

The Regulatory Response to the Financial Crisis

**By
C.A.E. Goodhart**

SPECIAL PAPER 177

LSE FINANCIAL MARKETS GROUP PAPER SERIES

February 2008

Charles A.E. Goodhart is Norman Sosnow Professor of Banking and Finance at the London School of Economics. He is also the Deputy Director of the Financial Markets Group Research Centre, and an advisor to the Governor at the Bank of England. Any opinions expressed here are those of the authors and not necessarily those of the FMG. The research findings reported in this paper are the result of the independent research of the authors and do not necessarily reflect the views of the LSE.

The Regulatory Response to the Financial Crisis¹

By C.A.E. Goodhart
Financial Markets Group
London School of Economics

A. Introduction

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

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

1. Deposit Insurance;
2. Bank Insolvency Regimes, a.k.a. ‘prompt corrective action’;
3. Money market operations by Central Banks;
4. Liquidity Risk Management;
5. Procyclicality in CARs, i.e. Basel II, and general lack of counter-cyclical instruments;
6. Boundaries of regulation, Conduits, SIVs and reputational risk;

¹ The author(s) wish to thank the Economic and Social Research Council for its support under research grant RES-156-25-0026.

7. Crisis management:-

- (a) . within countries, Tripartite Committee
- (b) cross-border

B. Deposit Insurance

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

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

Detragiache (2002), Demirgüç-Kunt and Huizinga (2004), and Demirgüç-Kunt and Kane (2002).

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

There are two problems with this. The first is that the question of what kind of DI scheme to have, and its coverage, cap and speed of pay-out, really ought to be European, if not world wide, in answer and resolution. Yet the UK has been rushing towards a unilateral conclusion for itself. Apart from being, typically, non-communautaire, this is likely to cause grief in the context of an increasingly cross-border banking system.

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

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

C. Bank Insolvency Regimes

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

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

historical precedents have been totally ignored now is not entirely clear to me, but the fact that a large proportion by number of Northern Rock shareholders were either bank employees or bank clients, or both, suggests that this route would not be politically propitious.

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

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

Since the European representatives on the Basel Committee of Banking Supervision have consistently denigrated the use of simple leverage ratios, in favour of more risk-weighted capital adequacy ratios, the UK could hardly import that feature of

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

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

American practice as the trigger. But the example of Northern Rock unfortunately underlines just how poorly the Basel II CAR would function as a sole trigger. Instead the joint, (Treasury, Bank, FSA) White Paper (Cm 7308, January 2008), proposes a more subjective test (Paragraph 4.10), covering enhanced risk of failure, exhaustion of earlier attempts at rectification, and present danger to the financial system and depositors.

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

The more that the judgment to remove the management, and take control away from the shareholders, has to be subjective, the greater must be the concern about due process and judicial review. It is certainly right that the basic decision should be

taken by the FSA, but only after consultation with the Bank and the Treasury, (Section 4.9), and that there are satisfactory appeal mechanisms (Section 4.18). That same latter Section states that the Government would “also provide the arrangements to ensure the fundamental rights of shareholders – including the shareholders and counterparties of the failing bank – [would be] protected”, but how this might be done is not yet spelt out. My own recipe would be to require the authorities to auction off any such bank within five years, or less, and then allocate the proceedings to stake holders in order of seniority. If circumstances plausibly prevented such an auction, the government would be required to pay debt holders in full and shareholders the value of their equity as of the day of the transfer of ownership.

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

There is also the tricky question of running such a, government-owned, bridge bank efficiently and profitably, but without triggering accusations of public-sector subsidy or of taking unfair competitive advantage from its default risk-free status. On this topic, I welcome the proposal “to consult with the European Commission and the

Competition Commission to ensure that any new [special] resolution [regime] proposals are compliant with state aid rules and competition law”.

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

D. Money Market Operations

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

This led to several difficulties. First, the closure of the wholesale markets impacted differentially on banks, depending on whether they were intrinsic net borrowers or net

lenders on such markets. The standard mechanism of Central Bank liquidity injection had them using open market operations of various kinds to provide sufficient cash on average to maintain the short-term policy rate of interest. Thereafter banks still short of cash could obtain additional funds at the upper band of the corridor, the discount window, or standing facility, typically 1% above the policy rate, (while banks replete with cash could deposit with their Central Bank at a rate typically 1% below the policy rate). The problem that arose, though more so in some monetary areas than others, was that in these circumstances such borrowing at the upper bound, if and when perceived, was taken by commentators as a serious signal of weakness, and thereby carried a stigma of reputational risk. Such reputational risk was even greater when using Emergency Liquidity Assistance or Lender of Last Resort actions.

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

The next problem was that the main shortage of funding occurred at the one to three month horizon. The authorities' usual task is to provide enough cash to meet immediate needs, and this, with a few hiccups, they did throughout. On average overnight rates were kept below the policy rate. Indeed, at times the banking systems

were characterised as being ‘awash with cash’. Instead, the main problem was that banks could see additional funding requirements falling on them in coming months, e.g. the need to replace withdrawals of asset-backed commercial paper, at a time when they could not raise such term-lending in wholesale markets. This meant that banks wanted to borrow from Central Banks at such longer maturities; this was a novel situation. After a short learning period, the Central Banks responded by offering some version of longer-term auction facility (TAF). Another wrinkle was that the banks’ wishes for such term lending often exceeded the cash requirement to keep overnight rates in line with the policy rate. So the term lending injection of cash had to be combined by mopping-up, withdrawing cash at the very short end, an ‘Operation Twist’ indeed. Since the main Central Banks intervened in somewhat different ways in this respect, we can look forward to analysis of what worked and what did so less well.

In my view a more serious issue is what collateral a Central Bank should accept? During the crisis several such Central Banks were pressured by events, and by the fact that commercial banks had drastically run down their holdings of public sector debt in recent decades, into accepting private sector assets, such as residential mortgages, of somewhat lower quality as collateral. Does this matter? What limits the collateral that a Central Bank should accept? Commercial banks benefit from liquidity transformation; is it proper for commercial banks to take all the upside benefit from such liquidity transformation leaving the Central Bank to protect against all downside liquidity risks?

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

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

Overall, as I have noted elsewhere, this crisis was fairly well forecast. For various reasons systemic liquidity had been excessive for most years, since about 2002, allowing a credit pyramid to develop. At some point an abrupt reversal was likely.

Central Banks and international financial intermediaries, such as the BIS, issued warnings, but were, or felt, otherwise unable to do anything about it. What we do not need is more early warning systems, more or alternative institutions to the existing Financial Stability Forum (FSF) at the BIS. What we do need is contra-cyclical control mechanisms, instruments, that allow the monetary authorities to do something about fluctuations in liquidity conditions.

The policy interest rate is predicated to the control of goods and services prices in the medium run. A feature of the years 2002-6 was that such goods and services prices remained restrained, at a time when liquidity was seen to be becoming excessive. In the euro-zone the monetary aggregates, the much derided Pillar 2, did perhaps provide a measure of that in the years 2004-6, but not so in the USA. Anyhow the short-term idiosyncrasies of the demand for money function are too great for comfort.

Meanwhile risk-weighted capital adequacy requirements, i.e. Basel II, are, as I shall remark next, pro, not contra, cyclical. So neither interest rates, nor Pillar 2, nor Basel II, provides us with a contra-cyclical instrument for offsetting major fluctuations in liquidity conditions. I have myself tried my hand at devising such an instrument. It is perhaps too wacky and idiosyncratic to be discussed here, but something like it, only much better, is badly needed.

E. Procyclicality in CARs

Several of the main trends in the regulatory and accounting systems of the last decade have served to exacerbate the pro-cyclicality of our financial system. The risk of default undeniably worsens in a recession. More companies and mortgages will go

bust in 2008 than in 2006. Credit ratings, whether internal or set by ratings agencies, will become downgraded, and rightly so. Meanwhile asset prices fall, both on primary and secondary markets. Where no such market exists, auditors, scared of future legal challenge, may feel forced to take a more conservative view. The combination of more risk-sensitive methods of applying CARs and mark-to-market valuations are imparting a strong upwards ratchet to the procyclicality of our system. Attempts to mitigate this syndrome, e.g. by proposing that credit ratings be made on a through-the-cycle basis, are unlikely to help much, if only because during the boom years it is to everyone's current benefit to adopt a point-in-time approach, and competition will ensure that that happens. Of course, for some time stress tests, re-running the 2007/8 experience, will prevent an exact re-run of that occurrence, but the range of potential self-amplifying financial crises is not only beyond the range of imagination, but if extended indefinitely in multitudes of stress tests could stifle financial intermediation.

These current developments, Basel II and mark-to-market accounting, have many eminent virtues. They clearly give each bank a much clearer, and better defined, picture of its own individual risk position. They will serve, and have served, to make banks more conscious of risk analysis. The problem is that the purpose of regulation should be to contain the systemic risks, the possibility of contagion, the externalities of the system as a whole, not so much to make each individual bank address risk more sensibly. The systemic problem is that the actions of each individual bank impinges on all other banks. For reasons that Keynes expounded, there is a natural tendency anyhow towards herd-like behaviour, and this is now only further encouraged by regulatory requirements. My colleagues here at the FMG, Jon Danielsson and Hyun

Shin, have coined the phrase ‘endogenous risk’ to cover the self-amplifying nature of interactions amongst banks, investment houses and other intermediaries. Our warning is that these recent regulatory and accounting measures have, despite having the very best of intentions, inadvertently but significantly reinforced such endogenous risk.

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

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

F. The Boundaries of the Banking System

We should, however, ask ourselves why that tendency has been so pernicious. My own answer to that is that the banking business strategy known as ‘originate and

distribute' should have been better re-entitled as 'originate and pretend to distribute'. What surprised, and should have shocked, most of us was the extent to which banks transferred their assets to vehicles closely related to themselves, conduits and SIVs of various kinds, to which they were bound, either by legal commitment or by reputational risk, to support whenever funding, or other, financial conditions become adverse.

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

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

G. Crisis Management

(i) The UK

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

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

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

The Treasury Select Committee (op. cit, 2008) has put the major blame for recent regulatory short-comings on the FSA, for failing to assess the funding/liquidity risks in the Rock's business plan. That did not surprise me. Any primarily supervisory body, like the FSA, is bound to find that the bulk of its work involves conduct of business issues, and the dominant professions on its staff will be lawyers and accountants. The key issue, however, in systemic, contagious externalities will be the interactions via financial markets of the banks, the process of endogenous risk. Here the need is for market expertise and professional economists, which the Bank has, and partly because of its stingy funding base, which the FSA does not, increasingly so as those Bank of England staff originally transferred to the FSA retire.

The Treasury appears minded, in the January White Paper, to give the bulk of the new proposed powers to the FSA. In the light of the above institutional considerations, I wonder if this is wise. I also wonder whether it is sensible to put so much emphasis on efficiency in the use of human resources in a field, such as systemic financial

dislocation, where the costs of getting it wrong can be so enormous. Two heads can be better than one. In the USA and in Japan, there are overlaps between the supervisory roles of the Central Bank and of the specialised supervisory agency. How about the idea of having the major banks and investment houses supervised both by the FSA and the Bank, with the former concentrating on conduct of business and the latter focussing on systemic issues? It might not be tidy, but it could be more effective, perhaps especially because it could add some wholesome competition into the scene.

(ii) Cross-Border Issues

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

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

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

References

Aggarwal, R. and K. T. Jacques, (2001) "The impact of FDICIA and prompt corrective action on bank capital and risk: Estimates using a simultaneous equations model", Journal of Banking & Finance 25(6) , pp. 1139-1160.

Bank of England, H.M. Treasury, FSA, (2008), Financial stability and depositor protection: Strengthening the framework, (London: H.M. Treasury Cm 7308), January.

Demirgüç-Kunt, A. and E. Detragiache, (2002), 'Does deposit insurance increase banking system stability? An empirical investigation' Journal of Monetary Economics, 49 pp.1373–1406.

Demirgüç-Kunt, A. and H. Huizinga, (2004), 'Market discipline and deposit insurance' Journal of Monetary Economics, 51 pp. 375–399.

Demirgüç-Kunt, A. and E.J. Kane, (2002), 'Deposit Insurance Around the Globe: Where Does It Work?' Journal of Economic Perspectives, 16(2), pp.175–195.

House of Commons Treasury Committee, (2008), The run on the Rock, (London: The Stationery Office Ltd.), HC 56-1, Fifth Report of Session 2007-8, January.

Pike, C. J. and J. B. Thomson, (1992) "FDICIA's prompt corrective action provisions," Economic Commentary, Federal Reserve Bank of Cleveland, issue Sep 1.