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Shattered on the Rock? British financial stability from 1866 to 2007

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ABSTRACT This paper provides an answer to the basic question of why in the United Kingdom the traditional techniques for the maintenance of banking stability appeared to fail in the Northern Rock episode. It also considers how the techniques may need to be changed or supplemented to prevent such problems in the future. We propose the following actions to make the banking system robust. First, there should be arrangements for prompt and orderly closure of a bank as it approaches problems, before it would otherwise be forced to close by either insolvency or illiquidity. Second, there should be reform of deposit insurance, such that whatever sum is guaranteed is completely guaranteed, and can be accessed without any significant delay. Third, arrangements need to be made such that customers retain access to all core banking services either through speedy transfer of all accounts or the continued operation in some guise of the troubled bank.
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INTRODUCTION

In the autumn of 2007, Britain experienced its first bank run of any significance since the reign of Queen Victoria.[1] The run was on a bank called Northern Rock. This was an extraordinary event, and the lapse of time since its immediate predecessor is the least extraordinary aspect of it, for Britain had been free of such episodes not by accident, but because by early in the third quarter of the nineteenth century the Bank of England had developed techniques to prevent them. These techniques had been used, in Britain and elsewhere, had worked, and appeared to be trusted. A second extraordinary aspect of the affair was that it was the decision to provide support for the troubled institution that triggered the run. That run was halted only when the Chancellor of the Exchequer (Alistair Darling[2]) announced that he would commit taxpayers' funds to

guarantee every deposit at Northern Rock. And third, unlike most runs in banking history, it was a run only on that institution; funds withdrawn from it went only to a trivial extent to cash, and were largely redeposited in other banks or in building societies.

The main aim of this paper is to address the basic question of why the traditional techniques for the maintenance of banking stability failed – if they did fail – on this occasion. We then consider how these techniques may need to be changed or supplemented to prevent such problems in the future.

The paper starts with a narrative of the events leading up to and immediately following the bank run. We then turn, insofar as these can be separated from that narrative, to banking policy before the event and to the policy responses after it.[3] In the course of discussing these, we suggest both why the decision to provide support triggered the run, and, more tentatively, why the run was confined to one institution.

This prepares the way for our consideration of why the traditional response appeared to fail, and of what should be done to help prevent the recurrence of such episodes.

WHAT HAPPENED? DESCRIPTION AND CHRONOLOGY

Background

Northern Rock was founded as a 'building society'. These societies were mutuals, owned by their depositors and their borrowers. Their deposits came primarily from retail customers, and their major (essentially sole) lending activity was to individuals to buy their residences. In the 1990s, these organisations were allowed to demutualise, and 'convert' (in the term of the time) to banks. Incentives to convert were strong. Management gained much greater freedom on both sides of the balance sheet, and the owners acquired shares in their institutions. These shares paid dividends and could be traded on the stock exchange, both features being attractive to most society members. Most of the large societies converted. Northern Rock was among them. It demutualised on 1 October 1997.

The development of Northern Rock to end 2006

All the demutualised societies grew, and many were taken over by or merged with previously existing banks. Northern Rock remained independent. Aside from this, two features of its post-demutualisation behaviour were distinctive. First, it grew very rapidly. At the end of 1997, its assets (on a consolidated basis) stood at £15.8 billion. By the end of 2006, its assets had reached £101.0 billion. According to Adam Applegarth, its then chief executive, Northern Rock had been growing its assets 'by 20 per cent plus or minus 5 per cent for the last 17 years'. Despite this rapid growth, it never departed from its traditional focus on residential mortgage assets, which by end 2006 were £86.8 billion, that is, about 86 per cent of total assets. Even so, at the end of the second quarter of 2007, these mortgage loans were only 8 per cent (by value) of the stock of mortgage debt in the United Kingdom, and therefore only about 5 per cent of total bank lending, and Northern Rock deposits were only about 2 per cent of sterling bank deposits. It was most certainly not an enormous institution.

The second feature relates to its activity. Although on the asset side of the balance sheet it remained close to the traditional building society model, in that it stayed concentrated on lending on mortgage to individuals wishing to buy their own home, there were dramatic changes in the structure of its liabilities. It adopted an extreme 'originate to distribute' model of funding, using securitisation, the issue of covered bonds, and direct borrowing in the wholesale markets, to finance its lending.

The resulting dependence on wholesale markets for the large majority of its funding was what most distinguished Northern Rock from other UK banks. Retail deposits (and

other classes of retail funds) did grow, but not nearly as rapidly as did wholesale funds. Retail funds thus fell as a proportion of the total liabilities and equity of Northern Rock, from 62.7 per cent at end 1997 to 22.4 per cent at end 2006. The Bank's chairman (Dr Matt Ridley) remarked that '… we had a smaller retail deposit book than many other institutions, although there are many like us overseas'. It is worth observing that, so far as the Eurozone goes, there is, according to the European Central Bank (ECB), no bank with such an extreme degree of reliance on wholesale funding. The same applies for all retail banks in the United Kingdom, and *a fortiori* for building societies, the regulation of which forbids such reliance on wholesale funding.

The unusual nature of the Northern Rock balance sheet is illustrated in Table 1, which reports total assets, lending and deposits of the 10 largest UK banks and building societies, as of end 2006.

This table illustrates three main points. First, Northern Rock is much smaller than the largest UK banks; for example its total assets were less than one-third of Lloyds-TSB, the fifth largest UK bank. Second, loans comprised a relatively large proportion of its balance sheet, that is, it maintained a traditional building society business on the asset side, similar to that of the only unconverted building society in this table, the Nationwide. Third, as already discussed, it relied far less than did other leading UK banks on deposit finance, with a ratio of deposits to total lending of only 31 per cent. Northern Rock was thus pursuing a very unusual business model, with a building society's traditional concentration on illiquid long-term mortgage assets while at the same time relying on very non-traditional sources of securitised and wholesale funding.

Table 2 provides a breakdown of Northern Rock's funding at end 2006.

This table highlights the importance of the various non-retail sources of funding. The issue of asset-backed securities, almost all through its 'Granite' securitisation vehicles, provided 40 per cent of Northern Rock's end-2006 funding. Wholesale borrowing provided a further 24 per cent, and covered bonds 6 per cent. The expansion of the Northern Rock balance sheet, that is, the increase in liabilities over the previous year, relied to an even greater extent on non-retail funding. Retail deposits provided only around 12 per cent of this expansion, whereas capital and reserves were actually *reduced* in the course of 2006. More than two-thirds of the 2006 expansion of the Northern Rock balance sheet was funded from the issue of mortgage-backed securities and of covered bonds.

The challenge of rolling over Northern Rock securitisation

Northern Rock's securitisation programme, its most important source of non-retail funding,

Table 1: Assets and liabilities of the largest UK banks and building societies

£ billion end 2006	*Assets (£ billion)*	*Loans (£ billion)*	*Deposits (£ billion)*	*Loans/assets (%)*	*Deposits/loans (%)*
RBOS	848	469	385	55	82
Barclays	997	282	254	28	90
HSBC (UK)	441	200	227	45	113
HBOS	455	217	107	48	49
Lloyds-TSB	346	190	141	55	74
Abbey	192	103	67	54	64
Nationwide	137	116	90	84	77
Northern Rock	101	87	27	86	31
Alliance and Leicester	69	48	30	70	61
Bradford and Bingley	45	36	22	80	61

Source: Bureau van Dijk Bankscope database and authors' calculations.

Table 2: Composition of Northern Rock's end-2006 liabilities

£ billion	*Total liabilities*	*Capital and reserves*	*Retail*	*Wholesale*	*Securitisation*	*Covered bonds*
Level end 2006	101.0	7.7	22.6	24.2	40.2	6.2
Increase on 2005	18.3	−0.5	2.5	2.9	10.6	2.7

Source: Northern Rock Annual Report and Accounts 2006 and authors' calculations.

Table 3: The growth of Northern Rock securitisation

	2006	*2005*	*2004*	*2003*	*2002*	*2001*	*2000*	*1999*
Non-recourse (securitised) finance (£ billion)	40.2	31.2	22.1	14.8	9.3	4.7	2.3	0.6
Percentage of customer loans	46	44	40	34	27	18	11	3
Year-on-year increase (£ billion)	9.1	9.1	7.3	5.6	4.5	2.4	1.7	0.6

Source: Northern Rock Annual Reports and Accounts, 2000–2006

supported rapid balance sheet growth for several years. A close examination of this programme reveals, however, potential problems that could have been anticipated even before 2007. Northern Rock management should have been aware that because securitisation needed to be rolled over on a regular basis, any difficulty in accessing securitisation markets would have led to serious liquidity problems.

Table 3 shows the year-by-year growth in securitisation by Northern Rock from its first use in 1999.

The share of funding from the issue of mortgage-backed securities increased rapidly until 2004. Although this share grew more slowly in 2005 and 2006, the volume of issuance reached its peak, with Northern Rock issuing more than £9 billion of net new mortgage-backed securities, in each of these 2 years.

Much of this securitised funding, as well as Northern Rock's other wholesale funding, was short term. According to Adam Applegarth in his evidence to the Treasury and Civil Service Select Committee, about half of their wholesale borrowing was at a maturity of less than 1 year. Even more importantly to their subsequent problems, the size of the Northern Rock securitisation programme meant that a large amount of mortgage-backed securities needed to be refinanced every year, requiring the issue of more mortgage-backed securities.

The magnitude of this refinancing is illustrated in Table 4. This table shows that net outstanding Granite residential mortgage-backed securities (RMBS) at end 2007 were nearly £24 billion less than the total amount initially issued (£47.9 compared with £71.7 billion), that is, some £24 billion of those originally issued were repaid to investors, much of which required financing by further issue of RMBS.

This need to refinance reflects the practical difficulties of managing a large RMBS programme, especially the problem of 'prepayment' risk. An unknown proportion of mortgage-backed securities will always be repaid earlier than scheduled (because borrowers pay back their Northern Rock mortgages either from the sale of a house or from a re-mortgaging). Although it is possible to replace these mortgages with other mortgages of similar quality, thus maintaining the volume of issued securities, it is also usual, as Northern Rock did, to protect investors from the risk of such prepayments by issuing RMBS notes of varying maturities, some being due at relatively short term. This protects investors in the mortgage-backed securities

Table 4: Northern Rock residential mortgage-backed securitisations – amounts in issue

Issue	*End of year of issue*	*End-2007*
Granite Mortgages 99-1 plc 1 October 1999	600	0
Granite Mortgages 00-1 plc 1 March 2000	750	0
Granite Mortgages 00-2 plc 25 September 2000	1300	0
Granite Mortgages 01-1 plc 26 March 2001	1500	424
Granite Mortgages 01-2 plc 28 September 2001	1500	0
Granite Mortgages 02-1 plc 20 March 2002	2420	0
Granite Mortgages 02-2 plc 23 September 2002	2748	1069
Granite Mortgages 03-1 plc 27 January 2003	2597	1645
Granite Mortgages 03-2 plc 21 May 2003	2305	963
Granite Mortgages 03-3 plc 24 September 2003	2246	877
Granite Mortgages 04-1 plc 28 January 2004	2827	1486
Granite Mortgages 04-2 plc 26 May 2004	3213	1695
Granite Mortgages 04-3 plc 22 September 2004	3787	1962
Granite Master Issuer plc – Series 05-1 26 January 2005	4000	2795
Granite Master Issuer plc – Series 05-2 25 May 2005	3762	2414
Granite Master Issuer plc – Series 05-3 31 August 2005	582	504
Granite Master Issuer plc – Series 05-4 21 September 2005	3891	2383
Granite Master Issuer plc – Series 06-1 25 January 2006	5048	4424
Granite Master Issuer plc – Series 06-2 24 May 2006	2786	2460
Granite Master Issuer plc – Series 06-3 19 September 2006	5400	4762
Granite Master Issuer plc – Series 06-4 29 November 2006	3206	2787
Granite Master Issuer plc – Series 07-1 24 January 2007	5607	5607
Granite Master Issuer plc – Series 07-2 23 May 2007	4571	4571
Granite Master Issuer plc – Series 07-3 17 September 2007	5074	5074
Total	71 720	47 901

Source: Northern Rock Annual Report and Accounts, 2002–2007. For 2002 and earlier value at time of issue is the value of mortgages transferred to the securitisation vehicle which, because of the usual practice of overcollateralisation, exceeds the par value of the issued notes by around 2 per cent. For 2003 onwards the issued value is the par value of issued notes. Granite was the vehicle used for all Northern Rock residential mortgage-backed securitisations. There were also a small number of commercial mortgage-backed securitisations not included in this table.

from prepayment risk, but creates a refinancing risk for Northern Rock because mortgage-backed securities are being paid back more rapidly than the decline in the underlying pool of mortgages.

Table 4 suggests that the scale of RMBS refinancing required of Northern Rock was rather large. By end 2007, the remaining outstanding amount of the 2006 Granite issues had fallen by about 10 per cent from their initial end-2006 levels, while those of the 2005 issues had fallen by about 30 per cent and the 2004 issues by about 50 per cent from their initial levels. There will have been some matching prepayment of the underlying mortgage pool (regrettably the Northern Rock annual reports and accounts do not provide figures), but this will certainly not have been so large, and as a result Northern Rock did face very large refinancing risk from its securitisation programme.[4]

This need to refinance maturing RMBS meant that in each year the total gross amount of Granite issuance (the first column of figures in Table 4) had to increase even more rapidly than the net issuance (shown in Table 3). The Granite securitisation programme in effect had to run fast in order just to stand still. This was not a problem while Northern Rock maintained the confidence of the markets and while investor appetite for residential MBS remained strong, but it meant that in 2007 Northern Rock needed to make considerably larger gross RMBS issues than in any previous year, and was increasingly vulnerable to a loss of liquidity in this market.

More than any other factor, it was the need to replace the funding obtained from short-term wholesale and securitisation markets, markets which were effectively closed from the summer of 2007, that forced Northern Rock to turn to the Bank of England for liquidity support in September 2007.[5] Indeed, the timing of this support can be understood from Table 4. It was the practice of Northern Rock, in order to reduce the costs of issuance, to make a few large issues each year. Table 4 reveals that a further £5 billion of Granite securitisation was due to be issued on 17 September 2007. Northern Rock was unable to sell any of this RMBS issue to investors, and had to hold these securities on its own balance sheet. The resulting funding gap could not be filled by wholesale borrowing, so Northern Rock was forced to request emergency liquidity support from the Bank of England by this date, in order to avoid default on its short-term wholesale borrowing.

Was Northern Rock an efficient low-risk lender?

Was Northern Rock, as it claimed and as appears to have been accepted by the authorities, a low-cost and efficient lender with relatively low risk exposure? We do not have the information to reach a definite conclusion on this question. What we can say is that its business model was so unusual as to make it very difficult for any outsider to determine whether it was indeed efficient and low risk. This was a further reason why it was much more exposed than other UK banks to a loss of confidence in the banking sector.

Northern Rock did appear to enjoy healthy interest margins. But whether this was really the case is debatable, for three reasons. First, Northern Rock increased its interest margins by borrowing a relatively large proportion of wholesale funds at lower short-term rates (it is not possible to quantify this benefit to net interest margins from the published accounts because they do not state to what extent Northern Rock was hedging out the associated interest rate risk). Second, as we discuss below, Northern Rock did not take out liquidity insurance by paying for a committed line of credit that would substitute for its wholesale and short-term securitised funding should this disappear. Third, since such a large proportion of its loan assets were securitised, retail depositors and, implicitly, the financial authorities were carrying much of the remaining balance sheet risk. Had this retail funding been replaced by subordinated debt, a substantial premium above default-free rates of interest would surely have been paid. Adjusting the cost of funding for these three sources of risk would reduce interest margins to well below the levels reported in Northern Rock accounts.

There are also some reasons to doubt the quality of Northern Rock's mortgage book. Northern Rock always claimed that its mortgage book was of high quality. It did not offer mortgages to sub-prime or self-certified borrowers, and the level of arrears on its mortgage book remained below the average of the UK mortgage lending industry. There are, however, four features of Northern Rock's business model that do raise the possibility that its mortgage book might perform relatively poorly in the event of a major downturn in housing and mortgage markets. First, there is heavy reliance on third parties such as mortgage brokers for the origination of its mortgages, an arrangement that contributed to the high level of recent losses on US sub-prime lending. Second, there is the fact that its lending book grew so rapidly compared to other lenders, implying that a comparatively high proportion of borrowing, around one third of total lending, was originated in the previous 2 years, and therefore would require a relatively small decline of house prices to expose Northern Rock to potential loss. Third, there is the fact that around one quarter of its exposure was to first-time buyers, or others with limited equity in their properties and hence with comparatively high loan-to-value ratio. Fourth, there was the

relatively high proportion of its lending, around 50 per cent, in the more volatile property markets of the South of England. In the event of a substantial decline in UK house prices, it is likely that 10 per cent or more of Northern Rock borrowers would be in 'negative equity', that is, they would owe more than the market value of their property, and losses might then mount.

These doubts about the quality of Northern Rock income and mortgage assets contributed to its difficulties, making it more difficult for Northern Rock, compared to other banks, to raise wholesale funding after the 2007 re-pricing of credit risk in global markets, and making it a less attractive acquisition for potential purchasers.

Developments in 2007

During the first half of 2007, Northern Rock pursued its business model if anything even more aggressively than in previous years. Its net lending to customers rose by £10.7 billion, that is, by more than 12 per cent. This continued growth in its business was pursued, despite hints of the trouble to come. The Bank of England's Financial Stability Report for April 2007 had, to quote the Deputy Governor of the Bank of England Sir John Gieve, 'identified the increasing wholesale funding of banks as a potential risk if markets became less liquid'. According to Matt Ridley, that warning, and the expression of similar views in the Risk Outlook of the Financial Services Authority, influenced the decisions of Northern Rock's board. Applegarth claimed that Northern Rock had noted the warning signs in the US sub-prime market, and slowed the growth rate of its lending, although the available figures suggest that Northern Rock in fact did entirely the opposite. There were, however, some modest changes in its business model: it made some efforts to broaden its sources of funding, by expanding its range of retail products (and by starting to secure retail funding in Denmark), and it also sought to cut back on the asset side of its balance sheet, seeking to sell its commercial lending, unsecured lending and commercial buy-to-let operations. By 30 June, its liquidity had 'increased by £2.3 billion' (Applegarth).

By the time these warning signs had been heeded, it was too late. On 9 August 2007, there was a sharp 'dislocation in the market' for Northern Rock's funding, with the start of a major re-pricing of credit risk in global financial markets. The board of Northern Rock had not totally ignored the possibility of this re-pricing, but had persuaded themselves that such a re-pricing would not have a major impact on their own business model:

> … we expected that as markets became tighter and as pricing for risk changed that low-risk prime mortgages (and we were below half the industry average of arrears on our mortgage book) such a low-risk book would remain easier to fund than sub-prime mortgages elsewhere …' But this did not happen. Their belief that '… high quality assets and transparency were the way to maintain liquidity …' was falsified. Further, they had not foreseen all their funding markets closing simultaneously. They had repeated the all-too-common mistake that Sherlock Holmes pointed out to Dr Watson – they had confused the improbable with the impossible.

In addition, and for much the same reasons, it had little liquidity insurance. Mervyn King, the Governor of the Bank of England, made a comparison with Countrywide. This US Mortgage lender had 'paid millions of dollars each year to big banks as a liquidity insurance policy', so that 'on 17 August, Countrywide was able to claim on that insurance and draw down $11.5 billion of committed credit lines'.[6] Applegarth admitted that Northern Rock carried much less insurance as a proportion of liabilities than did Countrywide, but claimed that '… our funding platform is broader than Countrywide's … . They (standby facilities)

were smaller because we have a more diversified funding platform.'[7]

Thus, by early autumn 2007, Northern Rock was facing difficulties.[8] These difficulties triggered the major changes to its assets and liabilities, and were revealed in its end-2007 balance sheet. By this time, it had managed net issuance of only £5580 million of collateralised paper (mortgage-backed securities and covered bonds) against an increase in loans and advances to customers of £12 041 million, a consequence of its inability to sell the September 2007 issue of its mortgage-backed securities to investors.[9]

The 2007 balance sheet also reveals the further losses of funding once Northern Rock's had lost the confidence of wholesale investors and retail customers, with withdrawal of £15.3 billion of retail deposits, £8.2 billion of unsecured wholesale borrowing ('uncollateralised' debt securities issued) and £3.1 billion of wholesale deposits. Overall, Northern Rock lost nearly 30 per cent of its balance sheet funding in the final 4 months of 2007. The timing of these different funding withdrawals is of importance. As we describe below, retail customers did not seek to withdraw their deposits from Northern Rock until after it became public knowledge, on 13 September 2007, that the Bank of England was putting in place emergency liquidity support for Northern Rock. But the need for this support was triggered because Northern Rock was no longer able to fund itself in wholesale markets. What were the events that led to this major loss of wholesale funding? Was there not any alternative policy response that might have avoided the replacement of this wholesale funding by an emergency loan from the central bank?

THE BANK OF ENGLAND'S MONEY MARKET OPERATIONS

Before we address these questions, we first provide a brief description of the Bank of England's money market operations and (in the following sub-section) the arrangements for bank regulation and supervision in the United Kingdom. This is necessary, as money market and regulatory arrangements determined, and to an extent constrained, the Bank's initial response to the difficulties facing Northern Rock. This description is all the more necessary because these arrangements were fairly new, and this was their first test in a period of market stress.

The Bank of England's money market operations are primarily used to implement the decisions made by the Monetary Policy Committee (MPC) regarding interest rates. The Bank has recently changed its money market techniques because it, and market participants, were concerned about the high level of volatility in the overnight rate as compared to that in similar markets overseas.

Banks operating under the money market scheme system select their own target for the reserves they will hold with the Bank of England at the start of a 'maintenance period'. These maintenance periods run from one MPC meeting to the next. Should banks require additional funds during this period, they may use, at their request, the 'standing facility', which allows them to borrow all they need against 'eligible collateral and [at] a penalty rate of 1% above Bank Rate'.[10] Another 'standing facility' allows banks to deposit funds with the Bank of England.

The Bank also carries out open market operations throughout the maintenance period to ensure that sufficient funds are available to let the banks reach their chosen reserve targets at the interest rate set by the MPC.

On 28 June 2007, as part of its inquiry into the May 2007 Inflation Report, the Treasury Committee questioned Paul Tucker on how the money market reforms had settled in. He replied as follows:

> There were four objectives. The first and by far the most important was to reduce volatility in short term money market rates, the market in which we implement

> monetary policy. I am very glad that that has been successful. Volatility is much lower in short term money market rates and I hope it stays that way. The second objective was to improve the ability of the Bank through its operating system to inject liquidity into the banking system in normal conditions and in stress conditions. I believe that to be the case in normal conditions. I believe it to be the case in stress conditions but we thankfully have not yet been tested on that, but our apparatus is much better than it was in the past.[11]

THE REGULATORY STRUCTURE

The Bank's money market techniques had not been tested under stress conditions when Northern Rock erupted. Nor had Britain's regulatory framework. At essentially the same time (1997) as the Bank of England had been granted 'operational independence' to conduct monetary policy, it had lost the right and duty to supervise banks, which had been one of its duties since 1979.[12] It retained responsibility for the overall stability of the financial system, but responsibility for supervising individual banks (and other financial institutions) was transferred to the Financial Services Authority (FSA).

There was then established a 'Tripartite Arrangement', comprising the Bank, the FSA and the Treasury, the last inevitably involved because of the possibility of the commitment of public funds in some crisis.

This new structure was also tested in the Northern Rock episode.

REGULATION IN THE RUN-UP TO CRISIS

The FSA has recently published its own assessment of how well it supervised Northern Rock. This assessment contrasts remarkably with the views the FSA had expressed earlier in evidence to the Treasury Committee. These can be found in Appendix D, and reinforce our point that Northern Rock was a surprise to the authorities. This appendix also contains some comments on the FSA's performance that were made at the Treasury Committee, and some observations, also made there, on signals it had missed.

The Chancellor of the Exchequer summed up the criticism of the FSA's monitoring of the potential signals of vulnerability at Northern Rock by stating that

> In hindsight, it would have been much better, would it not, if the FSA when first looking at Northern Rock had said, 'Hold on, what exactly is your fallback position?' and when Northern Rock said, 'We haven't got one' they did something about it.[13]

It would be fair to say that when Northern Rock ran into difficulties, although there was plainly some anxiety about it in the stock market, the difficulties were a surprise to the regulators.

This conclusion is reinforced by the treatment of Northern Rock's capital adequacy requirements, and of its liquidity. When adopting the Basel II requirements for capital adequacy, a bank may choose to adopt certain 'advanced approaches' to their management of credit risk.

The adoption of an advanced approach requires a waiver from the FSA.[14] On 29 June 2007, Northern Rock was told by the FSA that its application for a Basel II waiver had been approved (p. 14).[15]

Owing to this approval, Northern Rock felt able to announce on 25 July 2007 an increase in its interim dividend of 30.3 per cent. This was because the waiver and other asset realisations meant that Northern Rock had an 'anticipated regulatory capital surplus over the next 3 to 4 years'(p. 15).[15] Applegarth explained how Northern Rock had achieved this waiver. The company had come to the end of a two-and-a-half-year process, during which period

Northern Rock had undergone several stress tests.[16] As well as this, in order to obtain a Basel II waiver Northern Rock had to 'show that [it could] dynamically manage scorecards from new lending all the way through to arrears and possessions and put that information back into [Northern Rock's] front end score cards'.[17] Applegarth explained that the waiver had led to a dividend increase because

> when you get your Basel II approval, the relative risk weighting of certain assets in your balance sheet changes. So what we had, because of the quality of the loan book, was you saw our risk weighting for residential mortgages come down from 50% to 15%. That clearly required less capital behind it, so that links to why we were able to increase the dividend.[18]

The Basel II waiver, and the dividend increase this allowed to Northern Rock, permitted Northern Rock to weaken its balance sheet – in effect to pay a dividend out of capital – at the very time when the FSA was concerned about problems of liquidity that could affect the financial sector.

Next we turn to Northern Rock's liquidity. Northern Rock operated under the Sterling Stock liquidity regulatory regime,[19] which was introduced in 1996 (p. 32).[20] The FSA in its discussion paper outlines the purpose of the regime:

> The objective of the regime is to ensure that a sterling stock bank has enough highly liquid assets to meet its outflows for the first week of a liquidity crisis, without recourse to the market for renewed wholesale funding, to allow the authorities time to explore options for an orderly resolution.(p. 32)[20]

Although 'shock' or short-term liquidity stresses were well catered for, the Sterling Stock liquidity regulatory regime coped less well with 'chronic' liquidity stresses of long duration (p. 33).[20] This is exemplified in comments by Ridley:

> There were sharp reductions in liquidity after 9/11 in 2001. That lasted for a matter of days. Our model was extremely robust in those conditions. What was not expected was that all global markets would shut down and remain shut down for as long as they have.[21]

The demutualisation of Northern Rock from a building society to a bank also changed the liquidity regime under which it operated.

The Building Societies Association stated that 'Building societies are explicitly prevented from having as high a proportion of wholesale funding as Northern Rock'.[22] When asked whether Northern Rock would have found itself in such difficulties if it had remained a building society, Adrian Coles, Director-General of the Building Societies Association, replied, 'Had Northern Rock stayed a building society, it may or may not have been a successful institution but it would not have come to the sticky end that it appears to have come to in the way that it has'.[23]

Nor did stress testing of Northern Rock indicate any dangers. A paper by Bridget Rosewell, Chairwoman and Co-founder of Volterra Consulting, Consultant Chief Economist for the Greater London Authority, and Paul Ormerod, Director and Co-founder of Volterra Consulting, submitted to the Treasury Committee, explains what the problem was in this particular case. Companies use statistical models based on the assumption of normal distributions to estimate the likelihood of an event occurring, and thus what risk a business model is running. Such assumptions may however, be invalid:

> the problem lies in the extreme tails of the distributions. This is exactly the same problem which arose in the collapse of Long Term Capital Management. The data may appear to be normally

> distributed, but more careful inspection shows that the tails are fatter i.e. there are more extreme observations in the data than the normal distribution allows. Rare events are not as rare as you might think. The bulk of the data follows a normal distribution. It is the extremes which do not.[24]

The FSA was aware of some deficiencies in the stress testing being undertaken by financial firms, acknowledging in particular that overall understanding of tail risk was weak.

In May 2007, a review of Northern Rock's stress testing was undertaken as part of its Basel II waiver programme.[25] This review led to the conclusion by the FSA in July 2007 that the FSA were 'not comfortable with [Northern Rock's stress test] scenarios'.[26] The Chief Executive Officer of the FSA, Hector Sants, later stated that the FSA had pointed out to Northern Rock in July 2007 that it was 'very unhappy with [Northern Rock's] stress testing scenarios and asked them to do 'further distinct liquidity tests and scenario tests' and give greater consideration to the impact of accelerated cash flows from a trigger event in a liquidity crisis'.[27] In contrast, Applegarth, in an example of the confused communications between Northern Rock and its supervisor, identified the extra stress tests asked for by the FSA as 'primarily to do with credit, such as the example … of the 40% house price fall'.[28]

The former non-executive director of Northern Rock, Sir Derek Wanless, told the Treasury Committee that Northern Rock's 'stress tests at the time were sufficient',[29] and that Northern Rock was

> going through a process at the time of scenario stress-testing which involved looking at 20 scenarios which the Board had signed off. Fifteen of those scenarios involved liquidity risk, including two where securitisation became a particular problem. What did not happen was that we stress-tested the scenario of what has actually happened, which is, as we said earlier, that there was an unprecedented and unpredictable change in the market basis.[30]

Buiter wrote that that 'the [FSA] seem to have done not even the kind of liquidity stress-testing that I would have expected them to do, partly because the FSA is an institution that thinks more about capital adequacy and solvency issues than about liquidity issues'.[31] He also noted that

> One could have expected that they would have looked at the consequences of some of the markets in which Northern Rock was funding itself simply closing. What happened of course in the case of Northern Rock is that all of the markets in which it funded itself closed, something which had never happened before, so you would have had to have an ultra stress test to capture that.[31]

It is plain that Northern Rock's difficulties came as a shock to the Tripartite authorities. This is not to say that they were not expecting problems – both the Bank of England and the FSA had been giving warnings about under-pricing of risk – but they were not expecting this problem in particular.

ANOTHER AUTUMN CRISIS

Soon after inter-bank and other financial markets froze on 9 August, it became clear that Northern Rock would face severe problems if the markets were to stay frozen for long. These problems were especially severe for Northern Rock both because its funding model required the continuing issue of mortgage-backed securities, with its next securitisation scheduled for September 2007, and because of its great reliance on other short-term funding that had to be regularly renewed.[32]

The then Chairman and the then Chief Executive of Northern Rock first discussed these problems with each other on Friday 10 August.[33] On the same day, the FSA contacted the financial businesses that it believed might be at risk from the freezing of financial markets. One of these was Northern Rock.[34] Northern Rock replied to the FSA on the next working day, Monday 13 August, alerting the FSA to the difficulties that Northern Rock would face if the market freeze continued.[35] Thereafter, the FSA and Northern Rock were in twice-daily telephone contact.[36]

On Tuesday 14 August, the first discussions of Northern Rock took place between the Tripartite authorities at deputy level – Hector Sants, Sir John Gieve and a senior Treasury official.[37] The Governor of the Bank of England was alerted on that day.[37] On Wednesday 15 August, a more detailed conversation took place between the FSA and the Treasury, and the Chancellor of the Exchequer was informed about Northern Rock on that day.[38] On Thursday 16 August, the then Chairman of Northern Rock spoke directly to the Governor of the Bank of England by telephone, and the possibility of a support operation was discussed.[39]

On Wednesday 29 August, the Chairman of the FSA, Sir Callum McCarthy, wrote formally to the Chancellor of the Exchequer, indicating that the FSA believed that Northern Rock 'was running into quite substantial problems'.[40] On Monday 3 September, the Tripartite Committee met at the level of principals – the Chancellor of the Exchequer, the Chairman of the FSA and the Governor of the Bank of England.[41]

Between 10 August and mid-September, Northern Rock and the Tripartite authorities pursued a three-fold strategy to extricate Northern Rock from its difficulties. The three options they pursued were as follows:

- Northern Rock resolving its liquidity problems through its own actions in short-term money markets and by securitising its debt;[42]
- Northern Rock obtaining the 'safe haven' of a takeover by a major retail bank;[43]
- Northern Rock receiving a support facility from the Bank of England guaranteed by the government.

There was considerable overlap in the consideration of the three options. The prospects for a market solution through the money markets (including by securitisation) were pursued until 10 September.[44] The search for a private 'safe haven' started on 16 August, and continued until 10 September.[45] The possibility of a Bank of England support operation was raised as early as 16 August.[46]

DID THE BANK OF ENGLAND PROVIDE SUFFICIENT LIQUIDITY ASSISTANCE TO THE MONEY MARKETS?

The first option, that of the Northern Rock resolving its liquidity problems through its own actions, required that short-term funds be available in money markets at rates in line with adjustable mortgage rates and other short-term interest rates, that is, that there be no general shortage of bank liquidity. Some commentators have suggested that it was a failure on the part of the Bank to provide sufficient assistance to the money markets that forced Northern Rock to turn to the Bank for a support facility.

In August 2007, the Bank of England was approached by banks arguing that the Bank of England should provide additional liquidity, at no penalty rate.[47] The FSA had transmitted the banks' request to the Bank of England,[48] but refused to state to the Treasury Select Committee whether it had supported the banks in requesting this additional liquidity, on the grounds that conversations between Tripartite members ought to remain private.[49] On 12 September 2007, the Governor of the Bank of England wrote a letter to the Chairman of the Treasury Committee. In this letter, the Governor pointed out that

he did not agree with the suggestions for additional measures that others believed the Bank of England should undertake: lending at longer maturities, removing the penalty rate or increasing the range of collateral against which the Bank would be prepared to lend. In the letter, he gave three reasons for his position.[50] First, he stated that 'the banking system as a whole is strong enough to withstand the impact of taking onto the balance sheet the assets of conduits and other vehicles'. Second, 'the private sector will gradually re-establish valuations of most asset-backed securities, thus allowing liquidity in those markets to build up'. Third, there would be a risk of 'moral hazard'. Should the central bank provide extra liquidity at different maturities against weaker collateral, markets would, especially if the liquidity were provided at little or no penalty, take it as a signal that the central bank would always rescue them should they take excessive risk and get into difficulties. Such a signal would lead to even more risk taking, and the next crisis would consequently be greater than it would otherwise have been.

The banks chose to raise their reserve requirements by 6 per cent in the maintenance period starting 6 September 2007. On 5 September, before the start of this period, the Bank of England announced that, if the secured overnight rate had not fallen from its higher-than-usual level above Bank rate, the Bank would be prepared to offer additional reserves, amounting to 25 per cent of the requested reserves target, before the end of the 'maintenance period'.[50] On 13 September, this criterion was met, and additional reserves were provided. An additional fine-tuning operation occurred on 18 September – following the run on Northern Rock – again offering £4.4 billion, or 25 per cent of the reserves target.

Would the earlier provision of extra liquidity have saved Northern Rock? The Chancellor of the Exchequer pointed out that, despite the more proactive approach taken by the Federal Reserve and ECB, banks in the United States and Eurozone also got into difficulties:

> in the United States they did make money available. It did not stop three or four institutions from … I think in fact three or four institutions have actually had to close down in the United States and have been taken over by other banks. In Europe some of the smaller German banks got into difficulties. So it is not just a problem for here.[51]

Defending the actions of the Bank of England, the Governor was keen to explain that, contrary to the 'myth' propagated by commentators, the actions of the ECB and Federal Reserve were 'all remarkably similar' (to those of the Bank of England):

> One of the points most people fail to understand … is that the European Central Bank has not increased the amount of liquidity at all since the beginning of August. It has redirected some of the liquidity that it would have done at one-week term to three-month term, but the total amount of liquidity that it extends to the banking system is absolutely the same now as it was in June and July before the turmoil began in August. That is not readily understood by many people. The amount of liquidity that we are extending to the banking system is almost 30% higher. I do not put enormous weight on that. I think what we have is a system, which I prefer, in which the banks can choose their own reserves targets. If they say they would like to hold more reserves with the Bank of England we readily supply it on demand. That is why we are supplying 30% more now than we were. Equally, the Federal Reserve has not raised the total amount of liquidity very much. There is a certain myth in all this that goes around and we take our share of the

> responsibility for not explaining it properly, but it is not easy to get across these points[52]

When asked whether Northern Rock might have avoided falling into trouble if the liquidity approach adopted by the ECB had been applied by the Bank of England, Applegarth said that 'within Europe there are a number of business models that actually have a greater dependence on wholesale funding than we do and they have not had the same issues we have had, so I would suspect so, yes'.[53] As observed above, however, no Eurozone bank has a business model as extreme as that of Northern Rock, so this assertion is not really defensible, however understandable it may be that Applegarth made it.

The British Bankers' Association (BBA) considered that, 'had the Bank acted in this vein [of accepting a wider collateral base] at the beginning of August, then many of the problems affecting the money markets in general and Northern Rock in particular might have been mitigated'.[54]

In contrast, the Governor of the Bank of England dismissed the suggestion that a market-wide liquidity intervention could have assisted Northern Rock:

> You could ask whether the market could have been the lender of last resort for Northern Rock. I think the only circumstances in which that would have been feasible would have been when we had gone back to normal circumstances and banks had already financed the taking back onto their balance sheets of the conduits and vehicles that they now expect, over a period, to take back onto their balance sheets and were once again in a frame of mind to be willing to lend to others who had illiquid assets. To go back to those circumstances quickly and get back to where we were in July would have meant injecting a massive amount of liquidity. The Federal Reserve and the ECB have gone nowhere near that far at all.[55]

One cannot know whether an open market liquidity operation of the kind asked for by a number of banks in August would have prevented Northern Rock's need for emergency support from the Bank of England in September. But it does seem very unlikely that any such *general* lending operation could have been of a sufficient scale to ensure that Northern Rock received the liquidity it required. The balance of the argument does seem to tilt that way.

A SAFE HAVEN?

On 16 August, Northern Rock began its pursuit of a 'safe haven', acting 'behind the scenes' and with its advisers to encourage an offer for the company to be made.[56] In accordance with its responsibilities under the Memorandum of Understanding, the FSA 'encouraged and closely monitored discussions that took place between Northern Rock and potential acquirers'.[57]

Two institutions showed an interest in acquiring Northern Rock. One only showed 'a slight expression of interest … that never came to anything'.[58] The second institution, which was a major high street retail bank,[59] showed 'more specific interest' for a period of 2 or 3 days, but no firm offer was made.[60] Northern Rock ceased its pursuit of a 'safe haven' on Monday 10 September.[61]

Although it is possible to conclude on the balance of probability that pursuit of a 'money market recovery' solution to Northern Rock's difficulties was more in hope than expectation, it is not possible to reach any conclusion at all about how realistic were hopes of finding a 'safe haven'. There is a complete difference of view between the Board of Northern Rock and the authorities.

The first conflict in evidence relates to the nature of the financial support required by the high street bank that considered making an

offer for Northern Rock. Applegarth implied on several occasions in evidence (to the Treasury Committee) that the lending facility sought by the potential buyer was similar in nature to the support facility subsequently granted by the Bank of England to Northern Rock itself. First, he referred to the possibility of the facility being 'granted to a major high street retail bank ahead of us having to get the facility'.[62] Second, he stated that that bank wanted 'a backstop facility in case the markets remained closed for X months to make sure they had sufficient liquidity to cover the liquidity issues we had'.[63] Third, he said that 'a facility similar to the one we got was not available to the main high street bank at the time'.[64] Applegarth also indicated his belief that the Bank of England had refused the request for financing, and criticised the decision to refuse such financing.[65]

The Governor of the Bank of England stated that the request was in the form of 'one pretty vague telephone call, which came to Bank officials and then passed to me, originating in [the] FSA'.[66] The Governor confirmed that he had not been party to conversations between the FSA and the potential bidder for Northern Rock.[67] The Chancellor of the Exchequer stated clearly that the financial support requested was in the form of a loan, which 'could have been as much as £30 billion … to be given at commercial rates by the Bank of England'.[68] The Governor also described the request as one to 'borrow about £30 billion without a penalty rate for two years'.[69] Both the Chancellor of the Exchequer and the Governor indicated that they had an instinctive reluctance for the Bank of England to act as commercial lender to a going concern.[70]

The Chancellor of the Exchequer and the Governor also agreed that there was a legal barrier to the provision of financial support. The Governor received legal advice that such lending on commercial terms would constitute State aid under European Community competition law.[71] Both he and the Chancellor of the Exchequer concluded that, were such lending to be made available to one high street bank, a matching facility would also have to have been offered to other potential bidders.[72] The Governor advised against agreeing to the financing request; the Chancellor accepted that advice, and the tentative approach was not followed by a formal offer.[72]

In addition, the Governor of the Bank of England laid great stress on the legal difficulties faced in modern circumstances in accomplishing a smooth takeover of a bank that is a quoted company:

> The first way [the Bank of England] might have dealt with [the problems at Northern Rock] was to invite the directors of Northern Rock and prospective purchasers into the Bank or the FSA for a weekend to see if that could be resolved and a transfer of ownership agreed over the weekend such that the depositors in Northern Rock would have woken up on Monday morning to find themselves depositors of a larger and safer bank. That is not possible because any change of ownership of a quoted company – and Northern Rock is a quoted company – cannot be managed except through a long and prolonged timetable set out in the Takeover Code.[73]

He subsequently added that 'whatever accelerated deal one tries to bring about, the shareholders must be given proper time to consider a bid and others must be given a chance to make their counter bids'.[74] During the period when bids were under consideration, he argued, depositors might be tempted to withdraw their funds.[75] The FSA also stated that any takeover 'would have been done in the conventional fashion through the normal framework'.[76]

Applegarth, however, was firmly of the view that the initial stages of a takeover could have been accomplished more smoothly and could

therefore have prevented a run. First, he said that the run 'would not have taken place, in my view … if we had been able to announce an offer with a big retail brand'.[77] He subsequently said,

> Clearly it would have been impossible to get a completed transaction over a weekend, but it is my view that, had you had an announceable offer over the weekend with a major high street brand, that would have provided sufficient confidence so a run did not happen.[78]

The Governor of the Bank of England gave a somewhat different picture of what would have happened in such circumstances, drawing upon his conclusion that any financial facility to one potential buyer would have to have been made available to other potential buyers:

> The idea that if [the Chancellor of the Exchequer] stood up and said, 'I am willing to lend £30 billion to any bank that will take over Northern Rock' – that is not the kind of statement that would have helped Northern Rock one jot or tiddle. It would have been a disaster for Northern Rock to have said that.[79]

The FSA, the Governor of the Bank of England and the Chancellor of the Exchequer all indicated that they actively sought or favoured a solution to Northern Rock's problems before the run through a private sector takeover. The Chancellor of the Exchequer stated that a merger 'would have been by far the best option'.[80] Witnesses from each of the Tripartite authorities were, however, equally adamant that no firm offer was made.[81] Although an indicative approach was clearly made, this was subject to the provision of a support facility, which the Tripartite authorities were not prepared to provide at that stage. The Chancellor of the Exchequer concluded that, 'as the days went by, it was increasingly obvious that people just did not want to know'.[82]

THE SUPPORT OPERATION

By Monday 10 September, it was evident that a Bank of England support operation for Northern Rock would be necessary to avoid a default on its short-term borrowing such that Northern Rock was pushed into insolvency. On that day, Gieve spoke for the first time to the then Chief Executive of Northern Rock about the proposed facility.[83]

By the following day, it was apparent that this operation would need to be publicly announced.[84] The succeeding days saw preparations put in place for legal agreement on the operation and for handling the announcement and its consequences.[85]

It was initially decided to announce the support operation on Monday 17 September.[85] The Chancellor of the Exchequer implied that this initial timetable reflected the wishes of Northern Rock itself, although it also appears that support needed to be in place by this date in order to fill the funding gap when the planned Granite mortgage-backed securitisation planned for that day was not taken up by investors. Northern Rock had wholesale funding in place up to that day but not beyond.[86] Witnesses from Northern Rock and the FSA confirmed that Northern Rock's plan was to use the time before an announcement on Monday to increase the bandwidth of Northern Rock's website and to make other arrangements for handling customers and others affected by the announcement.[87]

The plan to announce the support operation on Monday 17 September was only abandoned on the afternoon of Thursday 13 September.

On that afternoon, according to the Governor of the Bank of England, 'rumours in the market started' in relation to the proposed operation.[88] At 1600 hours on that day, the Tripartite standing committee met at deputies' level, and decided to bring forward the announcement of the operation to 0700 hours on Friday 14 September.[89] The Court of the Bank of England met on the evening of Thursday 13 September.[90] The terms of the emergency liquidity assistance were finalised in

the early hours of Friday 14 September.[91] The announcement was made at 0700 hours that morning in the following terms:

> The Chancellor of the Exchequer has today authorised the Bank of England to provide a liquidity support facility to Northern Rock against appropriate collateral and at an interest rate premium. This liquidity facility will be available to help Northern Rock to fund its operations during the current period of turbulence in financial markets while Northern Rock works to secure an orderly resolution to its current liquidity problems … The FSA judges that Northern Rock is solvent, exceeds its regulatory capital requirement and has a good quality loan book.[92]

But before the provision of emergency liquidity assistance by the Bank of England to Northern Rock could be announced formally on the Friday morning, the outlines of the operation were reported by the BBC on the Thursday evening – at 2030 hours on BBC News 24 and then on other BBC media outlets.[93] Several witnesses to the Treasury Select Committee argued that the disclosure of the support operation in this way was instrumental in the run that followed. Applegarth said that the leak 'caused immense difficulties'.[94] He thought that 'it was the announcement of the facility being leaked that actually was the start of the run'.[95] The Chancellor of the Exchequer characterised the leak as 'clearly very unhelpful'.[96] McCarthy said,

> It was extremely unfortunate that the information leaked because it meant that instead of this being put in place as, 'This is a solvent institution which has a cash flow problem and the Government is stepping in to make sure that it is saved', it became a panic measure or a response to something that was already in the making. Panic was how it was seen.[97]

In explaining the impact of the disclosure, both the then Chairman and the then Chief Executive of Northern Rock contrasted the impact of that disclosure with the likely impact of a planned announcement the following Monday. Ridley said

> Had the leak not happened and we had been able to announce on the Monday the facility with the Bank of England in a measured fashion, with full communication plans in place, undoubtedly there would have been some concern – a lot of concern – to many of our customers but we think it would have been considerably less than it was in the way that it came about.[98]

Applegarth endorsed this view: 'I think the chairman is right in that the probability of a retail run would have been lessened had we been able to do the announcement as we had intended on the Monday'.[98]

Whether or not they are correct in this view is for present purposes immaterial; but their defence of it does indicate how unprepared both Northern Rock and the Tripartite authorities were to handle the episode. This, as we argue subsequently, is important in helping to understand why the course eventually chosen by the authorities was followed.

The run on deposits of Northern Rock that took place between Friday 14 September and Monday 17 September became a central element in the problems that Northern Rock faced subsequently.[99] The speed and extent of withdrawals meant that the Bank of England's emergency facility, which had been envisaged as a 'backstop' that would allow Northern Rock time to obtain lower-cost short-term funds in wholesale markets, actually needed to be called upon almost immediately.[100] The run started on the evening of 13 September, following, in the Chancellor of the Exchequer's words, 'the fairly dramatic news that a fairly well-known bank had gone to the Bank of

England for help', and the run accelerated the following day.[101]

The run gathered momentum in part because of the difficulties encountered by Northern Rock customers in seeking to withdraw their money. Applegarth attributed these difficulties in part to the fact that the support operation had been brought forward:

> The probability of a retail run would have been lessened … had we been able to do the announcement as we had intended on the Monday, to be able to put facilities in place and also to actually improve our ability to get the money to the customers. One of the things we had intended to do over that weekend was to widen the bandwidth on the internet account so you would not have had so much frustration from our internet customers. We would have been able to get the money back to customers better.[98]

According to McCarthy, the internet access provided by Northern Rock was 'inadequate', although he emphasised that all those seeking to withdraw funds this way were successful in doing so.[102]

Although most withdrawals were made through the internet, by telephone or by post, the most damaging images of the run were those associated with queues outside Northern Rock's branches.[103] Northern Rock did not have a large branch network: it had 72 branches in total, and only four branches in London.[104] Many branches had only a couple of counters, because the bank did not normally conduct much of its retail business over the counter.[104] Because of money laundering requirements, large withdrawals could take up to 15 min to be completed.[105] These factors together explained why it did not take many customers to seek to withdraw their funds for queues to extend out the front door and into the street – and into the public consciousness.

The Governor of the Bank of England indicated that, once the run had started, and in view of the weaknesses of the legal framework for handling banks in distress, other depositors were behaving rationally and logically in joining the run by seeking to take their money out also:[106]

> Once the depositors of Northern Rock had heard the bad news and they suddenly realised that Northern Rock needed a lender of last resort facility – this is the problem with an overt operation – once they had seen that there was bad news about Northern Rock, and they could not possibly be reasonably expected to have been sitting at home thinking about the wholesale funding structure of Northern Rock, once they learned that there was concern about Northern Rock it is not that surprising that they thought perhaps it might be safer to take some money out.[107]

The momentum of the run on Northern Rock deposits once it had begun was caused by two factors. First, depositors were becoming aware that, were the run to continue, Northern Rock would eventually cease to be a going concern.[108] Second, public awareness increased surrounding something of which many depositors might previously have been unaware – namely, that deposits above £2000 were not guaranteed in full.[109]

In these circumstances, the Governor of the Bank of England stated, the only way to halt the run was to provide a government guarantee of deposits in Northern Rock.[110] The Chancellor of the Exchequer 'became convinced' on Sunday 16 September that action along these lines was necessary.[111] The announcement of the guarantee took place during a press conference after 1700 hours on Monday 17 September. (Curiously, it was one that the Chancellor of the Exchequer held jointly with US Treasury Secretary Hank Paulson.) The Chancellor of the Exchequer informed the public that

> In the current market circumstances, and because of the importance I place on

> maintaining a stable banking system and public confidence in it, I can announce today that following discussions with the Governor and the Chairman of the FSA, should it be necessary, we, with the Bank of England, would put in place arrangements that would guarantee all the existing deposits in Northern Rock during the current instability in the financial markets. This means that people can continue to take their money out of Northern Rock. But if they choose to leave their money in Northern Rock, it will be guaranteed safe and secure.[112]

The announcement late on Monday 17 September had the desired effect. The momentum of the run was halted.[113]

Participants in the discussions surrounding the liquidity facility to Northern Rock emphasised the difficulty that they faced in predicting the effect of its announcement. Gieve told the Treasury Committee,

> We knew when we did that that the announcement of that would have two effects: a good effect because it would show they had a new source of finance but a bad effect because it would send the market a signal that they really needed a new source of finance. In the event, we knew that there was a risk that that balance would go the wrong way, and it did.[114]

The Governor of the Bank of England also observed that he did not view a bank run as 'inevitable' on Thursday 13 September, when the date of the announcement of the support operation was brought forward because of market rumours:

> The nature of a bank run is that it is a knife edge: it might happen, it might not. That is exactly why a bank run is so difficult to handle.[115]

He observed that the provision of the support facility might have had a reassuring effect on depositors,[116] and went on to say, 'I do not think anyone could have known with any certainty at all what would have been the consequences on retail depositors of the announcement'.[117]

McCarthy supported the view of the Governor of the Bank of England that the likely effect of the announcement of liquidity support was not 'obvious'.[118] The then Chairman of Northern Rock also emphasised the unexpectedness of the run:

> I think it is worth reflecting that all of us, both here and in the authorities, were surprised by the degree to which the announcement of a facility from the Bank of England – not the use of it but the existence of a facility – and the reassurances that went with it about us being a solvent and profitable business did not have a sufficiently reassuring effect on customers.[119]

In view of the awareness apparent within the Tripartite authorities and within Northern Rock's Board that a retail run was one possible consequence of the announcement of the Bank of England's liquidity support, the Treasury Committee asked witnesses from the Tripartite authorities about the extent to which a government guarantee – the device that was used on Monday 17 September to halt the run – had been the subject of prior consideration.

Sir John Gieve implied in his evidence in September that the possibility of announcing a government guarantee alongside announcement of the support facility was at least considered, and was consciously rejected:

> In terms of the crisis, the key question that underlies your questions is was it worth on Friday announcing that the Bank was making a facility available or should we have said at the same time that the Government guaranteed all the deposits? We did realise there was a risk that, if you like, the shock effect of an

> announcement would overwhelm the positive effect of saying the Bank was standing by with some money. We knew that was a risk but we thought that it was not an overwhelming risk and it was worth taking that step.[120]

In contrast, Sants did not appear to attach great importance to the early discussions on the question of a government guarantee: 'I think I may have some vague recollection of it being mentioned by some working group discussion, but that is the extent of it'.[121]

Be that as it may, the Governor of the Bank of England was firmly of the view that it would have been 'irresponsible' to announce a government guarantee at the same time that the liquidity support was announced, commenting that, in such circumstances, 'It would undoubtedly be said: 'Why on earth is this being done?''[122]

Perhaps it would indeed have been 'irresponsible' to announce the guarantee simultaneously with the support operation. But in view of the above statements that a run was seen as a distinctly possible consequence of the announcement, it is surprising that a guarantee was not planned at the same time as the support operation. Be that as it may, the idea of a government guarantee was given fuller consideration by the Tripartite standing committee at the level of deputies only after the retail run gathered momentum.[123] Gieve indicated the timescale on which he considered such a guarantee emerged as an issue:

> We did realise that offering a limited collateralised facility was not guaranteed to save Northern Rock. We hoped that it would restore confidence, and I think that was a reasonable judgment at the time, and other people commenting on it at the time thought so too, but I think we did not do enough to reassure the retail depositors, and that became clear on the Friday.[124]

Gieve had earlier implied that, in the light of subsequent events, the announcement of a government guarantee might have been of benefit on that Friday: 'If we had known it was going to be essential on Monday we might well have offered it on Friday but that was not certain at that stage'.[125]

The Governor of the Bank of England and the Chancellor of the Exchequer, however, both told the Committee that they did not discuss the government guarantee before Sunday 16 September, when discussions took place between these two and the Chairman of the FSA.[126] A decision was taken on that day by the Chancellor of the Exchequer to give the government guarantee. Consideration of the precise terms of the guarantee meant that an announcement was not possible before the markets opened on Monday 17 September, and so the final announcement was made after markets closed on that day.[127] (The details of the guarantee can be found in Appendix B.)

WAS THIS A LENDER OF LAST RESORT OPERATION?

The decision to provide support to Northern Rock has been described as a 'lender of last resort' operation, but it was certainly *not* what we would term a classic lender of last resort operation. That procedure evolved in Britain in the nineteenth century, in order to prevent a general loss of confidence in the safety of bank deposits, that is, to prevent a general run from banks to cash.

Lender of last resort was described in its essentials and named by Francis Baring in 1797 in his comment on financial consequences of the 1793 declaration of war between France and Britain:[128]

> That dreadful calamity is usually preceded by some indication which enables the commercial and monied men to make preparation. On this occasion the short notice rendered the least degree of general

> preparation impossible. The foreign market was either shut, or rendered more difficult of access to the merchant. Of course he would not purchase from the manufacturers; … the manufacturers in their distress applied to the Bankers in the country for relief; but as the want of money became general, and that want increased gradually by a general alarm, the country Banks required the payment of old debts. … In this predicament the country at large could have no other resource but London; and after having exhausted the bankers, that resource finally terminated in the Bank of England. In such cases the Bank are not an intermediary body, or power; there is no resource on their refusal, for they are the *dernier resort*.[129]

Very soon after Francis Baring's 1797 use of the term 'dernier resort', Henry Thornton (1802)[130] provided a statement of what it was, why it was necessary and how it should operate. Quite remarkably, this statement was essentially a complete description of the lender of last resort role as it worked up to the beginning of this century. His statement was made in a particular institutional context, and it is as well for the sake of subsequent clarity to consider what this context was.[131]

There were many banks in England all (except the Bank of England) constrained to being partnerships of six or fewer. The joint stock form was not generally allowed until 1826, and limited liability not until 1858. Even with the care unlimited liability surely brought, failures were common. It is here that the Bank of England comes in.

> If any bank fails, a general run upon the neighbouring banks is apt to take place, which if not checked in the beginning by a pouring into the circulation of a very large quantity of gold, leads to very extensive mischief (Thornton, 1802, p. 182).

And who was to 'pour in' this gold? The Bank of England.

> … If the Bank of England, in future seasons of alarm, should be disposed to extend its discounts in a greater degree than heretofore, then the threatened calamity may be averted. (Thornton, *op. cit*. p. 188)

This was not incompatible with allowing some individual institutions to fail.

> It is by no means intended to imply that it would become the Bank of England to relieve every distress which the rashness of country banks may bring upon them: the Bank by doing this, might encourage their improvidence. … The relief should neither be so prompt and liberal as to exempt those who misconduct their business from all the natural consequences of their fault, nor so scanty and slow as deeply to involve the general interests.' (Thornton, *op. cit*. p. 188)

Concern should be with the system as a whole.

The reason a 'pouring into the circulation' (to use Thornton's phrase) would stop a panic and thus protect the system was described with great clarity by Bagehot in 1873:[132]

> What is wanted and what is necessary to stop a panic is to diffuse the impression that though money may be dear, still money is to be had. If people could really be convinced that they would have money … . Most likely they would cease to run in such a herd-like way for money.' (1873, pp. 64–65)

In the kind of banking system that Britain had by the mid- to late nineteenth century, a system based on gold but with the central bank the monopoly supplier of notes, the responsibility for diffusing '… the impression that … .

Money is to be had' clearly rested with the central bank.

This summarises nineteenth century theory on the subject. Because the central bank was the monopoly note issuer, it was the ultimate source of cash. If it did not, by acting as lender of last resort, supply that cash in a panic, the panic would continue, would get worse, and a widespread banking collapse would ensue, bringing along with it a sharp monetary contraction.

What was nineteenth century practice? There existed a set of institutions, now gone, called discount houses. These originated as bill brokers who brought together those who wished to issue bills of exchange (an important means of trade finance) and investors who wished to purchase such bills. These brokers grew, built up their capital base and ceased to be pure brokers, instead holding some bills on their own account. They then became 'discount houses'. In part because of a degree of animosity between the banks and the Bank of England (due to the latter's privileges), the banks preferred to place their surplus liquidity with the discount houses. These in turn had access to borrowing at the Bank of England, by discounting bills there.

Within that setting, how did lender of last resort practice develop? Sterling returned to its pre-war gold parity in 1821. The first subsequent occasion for emergency assistance from the Bank was in 1825. There had been a substantial external drain of gold, and there was a shortage of currency. A panic developed, and there were runs on banks. The type of bills the Bank would normally discount soon ran out, and the panic continued. If a wave of bank failures were to be prevented, the banks would have had to borrow on the security of other types of assets. On the 14th of December, the Bank of England suddenly deviated from its normal practice, and made advances on government securities offered to it by the banks, instead of limiting itself to discounting commercial bills. The panic was ended.

After several other episodes, the final step was taken in 1866, with the Overend Gurney crisis.

Overend, Gurney and Company originated with two eighteenth century firms, the Gurney Bank (of Norwich) and the London firm of Richardson, Overend and Company. By the 1850s, the combined firm was very large; its annual turnover of bills of exchange was in value equal to about half the national debt, and its balance sheet was 10 times the size of the next largest bank. It was floated during the stock-market boom of 1865. By early 1866, the boom had ended. A good number of firms were failing. Bank rate had been raised from 3 per cent in July 1865 to 7 per cent in January 1866. After February, bank rate started to ease, but on 11 May, Gurney's was declared insolvent.

To quote the *Bankers' Magazine* for June 1866, 'a terror and anxiety took possession of men's minds for the remainder of that and the whole following day'. The Bank of England for a brief time made matters worse by hesitating to lend even on government debt. The Bank Charter Act (which among other things restricted the note issue to the extent of the gold reserve plus a small fiduciary issue) was then suspended, and the panic gradually subsided.[133]

The failure in 1878 of the City of Glasgow Bank was much less dramatic. It had started respectably, was managed fraudulently, and failed. There was fear that the Bank Charter Act would have to be suspended again, but no major problems appeared: 'There was no run, or any semblance of a run; there was no local discredit' (Gregory, 1929).[134] Other Scottish banks took up all the notes of the bank; Gregory conjectures that they acted in this way to preserve confidence in their own note issues.

Then in 1890 came the (first) 'Baring Crisis'. Barings was a large bank of great reputation; in 1877, when Treasury bills were introduced, Bagehot praised them as being 'as good as Barings'. It nevertheless became involved in a

financial crisis in Argentina. The Argentinean government found difficulty in paying the interest on its debt in April 1890; then the national Bank suspended interest payments on *its* debt. This precipitated a run on the Argentinean banking system, and there was revolution on 26 July. Barings had lent heavily to Argentina. On 8 November, it revealed the resulting difficulties to the Bank of England. The Bank (and the government) was horrified, fearing a run on London should Barings default. A hurried inspection of Barings suggested that the situation could be saved, but that £10 million was needed to finance current and imminent obligations. A consortium was organised, initially with £17 million of capital. By 15 November, the news had leaked, and there was some switching of bills of exchange into cash. But there was no major panic, and no run on London or on sterling. The impact on financial markets was small. Barings was liquidated, and refloated as a limited company with additional capital and new (but still family) management.

Why the great difference between the first, second and third of these episodes? The Bank of England had both learnt to act as lender of last resort and had made clear that it stood ready so to act. What the Bank had done wrong in 1866 was to lend … 'hesitatingly, reluctantly, and with misgiving … In fact, to make large advances in this faltering way is to incur the evil of making them without obtaining the advantage' (Bagehot, *op. cit.*).

So the lesson that was learned in Britain was that a banking crisis could be stopped by prompt lender of last resort action. This does *not*, however, mean that a central bank is obliged to provide funds to any institution facing liquidity problems. Today, banks have many sources of funding that were not available in the nineteenth century. They now have access to both unsecured inter-bank markets and secured short-term sale and repurchase (REPO) markets. This means that there is no need at all for the central bank to provide direct liquidity support to any bank that is able to access either inter-bank or REPO markets, and the obligation as lender of last resort can nowadays be fulfiled by providing liquidity to the money markets as a whole. As we have already discussed, there is no reason to believe that the Bank of England failed in this respect at the time of the Northern Rock crisis.

WHY DID THE AUTHORITIES PROVIDE SUPPORT AT ALL?

Returning to the more recent past, we were, by 14 September, in the situation when Northern Rock had started to borrow from the Bank of England, a run had started on Northern Rock and the Chancellor had on 17 September announced a guarantee of deposits there.

It is now useful to step back from this rather hectic series of events and review the range of possibilities considered by the authorities immediately before the loan facility was granted to Northern Rock. These options – Northern Rock being able to refinance itself in the markets, a 'safe haven' or Bank of England support – all differed from the traditional response (whether we term this lender of last resort or provision of liquidity to money markets) in that they involve something that may be called, in one sense or another, a rescue.

The authorities could have behaved as they had in the nineteenth century. They could have considered whether the troubled institution was of sufficient importance that its failure would have damaged the reputation of London, as they did in the case of Barings in 1890, and if it failed that test it would have been allowed to sink or swim, and liquidity would have been provided to the rest of the banking sector as needed to calm any subsequent panic.

As is well known, Northern Rock was not allowed to sink or swim. There was a determined attempt to keep the institution going, and to find a rescuer for it. This can certainly not be justified by the size or

reputation of Northern Rock. As noted earlier, it was not a particularly large institution, and even its greatest admirer would not claim that it was a bank of international renown similar to that of Barings in 1890, one whose orderly failure might fundamentally damage the reputation of London.[135] Why, then, did the authorities act as they did?[136]

AN INTERPRETATION

A range of factors probably influenced the decision. First, and most obvious, is that the problem came as a shock, and one to previously untested regulatory and money market regimes. There are then some factors about which it is possible at this time only to speculate, although more data may become available in the future when archives are opened (if written records of discussions were kept).

Gordon Brown had just become Prime Minister. Opinion polls suggested that there had been a subsequent sharp leap in the popularity of the ruling Labour government, and there was much speculation that an election would be called. Closing a bank (or nationalising it) would probably have done little good for the government's prospects of victory. A second consideration is that such action might not have reflected well, at least in the popular press, on the 'Tripartite Arrangements' (described above) for financial stability, and these arrangements had been put in place when Gordon Brown was Chancellor of the Exchequer. Third, Northern Rock was headquartered in an area of strong labour party support (Newcastle on Tyne), and where unemployment was above the national average. The political background was not favourable for the sink or swim option.

There are, however, also undeniably good economic reasons why the traditional course of refusing support to an individual institution and leaving it to sink or swim was not followed. We set these out before moving on to showing how these impediments can be removed, thus allowing a return to the traditional approach in any future episode of bank failure, and thereby diminishing the problem identified by Thornton and now referred to as moral hazard:

> It is by no means intended to imply that it would become the Bank of England to relieve every distress which the rashness of country banks may bring upon them: the Bank by doing this, might encourage their improvidence.

There is first a technical aspect of the Bank's money market operations, and then, more fundamentally, both the fact that the nature of inter-bank linkages make it extremely difficult to subject a commercial bank to a normal corporate insolvency procedure, and the nature of retail bank deposits in the twenty-first century, both resulting in unacceptably high costs of insolvency if this is not executed so as to maintain essential deposit and payment services with no more than a short-term interruption.

BORROWING VIA THE STANDING FACILITY

As already described, the system of money market operations used at present by the Bank of England lets the commercial banks choose their own level of cash reserves according to what they expect to need in the month ahead. If they get this forecast wrong, they can earn interest on the surplus, or borrow more through the standing facility.

The problem is with the latter. Borrowing more, at the 'penalty' rate above the basic one, is seen as revealing a mistake by the bank doing the borrowing. There was therefore no way for the Bank of England to supply additional liquidity through the standing facility, either directly to Northern Rock or via other banks that in turn lent to Northern Rock, even if offered good and normally acceptable collateral. Under Bank of England arrangements, borrowing under the standing facility is publicly observed and interpreted as a signal that the borrowing bank has in some way

blundered, and thus use of the standing facility erodes access to funding from the markets and reduces rather than increases available liquidity.

Under the money market system in use when the classic lender of last resort system developed, the discount houses (see above) were continually transacting with the Bank, on frequent occasions borrowing more than once a day. Hence, there was nothing abnormal in such borrowing, and nothing to give rise to alarm. The new money market operating procedure, in contrast, while perfectly capable of getting cash to banks in times of stress, did so in a way that highlighted the stress.

This suggests that it would be sensible to adopt arrangements where access to the standing facility at the 1 per cent penalty rate is offered anonymously, since this would make it easier for banks both individually and collectively to bridge an unexpected shortfall in liquidity.[137] Such an arrangement could in the future be helpful for other institutions that face liquidity problems, but would not have been enough to prevent Northern Rock defaulting on short-term obligations. The reason is that Northern Rock had such a large funding shortfall that it would not have had anything like enough eligible collateral (such as government bonds) to use for this borrowing. The Bank of England does not accept mortgages or other loan assets, or even securitised mortgages, as collateral for access to the standing borrowing facility. So it is clear that anonymous access to the standing facility, while possibly helpful in general, would not have resolved the liquidity problems at Northern Rock.

It can be argued that the Bank of England could still have provided support to Northern Rock through the standing facility, had it widened the range of eligible collateral. But this is problematic because other assets held by banks, such as retail or corporate loans, are illiquid and therefore very hard to value. Even when bank loans are made more liquid, through asset-backed securitisation, the tranches issued by the securitisation vehicle are still not actively traded and are therefore very difficult to value. Thus, such a widening of the range of eligible collateral would require very large 'haircuts' (the margins by which the estimated value of the collateral must exceed the amount borrowed), which in turn would have further weakened Northern Rock's balance sheet.

Even with anonymity and a widening of eligible collateral, the standing borrowing facility could never be appropriate for the provision of funding on the scale required by Northern Rock, for its borrowing from the Bank of England amounted eventually to more than one quarter of its total assets. A facility on such scale goes well beyond the normal needs of liquidity management, and would necessitate a careful assessment of the viability of the borrowing bank, in order to ensure that it has sufficient financial resources for there to be a reasonable prospect that it will continue in business, and is not just borrowing in order to delay an inevitable collapse. No matter how it is arranged, the standing facility must be limited in magnitude.

INTER-BANK LINKAGES

The nature and extent of inter-bank linkages create a problem with the 'sink or swim' option. If a UK bank were to 'sink', and go into liquidation, then, since there is no separate legal framework for handling a bank insolvency, it would be subject to the normal law of corporate insolvency. Its transactions, its assets and its liabilities would be frozen. A court-appointed liquidator would try, by avoiding a 'fire sale', to dispose of the assets at the best possible price, quite possibly taking some time to do so in order to minimise the loss for creditors. This would of course cause immense problems for a modern banking system, as it could leave many transactions uncompleted for months or even years. In an insolvency REPO borrowing (financing through an initial sale of a security and its later repurchase at a

slightly higher price) is closed out, in a similar way to OTC derivative transactions, but unsecured borrowing, such as Northern Rock relied on because it lacked eligible collateral for REPO finance, must be left to be finally resolved through the insolvency procedure.

Northern Rock's failure highlighted the absence in the United Kingdom of any regime for handling bank insolvency, such as is available in many other countries, and providing a mechanism for maintaining critical banking services and ensuring an orderly resolution of bank assets and liabilities.

RETAIL DEPOSITORS

When 'sink or swim' was the course of action, retail depositors differed in two ways from their modern-day counterparts. They were more prosperous than the average citizen, and they did not rely to the same extent on bank transactions for day-to-day living – banking services were not as crucial to functioning in nineteenth century society as they are now. In Britain today, the politicians, who make the ultimate decision over bank closure, could not tolerate bank customers, especially poor ones, losing both money and access to banking services. Indeed, aside from any questions of protecting savings, loss of access to banking services would impede economic efficiency in many ways, by, for example, forcing reliance on cash and unwarrantedly destroying credit ratings.

Britain does have a deposit insurance scheme supposedly intended to deal with these things, but, as we discuss further below, it is significantly defective. There are no practical arrangements for ensuring that insured depositors are paid out in any reasonably short time frame; they would instead have to wait months for the money that is due to them.

WHAT CAN BE DONE?

We have reviewed the key events that placed Northern Rock in difficulties, forcing it to turn to the Bank of England for financial support, and the shortcomings and limitations of the response of the 'tripartite' authorities. We now consider what can be done to ensure that similar problems do not occur again in the future, should another UK bank be forced to turn to the authorities for financial support.

We make proposals for three aspects of system:

1. the deposit insurance fund;
2. bank support;
3. prompt closure and payout.

The first reform is reform is to deposit insurance. Deposit insurance is needed because it is impossible to avoid a commitment to protect depositors. This commitment cannot be avoided for both political and for economic reasons. The public expect that their money will be safe with any bank that has a banking licence. Thus, in the event of a bank failure, it is politically damaging for the government of the day to allow small depositors to suffer losses. This is not inevitable: small depositors have on occasion lost money.[138] But if the bank is large enough, depositors' losses have to be restored.

How large must a bank be in order to be politically too big to fail? One lesson of the Northern Rock episode is that the political necessity of supporting depositors seems to apply to much smaller banks today than it did in the past. A few years ago, it was possible for covert financial support to be offered to a bank (in practice, this was then done indirectly, persuading other banks to continue offering credit) and in addition, reports of concerned depositors queuing outside branches were not widely disseminated.[139] Thus, the provision of support, in order to bridge a wholesale funding gap, might have been enough on its own to prevent a liquidity crisis. Nowadays, in contrast, even a relatively small bank requires a clear commitment to protect depositors in order to maintain the stability of the deposit base.

There are also good economic reasons for protecting depositors, in both large and small banks. In the case of large banks, this is

necessary in order to protect against the economic consequences of a loss of a significant share of household wealth. As we discuss further below, it is also clear that this support cannot just be in the form of a cash payout; large banks that are 'too big to fail' have to be maintained as going concerns, in order not to lead to loss of essential lending and payment functions.[140] This obligation to support large banks in turn means that it is beneficial to protect depositors in smaller banks, in order that they can compete effectively with the large banks that are perceived as 'too big to fail'. The difference is that a small bank may be allowed to 'fail', provided that depositors are promptly and fully compensated, and that arrangements, such as those we describe below, are made to ensure that these depositors continue to have access to banking services.

Deposit insurance cannot be avoided, but it is much better that this is an explicit scheme. The advantage of an explicit deposit insurance scheme is that this can make very clear exactly who is protected and to what extent. This then reduces the political pressure to provide a general bail-out of uninsured depositors, other creditors and perhaps even of shareholders.

How should this scheme operate in practice? The protection should be 100 per cent up to an appropriate limit. £35 000 per depositor per institution – the limit set in the government guarantee arrangements for UK bank depositors following the crisis at Northern Rock – is surely sufficiently large. This would be large enough to fully protect 90 per cent of depositors. Nevertheless, for unspecified reasons, the limit has now been raised to £50,000.

Premia should be paid by banks on a regular basis, in proportion to the amount of their insured deposit liabilities. Premia might have an element of risk-sensitivity, for example, according to the leverage of the bank. These premia should then be paid into the deposit insurance fund so that it has financial resources available to deal, immediately, with a bank failure. This requires maintaining the fund at an appropriate percentage level of total insured deposits (5 per cent of total deposits seems to be about right, but it is worth considering the exact target level for the fund in the light of the experience of other countries). In the event that there is a benign period, with no calls on the fund's resources, then the fund will become full, and premia can be reduced to that level needed to maintain the ratio of fund assets to insured deposits. The fund itself should be invested in very safe assets such as government securities.

The deposit insurance fund must be further supported through a guaranteed first line of credit from central government, so that it is in a position to deal with a bank failure larger than the amount in the fund. In event of such a call, so that the fund is forced to use this line of credit, insured banks will then be required, after the event, to pay relatively high deposit insurance premia, and, if necessary, a special levy, so as to restore the fund in a reasonable time frame.

The fund needs to have the further explicit financial backing of the government, in the form of an open-ended second line of credit, the difference between the first and second line of credit being that there is no obligation on other insured institutions to pay back this second line. Rather, once the crisis is resolved, the government will absorb this liability on its own books. We set out the reasons for this second line of credit below, after we discuss our bank closure proposals.

These funding arrangements, by building up assets in the fund and having lines of credit from central government, avoid the principal problem of pure private sector deposit insurance, that of imposing relatively large contributions on banks at a time when the economy is weak and banks' capital is under pressure. The remaining problem is to determine how rapidly to build up the fund to its desired level, both when it is first established and also following any major call on the resources of the fund. Some flexibility in

the speed of repletion may be in order, according to how well placed banks are to provide the necessary funding.

We now turn to the second element of reform: clear but strictly limited procedures for the provision of emergency liquidity support to a bank that cannot finance itself in the markets. As our previous discussion makes clear, offering such liquidity support is not lender of last resort; the operation does not involve providing liquidity to the market as a whole in order to prevent a run for cash. Even if the provision of liquidity to the market as a whole were made more generous, by making Bank of England access to standing facilities anonymous, and widening the range of eligible collateral, this would not have been enough to allow a bank with such severe liquidity problems as Northern Rock to continue funding itself in wholesale markets. It is also clear that the option of letting a bank that can no longer access wholesale markets immediately fail may create both inefficiency and systemic problems.

Inefficiency arises because the refusal to provide short-term liquidity, to an institution that cannot obtain credit from the private sector, threatens insolvency. If this cannot be quickly resolved by the private sector arrangements, for example, a takeover or a recapitalisation, then the resulting reorganisation of the bank can lead to substantial loss of value. Systemic problems arise because the failure to provide short-term support can lead to an impact on other financial institutions; this could be in the form of loss of confidence among uninsured depositors, or increases in spreads in inter-bank markets, for example.

Such support must be provided on strict terms. First, it must be provided against collateral, enough and of sufficient quality so that there is negligible risk of credit loss arising from the support operation. Unlike the situation with the standing facility, there need not be any strict rules for collateral eligibility; this collateral could include loans or non-standard securities, but the valuation must be conservative. Second, it must be provided at a penalty cost above market rates for collateralised borrowing, so that the provision of government liquidity is not a liquidity subsidy. Finally, it must be strictly limited in duration, with a requirement for transfer of control from shareholders to the financial authorities after a defined period, which we believe should be about three months.

The third element of reform is the need for special procedures for intervention in a financial institution, in order to resolve its financial distress and make a rapid payout to depositors. At present, this is not possible in the UK, because closure follows standard UK corporate insolvency law. A creditor applies to put a business into administration and the provider of liquidity support and the deposit insurance fund then have no preference over other creditors. A new legal framework is required.

This framework should state that intervention in a bank, in which shareholders lose both ownership and control rights, will take place in either of two circumstances:

1. when the maximum period of emergency liquidity support, which we have already suggested should be 3 months, has passed;
2. *or* when net worth declines below some minimum level(s), short of balance sheet insolvency; this might correspond to the usual Basel requirement on risk-weighted capitalisation with intervention at the tier 14 per cent; but there might, in addition, be a simpler requirement to intervene based on unweighted leverage (equity as a proportion of total assets).

There are a number of different mechanisms for resolving a bank failure following such an intervention, including the following:

- Operating the bank as a going concern, but with cash flow subsidy from the deposit insurance fund, with a view to preparing it for a private sector sale. Shareholders can

then be reimbursed if the proceeds of this sale exceed the amount needed to reimburse the fund.

- Transferring deposits to another financial institution, together with cash from the deposit insurance fund (deposits are valuable to banks and so the cash transfer will be less than the face value of deposits, and there may be some mechanism for soliciting bids for the transferred deposits to minimise the costs to the deposit insurance fund). At the same time, reorganising and selling bank assets and then paying out liability holders, with the deposit insurance fund first in the queue and the shareholders last.[141]

Transferring deposits, together with performing assets, to a 'bridge bank' (requiring an injection of funds from the deposit insurance fund), and preparing this bank for sale. The deposit insurance fund then acquires a claim on remaining non-performing assets, with shareholders receiving payment only if these eventually realise more than the transfer from the deposit insurance fund.

If we have an effective, prompt closure scheme, why do we believe that there will be any need at all for bank support? We think this is still required because prompt closure of the kind mandated by the US Federal Deposit Insurance Corporation Improvement Act, for example, is always based on accounting measures such as net worth. Where there are substantial off-balance-sheet problems (as was the case for Northern Rock), the first sign of difficulties is likely to be a withdrawal of wholesale funding, but it is not then necessarily appropriate for the authorities to move the bank directly into the closure regime.

This possibility, of offering temporary bank support against collateral, should be an alternative option to immediate closure. The authorities should have the right but not the obligation to provide this support (and they will not be likely to do so if the sums involved are so large as to suggest that closure is inevitable).

We do not consider in any detail the arguments over whether this short-term support is to be publicly disclosed; but it is surely reasonable to maintain that it should be on the same terms as other bank wholesale borrowing, that is, the bank must disclose that it has borrowed against collateral (so that other debt holders are aware), but need not say that it is the government that has, via the central bank, provided this support. Of course, for banks of any large size it will not be feasible to keep the support quiet.

The merits and demerits of the various approaches to bank closure are not compared in this paper. We do, however, note that any resolution other than maintaining the bank as a going concern involves tricky technical problems of account transfer. This is no longer the nineteenth century, and bank rescue no longer means just a cash payout to depositors. Depositors need to be able to continue holding deposits, making and receiving payments. This means that salary and other payments will need to be re-routed, and direct debits and other payment arrangements transferred. This in turn means that depositors need to have, within a very short period (say 48 hours), a clean transfer of all their banking arrangements to a new institution (either existing or de novo), or that the troubled institution should be reorganised (with all non-performing assets removed) so that banking services can then be provided on an ongoing basis going forward.

Transfer of accounts to a new institution is technically difficult. The various routing codes (sort codes in the UK) and bank account numbers have to be updated. Payment arrangements have to be transferred. New payment cards may have to be issued. Even if the existing systems architecture of the bank is transferred to a new bridge bank (so that from the depositors' perspective they are dealing with the same institution as before), systems transfer problems arise with the non-performing assets transferred out of the bank. Loan accounts still need to be monitored,

and repayments credited to these accounts. Staff will need to manage accounts in default.

Much time is thus needed to distinguish insured from uninsured deposits, to ensure that the magnitude of each insured deposit can be determined on the date of closure, and to make technical preparations for any transfer of accounts if this is the preferred form of resolution. This in turn means that for any resolution of a failing bank other than using public funding to maintain it as a going concern, several days, or more likely several weeks, of preparatory work are required before closure and elimination of shareholder claims. Arrangements must be in place for such preliminary intervention to take place, for example when a bank is first given emergency liquidity support, or at some earlier net-worth trigger above the level that would trigger closure.

CONCLUSIONS

This paper has examined the key events that preceded and the retail run that followed the September 2007 provision of emergency liquidity support by the Bank of England to Northern Rock. Our narrative does not cover subsequent events that eventually led, in February 2008, to the government taking Northern Rock into public ownership. We have shown how the highly unusual business model pursued by Northern Rock made it especially vulnerable to liquidity problems after the summer of 2007 re-pricing of credit risk in global markets. We have explained how it was that the decision to provide liquidity support then triggered the widely publicised run of retail depositors. We have also examined the actions of the Tripartite authorities, both before and after the initiation of the support operation.

Britain was lucky in how the Northern Rock affair worked out. Northern Rock was a relatively small institution, and so it was possible for the government to both provide a £28 billion loan to substitute for lost wholesale and retail funding and to guarantee the remaining £12 billion of retail deposits, without causing a major problem in public finances. Confusion in how official actions were announced (commented on very unfavourably in the report of the Treasury Select Committee) undoubtedly created anxiety, but the run was nevertheless confined, for all practical purposes to Northern Rock. This may have been a beneficial spillover from the government deposit guarantee Northern Rock received, or perhaps due to a well-entrenched belief that British banks were safe.[142] Such luck cannot be relied on for the future. The failure of a larger institution could well trigger both fiscal problems and a broader loss of confidence in the banking system.

Britain's financial stability was not shattered on the Rock, but it was left looking a little fragile. We propose the following actions to make it robust once more.[143] First, there should be arrangements for prompt and orderly closure of a bank as it approaches problems, before it would otherwise be forced to close by either insolvency or illiquidity. Second, there should be reform of deposit insurance, such that whatever sum is guaranteed is completely guaranteed, and can be accessed without any significant delay – by which we mean essentially with a delay of at most one business day. This of course implies a cap on the guarantee at a fairly modest level. We have seen no arguments for raising the cap above the post Northern Rock £35 000; this would cover over 90 per cent of retail sterling bank deposits. Third, arrangements need to be made such that customers retain access to all core banking services either through speedy transfer of all accounts or the continued operation in some guise of the troubled bank.

With these reforms in place, Britain should be able to return once more to its classic, well-tested method of dealing with banking problems as first fully set out by Henry Thornton in 1802. This would preserve

financial stability without encouraging bad, imprudent or even reckless, banking – and there is quite enough of that around without encouraging it further. We therefore hope that these or similar proposals are implemented soon.

References and Notes

1 There were runs on some 'fringe banks' in the secondary banking crisis of 1973–1974. See Reid, M. (2003) *The Secondary Banking Crisis*. London: Hindsight Books Ltd. for details.
2 The first time an individual is mentioned we refer to them by their full name; thereafter surname only is used. Appendix A comprises a Dramatis Personae. All quoted statements attributed to individuals are, unless another source is given, from evidence to the House of Commons Treasury Select Committee into Northern Rock.
3 Since our aim is to explain what caused the run, we do *not* discuss what happened afterwards, between September 2007, when the Bank of England first provided emergency liquidity support, and February 2007 when Northern Rock was taken into public ownership.
4 It should be noted that UK mortgage lenders including Northern Rock provide either floating rate mortgages or mortgages with rates of interest fixed from between 2 and 5 years; there is no issue of long-term (20-year plus) fixed interest mortgages. As a result, prepayment rates in the United Kingdom, unlike in the United States, are not sensitive to long-term rates of interest.
5 Unlike many other banks Northern Rock did not make use of asset-backed commercial paper conduits as a source of short-term funding for the issue of mortgage-backed securities; until the autumn of 2007 all its mortgage-backed securities were sold rather than held off-balance sheet.
6 Speech by Mervyn King, Governor of the Bank of England at the Northern Ireland Chamber of Commerce and Industry, Belfast on Tuesday 9 October 2007.
7 Q 501.
8 Quite plainly some in the financial markets had foreseen these problems before the Board of Northern Rock, and before the regulatory authorities had at any rate started to articulate them. Northern Rock's share price started to fall from about mid-May, well before those of the rest of the banking sector.
9 This was the £5077 million 17 September issue of Granite series 07/03 securitised notes.
10 Ev 216.
11 HC 568-I, Session 2006–2007, 28 June 2007 Bank of England May 2007 Inflation Report, Q 23.
12 Before that date it had no formal responsibility for bank supervision, although it had, and had exercised, considerable informal influence.
13 Q 785.
14 Financial Services Authority Handbook, BIPRU 1.3, Applications for Advanced Approaches.
15 Northern Rock's Interim Results, for 6 months until 30 June 2007, p. 14.
16 Q 454.
17 Q 538.
18 Q 689.
19 Northern Rock Annual Report 2006, p. 51.
20 (2007) Review of the Liquidity Requirements for Banks and Building Societies. Financial Services Authority. Discussion Paper 7/07, December , p. 32.
21 Q 417.
22 Ev 304.
23 Q 1569.
24 Ormerod, P. and Rosewell, B. (2007) How extreme is the current gap between Libor and base rate? Available at www.dur.ac.uk, October 2007.
25 Qq 207–208.
26 Q 192.
27 Q 1524.
28 Q 455.
29 Q 639.
30 Q 636.
31 Q 860.
32 Qq 3, 8, 12.
33 Q 391.
34 Q 1523.
35 Qq 568, 586–587.
36 Q 568.
37 Q 32.
38 Qq 200, 751, 754.
39 Qq 548, 574.
40 Qq 754, 756.
41 Q 754.
42 Qq 108, 200, 611.
43 Q 613.
44 Q 200.
45 Qq 571, 577.
46 Q 574.
47 Qq 83–84, Ev 295.
48 Q 288.
49 Qq 295–6.
50 Ev 216.
51 Q 770.
52 HC 139-I, Session 2007–2008, Bank of England November 2007 Inflation Report, Q 18.
53 Q 609.
54 Ev 296.
55 Q 3.
56 Qq 571, 732.
57 Q 257.
58 Qq 749, 754.
59 Q 588.
60 Q 754.
61 Qq 571, 577.
62 Q 588.
63 Q 614.
64 Q 680.
65 Qq 617, 579.
66 Q 1665.
67 Qq 1715–1717.
68 Q 789.
69 Q 1665.

70 Qq 789, 1665.
71 Q 1665.
72 Qq 1665, 789.
73 Q 5.
74 Q 1672.
75 Q 107.
76 Q 258.
77 Q 579. See also Q 613.
78 Q 679.
79 Q 1665.
80 Qq 257, 3, 790.
81 Qq 324, 1665, 788.
82 Q 790.
83 Q 136.
84 Q 1620.
85 Q 577.
86 Q 796.
87 Qq 623, 675, 681, 345.
88 Q 1668.
89 Qq 1668, 750.
90 Q 184.
91 Q 580.
92 Bank of England News Release. Liquidity Support Facility for Northern Rock plc. 14 September 2007.
93 www.bbc.co.uk/blogs/thereporters/robertpreston/2007/10/16/index.html, October 2007.
94 Q 580.
95 Q 577.
96 Q 792.
97 Q 1527.
98 Q 623.
99 Qq 304, 464.
100 Q 529.
101 Q 1760.
102 Qq 1527, 345.
103 Q 678.
104 Qq 345, 792.
105 Q 1527.
106 Qq 14, 1618.
107 Q 26.
108 Q 57.
109 Q 677.
110 Qq 46, 57.
111 Q 1760.
112 HM Treasury Press Release, Statement by the Chancellor of the Exchequer on financial markets, 17 September 2007.
113 Q 1760.
114 Q 8.
115 Q 1617.
116 Qq 110, 112.
117 Q 113.
118 Q 1527.
119 Q 623.
120 Q 108.
121 Q 1532.
122 Q 47.
123 Q 1617.
124 Q 1622.
125 Q 108. See also Q 1646.
126 Qq 55, 1763–1764.
127 Qq 1760–1762.
128 A detailed description of the evolution of this classic lender of last resort can be found in Wood, G. E. (2000) The lender of last resort reconsidered. *Journal of Financial Services Research* 18(2–3): 203–227.
129 This quotation comes from pages 19–23 of the 1967 facsimile reprint by Augustus Kelly of the 1797 edition of Francis Baring's *Observations on the Establishment of the Bank of England and on the Paper circulation of the Country.* Baring, as well as importing the term, used it in a new, metaphorical, way. In France it referred to the final court of appeal.
130 Thornton, H. (1802) *An enquiry into the effects of the paper credit of Great Britain*, Reprinted by Fairfield, NJ, 1978.
131 Bagehot, W. (1973) *Lombard Street*, London: Henry King.
132 His writing in *Paper Credit* continually interwove analysis with factual examples. In an early essay on the book, Francis Horner (writing in the *Edinburgh Review*), observed that this made *Paper Credit* hard to read and to understand, and accordingly, as well as praising the book's insights very highly, he summarised its analytical framework.
133 Suspension of the Act freed the note issue from the constraint of the Bank's gold reserves. This action has parallels in Italy later in the nineteenth century, and again in East Asia in 1998 (for a brief discussion of that 1998 episode, see Wood, 1999). There was also a parallel in the United States. The 1932 Banking Act (the Glass–Steagall Act) broadened the collateral the Fed could hold against Federal Reserve notes. While the gold requirement was left unchanged at 40 per cent, the Act added government bonds to the list of eligible paper that could take up the remaining 60 per cent (see Benston, G. J. (1990) *The Separation of Commercial and Investment Banking*. The Glass–Steagall Act Revisited and Reconsidered. London: ONP, and New York: Macmillan).
134 Gregory, T.E. (1929) Select statistics, documents and reports relating to British Banking, 1842–1928. Oxford: Oxford University Press.
135 In an article in *The Times* of 22 January, Anatol Kaletsky made a similar contrast, presenting the sensible choices as either administration or nationalisation, and condemning the chosen outcome as a device designed only to save the Government's reputation, and one that would be costly to the taxpayer.
136 On Monday 18 February the Government announced the latest development in the Northern Rock story. The bank was to be nationalised. It was in public ownership by Friday 22 February. The details of what went on to lead to this are sparse, so are relegated to Appendix C.
137 Whether anonymity could be preserved when a large operation was going on is not so clear – the operation would almost certainly be noticed.
138 For example, depositors in BCCI. Depositors there had to rely on the deposit insurance fund. But that case was perhaps special since BCCI was closed because it was run fraudulently.
139 Such depositor queues did take place at the time of the secondary banking crisis in the early 1970s, but were not widely reported. This may be because the media of the day were more compliant.
140 We emphasise that this does not mean that either management or shareholders are protected. It means simply that the operations of the bank are continued.

141 That order of priority follows US practice. The virtue of this is that it has been tested and has worked. But if the deposit insurance fund were to come second last, preceding only shareholders, then it would have a powerful incentive to maximise the value realised for the business, and that is desirable from the point of view of achieving efficient use of the business' resources.
142 The guarantee given to Northern Rock depositors was briefly extended to depositors at other banks; but there were few signs of other runs starting even before that was done.
143 These proposals do not concern themselves with reform of regulatory and supervisory structures. Proposal for such changes, wholly compatible with the proposals in this paper and fully supported by its authors, are in the report of the Treasury Select Committee.
144 Q 1761.
145 HM Treasury press notice 96/07, 20 September 2007. On 21 September, the Treasury confirmed that "renewals with Northern Rock plc of existing uncollateralised deposits and wholesale borrowing and retail bonds (in each case up to the same maturity) are covered for the term of the renewal": HM Treasury press notice, 21 September 2007, 'Northern Rock plc RNS'.
146 HM Treasury press notice 96/07.
147 HM Treasury press notice 104/07, 9 October 2007.
148 HM Treasury press notice 107/07, 11 October 2007.
149 Q 848.
150 Q 194.
151 'ARROW' is the acronym for 'Advanced Risk Recognising Operating Framework'. The final 'W' in 'ARROW' comes of course from the 'work' in 'framework'.
152 Ev 224.
153 Q 191.
154 Ev 225.
155 Q 193. It should in fairness be noted that there are some 400 banks in the United Kingdom.
156 Q 205.
157 Q 840.
158 Ev 326.
159 Ev 295.

APPENDIX A

Dramatis personae

Applegarth, Adam (Former Chief Executive of Northern Rock)

A graduate in Economics with Mathematics from the University of Durham, Applegarth joined Northern Rock as a research assistant in the marketing department in 1983, rising to the level of Executive Director in 1996 and Chief Executive in 2001. He resigned from his position in November 2007 in the wake of the Northern Rock crisis.

March 2001: Chief Executive of Northern Rock.
October 1996: Executive Director of Northern Rock.
1983: Joined Northern Rock as research assistant in the marketing department.
1982: Graduation from University of Durham with a degree in Economics with Mathematics.

Buiter, Willem (Professor of European Political Economy at the European Institute, London School of Economics)

Educated at Cambridge and Yale Universities, Professor Buiter has taught Economics at Cambridge, Yale, Bristol and Princeton Universities. From 1997 to 2000, he was a member of the Bank of England's Monetary Policy Committee.

Coles, Adrian (Director General of the Building Societies Association)

Adrian Coles has been Director General of the Building Societies Association since 1993, alongside his roles as a member of the Executive Committee of the European Mortgage Federation, the Secretary General of the International Union for Housing Finance, a member of the Board of the Monetary Advice Trust (1994–2004) and as Director General of the Council of Mortgage Lenders (1993–1996).
Degree in Economics (*University of Nottingham and University of Sheffield*)

Darling, Alistair (Chancellor of the Exchequer)

Alistair Darling was appointed Chancellor of the Exchequer in June 2007. Previously, he was Secretary of State for the Department of Trade and Industry (May 2006 – June 2007), Secretary of State for Transport and Secretary of State for Scotland (May 2002 – May 2006), Secretary of State for Work and Pensions (June 2001 – May 2002) and Secretary of State for Social Security (July 1998 – June 2001). He was the Shadow Chief Secretary to the Treasury (July 1996 – April 1997), Opposition

Spokesman on the City and Financial Services (1992 – July 1996) and Opposition Home Affairs Team (1988–1992). Having obtained a law degree from the University of Aberdeen, Darling worked as a solicitor in Edinburgh before being called to the Scottish Bar and admitted to the Faculty of Advocates in 1984. He has been the Member of Parliament for Edinburgh South West since 1987.

Gieve, Sir John (Deputy Governor of the Bank of England)

Sir John Gieve has been Deputy Governor of the Bank of England and a non-executive board member of the FSA since January 2006. Educated at Oxford, he joined the Civil Service in the Department of Employment in 1974. He has held numerous posts in government including Press Secretary (1986–1988), Principal Private Secretary to the Chancellor of the Exchequer (1988–1989) and Permanent Secretary of the Home Office (2001–2005).

King, Mervyn (Governor of the Bank of England)

Mervyn King is Governor of the Bank of England and Chairman of the Monetary Policy Committee. He previously held the position of Deputy Governor (1998–2003), Chief Economist and Executive Director (1991–) and Non-Executive Director (1990–1991) at the Bank of England. He has taught at Cambridge and Birmingham Universities and at the London School of Economics and Political Science, and was a visiting professor at both Harvard University and MIT.

McCarthy, Sir Callum (Chairman of the FSA)

Sir Callum McCarthy has been Chairman of the FSA since 2003. He joined from the energy sector, having worked as Director General of Ofgas (1998) and Chief Executive (1998) and later Chairman of Ofgem (1999). Having begun his career at the DTI, McCarthy previously worked for Barclays Bank, where he moved from Managing Director and Deputy Head of Corporate Finance of BZW to the position of Chief Executive Officer for the group's operations in Japan and North America.

Ormerod, Paul (Director and Co-founder of Volterra Consulting)

Paul Ormerod is an economist specialising in complexity, complex systems and nonlinear feedback. He is the author of The Death of Economics (1994), the Butterfly Economist (1999) and Why Most Things Fail: Evolution, Extinction and Economics (2005).

Ridley, Matt (Former Chairman of Northern Rock)

From 2004 to 2007, Matt Ridley was Chairman of Northern Rock, which he joined as Director in 1994. He is also Chairman of PA Consulting and the Director of Northern Investors. He began his career as a journalist for *The Economist*, where he worked between 1983 and 1992, before moving onto freelance writing for the *Sunday Telegraph* (1993–1996) and the *Daily Telegraph* (1996–2000). He is the author of several works of popular science.

Rosewell, Bridget (Chairwoman and Co-founder of Volterra Consulting; Consultant Chief Economist for the Greater London Authority)

Bridget Rosewell is Chairwoman of Volterra Consulting, which she co-founded with Paul Ormerod. She has taught economics at St Hilda's, Somerville and Oriel Colleges, Oxford. From 1984 to 1986, she was head of the Economic Trends Department and Deputy Director of Economic Affairs at the Confederation of British Industry. She then moved into the private sector, working as Chief European Economist at Wefa Ltd. (1986–1988), before her appointment as Chairwoman of Business Strategies Ltd. (1988–2000).

Sants, Hector (Chief Executive Officer of the FSA)

Hector Sants has been Chief Executive Officer of the FSA since July 2007. He joined the

organisation as Managing Director, Wholesale and Institutional Markets in May 2004, having previously worked as Chief Executive Officer of Europe, Middle East and Africa at Credit Suisse First Boston. He was earlier a member of the Financial Services Practitioner Panel, and a board member of the SFA and of the London Stock Exchange.

Wanless, Sir Derek (Former Non-Executive Director of Northern Rock)

From 2000 to 2007, Sir Derek Wanless was a non-executive director of Northern Rock, as well as Chairman of Northumbrian Water Group and the Financial Services National Training Organisation. Sir Derek began his career at Natwest, rising to become the group's Chief Executive in 1992, a position that he held until 1999. He is a Mathematics graduate of Cambridge University.

APPENDIX B

The Guarantee

The initial government guarantee on Northern Rock deposits was announced on Monday 17 September. The announcement did not take place until late that day, even though the decision in principle to provide it had been reached the previous day, because, in the Chancellor of the Exchequer's words to the Treasury Committee, 'when I announced the guarantee, I wanted to be pretty clear what exactly I was announcing because people would want to know beyond doubt what the position was'.[144] The initial guarantee announced on 17 September referred to 'all the existing deposits in Northern Rock', and was set for the duration of 'the current instability in the financial markets'.[112]

The terms of the guarantee have gone through several changes since that initial announcement.

On Thursday 20 September, the Treasury modified and clarified the coverage of the guarantee. The Treasury stated on that day that the guarantee 'would cover all accounts existing at midnight on Wednesday 19 September'. It was also made clear that the 'guarantee covers future interest payments, movements of funds between existing accounts, and new deposits into existing accounts'. In addition, to assist in rebuilding Northern Rock's depositor base following the run, the guarantee was extended to 'cover accounts re-opened in the future by those who closed them between Thursday 13 September and Wednesday 19 September'. In relation to wholesale deposits, it was stated that the guarantee covered 'existing and renewed wholesale deposits; and existing and renewed wholesale borrowing which is not collateralised'.[145] The guarantee did not cover other debt instruments such as 'covered bonds', securities issued under the 'Granite' securitisation programme and subordinated and other hybrid capital instruments.[146]

On 9 October, the guarantee was further extended to all retail deposits made with Northern Rock since 19 September. This additional guarantee was put in place at the request of Northern Rock, and was intended to 'allow the Company to continue to pursue the full range of its strategic options'. The Treasury also announced that 'Northern Rock plc will pay an appropriate fee for the extension of the arrangements, which is designed to ensure it does not receive a commercial advantage'.[147] The fee was subsequently described as being one 'from which the Treasury will benefit', which was 'set at a higher rate than the interest premium on the additional facilities' that we consider later.[145]

On 11 October, the Treasury clarified that the government guarantee was intended to 'supplement, and not replace, any compensation provided by the Financial Services Compensation Scheme (FSCS), which the Financial Services Authority has recently extended to cover 100 per cent of the first £35000 of deposits'.[148]

The guarantee would only be engaged in a situation where Northern Rock was itself unable to meet its payments. The Chancellor

of the Exchequer said in October that he was not contemplating the bankruptcy of Northern Rock.[149] The Treasury liability in the event that Northern Rock entered into administration or was otherwise unable to meet its commitments to depositors relates to the value of deposits in excess of the limit of £35 000 under the FSCS, together with the complete value of any deposits that are not eligible. The Treasury has so far not provided information on the scale of this liability.

APPENDIX C*

Nationalisation

The story of what led to the nationalisation decision taken over the weekend of 16/17 February is obscure. The government had been seeking buyers for Northern Rock. What was their authority to do so? The government was a large creditor, but this in principle gave them no more authority over the running of Northern Rock than had any other creditor. They were therefore acting as a 'Shadow Director'.

The Companies Act defines a shadow director as a person who instructs other directors what to do. Individuals who act in this way are deemed to have the same liabilities as properly appointed directors.

A shadow director can be any person, but usually represents majority shareholders who threaten to replace the actual directors if they do not follow their instructions.

This places the government in a strange position – for the duty of directors is to the shareholders. Were they acting in that way when they sought and then rejected buyers? Perhaps they were when they sought buyers, but whether they were when rejecting them depends on the compensation terms the government offers to the shareholders. These are not yet revealed.

In any event, there were initially four expressions of interest – from Virgin Money, J.C. Flowers, the existing management and an *ad hoc* group led by a former chief executive of Abbey National. Immediately after Richard Branson of Virgin went on a trip to China with the Prime Minister, Virgin was declared the 'preferred bidder'. Reasons were not disclosed. It was then decided that no bid was good value to the taxpayer. (These grounds for rejecting the bids surely represent a conflict with the government's 'Shadow Director' role.)

The company was then nationalised. An Acting Executive Chairman, Ron Sandler, was appointed, along with Ann Godbehere as Finance Director. Sandler had helped to restructure the Lloyd's insurance market with considerable success, had been on the board of National Westminster Bank when it had failed to resist a takeover by Royal Bank of Scotland, and when appointed to this post held several non-executive positions. Godbehere had in the past been finance director of an insurance company, and immediately before this appointment had, like Sandler, held some non-executive positions. Their first act in office was to appoint McKinsey's to advise them what to do.

(*We are much indebted to Peter Gardner of Hansa Capital Partners for his guidance on the concept of a 'Shadow Director'.)

APPENDIX D

The FSA's evidence to the Treasury Committee

According to Hector Sants, Northern Rock was treated by the FSA as 'a high impact bank, under close and continuous supervision'.[149] The FSA outlined the importance of what is called the ARROW[151] process:

> Our framework for assessing the risks to our objectives posed by individual firms is called 'ARROW'. Full ARROW risk assessments are an integral part of this supervisory process; they are intensive stocktakes of individual firms and are supplemented by a number of other

> monitoring techniques. We have designated Northern Rock and more than a hundred comparable businesses as high-impact firms.[152]

Northern Rock, despite being a high-impact firm, was not, however, scheduled to have another ARROW impact assessment until 3 years after its most recent assessment.[153] Its regulatory period was due to run from January 2006 until January 2009.[152] In a reply to a question from the Treasury Committee, Sants acknowledged that this proposed interval between assessments was 'inadequate'.[153] The FSA nevertheless stressed that, although there was a significant gap between full ARROW reviews, a 'close and continuous' relationship remained:

> This [close and continuous supervision] is characterised by very regular dialogue with the firm on the full range of supervisory issues, through ad hoc meetings and regular telephone conversations and email traffic. Our work streams in supervising Northern Rock over the last two years have included: reviewing strategic and business developments through discussions with the firm; attendance at results presentations; monitoring the market; assessing the ongoing validity of our risk assessment; monitoring financial data, supervisory returns and management information; reacting to specific requests from the firm – such as the Capital Requirements Directive (CRD) waiver request which was a major work stream during this period; and undertaking the formal review process which sets the capital requirements of the firm on the basis of the risks identified by the firm and the FSA. We also carry out thematic reviews–projects to review practices in a range of firms in a specific area of their business. Northern Rock was subject to thematic reviews in the same way as other similar firms.[153]

Sants revealed that three members of the FSA's staff (of some 2500) were assigned to the direct supervision of Northern Rock.[155] He went on to explain, however, that the number of FSA staff who would come into contact with Northern Rock would have been higher, observing that,

> You have coverage supervisors, you have the relationship with the bank and then you have a series of specialist teams who regularly visit the bank on particular issues. So, the question, for example, of stress testing would be addressed by a specialist team who come and visit to look at the stress test, and that was the visits that were carried out in this case in April and May 2007 and, indeed, we also have teams looking at the securitisation process and so forth during that period. So, if you are asking the question about the total number of people involved in the FSA engaged with Northern Rock, you would have a much higher number [than 3].[156]

But despite all this, two signals that possibly suggested that there were problems to come for Northern Rock appear to have been ignored.

Several witnesses before the Treasury Committee noted the rate of growth in Northern Rock, commenting that such unusual growth, although not necessarily signalling danger, certainly merited examination. For example, the Chancellor of the Exchequer remarked,

> I have said before that regulators should concern themselves not just with institutions that do not appear to be doing terribly well but also with institutions that do appear to be doing terribly well because, if they are out of line, it may be they are doing a very good job but they ought to just be sure that that is the case.[157]

The second warning signal was the fall in Northern Rock's share price, especially in

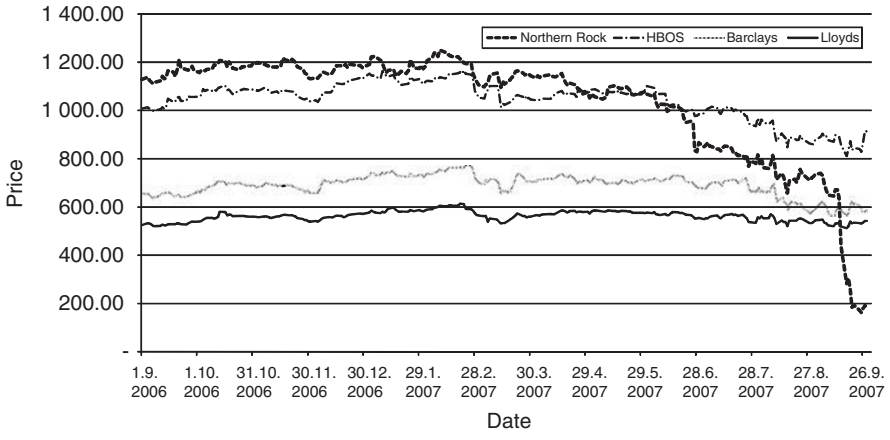

Figure D1: Northern Rock 1 September 2006 to 30 September 2007.

comparison to other banks, during 2007, a fall that accelerated after the profits warning issued in late June 2007 (Figure D1). By the time of the announcement of the Bank of England support operation, its share price had already fallen by about 50 per cent.

As Willem Buiter noted in his written evidence, 'There is some information surely in the fact that Northern Rock's share price had been in steep decline since February of this year, well before the financial market turmoil hit'.[158]

The 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 per cent 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 inter-bank lending arrangements generally. By mid-July the share price was some 30% lower than at the start of the year.[158]

EVIDENCE GIVEN TO SELECT COMMITTEE

Ev 1: Thursday 20 September 2007
- Mr Mervyn King
- Sir John Gieve
- Mr Paul Tucker
- Ms Kate Barker
- Dr Andrew Sentence

Ev 21: Tuesday 9 October 2007
- Sir Callum McCarthy
- Mr Hector Sants

Ev 47: Tuesday 16 October 2007
- Dr Matt Ridley
- Mr Adam Applegarth
- Sir Ian Gibson
- Sir Derek Wanless

Ev 78: Thursday 25 October 2007
- Rt Hon Alistair Darling MP
- Mr Nicholas Macpherson
- Mr Mark Neale
- Mr Richard Hughes
- Mr Clive Maxwell

Ev 93: Tuesday 13 November 2007
- Professor Willem Buiter
- Professor Geoffrey Wood

Ev 105: Tuesday 13 November 2007
- Mr Paul Taylor
- Mr Charles Prescott

Mr Michel Madelain
Mr Fréderic Drevon
Mr Ian Bell
Mr Barry Hancock

Ev 123: Tuesday 4 December 2007
Mr E Gerald Corrigan
Lord Charles Aldington
Mr Jeremy Palmer
Mr William Mills

Ev 135: Tuesday 4 December 2007
Mr Richard Sexton
Mr John Hitchins

Ev 144: Tuesday 4 December 2007
Mr Chirs Hitchin
Mr Peter Montagnon
Mr Guy Sears
Mr David Pitt-Watson

Ev 153: Tuesday 11 December 2007
Sir Callum McCarthy
Mr Hector Sants
Ms Loretta Minghella

Ev 169: Tuesday 18 December 2007
Ms Angela Knight CBE
Mr Adrian Coles

Ev 177: Tuesday 18 December 2007
Mr Mervyn King
Sir John Gieve

Ev 197: Thursday 10 January 2008
Rt Hon Alistair Darling MP
Mr John Klingman
Mr Clive Maxwell

List of written evidence
Ev 214: Bank of England, Letter from the Governor
Ev 214: Memorandum
Ev 217: Follow-up evidence session on 18 December 2007
Ev 217: Tripartite authorities
Ev 219: Financial Services Consumer Panel
Ev 220: Financial Services Authority
Ev 223: Follow-up to evidence session 9 October 2007
Ev 223: Follow-up to evidence session 11 December 2007
Ev 227: Letter from the Chairman of the FSA
Ev 231: Northern Rock, follow-up to evidence session on 16 October 2007
Ev 240: Letter from Chairman of Northern Rock
Ev 240: HM Treasury, letter from the Chancellor
Ev 242: Follow-up evidence session on 25 October 2007
Ev 243: Letter from the Chancellor
Ev 244: Julian D.A. Wiseman
Ev 247: London Investment Banking Association
Ev 253: Dr Paul Hamalainen, Loughborough University
Ev 257: The Alternative Investment Management Association Limited
Ev 258: Fitch Ratings
Ev 264: Follow-up evidence session on 13 November
Ev 266: The Association of British Insurers
Ev 269: Institutional Money Market Funds Association
Ev 272: Standard and Poor's
Ev 276: Follow-up to evidence session on 13 November
Ev 280: Moody's
Ev 285: Follow-up to evidence session on 13 November
Ev 288: Investment Management Association
Ev 294: British Banker's Association
Ev 303: The Building Societies Association
Ev 308: Council of Mortgage lenders
Ev 310: Professor Willem Buiter, London School of Economics and Political Science
Ev 330: National Association of Pension Funds (NAPF)
Ev 332: E Gerald Corrigan, Goldman Sachs International
Ev 335: David Pitt-Watson, Hermes Equity Ownership Service
Ev 336: PriceWaterhouseCoopers, follow-up to evidence session on 4 December 2007