those cases, such as the recent loans by the system of Federal Home Loan Banks to many mortgage institutions in the United States, when lending is fully collateralized and the intention is to support a bank regarded as solvent but illiquid, i.e. fundamentally sound but no longer able to borrow enough from private sector counterparties to stay in business.

In practice this distinction between insolvency and illiquidity is never clear cut.³ There are always some doubts both about the soundness of the institution and the value of the collateral available to the central bank, doubts that prevent the bank that is in difficulties obtaining private sector credit in the first place. Therefore any discretionary central bank loan to an individual institution always provides some degree of protection to private sector creditors and shareholders and creates moral hazard.

Interventions to support an individual institution can still be economically justified, even when taking account of moral hazard, if the wider systemic costs of each financial institution’s failure exceed the costs of public sector support. But the method used to provide support should minimize moral

³ The classic statement of this view is Ralph Hawtrey (1932) *The Art of Central Banking: The Lender of Last Resort*, an excerpt of which is reprinted in Capie and Wood (op. cit.).

hazard and the assessment of costs should allow not just for the direct fiscal costs of support but also the additional costs arising because the expectation of public sector financial support changes the behaviour of banks and other systemically important institutions.

There is another, related, moral hazard concerning monetary policy. If investors believe that monetary policy makers will respond to sharp falls in the prices of financial assets by an easing monetary policy which in turn limits investor losses, then they will invest more in risky assets than they otherwise would. This has come to be called the 'Greenspan put' because of a perception that the Federal Reserve has acted in this way under its previous chair Alan Greenspan.⁴ Central banks, including the Federal Reserve under both Greenspan and his successor Bernanke, have gone to considerable lengths to emphasise that this is not the way that they operate and that there can be no central bank guarantee on asset returns, although it does appear that easy monetary policy in the wake of the dot.com crash and 9/11 contributed to the US housing bubble.

Do similar issues of incentives arise when central banks provide liquidity to markets? During the current credit crisis there has been a divergence of opinion amongst leading economists about the extent to which central banks should provide such liquidity, especially at longer than overnight maturity, and on whether such provision can have an undesirable impact on incentives. On the one hand Willem Buiter, of the London School of Economics, has argued that liquidity is a pure public good which can be provided at zero social cost, and that the central bank should therefore always be prepared to provide the maximum amount of liquidity that it can against a very wide range of collateral both to the commercial and investment banks, at all maturities and to the full range of financial markets not just in short term money markets. Buiter (2008) is a detailed statement of his views.⁵ According to this analysis the only limitation on liquidity provision must be that it is provided against collateral in order that the central bank is not exposed to credit risk and at a penalty rate to ensure that there is no financial subsidy. Buiter further argues that the central bank should not only play such a role of 'lender of last resort', providing loans at penalty rates of interest against collateral in all maturities of money markets and to every type of financial institution, but should also act as 'market maker of last resort' in other financial markets.

⁴ A lucid recent statement is George Cooper's *The Origin of Financial Crises* (Vintage, 2008)

⁵ Willem Buiter (2008), *Central Banks and Financial Crises*, Federal Reserve Bank of Kansas City Symposium on Maintaining Stability in a Changing Financial System, Jackson Hole, August

These views can be contrasted with the widely reported statements of Mervyn King, the Governor of the Bank of England, who argued that central banks needed to be concerned about the incentive implications of providing liquidity to markets.⁶ On 12th September 2007 he wrote “... is there a case for the provision of additional central bank liquidity against a wider range of collateral and over longer periods in order to reduce market interest rates at longer maturities? This is the most difficult issue facing central banks at present and requires a balancing act between two different considerations. On the one hand, the provision of greater short-term liquidity against illiquid collateral might ease the process of taking the assets of vehicles back onto bank balance sheets and so reduce term market interest rates. But, on the other hand, the provision of such liquidity support undermines the efficient pricing of risk by providing ex post insurance for risky behaviour.”

In a later speech on 9th October, 2007, in Belfast he stated “Nothing would have been easier than for the Bank of England to lend freely without a penalty rate. Almost every actor in this drama saw advantage in cheap money and plenty of it. The role of the central bank is to ensure that the appropriate incentives are in place to discourage excessive risk-taking and the underpricing of risk, and in so doing to avoid sowing the seeds of an even greater crisis in future. That we have done in each action we have taken – by maintaining the principle of the penalty rate.”

He seems to have been concerned that a promise by central banks to lend against a wide range of collateral, in large amounts at all maturities, might weaken the incentives for commercial banks to manage their own risk and liquidity efficiently.

Who then was right, Buiter who has no concern about moral hazard in provision of market liquidity, or King who has taken this concern seriously?⁷ Or is some more intermediate position appropriate?

⁶ King’s views are documented in three places: his letter dated 12th September, 2007 to the Treasury and Civil Service Select Committee; the uncorrected evidence he gave to the select committee on 20th September, in the immediate aftermath of the failure of Northern Rock, and finally a more considered assessment, after Northern Rock, in a speech to the Northern Ireland Chamber of Commerce on 9th October 2007. These documents are all available on the Bank of England and TCSSC webpages.

⁷ A further discussion of this point, including a contribution by Buiter, can be found in the discussion of an article by Lawrence Summers, posted in Martin Wolf’s economics forum on www.ft.com, dated 24th September 2007

3. Liquidity provision and monetary policy implementation

In recent years, right up to the end of 2008, central banks in the major economies have implemented monetary policy in much the same ‘orthodox’ way. Monetary policy is conducted by making decisions over a short term policy rate of interest (for example the Federal Funds rate set by the Federal Reserve, the Bank Rate set by the Bank of England and the rather clumsily named Main Refinancing Operations Minimum Bid rate of the European Central Bank) with the level of this policy rate adjusted from time to time, normally at regularly scheduled meetings.

Central banks also all use a fairly similar framework for implementing these monetary policy decisions.⁸ First they establish a regime of reserve requirements on commercial banks with financial incentives to maintain reserves, averaged over period of time, close to a target level (so banks are paid a relatively low rate of interest on reserves if average reserves differ too much from the required level).

This then leaves the central bank with the tasks of controlling the aggregate supply of bank reserves and to do so in a way which keeps short term market interest rates, both overnight rates and rates at other short-term maturities up to and including the next monetary policy decision, as close as possible to the monetary policy rate. There are practical complications, for example monetary policy operations must respond to variations in the circulating stock of notes issued by the central bank, since these notes are issued on demand and their issue reduces central bank reserves. Reserves must also be adjusted to offset the impact of payments flows from banks within the reserves scheme to financial institutions outside of the reserves scheme holding accounts with the central bank (e.g. foreign central banks) and, most importantly, for draw down in any government borrowing facilities from the central bank (since such expenditure has the effect of increasing reserves held by the banking system).

Since there is a whole yield curve of these short term money market rates, running from overnight up to one month, it can use more than policy instrument

⁸ Monetary operations in the UK and the Euro area are documented in the Bank of England Red Book <http://www.bankofengland.co.uk/markets/money/publications/redbookjan08.pdf> and in the ECB general documentation on Eurosystem monetary operation and procedures <http://www.ecb.int/mopo/implementation/intro/html/index.en.html>. Documentation of Federal Reserve procedures are more scattered, but most information can be found via <http://www.frbdiscountwindow.org/> and from the Federal Reserve Bulletin.

for these tasks. Central banks use three forms of intervention in the market as a whole, which together are described as ‘open market operations’:

1. used to control the aggregate level of reserves, are outright open market sales or purchase of securities, usually government bonds, in order to maintain aggregate reserves with the central bank in line with that commercial banks are required to hold. A purchase paid for with central bank money increases aggregate reserves while a sale decreases aggregate reserves.
2. used to fine tune the aggregate stock of reserves, are medium term secured loans to banks, using “sale and repurchase agreements” or repo contracts. A central bank repo increases the reserves of the commercial bank counterparty, against securities such as bonds or equities which are offered as collateral for the loan. These medium term repos are offered to the market on a fixed quantity basis, with banks tendering in order to borrow these reserves, and those willing to pay the highest interest rate successful in their tender.
3. aimed at controlling market interest rates at very short maturities, are overnight repos offered at the policy rate of interest. The key difference here is that the volume of repo is *price* not quantity determined, giving the central bank effective control of overnight money market rates of interest.

There are also two further arrangements for loaning additional reserves on request to individual institutions, their crucial feature being that they are non-discretionary: provided a commercial bank’s request complies with the stated rules then the central bank must provide the additional reserves. First, as a technical tool to avoid gridlock in the payments system, central banks provide further intraday repo loans to individual banks without any interest rate being charged. Second, banks have access to standing borrowing and deposit facilities – such as the Federal Reserve discount window and the Bank of England standing facilities which they can use to borrow reserves against collateral at a penalty rate above the policy rate. In practice however the standing facilities of the Fed and the Bank of England have been little used, even in the crisis, because they are relatively expensive compared to market borrowing and because of a perceived ‘stigma’ i.e. potential damage to the reputations of banks that use them. Only in the Euro area are these standing facilities used to any large degree, because they are anonymous and because the alternatives of market borrowing are relatively underdeveloped.

There are many further technical details to monetary policy implementation and these differ from one central bank to another. One of these differences is that the Bank of England, unlike other central banks, asks the commercial banks operating in sterling money markets, to choose their own preferred level of excess reserves at the beginning of each ‘maintenance period’ i.e. the period from one meeting of its monetary policy committee to the next (these chosen reserves are excess to the very small unremunerated reserve requirements imposed on UK banks.). Commercial banks use central bank reserves in order to manage their payment flows. They therefore choose higher levels of reserves during periods when payments flows and liquidity needs are more uncertain. The Bank of England arrangements thus automatically inject much of the additional liquidity required in money markets during periods of market stress, while other central banks have to announce all such injections of additional reserves.

Since the end of 2008 in response to the current crisis central banks have moved away from this ‘orthodox’ approach to monetary policy, instead adopting unorthodox approaches with labels such as ‘quantitative easing’. The difference is that the central banks are no longer attempting to maintain overnight money market rate of interest at a target level, instead they have shifted to flooding the banks with reserves, causing money market interest rates to fall to their lowest possible levels, at or around zero (in theory central banks could drive rates even lower by applying interest rate charges to reserves held with the central banks, in practice they have not done so for fear that this would cause banks to disintermediate and no longer use central bank reserves for payments at all).

There are different approaches to such unorthodox monetary policy. One, adopted by the Bank of Japan when they also operated monetary policy in this way between 2001 and 2005, is to set targets for aggregate bank reserves buying sufficient government bonds to meet this target (“quantitative easing”). A second approach, favoured by Federal Reserve chairman Ben Bernanke is to flood the banks with reserves and use this purchasing power to provide liquidity to markets for credit risky assets such as mortgage backed securities or consumer ABS securities (“credit easing”). The debate on the relative merits of these two approaches is beyond the scope of this paper. But whichever approach is taken individual banks all more than enough liquidity.⁹

⁹ For Bernanke’s views see his speech *The Crisis and the Policy Response*, January 2009, <http://www.federalreserve.gov/newsevents/speech/bernanke20090113a.htm>

4. The credit crisis and the dislocation of money markets

Since August of 2007, central banks have taken several steps in order to limit the impact of the credit crisis on money market and bank liquidity. First they have made considerable use of their standard tool for responding to stress in money markets, an increase or ‘injection’ of additional reserves using overnight repo loans to banks and term loans. Secondly the Federal Reserve and the Bank of England have relaxed their requirements for collateral applied to term loans, accepting a range of securities such as MBS that were not previously acceptable (a change that was not necessary in the ECB because their rules always allowed lending against such collateral). Third, in the most intense phase of the crisis, in September and October of 2008 they radically increased the amount they lent to banks that could not fund themselves on the money markets.

Additional reserves are needed in times of uncertainty, because the demand for central bank reserves from commercial banks then rises sharply, banks preferring to hold more than they are required so they can more easily manage uncertain payment flows, for example an outflow of wholesale funding.¹⁰ This increased demand for central bank reserves in turn leads to increases in the overnight lending rates at which banks borrow from each other and from other money market participants. This has occurred on several occasions, for example following the failure of Long Term Capital Management in 1998 and the 9/11 terrorist attacks. It has also happened periodically during the current credit crisis, for example on August 9th 2007 when there was first an impact on money markets, immediately prior to the takeover of Bear Sterns in March 2008, and following the government takeover of the insurance giant AIG in September of 2008. On all these occasions central banks have injected substantial amounts of additional reserves and overnight rates have been brought back close to policy rates fairly quickly.

Episodes of heightened levels of overnight interbank rates and the response by central banks, injecting additional reserves, are not surprising. This is has happened in all previous episodes of financial stress. What has been a major surprise is that this crisis has affected not just the immediate overnight market, but the entire short-term money market yield curve. This is reflected in unsecured and some secured borrowing rates. Over the period

¹⁰ For a nicely written review of the injection of reserves required because of Y2K see Hampton (2000) Y2K and Banking System Liquidity www.rbnz.govt.nz/research/bulletin/1997_2001/2000mar63_1Hampton.pdf.

August 2007 – September 2008, three month unsecured interbank rates, such as those recorded in the London Interbank Offer Rate (LIBOR), have risen substantially relative to market rates secured on the best collateral e.g. government bonds, whether borrowing in dollars or in sterling. Spreads between unsecured and secured three-month borrowing rates have averaged around 75 basis points in all the major currencies, compared to around 5 basis points before the crisis; and have, moreover, fluctuated substantially. Central bank reserve injections have done little to reduce these three month spreads. Rates for borrowing on a secured basis using structured credit assets such as mortgage backed securities as collateral have also risen, e.g. rates in asset backed commercial paper markets or for repo of mortgage backed securities.

The emergence of these large and fluctuating spreads between the rates on money market instruments and risk free three months securities such as treasury bills or loans collateralized on government bonds is a major concern to central banks, in both their conduct of monetary policy and their responsibilities for maintaining financial stability. It affects monetary policy because bank lending rates are an important channel of monetary policy transmission. Bank lending rates are set in line with those on money market instruments, the marginal source of bank funding, so bank lending rates are also increased relative monetary policy rates, again by about 75 basis points. This is a substantial tightening of monetary policy relative to where it would have been without liquidity problems in money markets.

Why this unprecedented shift in money market interest rates? Spreads between money market and monetary policy rates have risen because of concern amongst both banks and non-banks that some commercial banks could face difficulties in repaying three month money. This erosion of confidence has been a self-reinforcing consequence of the credit crisis. As long as banks had plenty of collateral which they could use for secured borrowing, then there was no reason to think that they might have difficulty in borrowing new funds to repay three month money. Both secured and unsecured rates then remained close to expected future monetary policy rates.

The credit crisis changed this situation because of doubts about the valuation of the collateral. The most widely used collateral were mortgage backed and asset backed securities, collateral that the banks could easily manufacture themselves from their own loan books. As long as there was an open and liquid market for mortgage backed securities then short term borrowing was relatively easy for most banks. All they had to do was create new MBS and ABS, sell a few and use the rest as security for borrowing in money markets.

But as soon as confidence evaporated and the market for issuing structured securities collapsed then many banks, not just Northern Rock, faced major problems of funding themselves short term.

This in turn created doubts about their ability to refinance and this raised money market rates relative to monetary policy rates, both the unsecured borrowing rates such as LIBOR and the rates for secured borrowing against the doubtful mortgage backed collateral. The rate of interest on secured borrowing collateralized by treasury securities was unaffected, but banks need to buy treasury securities before they can use them as collateral for borrowing, so this is of little help to banks when they have to refinance their lending.

Do these heightened money market rates imply that central banks had failed, by not providing sufficient liquidity to the market? No, this was not a failure of central bank liquidity provision. A market is liquid if individual transactions take place without a large price impact. The key responsibility of the central bank is to ensure that payment flows between banks, especially the large and unpredictable flows associated with securities and foreign exchange markets, have as small a price impact as possible i.e. do not affect overnight lending rates and do not trigger bank insolvency. It does so by providing almost unlimited quantities (but usually price rationed) overnight collateralized lending.

Central banks do not and never have provided similar liquidity to other financial markets (the only exception is the foreign exchange markets under a fixed exchange rate regime). While central banks provide further loans to the market at longer than overnight maturities, for example the routine conducted one week and one month repos and also addition discretionary 'injections' of reserves during periods of financial stress, these actions do not and are not intended to remove the impact of payments flows on one week or one month money market rates of interest. These term loans are at fixed quantity, not fixed price, with the aim of guaranteeing additional aggregate reserves to the banking sector over the period of the facility, in turn making reserves management easier for individual banks.

5. Lender of last resort in the global bank run of September – October 2008

Following the failure of Lehman Brothers in September of 2008, the dislocation of money markets became much more severe, forcing central banks to greatly increase their provision of liquidity to the market.

What happened was very simple. Doubts about the ability of individual banks to refinance their short term funding, and increasing concerns about bank solvency, meant that many banks could no longer borrow unsecured in the money markets even overnight. As a result these banks were forced to turn to central banks to replace their lost short term deposit funding. This was a systemic run on the entire global banking system.

One consequence was an increase in the spreads between unsecured and secured lending rates, to around 2 per cent for British sterling and the euro and even higher for the US dollar, where it peaked at over 3½ per cent before falling back to around 2 per cent. These spreads have gradually, since December, subsided but are still around 1 per cent.

Central banks had no choice. To refuse to offer funds in the market, freely and at a penalty rate, would have triggered insolvency in a large number of institutions. They therefore had to act as ‘lender of last’ resort on an unprecedented scale, pretty much exactly as Thornton and Bagehot would have recommended. They stood ready to lend to all banks who wanted to bid for reserves, relaxing collateral requirements as necessary, and thus replacing all lost money market funding.

These actions have produced some astonishing changes in central bank assets and liabilities.¹¹ At the beginning of August 2007, before the crisis broke, the assets of the Federal Reserve system were about USD 900 billion, of which nearly USD 800 billion were securities such as Treasury bonds. The main liability was greenbacks – a little over USD 800 billion of notes in circulation. Deposits by commercial banks with the Federal Reserve were relatively small, fluctuating around USD 13 billion. Until early September 2008, despite the many liquidity measures undertaken by the Federal Reserve, the overall balance sheet had not changed much. Although they were increasing their term

¹¹ All figures in this and following paragraphs taken from Federal Reserve release H.4.1

lending, in order to maintain control of overnight interest rates they were also draining reserves, taking away with one hand what they gave with the other.

But with the global bank run after September 15, there was an extraordinary expansion of the Fed balance sheet. As bank confidence in money market counterparties collapsed, banks took shelter in the safety of depositing with the central bank. By 5 November 2008 total currency in circulation remained about the same, but otherwise the balance sheet of the Federal Reserve was transformed. Total assets had more than doubled, to over USD 2,000 billion. The various liquidity facilities had expanded dramatically, including some USD 380 billion in short-term and term repo loans, and USD 590 billion in other credit of different kinds, including loans to broker dealers and the financing of the so called AMLF asset-backed commercial paper and CPFF commercial paper funding facilities.

How were all these facilities financed? Securities holdings had fallen by around USD 300 billion, to just under USD 500 billion, the Fed having sold off about USD 300 billion of Treasury securities in order to finance liquidity loans. Even bigger was an entirely new item: a USD 560 billion US Treasury supplementary financing facility, i.e. the Federal Reserve was borrowed much of this money directly from government. Finally, there was a very large increase of nearly USD 480 billion in bank deposits with the Federal Reserve, that is, banks were now placing short term funds as reserves with the central bank rather than with money markets.

There has been a similar money market disintermediation and expansion of central bank balance sheets elsewhere. Over the same period balance sheet of the system of European Central Bank has almost doubled, from around EUR 1 trillion to EUR 2 trillion.¹² The assets and liabilities of the Bank of England have risen an astonishing threefold, from around £80 billion in early August 2007 to £240 billion in early November 2008, although the Bank of England weekly bank return gives rather little information about the composition of this expanded balance sheet.¹³

This lending of last resort was needed to prevent bank failures. There is a puzzle. Even with this support, and the accompanying measures to recapitalise banks, confidence in the liquidity and solvency of bank money market counterparties has not been fully restored and money markets have remained dislocated. There has been some subsequent contraction of central

¹² ECB weekly balance sheet.

¹³ Bank of England weekly balance sheet.

bank balance sheets and the spreads between unsecured 3-month Libor and secured lending rates have fallen back from their peaks. But central banks have continued to be the principal intermediaries of short term funds, replacing the dysfunctional money markets by taking deposits from banks with sufficient cash and then lending them out to the market to all those willing to pay and with collateral to borrow.

6. Is there an incentive problem?

In light of these dramatic events, who was right, Willem Buiter who argues that liquidity is a pure public good and advocates that central banks should act not just as lender of last resort; or Mervyn King who has been concerned that overgenerous provision of liquidity can create a problem of moral hazard and encourage banks to adopt an excessive exposure to liquidity risk?

While not providing an explicit answer to this question, the actions of the central banks reveal that they accept that they must provide liquidity in the form of bank reserves as demanded by commercial banks. Despite the suggestion to the contrary by some media commentators, The Bank of England, the Federal Reserve, and the ECB have responded in a fairly similar way to stresses in money markets, providing large amounts of additional collateralized repo lending in order to increase the stock of central bank reserves and to respond to the virtual breakdown of money market intermediation in the global banking run of September and October of 2008. This lending has not just been overnight but also, in order to provide commercial banks with greater medium term control over their reserves, at longer maturities out to three months.

In the case of the Federal Reserve and the Bank of England increasing reserves has also led them to extend the range of eligible collateral. These actions have substantially increased the stock of bank reserves and been successful in bringing back very short term (overnight) money market rates close to monetary policy rates.

But Buiter's views go much further. He seems to be proposing a massive extension in the role of central banks, giving them responsibility for limiting price volatility in the entire range of money and other financial markets. It is

unclear how central banks could even begin to undertake this task and if they were to do so, for example by offering the Greenspan put option, then there clearly would be a major change in incentives facing private sector financial institutions.

King's views, as summarized in this paper, at least as they were initially set out in his letter to the Treasury and Civil Service Select Committee of 12th September, 2007, can also be criticised. The central bank provision of liquidity in the overnight market does not itself create moral hazard, it is simply the implementation of the monetary policy decisions of the central banks. Monetary policy would create a moral hazard if were seen as be used to stabilize asset market returns and thus protect investors for the consequences of their own risk exposure, i.e. if the central bank did provide the Greenspan put option. But this is clearly not the case in the UK, where the inflation targeting regime of which Mervyn King himself was one of the principal architects, ensures that monetary policy is devoted only to price stability.

It is true that the central banks have shielded commercial banks from the consequence of the systemic liquidity problems since August of 2007 and especially from the impact of the global run on the banks in September and October of 2008. There is therefore some logic to Mervyn King's arguments. The central banks could have made clear to individual banks that they would be allowed to fail in the event of systemic run and this would have given them much stronger incentives to hold more liquid assets and have more long term funding. Such a regime might have helped prevent Northern Rock getting into the difficulties in the way it did.

These incentive problems in the provision of liquidity can be reduced to some extent by providing liquidity at penalty rates of interest *either* when a bank makes use of the standing facilities *or* by imposing substantial penalties when a bank strays too far below its reserve average target. But penalty rates of interest cannot be imposed when the central bank provides liquidity by lending to the market because it then does so at a market determined rate.

The real problem, and the cause of the large spreads between money market and monetary policy rates, was the collapse of liquidity in the market for mortgage backed securities, a collapse in turn largely triggered by excessive maturity mismatch across the global banking system.¹⁴ In recent years the issue of mortgage backed and other loan backed securities have been the principal

¹⁴ Milne (2009) *The Fall of the House of Credit*, chapters 2 and 6 estimates that this global maturity mismatch amounted to around USD 3 trillion.

means by which banks in the US, the UK and many other countries have raised secured wholesale funding. With the disappearance of this formerly liquid market, banks have been forced to turn on a very much larger scale than before to relatively expensive unsecured funding, a development which ultimately undermined money market intermediation and led to the global bank run of the autumn of 2008.

This leads to a key point that can help resolve the difference in view of Buiter and King. Employing such maturity mismatch to hold what were at the time liquid mortgage backed and other structured securities involved an externality. The benefits were using relatively low cost short term funding and these benefits were captured entirely by the bank holding the securities. The cost was the risk of a systemic liquidity crisis, the cost of which fall on all banks that are short of retail funding and seeking to use wholesale funding from money markets to supplement loans and other portfolios.

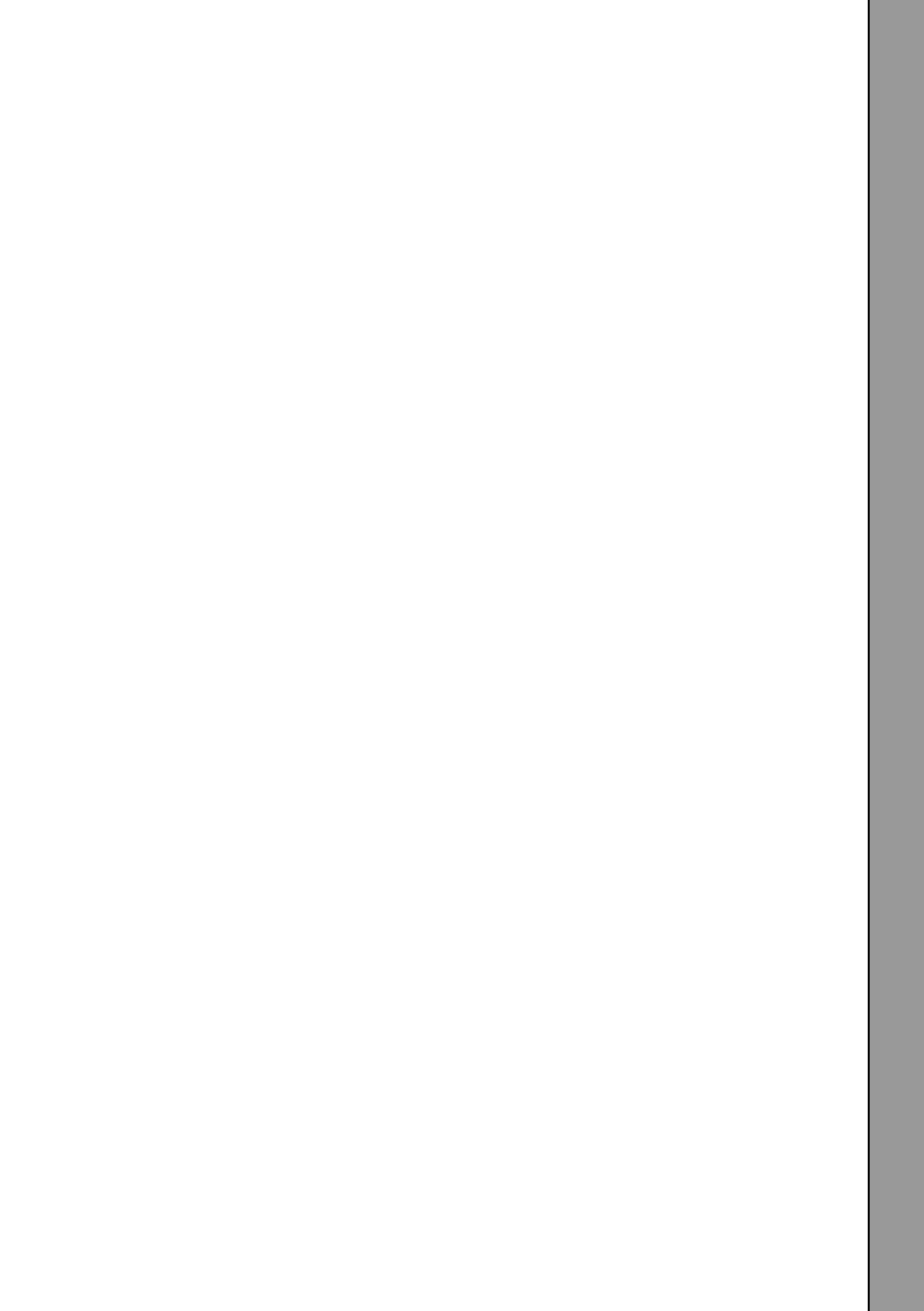
Buiter is right that liquidity is in effect a free public good, because by lending freely against collateral the central bank prevents short term self-fulfilling runs leading to bank failure. But King is also right that this creates an incentive problem, because short term funding – unlike long term funding – is then much less exposed than it otherwise would be to the underlying system wide credit and market risks of the bank portfolio.

In the event of a system wide shock, such as has occurred in this credit crisis, short term funds can be confident that they are likely to be repaid with the help of the central bank (the does not apply when an individual bank is exposed to specific risks such as a large sale operational failure or large exposure, since in this situation the central bank can allow a single bank to fail without creating systemic problems). As a result the return demanded by short term investors is relatively low and banks are incentivized to operate with substantial liquidity risk.

But the solution to this incentive problem is not, as King appears to suggest, to provide loans only reluctantly to banks suffering from deposit withdrawal in a systemic crisis. The better answer is instead to introduce a tax or charge that compensates for this externality. To avoid a similar crisis in future we need to have in place a charge per unit of short term wholesale funding set at a level that properly reflects the external liquidity costs of short term funding.¹⁵

¹⁵ A related proposal appears in Perry Mehrling and Alistair Milne (2008) *Government's role as credit insurer of last resort and how it can be fulfilled*. <http://www.cass.city.ac.uk/cbs/activities/bankingcrisis.html>

What are these costs and what should the level of this charge be? This is more difficult to say, although the answer is clearly greater than zero. An initial charge of perhaps 20 basis points per annum might be about right, this would be about the level needed to close off most of the ‘negative basis’ trading, such as that employed by UBS, the trade where banks held high yield structured securities financed using low cost repo borrowing, a trade that has played a big role in the current financial crisis. The recommendation of this paper is to begin with 20 basis points and then conduct the research to establish a more accurate figure.



THE NORTHERN ROCK AFFAIR: AN ANALYSIS OF THE 'TEASER RATE' STRATEGY

Tim Congdon

Founder
Lombard Street Research
Huntley Manor
Huntley
Gloucestershire
GL19 3HQ
UNITED KINGDOM

Tel.: +44 1452 830840

E-mail: timcongdon@btinternet.com

1. Introduction: Northern Rock's 'teaser rate' strategy

Northern Rock's rapid expansion from its de-mutualisation in 1997 to the summer of 2007 owed much to marketing, particularly the so-called 'teaser rate' strategy. According to *The Daily Telegraph* in an analysis in November 2007, the strategy was devised by Mr. Adam Applegarth in its early years as a quoted PLC. Mr. Applegarth later became Northern Rock's chief executive and was still in this position when the bank's growth plans hit their nemesis in September 2007. The essence of the strategy was to offer mortgages at rates that appeared to be little different from banks' cost of funds in order to take business from rival organizations, while charging fees and a number of other add-ons which gave Northern Rock a reasonable profit. It should be said that – even allowing for the fees and add-ons – Northern Rock's loan margins were low compared with most of the competition.

One of the issues raised by the Northern Rock affair is therefore 'How are banks' loan margins determined?' The purpose of the current paper is to set out a framework which answers this question, but also relates it to the long-run evolution of banking systems. Specifically, a formula is derived to relate the average return on banks' assets to the ratios of cash and capital

to assets, and a brief historical survey then shows that these well-known measures of liquidity and solvency are much lower in banking today than in the past. The discussion recognises the separate roles of 'liquidity' and 'solvency' in two types of decision analysis. These are, first, the thinking of banks' managements with their goal of profit-maximisation and, secondly, the agenda of financial regulation, as the regulators do their best to ensure that deposits always remain convertible into cash at par.

A fair generalisation is that the lower are cash-to-deposit and capital-to-asset ratios, the riskier are the banks' operations and the greater should be regulatory concern about their ability to meet claims. On the other hand, an implication of the formula is that, for any given rate of return on capital in the banking industry, the lower are the ratios, the lower also is the cost of bank finance to non-banks. Banking therefore suffers from an inevitable tension. The competitive, low-margin and customer-oriented banking practiced by Northern Rock, while admirable in some respects, may be difficult to reconcile with the emphasis on depositor safety demanded by the media in the immediate aftermath of a crisis.

2. How are banks' loan margins determined?

Bank loans are risky and costly to organize, and they are financed by deposits on at least part of which interest is payable. It is clear that revenues (i.e., net interest margin, fees and other income) must be sufficient at least to cover the following list of items,

- An allowance for likely loan losses,
- The costs of organizing the loans and maintaining the money transmission infrastructure which enables banks to collect deposits, and
- The cost of funds to the lending bank, in terms of the interest rate paid on deposits or other finance.

Loan losses might not unreasonably be expected to be close to zero for a specialist mortgage bank, like Northern Rock, maintaining low loan-to-value ratios and requiring borrowers to buy mortgage indemnity cover¹. For simplicity, the rate of loan loss is ignored in the rest of this paper. In the real world the costs of organizing loans are substantial, but they are largely met or exceeded by arrangement fees. For banks with extensive branch networks and a major role in the payments mechanism, the costs of collecting and managing deposits are also substantial, but they are assumed here to be zero to ease the exposition. With the assumptions of nil loan losses and zero running costs, the average return on banks' assets would still not be identical to the loan margin if assets included bonds and securities. Nevertheless, the concepts must be closely related in a world – such as that of today – in which banks' assets are dominated by their loan portfolios. In the rest of this paper the phrases 'return on bank assets' and 'loan margin' are used interchangeably in order to facilitate the discussion, even though they are not the same in practice. Obviously, loan margins need to be adjusted upwards to deliver a particular 'return on assets' if allowance has to be made for loan losses and bank running costs.

The list of costs set out in the last paragraph applies to all types of credit institution. But many such institutions – including, for example, hire purchase companies and specialist leasing businesses – are not banks. Without entering too deeply into the vexed question 'What is a bank?', the distinctive

¹ A plethora of newspaper reports appeared in late 2007 about the irresponsibility of Northern Rock's lending practices. The write-off rate on Northern Rock's loan assets in the first half of 2007 was in fact 0.01 per cent, although a larger charge (of almost 0.12 per cent of mean advances to customers) was made. See the section on 'Loan loss impairment' in Northern Rock's *Interim Results*, published on 25th July 2007.

characteristics of banks may be understood to include the ability to take and repay cash deposits over the counter, and an obligation to maintain a cushion of capital against possible loan losses which further protects depositors' interests. Historically cash reserves, both in the form of 'vault cash' and in a balance at the central bank, have not paid interest, but they are essential for retail deposit-taking². It follows that, for any given loan margin (which may be measured as a percentage of loan assets), the rate of return on assets is a positive function of the ratio of non-cash, earning assets to total assets. Plainly the rate of return on capital depends on both the rate of return on assets and the ratio of ratio of capital to assets. The argument is easily statement in algebraic terms. Let a bank's assets be split between cash, C , with c representing the ratio of cash to assets, and earning assets or loans, L . Then total assets $A = C + L$ or $A = c.A + L$. So $L = (1 - c).A$. Profits (P) are equal to the loan margin or profit 'spread' on assets, s , multiplied by the earning assets, L , or

$$P = s.L = s.(1 - c).A,$$

while the rate of return on capital (K) is P/K , which is

$$P/K = s.(1 - c).A/K.$$

So

$$s = P/K. (1/[1 - c]). K/A.$$

It is clear that, if the loan margin is given, the rate of return on capital is inversely related to the cash/assets ratio (or indeed almost certainly the more conventional cash/deposits ratio) and the capital/assets ratio. As Phillips remarked in his 1921 classic on *Bank Credit*, 'the essence' of banking 'consists in the practice of extending loans far in excess of either the capital or the cash holding of the bank in question'³.

By implication, bankers are likely to support any developments, in institutions or technology, which enable them to lower their cash/deposits ratio (i.e., their 'liquidity') and their capital/assets ratio (i.e., their 'solvency'). The next two sections discuss the long-run trends in banks' liquidity and solvency, with a particular emphasis on the UK as background to the Northern Rock affair.

² Following a precedent set by the European Central Bank, the Bank of England started to pay interest on reserve balances in 2006. While a system of remunerated reserves would require a radical restatement of the argument in this paper, in the UK's case it was made so recently as not to affect the paper's key points.

³ W. Phillips, *Bank Credit* (New York: Macmillan, 1921), p. 13.

3. Long-run trends in bank liquidity: an historical perspective

Banking evolved from the safekeeping of money. In the familiar accounts people left deposits of a widely-recognised monetary commodity (usually precious metals like gold) with a specialist in safekeeping, such as a goldsmith. Initially the deposit was backed 100 per cent by the assumedly safe 'hard' monetary asset. Over time the notes which acknowledged the deposits were used in transactions instead of gold, while bankers found that they could make loans in their note liabilities instead of gold. By issuing note liabilities without gold backing, the ratio of gold to total liabilities fell from 100 per cent or more to markedly lower levels. Nowadays the safe monetary asset – the so-called 'monetary base' – is no longer a precious metal, but the legal-tender notes issued by the central bank. But, like gold, legal-tender notes do not pay interest. Because notes are not earning assets, modern banks want to reduce the ratio of cash to their earning assets, in the same way as goldsmiths in embryonic banking.

Early banks often had cash/asset ratios of over 50 per cent. (One example is provided by Scottish banking in the middle of the 18th century, which is a favourite topic of the advocates of 'free banking').⁴ By the start of the 20th century the UK's so-called 'joint-stock banks', with their limited liability to shareholders and a sophisticated system of cheque-clearing, had cut the ratio to 11 per cent and continued to retain their customers' confidence. This fall had been facilitated by two insights, first, that the convertibility of deposits into cash could be protected by holding interest-bearing assets which could be readily sold for cash as well as by the holding of cash itself, and, secondly, that a distinct institution with the prerogative to issue notes (i.e., a central bank, which was the Bank of England in the UK's case) could lend to commercial banks if they ran out of cash.⁵ Indeed, the key to maintaining

⁴ Charles W. Munn, 'The origins of the Scottish note exchange', *Three Banks Review* (1975), no. 107, pp. 45–60. In February 1768 the Aberdeen Banking Co.'s ratio of specie to demand liabilities was 61.2 per cent. (See p. 51.)

⁵ A classic discussion of the factors influencing banks' cash/asset ratios was provided by Francis Edgeworth in his 1888 paper in the *Journal of the Royal Statistical Society* (vol. LI, pp. 113–27) on 'The mathematical theory of banking'. But Edgeworth concentrated on the scale benefits of a large bank, because of 'the law of large numbers' acting on deposit withdrawals, and the advantages of establishing a clearing-house. He did not discuss the ability of a central bank to create cash at zero cost and the implications of its ability to lend such cash (i.e., the ability to make lender-of-last-resort loans) for banks' own cash management practices.

deposit convertibility was not to have a large holding of idle vault cash, but to nurture a good relationship with the Bank of England and keep holdings of an assortment of 'liquid assets'. It was understood that such assets could either be sold to the Bank (possibly on repurchase terms) or would serve as collateral for a loan.

During the 20th century the Bank of England therefore paid close attention to both the cash ratio and 'the liquidity ratio' (i.e., ratio of explicitly defined liquid assets to a large balance sheet category, such as deposits held by non-banks) observed by the banks. In the first few years after the Second World War the cash ratio dropped to 8 per cent, while the liquidity ratio was 40 per cent and banks' assets were dominated by claims on government. In such circumstances it was virtually inconceivable that a run would exhaust banks' cash holdings. Over time both ratios fell dramatically. By the late 1950s the Bank of England has allowed the liquidity ratio to go down to about 30 per cent, although the institutions specifically charged to respect this ratio – the clearing banks – resented the competition they faced from other credit-granting organizations not subject to ratio control. In the Competition and Credit Control reforms of 1971 the discrimination against the clearers was largely remedied by the setting of a 'reserve assets ratio', applicable to all banks, at 12 ½ per cent of sterling deposits. The clearers had to keep a non-interest-bearing balance at the Bank of England, equal to 1 ½ per cent of deposits, on top of their required reserve assets, but this had an obvious functional rationale in their clearing activities and was not objectionable to them.

By now competition and risk-taking were intensifying, but British banking seemed to be working smoothly. In 1981 both the clearers' 1 ½ per cent ratio and the 12 ½ per cent reserve assets ratio were scrapped. Instead all banks – whether involved in clearing or not – were to lodge a deposit in 'special non-operational, non-interest-bearing accounts' at the Bank of England equal to ½ per cent of so-called 'eligible liabilities' (i.e., non-equity liabilities to agents other than banks and the government). These accounts were seen as serving no purpose in either monetary control or financial supervision and regulation. Instead they existed to give the Bank of England funds which it re-invested in interest-bearing securities, generating an income sufficient to cover its costs. The clearers kept a separate balance, over and above the ½ per cent, to settle debit and credit balances at the end of each daily clearing, but it was now a very low ratio of their balance sheet totals.

The Bank of England was still concerned about the degree of maturity transformation that the banks were undertaking. The liquidity ratio was

history and the reserve asset ratio had been abolished, but in July 1982 the Bank published a paper on ‘The measurement of liquidity’, showing how individual banks were to calculate (among other things) a ‘net cumulative mismatched position’. Bank officials continued to supervise all banks’ liquidity until 1998, when the job was transferred to the newly-created Financial Services Authority as part of an institutional upheaval at the start of the Blair government. This institutional upheaval led to the transfer of many officials from the Bank of England, with its decades of experience and a fund of central banking know-how, to the FSA which had yet to find its feet. Some officials at the FSA undoubtedly did appreciate that the structure of assets, and in particular the ratio of liquidity to total assets, was relevant to the integrity of the banking businesses under its supervision. But a fair comment is that official interest in UK banks’ ability to withstand a run was sharply less than had been the norm during the 20th century.

4. Trends in bank liquidity: the run-up to the Northern Rock crisis

The *insouciance* towards banks' vulnerability in a run was reflected in several developments in the decade leading up to the Northern Rock crisis. The traditional understanding had been that banks' cash reserve with the Bank of England had a definite functional rationale for the depositing banks themselves. Their cash reserves were both the accounts in which the clearing banks themselves settled their end-of-day imbalances and a backstop for their vault cash, if their vault cash came under attack from a loss of confidence and a retail run. Further, by opening an account at the Bank of England a bank started a relationship with the UK's central bank, which included the possibility of borrowing from it in the appropriate circumstances. Indeed, historically, building societies had not maintained accounts at the Bank of England. Instead they 'banked' via the clearing banks, while they had been regulated not by the Bank of England, but by the Registrar of Friendly Societies.

But officialdom seems increasingly to have forgotten that banks' cash reserves at the Bank of England had a functional purpose. Under the terms of the 1998 Bank of England Act and the 2000 Financial Services and Markets Act, UK banks were required to maintain a non-interest-bearing balance at the Bank of England of only 0.15 per cent of eligible liabilities. The Treasury subsequently published two consultative papers on what it came to term 'the cash ratio deposit scheme', in which the sole purpose of the scheme was seen as providing the Bank of England with non-interest-bearing balances.⁶ These balances could be re-invested in interest-bearing securities to generate a profit, and so to cover its staff and other costs. The scheme was discussed solely and entirely as a mechanism for covering the Bank of England's costs, and as having no wider value for the British banking system. The two documents seemed to be oblivious of the operational rationale of a cash reserve at the central bank from the commercial banks' own point of view.

⁶ The Treasury published the two documents – both called *Review of the Cash Ratio Deposit Scheme: Consultation on proposed changes* – in August 2003 and August 2007. In qualification to the statement in the text, the Bank of England was fully aware of the significance of the cash ratio deposit scheme for bank's liquidity management. See *The Framework for the Bank of England's Operations in the Sterling Money Markets* ('the Red Book') (London: Bank of England, March 2008), p. 6.

Before its demutualisation in October 1997 Northern Rock had been a mutually-owned building society and its direct contacts with the Bank of England were negligible. Since 1998, like other quoted British banks, it has kept a non-interest-bearing deposit at the Bank of England. In May 2006 the Bank of England changed the structure of its relationship with the UK's commercial banks in wide-ranging reforms, notably by starting to pay interest on cash reserves separate from the 0.15 per cent cash ratio deposit scheme. The new terms of the Bank of England's relationship with its customer banks were contained in a Red Book, which – in its own words – was 'designed to provide flexible access to central bank money, including in unlimited size against eligible collateral at a penalty rate through' the so-called 'standing lending facility'.⁷ In the summer of 2007 Northern Rock was a participant in the Bank of England's reserve schemes and a member of the list of banks to which a standing facility might be granted. The phrases contained in the Red Book were apparently comforting, implying that – as a long as Northern Rock or any other British bank had good collateral – it could always meet a run by selling assets (probably on a repo basis) to the Bank of England. The events of August and September 2007 were to show that, in practice, no one in Northern Rock's management or the Bank of England knew precisely what was supposed to happen if Northern Rock lost the confidence of its retail depositors.

Nevertheless, for most of Northern Rock's existence as a PLC the resilience of its defences against a retail run was not a big topic in its corporate strategy. Its regional roots and smallness handicapped it in the market for UK retail deposits. Here the clearers – with their national branch networks and the scale that allowed them to enjoy huge 'network economy' advantages in settlement business - were entrenched. Instead Northern Rock, like two other former building societies (Bradford & Bingley, and Alliance & Leicester), decided to fund their expansion in the wholesale markets, including the international markets in asset-backed securities (ABS) and collateralised mortgage obligations (CMO) which had started to grow rapidly in the 1990s. At demutualisation Northern Rock's liabilities were dominated by its retail deposits, mostly in the north-east of England; by the end of June 2007 its retail liabilities of £24.5bn were exceeded by wholesale money amounting to £26.7bn, securitisations of £45.7bn and covered bonds of £8.1bn⁸ A fair comment is that by this stage Northern Rock's management hoped to meet any funding problem by the issue of further securities. After all, in early 2007

⁷ *The Framework for the Bank of England's Operations in the Sterling Money Markets* (London: Bank of England, March 2008), p. 7.

⁸ See Northern Rock's *Interim Results*, published on 25th July 2007, p. 19 and p. 36.

it had been accorded a higher credit rating by the rating agencies and a large securitisation issue had been oversubscribed.

With hindsight, Northern Rock's business model and particularly its reliance on wholesale funding have been deemed imprudent or even irresponsible.⁹ But in truth by the early 21st century the whole of the British banking system had economised on cash to a remarkable extent and, in this respect, taken a cavalier attitude towards funding risk. Cash as a fraction of total sterling liabilities, and even of sight sterling liabilities, had become nugatory by 2005. In January 2006 UK banks' cash ratio deposits were £1,953m. and other balances at the Bank of England (i.e., the balances actively used in settlement of payments business) were £839m., and their vault cash was £5,417m. Their total cash resources were therefore £8,209m. At the same time their sight liabilities to UK non-banks were £629,892m and their total sterling liabilities £2,534,494m. So the ratio of cash to sight liabilities held 'by the British public' was 1.3 per cent and the ratio of cash to all sterling liabilities was 0.3 per cent.¹⁰ In other words, the cash ratio of British banks had dropped to about a thirtieth of what it had been 80 years earlier! Perhaps it is unnecessary to add that the situation in summer 2007 – which had changed again because of the introduction of interest-earning reserves in May 2006 – remained a far cry from the 100 per cent cash reserve ratio found when the idea of banking had been conceived in the late middle ages.

How would UK banks' managements have reacted if critics pointed out the apparently perilous degree of maturity transformation in their balance sheets? The answer might have had two parts. First, they might have mentioned that they kept deposits at other banks plus a cushion of ready-for-sale securities, often enjoying a triple-A credit rating and hence similar in quality to those that would have qualified as 'liquid' in the eyes of the Bank of England in the mid-20th century, on top of cash itself. In fact, at the end of June 2007 Northern Rock had deposits with other banks of £6,812m and ready-for-sale securities of £8,000m., against a balance sheet total of £113,506m.¹¹ So its 'liquid assets', taken altogether, were more than 13 per cent of liabilities (and much more than 13 per cent of retail deposits), not out of line with the norms

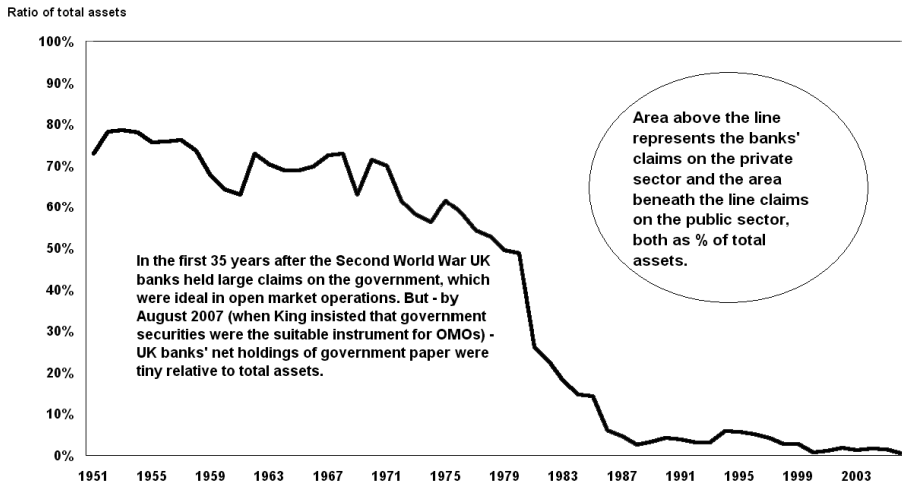
⁹ See, for example, the evidence of Mervyn King and Professor Willem Buiter to the Treasury Committee of the House of Commons, as summarized on p. 18 of volume one of the Treasury Committee's *The run on the Rock: 5th report of the session 2007/8* (London: The Stationery Office, 2008).

¹⁰ The apparently extreme vulnerability of the British banking system to a system-wide retail run was discussed by the author in Tim Congdon 'Short of cash', p. 41, in the July/August 2008 issue of *Financial World* (London: IFS School of Finance in association with the Centre for the Study of Financial Innovation).

¹¹ Again see Northern Rock's *Interim Results*, published on 25th July 2007, p. 19.

of the late 20th century. Secondly, banks' executives might have noted that they had inter-bank 'lines' (i.e., borrowing facilities), which could be used if – for any reason – they could not find buyers for their supposedly 'ready-for-sale' securities.

Chart 1: The Changing Composition of the UK Banking System's Assets



The trouble here was that, while any individual bank could regard an inter-bank line from other banks as enabling it quickly to add to its cash, for all banks together the inter-bank lines cancelled out. If the banks either ceased to trust each other or found that they needed cash for their own businesses, the likelihood was that banks would cut their lines to each other. Inter-bank finance would prove illusory as a source of liquidity. Further, if the market in allegedly 'ready-for-sale' securities became constipated by excess supply (of, for example, the ABSs and CMOs which had been issued in vast quantities in 2005 and 2006), the only ultimate source of cash was the central bank, which in the UK context of course meant the Bank of England. As is well-known, the international wholesale banking markets became paralysed in August 2007 as

a by-product of a crisis in sub-prime mortgage lending in the USA. When a number of British banks approached the Bank of England for an easing of its collateral requirements for central bank credit, they received a dusty answer. For many years they had cut back drastically on their cash holdings, taking for granted that the Bank of England would always help them out as long as they had adequate capital and good-quality assets. This assumption was shattered by the insistence of Mervyn King, the Bank's Governor, that only government securities constituted the right kind of collateral for central bank loans. In mid-2007 the British banking system had extremely low cash relative to deposit liabilities by past standards, while the availability of new cash from its ultimate source (i.e., the Bank of England) was thrown into doubt.¹² For reasons not discussed here, British banks' net claims on government were also tiny by the early 21st century. (See Chart 1 above.)

¹² A growing problem from mid-2007 was that many of the securities believed to be 'ready-for-sale' had been conceived in the structured finance boom of the previous few years. Despite having triple-A credit ratings, they became illiquid and for several quarters could be sold only at prices well beneath their par value. In the past – including the quite recent past – British banks' transactions with the Bank of England had been conducted largely in 'eligible' commercial bills, with eligibility for sale to the Bank being established by the acceptance of the default risk by two good banking names. The arrangements were brought to an end in 2003, largely at the instigation of Mr. Paul Tucker, one of the Bank's executive directors. One of the virtues of the eligibility system was that it dispensed with the need for outside credit ratings, since the credit assessment has to be done by the banks 'accepting' the default risk.

5. Long-run trends in bank solvency

For many decades writers on monetary theory – and particularly writers on the theory of monetary policy-making – paid considerable attention to the ratios of cash and liquidity to banks' overall balance sheet size. By contrast, the ratio of capital to assets was neglected until the 1980s. One reason is that central banks did not always publicise their views on the desirable level of banks' cash/assets ratio. In the first edition of *The British Financial System*, published in 1973, Revell noted that building societies were subject to regulations on their capital reserves set by the Registrar of Friendly Societies, but for the banks matters were somewhat different. To quote,

The Bank of England keeps a close watch on the reserve ratios of the bodies under its direct surveillance in the banking system – deposit banks, accepting houses, other secondary banks and discount houses. In all cases it works to certain minimum ratios, although nobody outside the Bank knows what these ratios are.¹³

Of course banks' management were cognisant of their capital ratios from internal records and they had to keep shareholders informed in their audited accounts. So – despite the apparent regulatory neglect of the capital side of banks' balance sheets until the last 25 years – researchers have been able to compile data on the long-run behaviour of capital ratios. As with the cash and liquidity ratios, the trend is clear. Whereas in the embryonic phase of banking capital/asset ratios put heavy emphasis on safety and were often over 30 per cent, in the 20th century and the opening years of the 21st century the ratios fell substantially and with only occasional interruptions to the long-run pattern.¹⁴

This is not the place for a systematic treatment, but some generalisations can be offered. (See Table 1 for some relevant data.)¹⁵ In the late 19th century a capital/assets ratio of over 15 per cent was normal even in the UK, the

¹³ Jack Revell *The British Financial System* (London and Basingstoke: Macmillan Press, 1973), p. 105.

¹⁴ The subject is of course vast, but – for example – see p. 124 of Howard Bodenhorn *A History of Banking in Antebellum America* (Cambridge: Cambridge University Press, 2000.) At end-June 1840 the Bank of Charleston had an equity-to-assets ratio of 60.6 per cent and a contingency fund of over 5 per cent of assets as well! It nevertheless earned a return on equity of about 10 per cent.

¹⁵ The data used in the table come from p. 149 of M. K. Lewis and K. T. Davis *Domestic and International Banking* (Oxford: Phillip Allan, 1987).

most advanced financial power of the time. By contrast, in the first half of the 20th century the leading British banks regarded an appropriate capital/asset ratio as between 7 per cent to 10 per cent. In the second half of the 20th century the figure had fallen to 5 to 6 per cent. By the end of the century banks in the USA and Europe – which had historically operated on higher capital/asset ratios than their British counterparts – increasingly had the same attitude towards capital adequacy, but bank managements and regulators in these areas were dismayed by the very low capital/asset ratios in Japanese banking. Indeed, the view that Japanese banks' skimpiness on capital allowed them to undercut their rivals in the offshore banking markets provoked the Anglo-American 'convergence accord' on bank capital in January 1987. The accord developed into the Basle capital rules which were enforced in all the participating countries, including Japan, to establish a 'level playing field'. As is well-known, the central principle of the first set of Basle guidelines was that capital should be not less than 8 per cent of assets, with equity capital equal to at least half of total capital. The similarity of this principle to British banks' own preferred capital/assets ratio of about 5 per cent is striking. Given the pattern of the preceding international negotiations in which UK officials had been so active, the setting of a 4 per cent minimum may not have been entirely accidental.

Table 1: Equity capital to total assets of UK and US banks, 1880–1985

	UK Banks*	US Banks ⁺
1880	16.8	n.a.
1900	12	n.a.
1914	8.7	18.3
1930	7.2	14.2
1940	5.2	9.1
1950	2.7	6.7
1966	5.3	7.8
1980	5.9	6.8
1985	4.6	6.9

* UK deposit banks 1880–1966, UK clearing bank groups 1980 and 1985

⁺ All member banks of the Federal Reserve system

The low value of the UK ratio in 1950 reflected the high ratio of low-risk government paper in banks' assets after the Second World War.

Source: Jack Revell, *The British Financial System* (London and Basingstoke: Macmillan Press, 1973), p. 105.

Northern Rock became subject to the Basle rules at its de-mutualisation. Indeed, references to compliance with the latest developments in the Basle regulatory framework were included in its last published accounts as a quoted PLC.¹⁶ Perhaps it is premature to pass judgement on international banks' manipulation of asset and liability structures over the last decade or so, as they attempted to bypass the Basle constraints. Nevertheless, even a cursory examination of banks' annual reports shows that in the last few years actual ratios of equity capital to assets have often been under 3 per cent for a very large number of institutions. They nevertheless met the Basle rules because those rules allow a zero weight (in terms of capital usage) for inter-bank exposures and claims on government, as well as other technical exemptions. Not the least of the adjustment problems created by the paralysis in the wholesale banking markets from August 2007 was that, whatever the Basle rules said, responsible banks decided in their own interests to allocate capital against the risk that other banks might fail. Contrary to the intention of international bank regulation since the late 1980s, banks ceased to trust each other in the crisis of 2007. Equilibrium capital/asset ratios rose sharply across the whole international system. The risks of defaults on claims on other banks were given new urgency by the collapse of Northern Rock, even though – in strict legal terms – by the end of the year it continued to have positive capital and had met all its obligations.

To conclude this section, in the early phase of modern industrialism banks typically had capital/asset ratios of over 30 per cent, but in the middle years of the present decade the effective ratio was little more than 3 per cent. A significant rise in the ratio, probably to about 5 per cent, and a fall in the ratio of inter-bank claims to total assets are likely to be two medium-term responses to the current crisis.

¹⁶ See Northern Rock's *Interim Results*, published on 25th July 2007, p. 13.

6 . What do the trends in liquidity and solvency imply for loan margins?

It is now time to bring together the strands of the argument by setting out a matrix which shows how, with a particular return on equity targeted, the average return on bank assets varies with different ratios of cash and capital to assets. The matrix – set out in Table 2 below – uses the formula developed earlier for the determination of banks' average return on assets. A reminder may usefully be inserted that the implicit assumptions in preparing the matrix are the same as they have been throughout this paper. They are that banks have no loan losses, and that banks' fee revenues cover the costs of organizing the loans and running any deposit collection and money transmission infrastructure.¹⁷

¹⁷ Also neglected – as mentioned in the text – are the complications arising from banks' issue of bonds and preference capital. Liabilities are deemed, for simplicity, to consist solely of equity capital and deposits. The text assumptions may seem unrealistic, but in the case of Northern Rock they are far from silly. In the five years leading up to the crisis of mid-2007 its loan losses were negligible, while its wholesale funding model minimised the costs of collecting deposits and arrangements fees covered the costs of organizing loans. Could Northern Rock have been 'reckless' in its asset selection, if its loan losses had been negligible over such a sustained period? In the years to 31st December of 2003, 2004, 2005 and 2006, pre-tax profits were £ 390m., £ 435m., £ 494m. and £ 627m. respectively, compared with shareholder funds at 31st December of 2002, 2003, 2004 and 2005 of £ 1,210m., £ 1,388m., £ 1,538m. and £ 1,576m. respectively. The implied rates of return on shareholder funds (on a preceding year basis) were therefore 32.2 per cent, 31.3 per cent, 32.1 per cent and 39.8 per cent. (Data taken from August 2007 issue of *Company Refs: Fully Listed Companies* [London: HS Financial Publishing].) No doubt Northern Rock's management and auditors made mistakes, as do those of any commercial organization. But – given the record of consistent profitability and the relative simplicity of Northern Rock's business – the claim that its operations were systematically 'reckless' seems implausible, to say the least. On 12th May 2008, under new management, Northern Rock issued a trading statement which included a change in its policy towards arrears accounting. To quote from the next sentence, 'the change... does not reflect any change in the underlying quality of Northern Rock's mortgage portfolio, as demonstrated by the low level of realised losses which the company has experienced on its mortgage portfolio over many years'.

Table 2: How banks' loan margins vary with their cash and solvency ratios

P/K <i>Rate of return on capital</i>	c <i>Cash ratio</i>	K/A <i>Capital/assets ratio</i>	r_b <i>"Loan margin"</i>
14	80	45	31.5
14	40	20	4.7
14	12	15	2.4
14	5	8	2.2
14	1	5	0.8
14	1	3	0.5

Table 2 shows, with a given target rate of return on capital, how a reduction in banks' average return on assets (i.e., their 'loan margin', more or less) becomes possible as their cash/asset and capital/asset ratios decline.

A target rate of return on capital of 14 per cent has been chosen, as this sort of number would be regarded as modest by contemporary UK banks in their internal strategy documents and serves as a reasonable benchmark for discussion.¹⁸ In the very early days of banking – when banking was indeed little different from risky and avaricious money-lending, and the cash ratio was perhaps 80 per cent and the capital/assets ratio 45 per cent – the loan margin had to exceed 30 per cent. In the opening decades of the industrial revolution, in such countries as England, Scotland and the USA, a cash ratio of 40 per cent and a capital/asset ratio of 20 per cent would have been commonplace in the banking industry. A loan margin of almost 5 per cent (i.e., 500 basis points) would achieve a return on capital of 14 per cent. In the early decades of the post-war world, with a cash ratio of 5 per cent and a capital/assets ratio of 8 per cent, a loan margin of about 200 basis points would have been consistent with that return on capital. But in the low-ratio banking of the last 15 years or so, loan margins of 100 basis points or less were compatible – assuming all went well with asset selection and cost control – with high bank profitability. Admittedly, the teaser rates offered by Northern Rock may have taken the logic of these developments to an unsustainable extreme. But that does not necessarily mean that the Northern Rock management was irresponsible and foolish. Northern Rock's activities

¹⁸ As demonstrated by the previous footnote, Northern Rock exceeded the 14 per cent figure by a wide margin, until its funding – and so the business itself – collapsed in late 2007. The chief economic commentator of the *Financial Times*, Martin Wolf, protested about the high profitability of banking in a column on 28th November 2007, attributing it to 'sundry explicit and implicit guarantees' from the state. Later in his column he endorsed 'higher capital requirements'. The argument of this paper is that the likely result of imposing higher capital requirements is that banks will widen their margins. A widening of banks' loan margins has indeed occurred in early 2008. See Chart 2 and footnote 20 below.

certainly intensified competition within the UK housing finance industry and, to that extent, benefited the British public.

Chart 2: The rise and Fall of “The Teaser Rate”

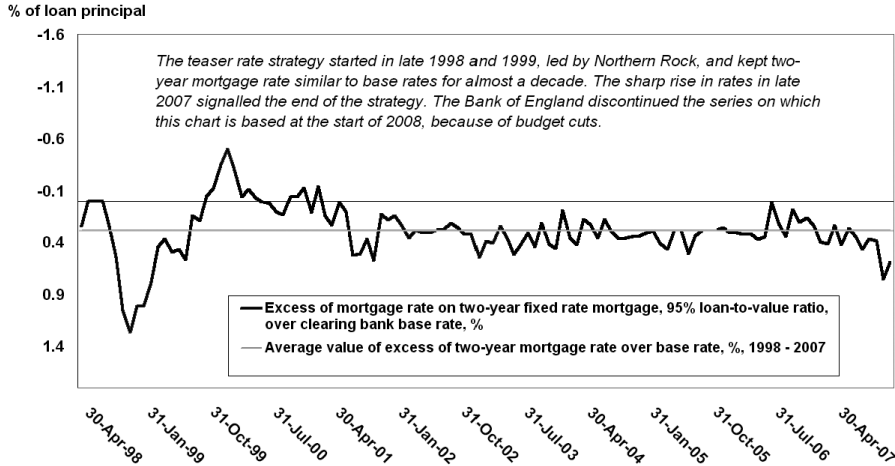


Chart refers to monthly data. Note that the scale has been inverted, so that the lowest values of the mortgage margin (in 1999) appear to be the highest

The regulatory sequel to the Northern Rock crisis has included a drive towards the raising of capital/asset ratios in UK banking as part of a wider campaign to improve the safety of deposits. Since the *contretemps* of August 2007 the Bank of England has continued to equivocate about the type of assets it would readily purchase from the banks, even if it has to some degree relented on King’s initial insistence that only government paper constituted valid collateral.¹⁹ Meanwhile banks have cut back on inter-bank exposures and tried to improve the quality of the securities in their portfolios. So the long-run pattern for banks to economise on cash and low-yielding liquid assets, and to increase their leverage, have been reversed. This reversal may

¹⁹ A Special Liquidity Scheme was introduced in April 2008, to enable banks to swap mortgage debt into gilt-edged securities (on a repo basis for as long as a year, if desired), so that the gilts could be used as collateral in the inter-bank market. King’s insistence on government paper as collateral for a loan from the Bank of England, or as the assets purchased by the Bank in open market operations, is remarkable by historical standards. For most of the 19th century the Bank’s assets were dominated by commercial bills, not government securities. As recently as the 1980s the Bank’s holdings of commercial bills were several times larger than its holding of claims on the government. Indeed, in 1984 and 1985 a veritable ‘bill mountain’ resulted from the Bank’s operations in the gilt-edged and money markets, and – according to the Prime Minister of the day – the Bank’s excessively large holdings of commercial bills (i.e., claims on the private sector) constituted a policy problem. (Margaret Thatcher *The Downing Street Years* [London: HarperCollins, 1993], pp. 695–6.)

be merely cyclical, but sooner or later the secular trend towards low-ratio banking had to end. The Northern Rock crisis demonstrated yet again that, in banking, ‘convulsion’ can follow all too quickly after ‘overtrading’.²⁰ At any rate, for Northern Rock’s customers, and the many other British households servicing mortgages or considering house purchase, the effect of the reversal in the long-run trend towards low-ratio banking has been a rise in the cost of mortgage finance.²¹ (See Chart 2 above).

²⁰ This is of course a reference to Overstone’s account of the 19th century trade cycle which, in his view, consisted of successive states of ‘quiescence, improvement, growing confidence, prosperity, excitement, overtrading, convulsion, pressure, stagnation and distress’, before starting up again with ‘quiescence’. For a discussion, see Joseph A. Schumpeter *History of Economic Analysis* (London: George Allen & Unwin, 12th printing of 1954 edition, 1981), p. 744.

²¹ ‘The death knell was sounded for the cheap fixed mortgage last night as Britain’s biggest lender raised rates by up to 0.5 per cent. Halifax – which provides one in five new mortgages – pushed up the cost of more than half of its fixed-rate deals.’ The quotation is from a story headlined ‘End of the cheap fixed mortgage’, which was the front-page main lead in *The Daily Mail* of 21st June 2008.

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