

Bank Creditors, Moral Hazard and Systemic Risk Regulation

Andrew Lilico



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Executive Summary

Companies finance their activities through capital. It is normal to distinguish two broad categories of such capital — “equity” and “debt”. The most obvious kind of equity is that raised by issuing shares in the economy that entitles the shareholders to claims on dividends and control of the company. The most common forms of debt are bank loans and bonds. However, banks themselves have another important category of debt: deposits. Deposits are loans that depositors make to the bank. Failure to repay a loan or to make an interest payment renders a company “in default” and can trigger a corporate insolvency.

Since the very beginning of lending at interest in capitalist societies, there has been a concept that lenders (bondholders or creditors) should be and are exposed to risk of loss, both in standard corporate insolvency and also in special administration procedures. But in recent years those that lend money to banks — depositors and bank bondholders — have been protected from risk of loss by government guarantees. In effect, lending money to banks (depositing it, or buying a bank bond) has ceased to be a fully private sector loan and has become a loan guaranteed by governments.

This report considers the economic and ethical perils of state guarantees for the creditors of banks. We argue that such guarantees mean that (relative to what would otherwise have been the case):

- There will be a higher proportion of bonds in the capital structure;
- Capital buffers will fall, and the riskiness of bank balance sheets will rise;
- Liquidity ratios will fall;
- Remuneration schemes will involve more risk-taking; and
- The balance sheet of the banking sector will rise, potentially to the point at which it starts to materially raise the risk of sovereign default.

In addition, state guarantees of bank creditors threaten the ethical foundations of capitalism, making it a system in which the poor pay taxes so that the system can keep the rich rich, regardless of how foolish, lazy, or unlucky the loans they have made might be.

Both for reasons of ethics and of economic efficiency, we urgently need to devise mechanisms whereby those that lend money to banks can be forced to lose some of that money if the banks go bust.

We identify two key drivers of the current sorry state of affairs. First, bondholders are too entangled, legally and mechanistically, with depositors for losses to be imposed upon bondholders without also imposing losses on depositors. We believe that depositors should be divided into two categories: those that simply wish to store money in banks; and those investing deposits in banks to get a return. We believe that storage deposits should be 100% backed by

government bonds, and can legitimately be insured by the state. Investment deposits, by contrast, should be at risk in principle, but should rank above bonds (even “floating charge” secured bonds) as claimants.

Second, policymakers are confused about the concept of systemic risk. Our analysis suggests that the relevant form of systemic risk in respect of the financial sector is what we term “conduit risk” — that the payments system is a key conduit of economic activity, akin to the electricity grid. This, we believe, justifies

“ In theory and in practice, bailing out bank bondholders will have the consequence that banks will act in such a way that it becomes materially more likely they will fail ”

the use of special administrative procedures in the banking sector akin to the special administration regimes that apply to vital utilities. We argue that many other notions of “systemic risk” — in particular preventing the failure of financial institutions; minimising financial market volatility; preventing individual investors from

losing significant sums of money; eliminating all bank runs; or preventing the failure of firms when such failure might lead to significant unemployment, perhaps even regionally-focused blight — are not legitimate reasons for special intervention in the financial sector.

We argue that the proper goal of systemic risk regulation is fourfold:

- Maintenance of an orderly payments system;
- Provision of adequate assurance to retail depositors so that they place (and leave) depositary funds in the financial system rather than storing them at home;
- The disincentivising of behaviours designed to game the fact that, in crises, governments may come under political pressure to bail out failing institutions — gaming behaviour designed to generate rewards for irresponsible behaviour; and
- Provision of adequate information to monetary authorities so that they can conduct monetary policy and deliver the first three objectives.

In theory and in practice, bailing out bank bondholders will have the consequence that banks will act in such a way that it becomes materially more likely they will fail, leading to calls on state bailout guarantees. Indeed, research has suggested that each bailout leads the bailout net to slacken, so that the next test of government willingness to bail out occurs at a higher level of danger. This problem — that bailing out banks makes them behave in undesirable ways — is a form of what is known as “moral hazard”.

One route to limit moral hazard problems associated with the bailing out of bank bondholders must be to create sufficiently robust and credible mechanisms to manage the maintenance of an orderly payments system that also allows for bank bondholders to take significant losses, thereby limiting the likelihood of state bailouts.

To credibly impose losses on bondholders and, in principle, investment depositors, we propose a system of special administration for banks. We suggest that special administration should only be triggered by solvency concerns (including the actual failure to make a payment on a loan), but not by pure

liquidity problems (which should be resolved by central bank lending in the traditional way). We argue that the key features of a special administration regime are:

- Depositors must not be exposed to losses from failure unless politicians are willing to allow them to experience those losses (hence there must be storage deposits available that offer no risk of loss, and no cap);
- Investment depositor losses should only occur if bondholder losses are total;
- Depositors must have access to their funds, even when the institution is in administration; and
- In special administration, losses should be imposed upon bondholders even when the bank is a going concern.

We propose a mechanism whereby, in special administration, if banks could be viable going concerns, they can be recapitalised by converting bonds into equity. However, we believe it crucial that investment depositors also be exposed to the in-principle risk of loss, and we explore mechanisms by which this can be achieved.

Much of the current debate has focused around increasing capital requirements and how to regulate banks such that they “never go bust again”. Apart from the hubris involved here (no system can prevent financial crises without eliminating the innovative virtues of the financial sector), the goal is deeply misconceived. The proper goal should be to devise means by which bank bondholders and investment depositors can be credibly exposed to risk. We want a system in which banks are more able to go bust, not less, but in which those failures can be tolerated much better. Company failure is an integral and healthy part of an economically efficient capitalist system and investors losing money is a vital and ineliminable element of any ethically defensible economic order. Small wonder that Mervyn King said recently that “Of all the many ways of organising banking, the worst is the one we have today”.¹

¹ <http://www.bankofengland.co.uk/publications/speeches/2010/speech455.pdf>

2 An implication is, of course, that depositors do not own their bank deposits in the way that they do retain ownership of, say, a car deposited at a garage or a suit deposited at a drycleaner's. For more on this point see Lilico, A. (2010), *Incentivising boring banking: an alternative approach*, Policy Exchange. http://www.policyexchange.org.uk/images/publications/pdfs/Incentivising_Boring_Banking_-_June_10.pdf

3 An exception is an infinite-term loan such as a traditional British government "consol" where the face value was never to be repaid.

4 When the loan is a bond a typical form would be for the bond to pay a fixed "coupon". So, for example, if the bond had a face value of £100, the coupon might be £5 per year. A variable interest rate is typically specified as a percentage of the loan outstanding (rather than as a fixed coupon) and might either be anchored to a specific measure (e.g. tracking the three-month London Interbank Offer Rate (LIBOR) plus a certain number of basis points) or reset at the lender's discretion (e.g. a variable rate mortgage).

5 Of course, monarchs and other great lords often found it convenient to borrow money for various purposes such as wars, and Catholic theologians had sought to soften earlier Greco-Roman-inspired restrictions on lending money at interest (restrictions that drew their inspiration from Aristotle's well-known condemnation of the practice), known as "usury", with a number of conditions under which usury was permitted. Specifically, receipt of interest could be justified by what were termed "extrinsic factors", such as:

- provable alternative profit opportunities foregone that did not involve lending at interest;
- operating costs incurred in the business of providing the loan;
- penalty interest, at a pre-agreed rate, to be incurred in the event of delay in making repayment, to compensate for specific provable costs the lender would then incur;
- when the government decides to set a temporary low rate of interest on loans to encourage more lending for a time, for some specific purpose to the common good;
- when the lending is of a sort where the risk of default and consequent loss to the lender is significant and can be evidenced, interest could be charged that would compensate for such losses.

1

How Law and Government Intervention Treat the Debt of Banks and Other Companies

Companies need capital to finance their activities, particularly for investment and working capital. It is normal to distinguish two broad categories of such capital — "equity" and "debt". The most obvious kind of "equity" is that raised by issuing shares in the company that entitled the shareholders to claims on dividends (and the residual value of the company if it is wound up) and to control of the company (holders of "common equity" are the "owners" of the company).

Turning to debt, the forms available depend very much upon the industry involved. The two simplest forms of debt are bank loans and bonds (promises to pay regular amounts plus, if the bond has a terminal value, the repayment of the "face value" at the end). But banks themselves have another important category of debt: deposits. Deposits are loans that depositors make to the bank.²

A loan typically involves the lender being repaid (or, in the case of a deposit, entitled to withdraw) the original face value of the loan³ plus receiving either a fixed or variable interest rate on the loan.⁴ Failure to repay a loan or to make an interest payment renders a company "in default" and can trigger a corporate insolvency.

How corporate insolvency law arose in the UK

Prior to the sixteenth century, lending money at interest was (subject to certain qualifications) generally regarded as immoral and in much of Europe outright forbidden for private citizens.⁵ But by the mid-sixteenth century the debate had moved on, and Protestant states drew their legislative inspiration from Calvin's argument that lending money at interest was (subject to certain restrictions) legitimate.⁶ With more widespread money-lending came more widespread bankruptcy. The first formal English attempt to deal with the problems associated with bankruptcy, 'An Act Against Such Persons As Do Make Bankrupts', was passed by Parliament in 1543. It provided for the bankrupt's assets to be distributed to his creditors in 'a portion rate and rate like, according to the quantity of their debt'. The new procedure was initiated by a creditor making a written complaint to any three of the officials named in the statute, and crucially, 'once initiated, barred other creditors from attempting to collect their debts for an unspecified time'.

In the early period of the English law, there was no clear concept of a “corporate debtor”, as we would now understand it, because initially there was no limit to shareholder liability, and creditors could (and did) claim against a company’s shareholders, much as if they were personal debtors. English corporate insolvency law (as opposed to personal bankruptcy) really became established in a burst of innovative activity during the 1840s.

- In 1844 Parliament removed the need to obtain letters of patent from the Crown before a company could be set up.
- In the same session, another statute — dealing with the winding-up of companies and partnerships — provided that ‘upon a company’s failure a fiat in bankruptcy could issue and the [Bankruptcy] Court “could proceed thereon in like Manner as against other Bankrupts”’.
- The Joint Stock Companies Act of 1844 created a general procedure for establishing joint stock corporations with their own separate legal status.⁷
- This was rapidly followed by The Limited Liability Act of 1845, which introduced the concept of “limited liability”, preventing company shareholders from being pursued for anything more than their initial investment.

These legal innovations together provided the foundations of corporate insolvency law in the UK. By the time the Companies Act of 1862 passed into law, it had become firmly established that when a company was involuntarily liquidated under court supervision, the presentation of the winding-up petition would cause all actions against it to be stayed.⁸ The pivotal innovation was a mechanism by which a court could order the winding up of a company that was unable to pay its debts. Under the descendent procedure in the UK’s current insolvency legislation, a judge granting such an order will appoint a liquidator whose duty is to ensure “that assets of the company are got in, realised and distributed to the company’s creditors”.

The law ultimately evolved in a manner that was very favourable to the enforcement of security by one party. In the mid-nineteenth century English lawyers began to draft clauses for clients granting security against all present and future property, and in short order hospitable judges recognised the validity of such instruments which came to be known as “floating charges”.⁹

Also noteworthy was that English judges permitted the holder of a floating charge, upon default, to put a receiver in place without recourse to the courts. Throughout the opening decades of the twentieth century, this sort of congruence was evident in the UK. In larger business enterprises, including those with publicly quoted shares, the founder and/or their heirs generally retained a sizeable percentage of the voting equity and played an influential role in managerial decision-making.

As time progressed, family control became less pervasive in larger UK companies, the divorce between ownership and control became sufficiently wide for Britain to acquire its outsider/arm’s-length governance regime.

In 1977, the UK’s Trade Secretary responded to growing bankruptcy by establishing a Review Committee on Insolvency Law and Practice. Known as the “Cork Committee”, after its chair, Sir Ian Kenneth Cork, it published its report in 1982.¹⁰ The report proposed that modern insolvency practice should both

Indeed, in certain Italian city states government levies on citizens had even taken a form now regarded by some theorists as akin to the issuance of bonds.

⁶ However, until 1981 virtually all US states (49 of the 50) had “anti-usury” laws restricting rates of interest chargeable on loans (in general caps on normal loans were between 6% and 10%), and many EU Member States have such interest rate caps even today.

⁷ This generalised concept, developed some centuries earlier in older examples of joint stock companies, included the East India Company and the Virginia Company.

⁸ Lester, V. Markham, “Victorian Insolvency: Bankruptcy, Imprisonment for Debt and Company Winding-up in Nineteenth Century England”, pp. 222-228, 1995. For more details on the origins of English corporate bankruptcy law see Fletcher, Ian F. “The Law of Insolvency” pp. 10 – 13, 2nd edition, 1996.

⁹ Even now, the English floating charge offers an important advantage compared to other systems: in England there is no equivalent to the federally imposed stay of enforcement of bankruptcy as there is in the US.

¹⁰ In considering potential reforms, the Chair of the report Kenneth Cork stated that “It is a basic objective of the law to support the maintenance of commercial morality and encourage the future fulfilment of financial obligations. Insolvency must not be an easy solution for those that can bear with equanimity the stigma of their own failure...”. This should be seen as a fundamental principle of any corporate insolvency, if the essential linkage between risk and reward is to be maintained.

differentiate clearly between corporate and individual insolvency and emphasise the rehabilitation of debtors. The reform process culminated in the enactment of wide-ranging reforms in the Insolvency Act of 1985. This legislation in turn was quickly superseded by the Insolvency Act 1986, which, as later amended by the Enterprise Act of 2002, governs corporate bankruptcy today. The 1986 law introduced a new insolvency procedure, known as ‘administration’. The purpose of this procedure was to foster corporate rescues by giving financially distressed firms breathing space from their creditors.

What happens in an insolvency?

UK insolvency proceedings can be started by any of a company’s creditors, shareholders, directors or the Secretary of State responsible for business. There are two essential options for insolvent firms: rescue (administration or company voluntary arrangement) or liquidation (compulsory liquidation or creditors’ voluntary liquidation). The preferred option will largely depend on whether outside of its existing obligations to creditors the company could continue to operate and generate value (“going concern”), or whether it will continue to destroy value and is effectively defunct (“gone concern”).

As an insolvent company’s liabilities will outweigh its assets (unless it has failed to meet agreed debt repayments) it is natural that all insolvency procedures should seek to recover as much value for the company’s creditors as possible. Hence where a firm is not only insolvent but will continue to generate losses and hence is a gone concern, it is better to liquidate and redeploy the assets as quickly as possible.

There are a number of routes a company can take once it has become insolvent.

- **Liquidation:** This will involve selling the assets of a company in order to try and pay off creditors. There are various forms of liquidation.
 - **Compulsory liquidation:** In this case, one or more of the creditors will have gone to a court to get their money. The court issues a winding up order that forces the business to close down and take steps to sell off its assets.
 - **Members’ voluntary liquidation:** This occurs where the company has sufficient assets to cover its liabilities but the shareholders decide to put the company into liquidation. The implication is that the shareholders are not confident of the longer-term position of their business and decide to cut their losses. (Note that members’ voluntary liquidation can occur even when a company is not insolvent or liable to become insolvent. Companies sometimes wind themselves up when projects have reached the end of their natural lives. That could happen for many reasons, but one classic case is when the project depends upon the active involvement of certain key workers that are also shareholders, and those key workers decide it is time to move on to something new. Liquidations then return the residual value of the business to the shareholders — and can be very profitable.)
 - **Creditors’ voluntary liquidation:** In this case, shareholders have decided to put the company into liquidation but they face a situation where they do not have sufficient assets to cover their liabilities.

- **Informal Arrangements:** Here the company might contact its creditors advising them of its position and seeking to come to an agreement about arrangements to settle its debts.
- **Company Voluntary Agreement:** Similar to the informal arrangement but the company would use a court to formalise it. In such cases a specialist Insolvency Practitioner (IP) will be employed to see through the agreement. An IP must be registered and will often be part of a firm of accountants who specialise in dealing with company failures.
- **Administration:** An application to a court by the company to suspend the requirement to pay creditors for a period of time. During this period of time, the company will be administered by an IP and it will be their job to either find a new buyer for the business or parts of the business, negotiate with the creditors to restructure the debts or oversee the liquidation of the assets to pay off creditors. Going into administration gives the firm some breathing space to help deal with its problems and can result in the firm surviving albeit probably in some different form than before it went into administration.
- **Receivership:** In this situation, the creditors can ask for a receiver to be appointed to sell the assets of the company and thus pay off the creditor. The receiver’s job in this case is purely to recover the debts of the creditor. Once this has been done what remains of the business is handed back to the owners.

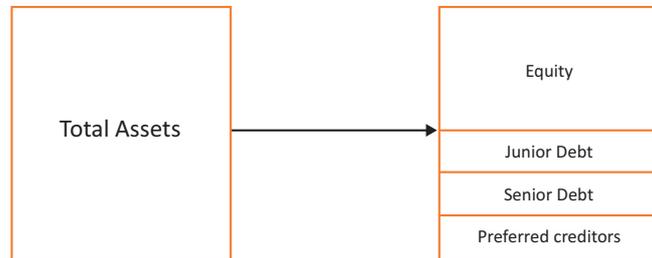
In a liquidation the assets will be sold in such a way as to retain the most value, with the proceeds distributed to the creditors in a strict order of priority (or “seniority”), with each class fully paid before the next receives any funds. Secured creditors with claims (and usually right of sale) over particular assets (fixed charge holders) are paid first, then “preferential creditors” (explained below), followed by secured creditors with claims over general company assets (floating charge holders) and finally unsecured creditors. Any remaining funds are then distributed to the equityholders. Preferential creditors (sometimes called “preferred creditors”) in this case are defined as contributions to occupational pension schemes, employee remuneration,¹¹ but no longer includes revenues owing to the Crown (debts due to the Inland Revenue, Customs and Excise and social security contributions) as this seniority was relinquished in the Enterprise Act 2002.

We can illustrate the process of dividing up a company’s assets diagrammatically, as follows. First, think of a members’ voluntary liquidation in which there is a “residual value” of the company (i.e. what is left over once all creditors have been paid) returned to shareholders. In that case the total assets are greater than the total owed to creditors, as shown in the Scenario 1 figure (note that, for simplicity, we exclude secured creditors with claims over particular assets).

“Where a firm is not only insolvent but will continue to generate losses and hence is a gone concern, it is better to liquidate and redeploy the assets as quickly as possible”

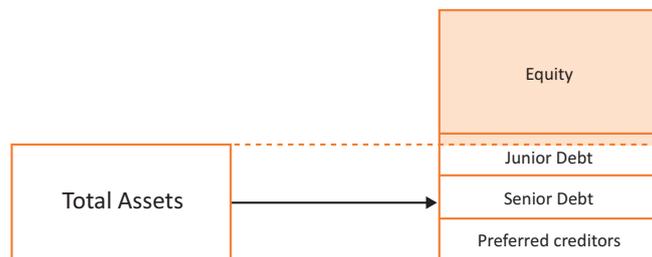
¹¹ Preferred creditors also include levies on coal and steel production.

Scenario 1: A company is liquidated returning the residual value to shareholders

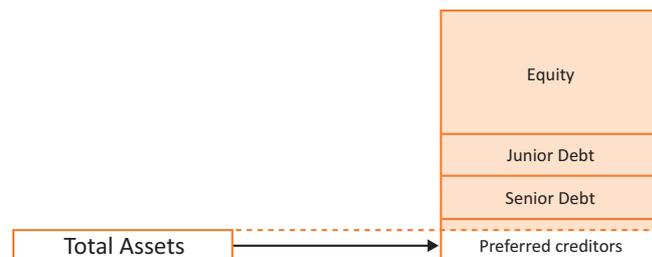


If the assets of the company are not quite enough to cover all debts, then the most junior tranches of debt take a “haircut” (i.e. do not pay out all that was promised) but more senior tranches of debt are paid out in full, as illustrated in the Scenario 2 figure.

Scenario 2: Equity wiped out and junior debt receives a haircut



Scenario 3: Equity, junior and senior debt wiped out and preferred creditors receive a haircut



In Scenario 3, we consider a case of more extreme insolvency. This time, the assets realised from liquidation or sale of the company are so low that junior and senior debtors are entirely wiped out and even preferential creditors are not paid out in full.

The key message arising from this discussion is that in neither a liquidation nor in any of the methods of corporate recovery is there any assumption that bondholders or any other form of creditors should be protected from loss if the assets upon realisation are smaller than the debt owed. The only aims of the insolvency procedure are to ensure a more orderly resolution of the situation and to try to recover as much of the creditors' funds as possible.

The ethical significance of this point is worth dwelling on for a moment. It is easy to forget that there was a vigorous debate for about 2,000 years about whether it was correct to be able to lend money at interest at all. That debate was resolved in favour of lending for interest principally on two grounds: that there were some people that would find it financially straightforward to repay and so borrowed for purposes of convenience rather than fundamental need (the lending to the rich, emphasized by Eck and Melancthon); and that lending money could be justified when it was for business purposes and there was genuine risk of loss (as emphasized by the Scholastics). We should not blithely assume that this debate is an anachronism, irrelevant to the modern world. Suppose, by contrast, that rich people lent money to other private individuals, and that if those borrowers did not repay, the state would then intervene, taxing others (including the relatively poor) to repay loans to the rich. The consequence would be that once one had obtained property, one could live off that property simply by lending it out to other people, and the state would intervene to ensure that those with property never lost it. The state would then be an instrument that kept the rich rich, regardless of how foolish or lazy their lending decisions were, and did so by confiscating the property of the poor — the state as an inverse Robin Hood. If that were how the system really worked, the criticisms of Marxists and other radicals would be well-made. And yet, once the complexities, excuses and more genuine justifications are stripped away, that is precisely how the system has worked in respect of money lent to banks over recent years.

By contrast, modern capitalist societies were built and sustained between the seventeenth and nineteenth centuries on the cardinal ethical foundations that interest on loans is justified by skill and risk (and thus that lenders that make errors or are unlucky can lose their money); and that the state does not exist to keep the rich rich. We forget (or set aside) these principles at our extreme peril. Insolvency procedures contain no assumption that creditors cannot lose their money. Obviously they rank ahead of shareholders as claimants, but they can (and do, in practice) lose money if the assets of the firm are not adequate.

Furthermore, the continued operation of a company is not usually perceived as an objective in itself, although there are certain circumstances when it might be considered an imperative that the activities of a business continue, even if the company itself is liquidated. An important example of such circumstances is businesses covered by “special administration” regimes.

Special administration regimes

Whilst some crucial functions of the state are deemed necessary to hold in public ownership, (e.g. the police, the judiciary and the armed forces) there are other similarly essential economic functions such as the provision of food, water, electricity, fuel, transport, telecommunications, shelter, and the payment system, which we are able to allow the private sector to perform.

When these private enterprises become insolvent and collapse, the dislocation in provision can sometimes be managed by a switch to other market participants offering the same or substitute services. Spare capacity enables existing participants to absorb the unsatisfied demand until new entrants appear, and whilst there may be a temporary spike in prices, economic activity is able to continue. However, when natural monopolies over a specific territory fail and bring activity to a halt this can create acute problems for consumers. Imagine if a water provider or a train operator running commuter routes failed and was liquidated, bottled water and buses would be able to take up some slack but the knock-on effects to other economic activity would be dramatic.

Hence because of the wider economic damage in these cases, there is an objective to ensure a company continues to operate, at least until such time as there can be a transfer of services to an alternative provider and the company liquidated, or until the company can be restructured and put onto a sound footing on which to operate independently again.

An example is the special administration regime for airports, established by the Transport Act 2000.

Special administration regime for airports (Transport Act 2000)

If an application is made to any court for the winding up of a company with an airport licence and the court is satisfied that it would be appropriate to make a winding up order if the company were not a licence company, it must instead make an air traffic administration order. The court may make an air traffic administration order in relation to a licence company if:

- (a) an application by petition is made by the Secretary of State or by the Civil Aviation Authority with his consent, and
- (b) the court is satisfied that one or more certain conditions is satisfied, which include that the company is or is likely to be unable to pay its debts or there has been or is likely to be a contravention of a duty by the company.

An air traffic administration order is an order directing that in the period while the order is in force the company's affairs, business and property are to be managed by a person appointed by the court. The person's purposes are detailed below, but these must be pursued in a manner which protects the interests of the company's members and creditors.

The first purpose specified is as follows:

- (a) *the transfer to another company, as a going concern, of so much of the licence company's undertaking as it is necessary to transfer to ensure that its licensed activities may be properly carried out, or*

(b) the transfer to different companies of different parts of the licence company's undertaking, as going concerns, where the parts together constitute so much of its undertaking as is described in paragraph (a).

The second purpose is: *the carrying on, pending the transfer, of the licence company's licensed activities.*

For our purposes in this report, the key point is that the use of a special administration regime permits the activities of the business to continue, even as the company is wound up. Put another way, the creditors of the company (such as the bondholders) can lose money even without the activities of the business having to cease.

Special administration regimes for insurers

From 1870, insurers were subject to a special resolution procedure, subsequently used twice (1880 — the Great Britain mutual; and 1916 — National standard). Under this procedure the Board of Trade, upon coming to believe the insurer was insolvent, went to court to argue the case. If it wished to do so, the insurer could dispute the assertion, with a judge then making a decision based on the evidence.

If the judge decided against the insurer, the insurer was closed to selling new business. An administrator was appointed and could take various actions. If the procedure had been used regularly, the most likely course of action would generally have been to consider a merger with a sound company and segregate the fund. All providers of capital lose everything (including bonus entitlement for with-profit policyholders). If that was not enough to deal with the situation (and in the two cases the procedure was used it was) all non-profit benefits were subject to haircuts in proportion to the liability they formed.

Note that one important feature of insurance is that there is typically a reasonably large period of time in which to act.¹² Once the regulators required margins of solvency if insurers were to carry on writing new business, it became feasible to merge an insolvent insurer with another insurer — an alternative would be to tell it to raise more capital.¹³

The UK introduced a Special Resolution Regime (a form of special administration regime) for banks as part of the Banking Act 2009.¹⁴ As we shall see later, though better than nothing, it is inadequate in a number of ways. In particular, it does not treat depositors as preferred creditors, and (related to the first point) it does not contain adequate mechanisms for imposing losses on bank creditors — in particular upon bondholders.¹⁵

Bailouts of bank bondholders

We have seen there has been a concept that lenders (bondholders) should be and have been exposed to risk of loss, since the very beginning of lending at interest. This has applied both in standard corporate insolvency and also in special administration procedures. Indeed that the fact that lenders are exposed to loss is a

12 Indeed, in one case two administrators died before the process was complete.

13 For more details on administration regimes for insurers see Booth P. M. (2007), "Freedom with Publicity" — the actuarial profession and insurance regulation from 1844-1945', *Annals of Actuarial Science*, 2(1), pp. 115-146

14 Indeed, the Bank of England view, as emphasized in Paul Tucker's speech to the Eurofi Financial Forum in Brussels (<http://www.bankofengland.co.uk/publications/speeches/2010/speech458.pdf>), is that the key objective for all countries should be to develop tools (including, as a first step, special resolution regimes) to enable the resolution of all systemically important financial institutions (SIFIs) without imposing costs on the taxpayer and without disruption to the flow of essential financial services to the economy — as broadly agreed by the G20 Leaders in Seoul and set out by the Financial Stability Board (FSB).

15 That is not to say, of course, that it contains *no* provisions for imposing such losses. Under the SRR it is possible to effect a partial property transfer in which depositors are fully protected through the transfer of their accounts to a private sector purchaser or bridge bank, while losses are imposed on other creditors through their claims being left behind in a bank administration procedure. However, there is no "bail-in" procedure of the sort we shall set out below and no clear mechanism for imposing losses on depositors whilst maintaining depositor liquidity.

key ethical principle justifying the receipt of interest despite the money-lender not having made a specific contribution to the flourishing of a business. But in one sector this has ceased to apply. Those that lend money to banks — depositors and bank bondholders — have recently come to be protected from risk of loss by government guarantees. Indeed, in most political circles it has come to be seen as *unthinkable* that bank creditors could be allowed to lose money. In effect, lending money to banks (depositing it, or buying a bank bond) has ceased to be a fully private sector loan, exposed to risk of loss in the normal way, and has instead become a loan guaranteed by governments and backed by levies on other taxpayers.

In recent years bonds have become an increasingly significant component of bank capital in the UK. Whereas in 2005 they were only 13.2% of total assets for the big four UK banks, after 2006 the percentage of bonds in total assets had risen dramatically, and by 2009 had reach 22%.¹⁶

One important factor explaining this large increase in bondholding is that, since the middle of the 1980s, government interventions in the financial sector have come increasingly to involve bailing out bondholders. Key staging posts in this process included:

- The 1984 failure of Continental Illinois, Chicago's largest bank and at one point the seventh largest US bank by deposits, was (up to that time) the largest ever US bank failure. Weighed down by its significant lending exposure to the receding oil and gas sectors, as well as sovereign debt defaults of less economically developed countries, Continental became frozen out of domestic and international wholesale money markets, a problem exacerbated by its limited use of traditional retail deposits as a source of funding.

Fearing a widespread loss of confidence in the banking sector due to the reliance of other US banks on Continental, the Federal Deposit Insurance Corporation (FDIC) stepped in and provided bailout funds of \$2 billion, in addition to \$5.3 billion of unsecured lending from other banks and assurances of liquidity provision. Controversially, as a further measure the FDIC then extended a full guarantee to all uninsured depositors and creditors, creating a precedent and solidifying market expectations that future failures perceived as 'systemically important' would be similarly rescued.

When no acquirer was forthcoming for Continental's impaired portfolio, the FDIC received preferred stock for a \$1 billion injection of capital, resulting in a total 80% stake of the company, a nationalisation in all but name.¹⁷

- In the case of Long-Term Capital Management (LTCM), a combination of high leverage and exposure to both the East Asian financial crisis of 1997 and the Russian financial crisis of August and September 1998 left it teetering on the brink of collapse. A potential rescue acquisition by Goldman Sachs, AIG and Berkshire Hathaway was rejected by LTCM's board, and there were felt to be potential systemic ramifications for Wall Street. The Federal Reserve Bank of New York organised a bailout by the other major banks who were creditors of the company, wiping out the equity holders in the process. When LTCM's positions were eventually unwound, a small profit was made by the creditors, however the involvement of the Federal Reserve in arranging the bailout by other parties further added to the market assumption that they would intervene to ensure rescues.

¹⁶ Calculated by taking the average of subordinated and senior debt as a percentage of total assets for the Big Four banks, i.e. Barclays, Lloyds, HSBC and Royal Bank of Scotland.

¹⁷ In 1991 the US introduced special rules for the resolution of failing deposit-taking institutions, mandating the FDIC with the two principles of 'least cost resolution' and a 'prompt resolution approach'. This legislation followed on from the Financial Institutions Reform, Recovery, and Enforcement Act of 1989, which had been created to restore public confidence in the savings and loan industry after several high profile failures.

- Both the depositors and the holders of certain wholesale liabilities in the UK's Northern Rock bank received government guarantees in September 2007 after an announcement that the bank, due to flaws in its funding model that were exposed after interbank wholesale money markets seized up from July 2007, had become reliant on emergency financial support from the state. Eventually the government took Northern Rock into 'temporary public ownership', again ensuring that creditors and depositors would not face risk of loss.
- Credit market problems continued and, in early March 2008, exposed weaknesses in the investment bank Bear Stearns. Credit spreads increased between Treasury bonds and agency bonds issued by Fannie Mae and Freddie Mac. These widening spreads hurt Carlyle Capital, an Amsterdam-listed hedge fund, which was heavily invested in agency bonds. When Carlyle could not meet its margin calls, its collateral assets were seized and partially liquidated. This action depressed the price of agency bonds further. Not only did Bear Stearns hold large amounts of agency paper on its own, but it was also one of the creditors of Carlyle. On 11th March 2008 the Federal Reserve announced its \$200 billion Term Securities Lending Facility. This programme allowed investment banks to swap agency and other mortgage-related bonds for Treasury bonds for up to 28 days. To avoid stigmatisation, the extent to which investment banks made use of this facility was kept secret. However, some participants might have interpreted this as a sign that the Fed knew that some investment bank might be in difficulty. As a consequence, speculators pointed to the smallest, most leveraged investment bank with large mortgage exposure: Bear Stearns.

Bear Stearns was subsequently a recipient of state largesse, relying upon a non-recourse \$29 billion loan from the Federal Reserve secured upon Bear Stearns' assets in order to ensure the sale of the company to JPMorgan Chase. This loan relieved fears of a substantial fire-sale of the collateralised debt obligations (CDOs) held by Bear Stearns, and prevented a downward spiral of asset prices, collateral demands and further asset liquidation. However, this was at the cost of providing yet more evidence of the implicit protection for systemic firms, and even Paul Volcker has described the Federal Reserve's decision as "actions that extend to the very edge of its lawful and implied powers".

- The key escalation point of the 2007-9 crisis was the wiping out of shareholders and bailing out of bondholders of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac) when these corporations were taken into government "conservatorship" (i.e. effectively nationalised), on 7th September 2008. Mortgage delinquency rates continued to increase in the subsequent months after Bear Stearns was bailed out. By mid-June 2008, the interest rate spread between agency bonds, of the government-sponsored enterprises Fannie Mae and Freddie Mac, and Treasury bonds had widened again. Fannie Mae and Freddie Mac at that time were two publicly traded but government-chartered institutions that securitized a large fraction of U.S. mortgages and had about \$1.5 trillion in bonds outstanding. After IndyMac, a large private mortgage broker, was put in conservatorship (i.e. when an entity or organisation is

18 Even at the subsequent Financial Crisis Inquiry Commission, Dick Fuld (the former Chairman and CEO of Lehman) continued to argue that the state should have saved his company. Ben Bernanke on the other hand has testified that prior to specific legislation on bailouts, it would have been illegal for the Federal Reserve to provide capital without reasonable expectation of repayment.

19 This support was later restructured, with additional funds provided by the Treasury through the TARP (see below), and as at March 2009 AIG had made use of \$126.1 billion of the \$182.5 billion of bailout funds made available to it. See Sjoström, William K., *The AIG Bailout* (November 1, 2009). Washington and Lee Law Review, Vol. 66, p. 943, 2009.

20 Fed Press Release 16th Sept 2008, *supra* note 123.

21 One interesting case in which a company was allowed to fail, little more than a week after the bailout and effective nationalisation of AIG, was the biggest bank failure in the history of the US as Washington Mutual Bank was seized by the Office of Thrift Supervision (OTS). Washington Mutual had suffered a 'silent' bank run. Instead of people queuing in front of bank tellers, customers and fund managers withdrew funds electronically. Soon afterwards Washington Mutual was placed in receivership by the Federal Deposit Insurance Corporation (FDIC), and then sold to JPMorgan Chase. The OTS placed the bank into the hands of the FDIC who sold all of its assets, deposits and other qualified financial contracts for \$1.9 billion to JPMorgan Chase. The equity, senior and subordinated debt claims of the bank were left with the holding company, Washington Mutual Inc., which filed for Chapter 11 bankruptcy protection the following day.

In this instance the parent company had sufficient assets left in the bankruptcy to cover all of the creditors' claims (including the subordinated debt), and it was the equityholders who lost out, and subsequently started legal proceedings, arguing that Washington Mutual did not receive fair value from the forced sale. If some of the creditors had indeed faced losses in the bankruptcy, then the quick sale of assets and deposits to JPMorgan Chase might have been difficult to

subjected to the legal control of an external entity or organisation) by the Federal Deposit Insurance Corporation (FDIC) on 11th July, problems at Fannie and Freddie flared up, prompting then Treasury Secretary Henry Paulson on the evening of 13th July (a Sunday), to announce plans to make their implicit government guarantee explicit. Despite this support, the stock prices of Fannie and Freddie slid further in the subsequent weeks, the government officials placed them into federal conservatorship on 7th September.

- Following the Fannie Mae and Freddie Mac bailouts, and especially because equity holders were wiped out whilst bondholders were kept intact, all prospect vanished of troubled investment bank Lehman Brothers, which had made large losses particularly on subprime mortgage-related assets, being recapitalized through new equity injection. The next available avenue was a sale (in August 2008, the Korea Development Bank was the preferred buyer, and by early September discussions were underway with Barclays and Bank of America), but, especially once Fannie Mae and Freddie Macs' equity was wiped out, buyers were reluctant to enter without government guarantees. An expectation remained both within the senior management of the firm and throughout the market that should they be unable to find a buyer, the Federal Reserve would naturally step in to avoid a potentially catastrophic failure.¹⁸ In the event, the epic degree of insolvency in Lehman's, the sheer scale of its losses, the limitations on the Federal Reserve's power to expose itself to losses without US Treasury backing, the Treasury's need to obtain Congressional approval to incur losses on the required scale, and the sense that bailouts had to have some limit and there was a need for a line to be drawn to limit moral hazard, meant that Lehman's was allowed to enter bankruptcy on 15th September.
- The market turmoil that had arisen in mid-2007 and become acute after the conservatorship of Fannie Mae and Freddie Mac continued, but immediately after Lehman Brothers declared bankruptcy the next major institution to come under threat was American International Group (AIG), which had made serious losses on derivatives, and was a major provider of insurance on interbank loans for European banks, meaning that its failure was said to threaten the financing position of much of the European banking sector — though it is now heavily disputed whether this was in fact true. Whether true or not, the authorities capitulated, deciding on 16th September 2008 to create an \$85 billion credit facility to enable the company to meet increased collateral obligations consequent to the credit rating downgrade, in exchange for the issuance of a stock warrant to the Federal Reserve Bank for 79.9% of the equity of AIG.¹⁹ This incredible amount of government support was deemed necessary because “in current circumstances, a disorderly failure of AIG could already add to significant levels of financial market fragility and lead to substantially higher borrowing costs, reduced household wealth, and materially weaker economic performance”.²⁰
- Having surrendered on the principle of bailing out bondholders in the Fannie Mae and Freddie Mac and AIG cases,²¹ the US government commenced plans for the rapid creation of a \$700 billion dollar state bailout of the banking

sector, better known as the Troubled Asset Relief Program (TARP).²² The banks agreeing to receive preferred stock investments from the Treasury include Goldman Sachs Group Inc., Morgan Stanley, J.P. Morgan Chase & Co., Bank of America Corp. (including Merrill Lynch), Citigroup Inc., Wells Fargo & Co., Bank of New York Mellon and State Street Corp. The Bank of New York Mellon served as master custodian overseeing the fund.

Examples of TARP payments include the following: Goldman Sachs received \$10 billion preferred stock investment from the US Treasury in October 2008;²³ Morgan Stanley received \$10 billion;²⁴ Bank of America received \$25 billion initially in late 2008, then a further \$20 billion on 16th January 2009 and also obtained guarantees of US \$118 billion in potential losses at the company. The additional payment was part of a deal with the US government to preserve Bank of America's merger with the investment firm Merrill Lynch, which was taken over keeping bondholders whole.

- On 26th September 2008, the UK bank Bradford & Bingley (B&B) was nationalised, with a number of its components sold to Spanish banking group Santander. In order to provide “assurance to wholesale depositors and borrowers and preserve wider financial market stability and maximise proceeds in the downturn”, the government again provided guarantees on certain wholesale liabilities and deposits as part of the sale of B&B's retail deposits and branch network to Abbey National, and the nationalisation of the remainder of its assets and liabilities.
- In October 2008, the British government provided almost the entirety of the funds when RBS and Lloyds sought to recapitalise themselves (in effect part-nationalisations), again guaranteeing the security of the institutions and insulating bondholders from any likely bankruptcy proceedings and risk of loss. Under the Darling Plan announced on 8th October 2008, £25 billion of government funding was to be provided for recapitalising the banking system. Banks did not need to participate if they could achieve this objective without government assistance by raising funds privately. HBOS and RBS opted for government support, but Barclays and HSBC preferred private funding. It was proposed that government support would be in the form of purchase of preference shares, but the interest charged at 12% would be a burden on banks, making direct equity participation a more practical alternative.

In addition, the government guaranteed short and medium-term borrowing up to £250 billion for a term of up to three years. This measure was intended to increase the creditworthiness of banks and so facilitate borrowing on the money market. It has been followed by some relaxation shown by the narrowing of the spread between Bank Rate and LIBOR. Finally the Bank increased the size of its Special Liquidity Scheme (SLS — in place since April 2008) to £200 billion. The SLS aimed to improve bank liquidity by allowing the exchange of bank assets for government bonds to be used as collateral for borrowing on the interbank market.

- Further measures were introduced on 19th January 2009. The Bank announced a new Asset Purchase Facility (APF) to buy up to £50 billion of commercial paper and other securities in exchange for gilts. A second measure provided for the issue of £50 billion of Asset Backed Securities for new mortgages, bearing government guarantees. It originated from an earlier

implement and the question remains whether the US Treasury would have felt obliged to provide additional support. Given that this bankruptcy did not result in losses for bondholders, it cannot really be regarded as countering the tendency towards believing that bank bonds carried government backing.

In a move also facilitated by the FDIC, Wachovia announced on September 29th that it was selling its banking operation to Citibank, but ultimately fell into the hands of Wells Fargo after a bidding contest. Citibank needed additional support in November 2008 and several facilities were established to enable the Fed to buy commercial paper and almost any type of asset-backed security and agency paper. The complex rescue plan calls for the government to back about \$306 billion in loans and securities and directly invest about \$20 billion in Citigroup. The Fed's balance sheet roughly doubled from about \$1.2trillion in November 2007 to about \$2.3trillion in December 2008. (Source: Brunnermeier, Markus K. “Deciphering the Liquidity and Credit Crunch 2007 – 2008”, *Journal of Economic Perspectives* 23.1, 2009.)

22 Notoriously, US Treasury Secretary Hank Paulson is believed to have secured agreement for the TARP only after (on September 19th) threatening the imposition of martial law if it was not passed, and literally going down on one knee at a meeting of congressmen (September 26th) to beg Democratic congressional leader Nancy Pelosi to support the plan.

23 In addition, on September 23, 2008, Berkshire Hathaway famously agreed to purchase \$5 billion in Goldman's preferred stock, and also received warrants to buy another \$5 billion in Goldman's common stock, exercisable for a five-year term. In June 2009, Goldman Sachs repaid the US Treasury's TARP investment, with 23% interest (in the form of \$318 million in preferred dividend payments and \$1.418 billion in warrant redemptions).

24 It repaid the funds on 17th July 2010.

proposal from the Crosby Committee on reviving finance for mortgages. The third measure was the most controversial because of the potential obligations falling on the taxpayer. It was announced on 26th February that government insurance was to be made available to banks against future losses on toxic assets under an Asset Protection Scheme (APS). Royal Bank of Scotland and Lloyds Banking Group, both substantially nationalised under the recapitalisation provisions of the Darling Plan, participated in the scheme, and the Treasury insured £585 billion of their holdings of toxic assets. The Asset Protection Scheme was intended to reduce banks' fears about exposure to toxic assets and to encourage them to increase lending to companies and households. Both banks participating in the APS gave formal undertakings about increasing their lending.

Whilst no explicit protection exists in legislation for creditors in financial institutions, given the failure of UK bank creditors to take losses in one of the most damaging financial crises ever, it would be very difficult to argue against the existence of implicit support, and strong expectations that it will continue.

Cases of losses being imposed on bondholders after the financial crisis

We observe, in passing, that some losses were imposed upon Bradford & Bingley bondholders and there were some very restricted requirements imposed under EU state aid rules by DG Competition, upon bondholders of RBS and Lloyds Banking Group.

Another case of interest was Dunfermline Building Society. Dunfermline's retail and wholesale deposits, branches, head office and originated residential mortgages (other than social housing loans and related deposits) were all transferred to Nationwide Building Society under a sale process conducted by the Bank of England in March 2009 under the Special Resolution Regime provisions of the Banking Act 2009. The social housing loans of Dunfermline's customers (and related deposits) were transferred temporarily to DBS Bridge Bank Ltd, a 'bridge bank' owned and controlled by the Bank of England. This allowed the Bank of England to support Dunfermline's social housing portfolio, consistent with the objectives of the Special Resolution Regime, and provided time to secure a permanent solution. A court order was issued to place the remainder of Dunfermline's business into the Building Society Special Administration Procedure (BSSAP) and to appoint KPMG as the administrator. This part of the business included commercial loans, acquired residential mortgages, subordinated debt and most treasury assets.

One jurisdiction in which rather more extensive losses were imposed was Kazakhstan. Pushed by expanding income on the back of rising oil prices, and by rapid external debt accumulation, the Kazakh banking sector featured a highly dynamic credit boom until 2007. Following the US subprime crisis, the banks' access to external funding plummeted and credit expansion fell to zero. The collapse of oil prices in late 2008 and the devaluation of the Kazakh tenge in February 2009 cut domestic demand, liquidity and solvency. The share of non-performing loans rose dramatically from 7% to 38% in 2009. Large losses stemming from real estate exposure lending to dubious partners and fraud (mainly embezzlement) played a role. The authorities' crisis response

measures included the nationalisation of two of the country's largest banks (BTA and Alliance) and the recapitalisation of two others (together accounting for two thirds of banking sector assets).

Soon after BTA and Alliance Bank were nationalised, it turned out that their financial needs were higher than originally assessed: In mid-2009, the two banks' foreign liabilities were estimated to add up to about €12 billion (comprising more than 40% of the banking sector's total external debt or up to 15% of the country's external debt), of which BTA owed almost three-quarters. In April 2009, both banks defaulted on their foreign obligations, which triggered payments on credit default swap (CDS) contracts written on the two banks. The authorities declared that they do not intend to guarantee the loans of (nationalised) Bank Turan-Alem (BTA), Alliance Bank or of any other credit institution. In the summer of 2009, the two insolvent banks signed memoranda of understanding with their foreign creditors in which the latter principally approved to restructure the credit institutions' foreign debt. In November, Temirbank (the eighth largest bank of Kazakhstan), of which BTA – and therefore the state – was a major shareholder, also declared default on its obligation and launched restructuring negotiations.

In December 2009, BTA as well as Alliance reached preliminary agreements with their creditors in which the latter accepted major haircuts (of 60% and higher). Subsequently, the state holding company, Samruk Kazyna, took over Alliance Bank entirely. Temirbank reportedly reached a preliminary agreement with its creditors in late March 2010. At around the same time, Alliance is reported to have signed its final agreement, which provides for the bank's creditors to take a 33% stake in Alliance (the remaining 67% being controlled by Samruk Kazyna) and for the banks' debt to be cut from €3.3 billion to €800 million, that is by 76%. BTA's final agreement was completed in the summer of 2010 with a total restructuring of €13 billion resulting in BTA's debt being reduced to €3.5 billion, implying a haircut of 75%.

2

The Effects of State Guarantees of Bondholders

It is important to understand some of the consequences of increased state backing of bondholders, including in particular the following (note that all notions of “optimal” are expressed in terms of what is optimal from the point of view of the bank, rather than of wider society):

- The optimal proportion of bonds in the total capital structure will rise;
- The optimal proportion of high-quality capital buffers (in particular, equity buffers) will fall. This will involve some combination of a fall in the amount of equity, relative to debt, and a rise in the riskiness of the balance sheet;
- Optimal liquidity ratios will fall — banks will want to become less liquid;
- Optimal remuneration schemes will involve more risk-taking;
- Optimal balance sheet size for the banking sector will rise.

We shall now explain each of these factors in more detail.²⁵

Increasing proportion of bonds in total capital

Consider a classical deposit-taking retail bank that simply lends money for business loans and personal loans (we’ll move on to investment banking activities in a moment), and (simply to make the argument below more direct) assume that the deposits are not insured and, initially, that there is no regulation. Because depositors normally only withdraw a small proportion of their deposits each period, such a bank operates on what are called “fractional reserves” — specifically, they hold only a small proportion of their assets in a liquid form; for now, let’s assume they hold enough to cover plausible fluctuations in deposit withdrawals. That means that banks are at continuous risk of runs — if all depositors suddenly attempted to withdraw their funds at the same moment, even the soundest bank would fail, leaving depositors in the position of having to wait for the liquidation of all the bank’s assets to recover their monies. In a sense, one can think of a classical bank as being at continuous risk of liquidation.

To avoid failing, a bank can borrow money from other banks or from money markets. But it may find it attractive to raise some money by selling bonds even absent a liquidity crisis. The reason is that a bondholder, unlike a depositor, does not have the right to reclaim all its funds on call (or with short notice). Provided that the terms of the bond are met — e.g. that coupons are paid on time — bond

²⁵ Government guarantees to depositors are also highly problematic, as explored in our Research Note *Incentivising boring banking*, but in this section we focus particularly upon the negative impacts of bailouts of bondholders.

servicing requirements are very predictable. So to manage liquidity — e.g. to provide an additional liquidity buffer to protect the bank against fluctuations in deposit withdrawals — a bank might find it advantageous to issue some bonds. There are of course other ways it could raise such money — e.g. by raising equity. So a bank will typically have some balance between bonds and equity, in addition to its deposits.

Now, if the cost of bond finance falls (e.g. because the government implicitly backs bonds), then bond financing becomes more attractive, and if a bank is already issuing bonds it will tend to issue more, relative to deposit-taking or equity issuance. In other words, the proportion of total capital that is bonds will rise.

One mechanism of interest by which this might be achieved is a debt-funded merger. Indeed, if larger banks are more likely to have their bondholders bailed out (e.g. because they are considered “too big to fail”),²⁶ the use of a debt-funded merger might also increase the probability of bailout. Shifts in merger rules over recent decades away from broad and vague “public interest” tests towards a stricter focus upon significant market power may have had the unforeseen side-effect of removing or reducing consideration of systemic risk²⁷ created by mergers. This is of particular interest in the finance sector (though obviously in principle of relevance across all merger rules).

We note in passing that bailouts of bondholders may not be the only policy factor encouraging higher-than-socially-optimal gearing. For example, taxing debt interest less than dividends could be another (albeit probably less powerful) factor encouraging over-leverage.²⁸

Falling high-quality capital buffers

Lending money is intrinsically risky — some loans go bad. So unless a bank held a buffer of capital to cover potential losses, it could find itself insolvent — it could end up with assets worth less than its liabilities. Now a normal business might trade its way out of insolvency — profits generated in later periods might cover losses made in earlier periods. But because banks are at continuous risk of bank runs, and hence under continuous threat of liquidation, any period of insolvency would leave a bank very exposed to the risk of a run — during any period of insolvency, depositors would not recover what was owed them, so their incentives to withdraw their money and to be first in the queue, leaving others to bear the losses, become very high.

Indeed, matters are worse than this, because even if a bank is not insolvent today, if it becomes too close to insolvency, the risk that it will become insolvent tomorrow, triggering a bank run almost for certain, gives depositors a strong incentive to withdraw their funds early — ahead of the rush. Furthermore, if depositors have some limitations on their information about bank solvency, they will again be tempted to withdraw funds even when banks are materially above insolvency. So it is not enough for banks merely to be solvent. They need to hold non-trivial buffers over-and-above insolvency.

One factor that will determine the optimal level of such capital buffers will be the willingness of bondholders to supply debt. If capital buffers are too low, and hence the risk of disorderly liquidation through a bank run is too high, then

²⁶ We consider “too big to fail” and other aspects of systemic risk in more detail below.

²⁷ We define and analyse “systemic risk” in detail below.

²⁸ For more on this point see pp. 60ff. of Lilico, A. & Sameen, H. (2010), *Taxation, growth and employment*, Policy Exchange. http://www.policyexchange.org.uk/images/publications/pdfs/Taxation_Growth_and_Employment_March_10.pdf

financiers will be unwilling to purchase new bank bonds because there is a risk that the bank, if liquidated, is insolvent and bondholders make losses.

But if bank bonds are guaranteed by the state, then this risk of loss is reduced. So financiers will be willing to buy bank bonds even when high-quality capital

“ If the state guarantees bonds, then bondholders have less concern about the risk of loss, so impose less discipline upon liquidity. The consequence is that liquidity ratios for banks will tend to fall — optimal levels of liquidity become lower ”

buffers are lower (and hence the risk of insolvency is higher). The consequence is that banks have incentives (or will face competitive pressures) to reduce their capital buffers.

There are several forms such a reduction could take. One would be simply to run down equity by paying out dividends. Another would be to increase the riskiness of the total balance sheet, so

that even if the amount of equity and the amount of the total balance sheet is unchanged, the risk that fluctuations because of loans going bad will render the bank insolvent or the level of capital so inadequate as to trigger disorderly liquidation through a bank run will increase. Another might be to keep the same amount of equity, but reduce the proportion by expanding the balance sheet.

Falling liquidity ratios

If banks have very low levels of liquidity, they become very dependent on being able to obtain inter-bank finance at short notice, and very exposed to the risk of bank runs. The normal consequence would be that those considering buying bonds outwith a crisis (as part of normal bond debt-raising operations) would regard a bank's having a low level of liquidity as a credit risk, and so would require an increase in such liquidity ratios or an increase in bond interest rates to be willing to purchase such bonds. Thus, bondholders would impose a discipline upon liquidity, keeping it to prudent levels.

But if the state guarantees bonds, then bondholders have less concern about the risk of loss, so impose less discipline upon liquidity. The consequence is that liquidity ratios for banks will tend to fall — optimal levels of liquidity become lower.

Rising remuneration scheme risk-incentivising

To encourage high levels of effort, to maintain loyalty, and to attract skill, companies in the financial sector find it optimal to provide certain of their staff with contracts that involve bonuses being paid for strong performance. Such bonus schemes are a key mechanism that increases efficiency in the financial sector.

One important factor in such schemes is the way in which they reward risk-taking. There will be an optimal balance between taking appropriate risks that might deliver high returns and not taking poorly-conceived or excessive risks. One factor limiting risk-taking is the need to raise bond finance. If a financier, upon investigating a bank seeking to sell new bonds, concludes that the bank's remuneration schemes incentivise excessively high risk-taking, that financier may be less willing to buy bonds, since the danger that those risks go bad leaving the bank insolvent and the bonds loss-making will be high.

In this way, bondholders discipline remuneration schemes. And it is important to understand that bondholder disciplines are different from shareholder disciplines. Because shareholders have limited liability, it is in their interests for remuneration schemes to incentivise much higher risk-taking than is in the interests of bondholders — shareholders gain greatly if risks turn out well, but are limited in their losses if risks go bad, whereas bondholders gain only a little if risks turn out well (just the small decrease in the risk that future losses cause the bank to fail) and lose significantly if risks turn out badly (losing some of the value of their bonds).

But if the state guarantees bonds, then the bondholder discipline on remuneration is removed, leaving only the shareholder discipline. And as shareholders gain more than bondholders from greater risks, the consequence will be greater risk-taking being incentivised in remuneration packages.

Rising optimal balance sheet size for the banking sector

The most fundamental result in corporate finance is the famous Modigliani-Miller Capital Structure Irrelevance Theorem. This deeply insightful and brilliant result tells us that (setting aside tax incentives), unless the capital structure changes the way in which assets are managed, it makes no difference to the value of a company how much of it is financed by equity and how much by debt. The reason is that the company's cash-flows are determined by the management of real assets — machines, plant, etc. — and the aggregate value of those cash-flows depends on their timing and riskiness, which are in turn dependent upon real factors such as fluctuations in market demand for the product, fluctuations in labour costs and other supply costs, and so on. All that the capital structure does is to decide how the cash-flows generated by those real assets (subject to the timing and risk factors) are distributed between debt holders and equity holders.

Many people, when first encountering this result, find it difficult to believe. They have an intuition such as the following: the cost of debt (the interest rate on bonds) is typically lower than the cost of equity (the interest rate equivalent of the stream of dividends), so the average cost of capital between the two must fall if more debt is taken on, so companies have incentives to take on as much debt as the market will bear.

A numerical example might make this thought clearer. Suppose that the cost of debt is 2% and the cost of equity 10%, and we begin with a company with 50% of its capital being equity and 50% being debt (this is called “50% gearing”). Then the average cost of capital is:

$$50\% \times 2\% + 50\% \times 10\% = 6\%$$

And the thought is that if the company switched, instead, to being 75% debt and 25% equity (“75% gearing”), the average cost of capital would be:

$$75\% \times 2\% + 25\% \times 10\% = 4\%$$

If the average cost of capital were indeed 6% at 50% gearing and only 4% at 75% gearing, then it would indeed be in the company's interests to increase its gearing. But the insight of the Modigliani-Miller theorem is that the above tale is incorrect,

because it assumes that it is the capital structure and the costs of equity and debt that determine the average cost of capital, when in fact it is the average cost of capital and the gearing that determine the costs of equity and debt. Put another way, the erroneous thought is that the costs of equity and debt are invariant to the level of gearing whilst the average cost of capital changes, whereas the Modigliani-Miller insight is that it is the average cost of capital that is invariant (since it is determined by real factors independent of the capital structure) and the costs of equity and debt change with the level of gearing. So, if indeed the average cost of capital is 6% as in the 50% gearing example above, then if the gearing changes to 75% and if we assume for simplicity that the cost of debt does not rise, then the cost of equity will rise, such that the overall cost of capital becomes:

$$75\% \times 2\% + 25\% \times 18\% = 6\%$$

Now, in the above example we assumed for simplicity that the cost of debt did not rise as gearing rose. It could well be that the cost of debt is only very slightly affected by a rise from 50% to 75% in the gearing level, but it cannot be the case that the cost of debt is always unaffected by the level of gearing, because otherwise if the company were 100% debt-financed (“100% gearing”), the average cost of capital would be only 2%. So at some point the cost of debt must rise as gearing rises, such that by the time gearing reached 100% the cost of debt would be 6%.

We have already argued, in our discussion of high-quality capital buffers, that as gearing becomes high it will be natural for the cost of debt of a bank to rise, since the risks new bondholders will take on (the risk that the bank becomes insolvent or is subject to liquidation through a run before insolvency) will be increasing. We said that, since state guarantees reduced the risk of default on bonds, the optimal level of gearing would rise (at least once one took account of balance sheet risk).

But there is another force at work here that goes beyond the reduction in capital buffers. Because bond debt is state guaranteed, then it will not rise at very high levels of gearing in the normal way. That means that in a stylised case a bank would find it optimal to fund itself virtually entirely from bank debt — doing so would reduce its average cost of capital in ways that increasing gearing would not reduce it for a bank without a state guarantee of its bonds. We can imagine the gains from this reduced cost of capital taken by a tiny equity sliver, or in the form of extremely high remuneration for senior managers — it does not matter, for our purposes here. In a less stylised case, the bank might eventually run up against regulatory capital requirements.

But the process will not end there, because this reduced cost of capital provides an ongoing opportunity for the tiny equity sliver or senior managers: if they can raise more debt to engage in more lending, they can make further money by expanding the business. That is to say, the optimal size of balance sheets will rise.

This rise in the balance sheet will not be quite without limit, even absent regulatory restrictions. There are three ways that it might eventually be circumscribed. One is quite implausible for our purposes, namely that all lending opportunities on earth are exhausted.²⁹ A second is that the balance sheet becomes curtailed by timing issues, specifically that the economic cycle enters a

²⁹ This might not be implausible for the US — say, in a case in which US balance sheets as a proportion of GDP reached the levels prevailing in Iceland in 2008.

sufficiently bad down-phase that it becomes so likely that the bank will fail that even the spectacular returns available to managers and the equity sliver each period become unattractive to exploit. The third, probably most relevant, case is that the balance sheet expands to the point at which state guarantees render the sovereign as risky a borrower as the original bank, exhausting the value of the bailout promise.³⁰ This would appear to be a very relevant case at least for Iceland and Ireland in recent years, and perhaps also for the UK.

Expected effects vs actual effects

So, we have set out some of the effects implicit bailout promises should have been expected to have:

- There will be a higher proportion of bonds in the capital structure;
- Capital buffers will fall, and the riskiness of bank balance sheets will rise;
- Liquidity ratios will fall;
- Remuneration schemes will involve more risk-taking;
- The balance sheet of the banking sector will rise, potentially to the point at which it starts to materially raise the risk of sovereign default.

At a broader level, distorting the prices of bank bonds has potentially profound and unpredictable effects across the economy, because bond prices provide particularly powerful signals about risks of default that play a key role in economies in communicating the risk of impending recessions and other important economy-wide events. Consequently, government backing for bank bonds risks significantly undermining the functioning of the price mechanism and thence the efficiency of the entire capital market.

An analysis of what effects bailout promises have *actually* had appears in Haldane, A. and Allesandri, P. (2009), *Banking on the state*.³¹ Haldane and Allesandri identify five ways in which state safety nets for financial institutions grant opportunities to banks in particular to game the system:

- Higher leverage (increasing upside equity risk at the expense of downside bonds and depositor risk — but these latter risks are insured by the state);
- Higher trading assets (again, increasing exposure to asset price fluctuations, with upside risks taken by equity but downside risk by the state);
- Business line diversification (making banks collectively more similar, increasing systemic risk and thereby increasing the opportunity to take advantage of state bailouts);
- High default assets (the authors argue that in the US, where there were leverage restrictions, banks instead pursued higher-default-risk loans to increase upside risk — this is an important point to note concerning the limitations of formulaic leverage rules);
- Out of the money options (a more subtle variant of high-risk lending, pursued by AIG).

So, both in theory and in practice, in combination these factors mean that bailing out bank bondholders will have the consequence that banks will act in such a way

30 Strictly speaking, the sovereign need not be quite as risky as the original bank, if the expansion in the bank's balance sheet has resulted in the riskiness of its loan book increasing. But we shall ignore this technicality for our purposes here.

31 <http://www.bis.org/review/r091111e.pdf?noframes=1>
Further discussion of this case can be found in Annex VII of Europe Economics (2009), "Ex-Ante Evaluation of the proposed Alternative Investment Managers Directive", especially p113ff.

that it becomes materially more likely that banks will fail, leading to calls on state bailout guarantees. Indeed, Haldane and Allesandri have argued that each bailout leads the bailout net to slacken, so that the next test of government willingness to bail out occurs at a higher level of danger. This problem — that bailing out banks makes them behave in undesirable ways — is a form of what is known as “moral hazard”.

3

Moral Hazard vs Systemic Risk

The negative effects of bailing out bank creditors have been understood, at least in outline if not in as much detail as today, for many years. Yet, despite this, in the 2007-9 banking crises, as we have already detailed, almost all bondholders were bailed out in almost all institutions. Why?

In a political sense, the simplest reason is that (a) legally, bondholders and depositors ranked equally in terms of their claim upon the assets of the bank; and (b) banks had no special administration regimes, relying instead upon standard administration procedures. The consequence was that:

- (a) Unless governments were prepared to impose a re-write upon existing bond contracts (which was urged by some at the time),³² bondholders would only be exposed to losses if depositors were likewise exposed to such losses.
- (b) Although depositors could be compensated for such losses there might be a waiting period.
- (c) In the meantime, whilst matters were resolved, unless the government imposed a new emergency special administration regime including a deposit access fund (again, urged by some at the time)³³ depositors would lose access to their funds (with material cash-flow implications at a time when access to credit might be limited) and also lose access to other banking services.

The potential for disruptive implications for depositors leading to widespread social unrest (as in the case of Argentina in the early 2000s) meant that, despite the unattractive consequences of bailing out bondholders, not bailing them out seemed even less palatable.

Now, that might be the simplest reason, but it is not the only one. For there was an argument that, even absent implications for depositors, allowing bondholders to lose money might have negative “systemic” implications. During and since the events of 2008, many policy discussions have revolved around “systemic risk”, but typically without offering any clear definition or concrete sense of why and to what extent it is a genuine policy concern, let alone, looking beyond the immediate events of the 2007-11 crisis, what are the correct tools to address it. Since the concept is central to what follows, we shall offer our own definition. The central thrust of what follows is that the key policy interest lies in a form of systemic risk that does not require bondholder bailouts — namely “system breakdown” or “conduit” risk.

³² For example, by the author of this paper.

³³ For example, by the author of this paper.

System breakdown risk (“conduit risk”)

We can distinguish, in any economy, between goods and services that are *optional* and those that are *crucial*. For our purposes here, what we have in mind as those crucial goods and services without which a material part of the rest of the economy could not function (note we say *could* not, not simply *would* not). Examples in a modern economy would be food, water, transport, telecommunications, and the payments system. We define “optional” goods and services as those that are not crucial.

If something were to happen that materially threatened the supply of a crucial good (water, say), then that would have implications for the public interest. One would expect that public policy would recognise this risk — and indeed it does and has done for many years. For example, as we have discussed earlier, although in most sectors of the economy if a company goes bust, it can enter administration as a going concern (i.e. continue to run as a business whilst its debts are sorted out) or be liquidated (closed down with its assets sold off or otherwise disposed of), in the case of regulated utilities (such as airports and water companies) there are special administration regimes in which rapid liquidation is not an option.

On the other hand, it does not automatically follow that every company failure in sectors including crucial goods would be systemically significant. For example, food would naturally be considered paradigmatically crucial, but presumably that does not imply that we need a special administration regime for chocolate manufacturers. Even if one restricts the concept to key foodstuffs such as bread, we presumably do not need special ways to deal with the failure of just any bakery. Even if there were only one bread manufacturer for the whole country, it would still not be obvious that there were a problem, because if people could not buy bread they might simply buy rice or potatoes instead, or perhaps buy flour and bake their own bread if bread were really what they wanted.

The key to understanding here why, although food is crucial, failure of food companies is not automatically systemically significant, is competition and more generally the presence of alternatives (buying bread somewhere else, or buying rice instead of bread). If, instead, there were an isolated village without access to rice or potatoes in which bread were the main staple, and in which there were only one baker, then it is quite likely that collapse of that bakery would be systemically significant — because there would be an absence of alternatives.

But certain key networks — such as air transport, or the payments system, or perhaps also the electricity network in certain respects (e.g. the grid) — are heavily dependent on a small number of conduits, such that sudden removal of one of those conduits might threaten the integration of the system as a whole. In such cases it would be inadequate if the financial failure of a company managing one of these key conduits led to its simply ceasing to operate.

Unfortunately, although this issue has been recognised in respect of many key conduits for some time — in particular those associated with privatised utilities — prior to the credit crunch that began in 2007, there was no special administration regime for the banks. There was thus no mechanism for

resolution — e.g. for the imposition of losses upon bondholders (as opposed to, say, the bondholders *agreeing* to debt-for-equity swaps) — without the risk of key conduits ceasing to operate.

Systemic risk regulation

One route to limit moral hazard problems associated with the bailing out of bank bondholders must be, as argued above, to create sufficiently robust and credible mechanisms to manage the maintenance of an orderly payments system that also allow for bank bondholders to take significant losses, thereby limiting the likelihood of state bailouts. We have discussed treatment of depositors in some detail in a previous Research Note,³⁴ and shall set out some more detailed thoughts on precisely how to treat bondholders in the next section.

However, although we have argued in favour of such systems, we recognise that they may only have limited credibility, at least until they are proven in action, and it will be necessary to combine attempts to limit the need for future bailouts (even in the event of financial calamity) with systemic risk regulation that, in the meantime, aims to curtail attempts to game the implicit lack of ‘no bailout’ credibility.

What are the proper goals of “systemic risk regulation” in the financial sector?

We shall argue that the proper goal of systemic risk regulation is fourfold:

- Maintenance of an orderly payments system;
- Provision of adequate assurance to retail depositors so that they place (and leave) depositary funds in the financial system rather than storing them at home;
- The disincentivising of behaviours designed to game the fact that, in crises, governments may come under political pressure to bail out failing institutions — gaming behaviour designed to generate rewards for irresponsible behaviour; and
- Provision of adequate information to monetary authorities that they can conduct monetary policy and so that they can deliver the first three objectives above.

We shall argue that the following do not represent proper goals of systemic risk regulation:

- Preventing the failure of financial institutions;
- Minimising financial market volatility;
- Preventing individual investors from losing significant sums of money;
- Eliminating all bank runs; or
- Preventing the failure of firms when such failure might lead to significant unemployment, perhaps even regionally-focused blight.

Let us consider the proper goals.

34 See *Incentivising boring banking: an alternative approach*, http://www.policyexchange.org.uk/images/publications/pdfs/Incentivising_Boring_Banking_-_June_10.pdf

The proper targets and goals of systemic risk regulation

Maintenance of an orderly payments system

By the payments system we mean the complex and inter-related web whereby workers receive their wages, households pay bills to firms, firms pay bills to each other, individuals are able to withdraw money from banks and cashpoints, and so on. There is certainly a case for regarding this payments system as a vital public good, akin to the electricity grid or the roads network.

It is therefore natural that systemic risk regulation should include oversight of the payments system by regulatory authorities and a special administration regime for those institutions that constitute key conduits within the payments system (comparable, say, to the special administration regimes that apply for other utilities). It appears that regulatory understanding of the payments system and threats to it was weak in the years before 2007, and that in addition the administration regime applicable to banks did not provide a proper mechanism for securing the payments system in the event of the failure of a major bank. Although both of these issues have now, to some extent, been addressed, it is plausible that there is still further work to do in this area.

Provision of adequate assurance to retail depositors so that they place (and leave) depositary funds in the financial system rather than storing them at home

There are many reasons why it is desirable for the considerable bulk of household and business funds to circulate within the financial system rather than being stored at home. Fairly straightforward reasons for this include:

- Funds simply stored are idle, whilst deposits in banks support economic activity by forming the basis for investment loans.
- Large quantities of cash (or, even, precious metals or jewels, say) kept in homes represent a temptation to crime. Funds stored in this way might also be subject to destruction through fires or other accident, creating uncertainty.
- Large volumes of (and large quantities in) transactions occurring in the form of cash create a temptation to tax evasion or other regulatory evasion as transactions might not be reported. Related to this, there would be a burden on individuals and small businesses to track their transactions, and they might fail to meet their tax or regulatory reporting obligations simply through oversight as well as through the desire to cheat.

The above constitute drawbacks to depositary funds being stored at home in ordinary times. A more subtle reason is related to the danger that, in times of financial crisis, households will withdraw funds from the banks in order to store them at home. Because banks employ “fractional reserves” (that is to say, they hold liquid assets of only a small fraction of their total deposits), even a perfectly well-capitalised and profitable bank could be forced into financial distress by the disorderly withdrawal of large volumes of deposits in a crisis. Such a bank could, of course, borrow money from other banks³⁵ or from the central bank in such a scenario, and if the central bank had sufficiently intimate prudential oversight to be assured of its long-term financial robustness then loans might be forthcoming to address such a deposit run. However, times of financial distress might well be periods in which other banks preferred to keep

35 ...at least, it could do so were it not restricted by regulation from such wholesale borrowings. We note that some proposals for restricting banks from involvement in wholesale money market activities, though wholly understandable in a political sense given the difficulties faced by Northern Rock and others, would have the perverse consequence of making banks more exposed to bank runs.

their own liquid funds to protect themselves from bank runs and the otherwise-sound bank might rapidly become dependent on loans from the central bank at a penal rate of interest.

Provision of adequate information to monetary authorities that they can conduct monetary policy and so that they can deliver the objectives above

Periods of systemic financial crisis can involve sudden large shifts in the money supply. A detailed discussion of the merits of various money supply management techniques during financial crises is outwith the scope of this report. However, it is widely accepted that the significant and decisive use of monetary policy may be appropriate in such circumstances — large interest rate cuts, certainly; and perhaps also the use of more direct monetary injections through quantitative easing or credit easing.

To be able to enact monetary policy effectively so as to address systemic crises, the monetary authorities clearly need timely and appropriately detailed information from key financial institutions. In principle, such information requirements may go beyond those institutions actually in crisis or even beyond those institutions the failure of which would provoke direct intervention by the regulatory and monetary authorities.

Regulatory authorities also may have considerable information needs during periods of systemic financial crisis so as to manage the sorts of interventions discussed under the previous headings. Perhaps somewhat less detailed information, and perhaps from a somewhat narrower range of institutions, may well also be required outside periods of crisis as part of the effective delivery of regulation designed to prevent systemic crisis from occurring or to limit the worst effects of such crises.

“To be able to enact monetary policy effectively so as to address systemic crises, the monetary authorities clearly need timely and appropriately detailed information from key financial institutions”

Inappropriate goals of systemic risk regulation

We shall now turn to various goals for systemic risk regulation that might be tempting to some political and regulatory thinkers, but which we believe are inappropriate.

Preventing the failure of financial institutions

The failure of companies can be distressing. Investors lose money; creditors (sometimes including small companies) are not repaid; workers lose their jobs; long-established customers lose services and products they are familiar and happy with. It can be tempting to believe that if companies fail then there is something wrong — that the system has failed in some way.

It can be very tempting for governments to intervene to prevent the unpleasant consequences of company failure described above. Such intervention may take the form of bailing out companies that would otherwise fail by providing them with subsidies or special low-interest loans, equity injections or outright

nationalisation. It might also take the form of earlier interventions to curtail the activities of companies to prevent them from taking risks that might otherwise lead to them failing.

The sense that company failure constitutes a failing of the system is widespread and reaches very high up the regulatory hierarchy. For example, Alan Greenspan, longtime former Chairman of the US Federal Reserve, went before Congress at the height of the crisis in 2008 and said that he had been wrong to believe that self-interest would be sufficient to make financial markets broadly self-regulating. Greenspan recently stated his view in the following terms:³⁶

“Fundamental to the functioning of a market system is the fact that each individual economic entity works extraordinarily assiduously to preserve its solvency. It is such a critical part of the way a competitive free market system works. You have to have that as an essential ingredient in the marketplace, or it will not work.”

This is, however, completely wrong (and it is rather extraordinary that the Chairman of the Federal Reserve believed such a thing). There is no mainstream economic theory according to which, in a competitive free market, firms strive assiduously to preserve their solvency. And it is certainly not an “essential ingredient in the marketplace”, a *sine qua non* for a competitive free market system to work, that firms so strive.

Indeed, quite the reverse is true. In the standard paradigms firms strive to maximise their profits or to maximise shareholder value. Profit maximization, of necessity, involves the taking of risks in order to try to garner returns. Firms that made it their central goal to avoid insolvency would avoid risky new projects — risky new products or new production methods — preferring instead always to protect their solvency. Indeed, if a solvency-risk-minimizing firm ever had any other option, it would always avoid taking on any new debt because to do so would increase the risk that, some day, it might become insolvent. In almost no industry will it be the case that either the strategy that maximises expected profits or the strategy that maximises shareholder value will minimise the probability of insolvency. This is particularly the case in the finance industry, which intrinsically deals in risky activities. To maximise expected profits you need to take risks that might go bad. To minimise the probability of insolvency you need to avoid risks that might go bad.

Thus, financial institutions failing does not constitute a market failure. Firms going bust is not capitalism failing; it is capitalism *working* — weeding out inefficient and obsolete companies, management, and working practices, so as to make space for new entrants, new ideas, and better managers.

One implication of this is that regulatory capital and liquidity requirements should not be set so high as to eliminate all material risk of banks going bust. We could of course set (and keep)³⁷ such requirements at extremely high levels. But the consequence will be significant inefficiency, because the market loses the healthy dynamic consequences of periodic company failure. Very onerous prudential requirements are an extremely inefficient mechanism for reducing the moral hazard problem associated with bond bailouts — they remove the inefficiencies of government bond subsidy only by replacing them with potentially even greater inefficiencies of excessive idle capital and liquidity.

³⁶ In an interview for a BBC2 programme called “The Love of Money”, broadcast in September 2009.

³⁷ Of course, if they are set very high in a bust period, there will be the temptation to reduce them during the next boom...

For systemic risk regulation to have the goal of preventing the failure of financial institutions would be for it to damage the key market discipline that keeps firms efficient and promotes efficient new innovation but avoids excessive socially useless innovation: namely that if you take a risk and it goes bad, you lose your money.

But what about maintaining an orderly payments system and protecting depositors?

One natural response to this critique might be that it misses the point. The preventing of financial firms from failing is not a goal in itself. It is, rather, the mechanism by which regulatory agencies maintain an orderly payments system and provide assurance to depositors (in particular preventing panic-based bank runs).

This is a common idea, but it is flawed. The electricity grid and the water supply network are both vital utilities, the collapse of which would have very severe and very rapid social consequences (perhaps even more rapid than the collapse of the payments system). Yet it is not thought necessary for regulation to forbid the failing of water supply companies or electricity generating companies. Any administration regime takes control of a company as, in the first instances, an ongoing business whilst limiting or suspending the honouring of debt repayments. And administration can lead into orderly liquidation. There is no good reason why an adequate special administration regime for banks could not maintain the payments system whilst imposing losses on bondholders, the breakup of the firm and sale of certain assets, and the windup of that firm as a legal entity.

Similarly, whatever level of assurance for depositors is enacted in regulation could be implemented within the auspices of an adequate special administration regime. If some categories of depositors (storage deposits) are to be insured by the state or by a special industry-wide fund, deposits could be paid out under special administration. If other categories of depositors (investment deposits) are to be preferred creditors with merely liquidity-based access to their deposits (and an obligation to repay in the event that the bank's assets do not cover 100% of deposits), that again could be managed under special administration.

Perhaps in 2008, the administration options available were not adequate or the legal property rights of bondholders versus depositors so strong that it was not legally feasible to intervene to the extent required to maintain an orderly payments system or to protect retail depositors without preventing the whole bank from failing. But, if so, that was a (dreadful) failing of the wider regulatory and legal framework, not an inevitable and universal truth concerning the interplay between preventing bank failure and delivering the proper objectives of systemic risk regulation. We must not assume that just because bank bondholders have not been permitted to lose money for decades that, therefore, it is simply infeasible for bank bondholders to experience losses whilst maintaining an orderly payments system. That is the route of despair, and its only destinations are the nationalisation or banning of retail deposit-taking for fractional reserve banks.

Minimising financial market volatility

There have always been casual commentators taking the view that financial markets are little more than respectable casinos, and that volatility in financial markets is the result of irrational impulses of greed and fear or reflects little more

than the vicious consequences of rich boys' games. From this intuitive startpoint, many have believed that financial market volatility is intrinsically a bad thing, something that policy should aim to minimise.

Though financial market volatility is widely acknowledged to have been much more the symptom than the cause of the financial crisis, recent events have once again provided a platform for those that have always favoured regulatory action to “clip the wings” of financial markets, and there are voices that contend that a proper goal of systemic risk regulation is the minimisation of financial market volatility.

Orthodox economic theory rejects entirely the characterisation of financial market volatility above. Even outside periods of crisis, one would expect financial markets to exhibit a certain degree of volatility. Indeed, having some volatility is efficient, as it reflects the ability of agents to experiment, analyse, and update their views, and also to innovate under conditions of brute uncertainty. Specific drivers of natural volatility in asset prices include:

- Effects of information or interpretation updating, such as:
 - New general information releases (e.g. by national statistical authorities);
 - New policy changes (e.g. interest rates, fiscal policy, regulation, direct interventions such as bailouts or quantitative easing);
 - New analysis (as part of the process of delivering semi-strong efficiency);
 - New information revealed in market actions – this can take the form of things changing (e.g. a new company entering the market); or of things staying the same (e.g. when people keep trading rather than stop trading [as one might have expected], that can cause us to update our opinions about what they know).

(In all cases above, is it important to recognise that there can be updating of interpretations, as well as of information.)

- Effects of speculation, such as:
 - Signalling effects, wherein agents known often to be well-informed can move markets by their observed trades even on occasions when they are not, in fact, any better informed than the market as a whole;
 - Volume effects, where in thin, specialised markets without other agents ready and willing to enter to take up arbitrage opportunities, large trades can move prices by sheer volume.

A straightforward consequence is, for example, that if market participants had under-estimated the risks associated with some product (e.g. a collateralised debt obligation [CDO]) and then either some new data (e.g. showing house prices falling), some new market event (e.g. a firm known to have lots of CDOs going bust) or even simply trade continuing as it had when one might have expected prices to rise (say) all might cause those market participants to update their view of the risks of their CDOs (e.g. by raising their risk assessments) and hence pay less, causing the price of such CDOs to fall.

There is therefore nothing intrinsically malfunctioning about market volatility. Markets can swing wildly because market processes are working well, not only because they are failing to work well. Investment companies that take risks are

intrinsically likely to face occasional periods of loss — that follows logically from their being risk-taking endeavours. That risk-taking investors sometimes lose money does not itself indicate that markets are malfunctioning.

On the other hand, it is important to recognise that, just because volatility can (and should) arise without market or regulatory failure, it does not follow that there were not also market and regulatory failings. We do not contend that extreme financial market volatility might not be a symptom of such market and regulatory failings, neither do we say that it would not be valuable to address such failings. But these failings are issues to be addressed in themselves. There would be little merit, and much loss, in addressing the symptom of such failings by preventing financial markets from functioning properly (i.e. limiting financial market volatility) but not addressing the underlying cause. (Indeed, it is arguable that this is in itself another merit of the freedom of financial markets to be volatile — such volatility may indeed be a symptom of market or regulatory failings and exposes them so they can be addressed, when they might otherwise go unnoticed, causing damage nonetheless.)

Preventing individual investors from losing significant sums of money

There is an asymmetry in the risk profile for managers of depositing institutions. They effectively face limited liability (even bankruptcy is a limited form of punishment) as they do not face equal downside risk as they do upside risk. Therefore they have incentives to engage in risky activities which may return high rewards but also may lead to large losses. This means that such managers need monitoring by those whose money they invest. However, many depositors are small (in fact a major function of banks is to collect relatively small deposits to use for relatively larger loans) so each depositor faces incentives to free-ride on the monitoring of other depositors. Hence markets may under-monitor banks to the detriment of some depositors. This is the basis for the representation hypothesis developed by Dewatripont and Tirole (1994) which makes a case for regulation as performing the monitoring functions (screening, auditing, covenant writing, and intervention) which dispersed depositors are unable or unwilling to perform.

There is an important debate within broader prudential regulation as to what is the appropriate balance between the representation hypothesis approach and a *caveat emptor* (buyer beware) approach that places more burden upon investors to engage in their own independent (and diversified) analysis.³⁸ Without entering into this broader debate in any detail, we would emphasise here that the preventing of individual investors losing significant sums of money is not a special goal of systemic risk regulation, as opposed to broader prudential regulation.

It is tempting to believe that there is a special issue concerning those that lose money in periods of crisis. The idea is that their investments may go bad through no fault of their own but, rather, simply because of wider economic circumstances beyond their control. It thus seems unfair that they should lose money under such circumstances. So it may be tempting to limit their losses in systemic crisis and, because of such bailout promises, to have special regulation to check such investors' exposure to systemic risk at better times — perhaps limiting their ability to expose themselves to such risks.

38 In *What Killed Capitalism?* The author of this report argued that the use of regulatory badging to replace diversified individual analysis under *caveat emptor* was one of the key drivers of the financial crisis, and indeed that international coordination of such regulation was a key factor explaining why the crisis was so international. In other words, there is a trade-off between addressing the free riding problem via regulatory badging and increasing the systemic coordination of errors.
http://www.cps.org.uk/cps_catalog/CPS_assets/714_ProductPreviewFile.pdf

This notion is, however, confused. Investors take risks and are rewarded for that risk-taking by higher returns. That is a key basis of capitalism. Some such risks are specific to the firms invested in — in other words, that firm might lose money or have poor profitability whilst other firms in the economy still did well. Other risks are systematic — that is to say, the firm invested in is affected by systematic risks at the same time as are many other firms in the economy; systematic risks cause the whole market to move.

Specific risks affecting an individual firm can be offset by diversifying investments. To see what this means, consider an industry in which there is no systematic risk (and no industry-specific risk), but each of the companies in the industry faces company-specific risk. Standard theory predicts that the rate of return in this industry would be what is called the “risk-free rate”, the rate of return received by those investing in an entirely risk-free asset. Since there is no systematic risk, an investment company with equal shares in all the companies in the industry would be guaranteed to receive the risk-free rate every period — the company-specific risks taken that turned out badly in some companies would exactly balance those that turned out well in others (that is precisely what it means to say that there is no systematic risk).³⁹

Since company-specific risks can be diversified away, the key form of risk justifying higher returns is systematic risk. But, by definition, when systematic risks go bad then they go bad across the market as a whole. An implication is that

times of crisis will be times in which many investors will lose significant sums of money. That does not mean that the market is not functioning properly. Neither is it unfair — it is not that those investors have been “dragged down by circumstances beyond their

control” and therefore ought to be bailed out. In better times they receive high returns precisely because in times of system-wide problems they might lose money. If they were not permitted to expose themselves to systematic risks, they could not garner above-risk-free-rate returns. The consequence would be highly risk-averse investment and low economic growth.

“ Since company-specific risks can be diversified away, the key form of risk justifying higher returns is systematic risk ”

Eliminating all bank runs

Much casual policy discussion assumes that bank runs are automatically bad, that policy should aim to deter or prevent them, and that their occurrence indicates a failure of policy. But this is incorrect, for at least three reasons:

1. **Slow bank runs are not vicious, but simply represent the liquidation of an asset.** By a “slow bank run” we mean a withdrawal of deposits that occurs gradually enough that the bank is able to liquidate assets in response and is not driven to seek central bank assistance, and yet, unlike natural downward dips in deposit-holdings that naturally occur from month to month in even the healthiest bank, are sufficiently sustained that they drive a material downscaling of the bank or eventually perhaps even its winding up. Deposits are investments,⁴⁰ and if investors wish to liquidate their investments that should not be automatically regarded as a bad thing.

³⁹ Note that industry-wide industry-specific risks can be diversified by investors, in an analogous way to that set out in the thought experiment above, through holding shares across industries.

⁴⁰ For more on this point, see *Incentivising boring banking*.

2. **Rapid bank runs discipline bank management.** The threat that depositors will withdraw their funds is a discipline on excessive risk-taking by bank management — either in the form of excessive leverage or in the form of high-risk lending — or other forms of poor management. As key investors in banks, depositors are a key source of monitoring. Monitoring by individuals is likely to be limited by free-rider problems (this is one reason for prudential regulation), but the threat of sudden bank runs unexpectedly revealing weaknesses in management provides a discipline on managers that more gradual and limited mechanisms will not.
3. **Rapid bank runs are an intrinsic part of the mechanism that disciplines banker remuneration.** In a brilliant paper,⁴¹ Diamond and Rajan argue that the threat of bank runs and the serial nature of repayments (i.e. that depositors are paid out in the order in which they turn up to withdraw money) are necessary to limit the ability of bank managers to secure monopoly rents for their skills. Without the threat of bank runs, managers can achieve high margins between the interest rates they charge for loans to businesses and the deposit rates they pay, and take the difference as salaries. They can do this by implicitly threatening not to secure high rates of repayment on loans once those loans are made (i.e. establish large loan books that they understand better than anyone else and then threaten to permit defaults unless they are paid high salaries). But the risk of bank runs means that in this scenario (the threat of permitting defaults) depositors will queue to withdraw their funds (since they secure no less by withdrawing than by leaving them in place whilst paying inflated salaries to bank managers, and if they do not withdraw their money then others may withdraw ahead of them and they would be left with losses).

Preventing the failure of firms when such failure might lead to significant unemployment, perhaps even regionally-focused blight

It is obviously distressing for workers and their families when they lose their jobs and must find others. And when unemployment is highly concentrated in a town or even region, this can create many social problems.

It is arguable that there is a goal for regional policy in mitigating the effects of regional blight in such circumstances. There is also a case for more specific work retraining programmes or relocation packages to assist the unemployed to move to find work.

We make no comment here on whether such policies are desirable or effective. But we do urge that, interesting and important as they are, these are not proper issues for financial systemic risk regulation. The closure of a large coal-mining company, or ship-building yard, or car manufacturer, or a regional bank or a regional general insurance company might all involve significant job losses and generate a legitimate debate about wider policy responses. But they are not, in themselves, issues for systemic risk regulation.

This is of particular relevance, because it is often confusingly suggested that the failure of any sufficiently large financial institution will be systemically significant. It may well be true that the failure of any sufficiently large financial institution will lead to significant job losses both within the company itself and (as in other industries such as car manufacturing) to job losses amongst firms that dealt with

41 Diamond, D. & Rajan, R. (2000), "A theory of bank capital", *Journal of Finance*, LV(6), pp2431-2465.

the large failing institution. And there is certainly a broad sense in which one might declare this as “systemically significant”, just as the failure of a shipbuilder or car manufacturer is “systemically significant”. But that is not the sense of “systemic significance” that raises specific issues for financial regulation. The issue for financial regulation is not the general policy question of job losses and economic blight — which is a matter crossing many industries. The issue for financial systemic risk regulation is much more specific: the maintenance of the payments system and the appropriate assurance of retail depositors.

Thus, the size of financial firms should only be relevant insofar as it influences the impact that failure of those large firms would have upon the ability of the regulatory authorities to maintain the payments system and to provide appropriate assurance to retail depositors.

4

Our Proposal: A Special Administration Regime for Banks

Triggering special administration

In the UK Special Resolution Regime created by the Banking Act 2009, there are two triggers for special administration:

1. The bank must be failing, or likely to fail, to satisfy its five ‘threshold conditions’ — namely legal status (the bank must be a body corporate or partnership); location of offices (the head office of a body corporate constituted under the laws of any part of the UK must be located in the UK); close links (these must not prevent effective supervision); adequate resources (interpreted widely to include liquidity, capital, provisioning, human resources and risk management processes); and suitability (interpreted to include that management be fit and proper).
2. It must not be reasonably likely the bank could and will take action (in the absence of Special Resolution being initiated) that would enable it once again to satisfy the threshold conditions.

We suggest that special administration should instead be triggered on three broad bases:⁴²

- (a) If the regulatory authorities (in particular, the prudential regulator, which we believe should be the central bank)⁴³ decide that the entity has sufficiently inadequate capital that it is exposed to the risk of becoming insolvent in the event of a bank run or other small shock, it could choose to trigger special administration. We note that this is not (i) simply a matter of having capital less than the standard regulatory minimum — many circumstances might involve temporary drops below the regulatory minimum without indicating material distress (after all, capital buffers exist to absorb shocks, so their employment to bear losses does not indicate something wrong) and even if the entity becomes materially below regulatory thresholds and the central bank presses for the restoration of adequate capital there could be rectification without entering administration. Neither is it (ii) simply a matter of being subject to a bank run — a perfectly solvent bank with adequate capital could be subject to a bank run as a result of false rumours or depositor panic if another institution failed; either of these cases could be dealt with in the normal way through a combination of interbank borrowing and central bank

⁴² We do not express ourselves in as precise legal terms as the two triggers from the Banking Act 2009.

⁴³ For example, see <http://www.spectator.co.uk/coffeehouse/3756738/rules-versus-discretion.shtml>, <http://www.publications.parliament.uk/pa/cm200809/cmselect/cmtrasy/767/9062302.htm> (answer to Q11) and <http://www.publications.parliament.uk/pa/cm200809/cmselect/cmtrasy/767/9062303.htm> (answer to Q21). A useful extended discussion of why the central bank is to be preferred appears in Chapter 2 of *The Future of Banking Regulation*, report prepared for the City of London Corporation by Europe Economics, May 2010 — http://www.europe-economics.com/publications/bc_rs_thefutureofbankingregulation.pdf

borrowing, or (if necessary) sale of the company. Thus we do not envisage an adequately capital-solvent bank being placed into special administration on the basis of temporary liquidity problems (in contrast to the power to trigger Special Resolution under the Banking Act 2009).⁴⁴

- (b) Creditors could apply to a court for a bank to be placed into special administration even if a regulator would not agree, if those creditors can successfully contend that the regulator's failure to place the bank into special administration creates a material risk of loss for that creditor. In essence, this is the contention that, from the creditors' point of view, the bank really ought to have been placed into special administration, but the regulator is failing to do so because of some combination of a different judgement of risk, lack of some relevant piece of information, complacency, incompetence, and the fear that triggering special administration could trigger a wider financial crisis or political problems (neither of which should be decisive reasons for exposing a creditor to risk of loss).⁴⁵
- (c) The shareholders of the bank could decide to wind the bank up, as can the shareholders of other companies.

44 Under the US "prompt corrective action" rules introduced in 1991, US banking supervisors were empowered (but not obliged) to appoint the FDIC as receiver within 90 days of a bank's tangible equity ratio falling below 2% (termed 'critically undercapitalised'), and obliged to appoint the FDIC as receiver if the bank remains critically undercapitalized for four quarters. Special administration could also be triggered in various other ways, such as violations of law, unsafe or unsound practices or critical management failures, even if these did not result in the bank becoming critically undercapitalised.

45 That is to say, we reject the notion that administration might legitimately be *delayed* (as opposed to *accelerated*) because of the special public policy features of the banking sector — or, at least, we reject the idea that if other creditors can identify this to be so then they should be unable to force administration themselves.

46 http://www.policyexchange.org.uk/images/publications/pdfs/incentivising_Boring_Banking_-_June_10.pdf

47 Depositors currently have (some degree of) preferential status in Switzerland and in the US.

48 This was proposed by the author in late 2008, and written up in Lילו, A. (2009), *What Killed Capitalism? The Crisis: What Caused it and How to Respond*. http://www.cps.org.uk/cps_catalog/CPS_assets/714_ProduktPreviewFile.pdf

Key features of special administration regimes

For it to be credible that bank bondholders are not bailed out, a number of key features of special administration regimes must be in place — which are not reflected in existing regimes.

- **Depositors must not be exposed to losses from failure unless politicians are willing to allow them to experience those losses.** Otherwise, the special administration regime will never be triggered, because politicians will intervene at an earlier stage to bail the company out (sparing the bondholders along with the depositors). In our Research Note *Incentivising boring banking*,⁴⁶ we argued for a significant reform to the structure of deposit-taking, legally insulating a category of deposits ("storage deposits") from the wider bank (including bondholders), as nested entities 100%-backed by high-liquidity/low risk assets (typically, government bonds) in the style of the "savings banks" common in the UK before the 1980s. We believe that if depositors had the option of storage deposits at every bank licensed to accept retail deposits, politicians would be more willing to accept depositors making losses on (non-insured, fractional-reserve-backed) "investment deposits".
- **Investment depositor losses should only occur if (unsecured) bondholder losses are total.** In other words, investment depositors should rank above all bondholders (except those with security over specific assets — e.g. the central bank if it provides last resort lending with collateral) as creditors — they should be preferred creditors.⁴⁷ Note that depositors are not preferential creditors under the Banking Act 2009.
- **Depositors must have access to their funds, even when the institution is in administration.** In *Incentivising boring banking* we described our proposal for a deposit access fund.⁴⁸ By contrast, the Banking Act 2009 envisages passing deposits to other banks, creating "bridge banks" owned and controlled by the

Bank of England, or placing the bank under “temporary public ownership” (i.e. nationalising it). A key problem with these measures is that their presence makes it very unlikely that regulatory authorities would ever feel able to allow depositors to lose money. We shall argue below that this no-depositor-losses approach is destabilising and incompatible with private capitalism.

- **In special administration, losses should be imposed upon bondholders even when the bank is a going concern.** The most straightforward mechanism for this would be to impose debt-equity swaps upon bondholders.⁴⁹ However, in some settings bondholders might prefer simply to accept haircuts in the value of their bonds, delays to coupons, or other measures short of conversion to equity. A key issue would be speed — the administering regulator would need to set an early date by which debt-equity conversion would be imposed, unless bondholders agreed to some alternative acceptable to the administering regulator before that date. The UK special administration regime contains no structured mechanism for debt-equity conversion.

Below we shall explain why we believe that it is absolutely necessary for investment depositors to be exposed to potential risk of loss, and how that should be managed. But first we shall focus on the procedure for imposing losses on bondholders.

More detail on the debt-equity swap procedure

When banks have considerable volumes of bonds outstanding, but have inadequate capital, then if they are viable going concerns they can be recapitalised by conversion of debts into equity. (We note that what follows will not be applicable to the case in which a bank enters administration because it is being voluntarily wound up by its shareholders — in that case there should be no debt-equity swap.)

Deadline

The first step in the procedure would be the statement of a deadline by which debt-equity swaps would apply, unless an acceptable alternative can be presented to the prudential regulator. We suggest that such a deadline should be quite short — of the order of two weeks. One could imagine a number of alternatives to debt-equity swap that might be acceptable:

- **Sale:** Another company might wish to buy the bank (or some part thereof) with bondholders intact, and the regulatory authorities could be inclined to consider it a credible bidder.
- **Capital injection:** An investor might be prepared to inject new equity into the company whilst leaving bondholders intact.
- **Haircut or coupon delay:** Bondholders might prefer to accept a haircut on their bonds and/or delay of a bond payment to having their debts converted to equity.
- **Improved outlook:** Bondholders, existing shareholders, or even employees might be able to present arguments that the outlook for the entity was actually

49 This was urged by the current author as the strategy to pursue in late 2008 instead of bondholder bailouts and recapitalisation by state funds injection. For more detail see Lilico, A., *What Killed Capitalism? The Crisis: What Caused it and How to Respond* (2009) http://www.cps.org.uk/cps_catalog/CPS_assets/714_ProductPreviewFile.pdf

better than thought — say because some attractive new product were about to be released, or because there were actually large gains on some investment of the bank that had not been known at the time the special administration began, or just because market sentiment about the banking sector had changed dramatically following some wider policy decision (e.g. an interest rate cut) or new statistic (e.g. much better than expected GDP growth data).

Some combination of the above might be sufficient to convince the regulator that adequate capital could be restored without triggering debt-equity swaps.

A further possibility is that some creditors or shareholders might be able to persuade the regulator or a court that the bank was a value-destroying concern, and so should be dealt with as a standard “gone concern” instead of being recapitalised. In that case debt-equity swaps would be abandoned and one would move to the Special Liquidation procedure we shall outline below.

Debt conversion

If the deadline is reached, then if there are bonds, they can be converted to equity. To see how this might work, we shall compare the features of two broad mechanisms. Suppose that the bank reaches the debt-equity swap deadline with £1 million of equity, £7 million of junior debt, £10 million of senior debt, and £82 million of depositors, whilst having £100 million in assets. And suppose that the regulator decides that it needs to have equity of 10% of assets (£10 million) before being permitted to leave special administration. (This might be more or less than the capital adequacy requirement — it might not be necessary for the bank to be adequately capitalised to exit special administration if it could credibly argue that it would be able to trade its way back to adequate capital.)

Two broad mechanisms are as follows:

1. Once debt-equity swap is triggered, then £9 million of debt becomes equity, which together with the £1 million of equity at the trigger point sums to the required £10 million, and the existing equity is diluted. So, all £7 million of the junior debt is converted to equity, and of the senior debt £2 million is converted (so, senior debtors take a 20% haircut on their £10 million of senior debt in exchange for receiving £2 million in equity). Thus, at the end, the original equity holders have 10% (£1 million) of the total equity of the company (£10 million), whilst the original junior debtors hold 70% and the original senior debtors hold 20%.
2. Once debt-equity swap is triggered, equity-holders are wiped out. That leaves £1 million of “surplus” to re-allocate. We then step down class of bonds. If the first class of bonds encountered (in this case what we term “junior debt”) has sufficient funds that, in combination with the equity “surplus” there is adequate total capital, then that class of bonds takes the required haircut in exchange for receiving equity summing in value to the full £10 million. So, if there had been, say, £10 million of junior debt, then there would have been a 90% haircut in exchange for the junior debtors receiving £10 million in equity. However, in this case there is not sufficient junior debt. So, like the equity holders before them, the junior debtors are wiped out completely, leaving a “surplus” now of £8 million (the original £1 million in equity plus

the £7 million in junior debt now wiped out). We then move on to the next class of bonds and repeat. So, in this case we would wipe out the original equity holders and the junior debtors, whilst senior debtors would have a haircut of 20% on their £10 million and in return receive £10 million in equity.

One natural thought is that the broad approach might depend upon the solvency or otherwise of the bank. Note that the first of them involves swapping debt for equity at a conversion rate of £1 of equity for £1 of debt. If the bank is actually insolvent, such that junior tranches of debt would not be paid out in full on liquidation, then there would seem on the face of it to be a strong case for such tranches being swapped at less than £1 of equity for each £1 of debt (i.e. imposing a haircut on bondholders — perhaps corresponding to the haircut they would experience in liquidation, even prior to conversion).

There is thus a sense in which the latter broad form of mechanism is closer in spirit to the concept of liquidating the entity whilst the latter is closer to a capital restructuring in a going concern. If the entity were liquidated then if there were not sufficient assets to cover all liabilities, equity-holders would lose everything, not simply be diluted; if there were not sufficient assets to cover all liabilities other than junior debt, junior debtors would lose everything, not simply be diluted; etc. Companies sometimes choose to swap equity for debt or debt for equity as part of restructuring their capital, and in other settings might choose to issue new equity — in either of these cases equity is diluted, not wiped out.

Given how quickly it would be necessary to implement recapitalisation so as to restore market confidence in the event of a crisis, there are clear advantages in having a mechanism that is spelt out in detail in advance and implemented mechanically. Too high a degree of discretion and judgement, or too complex and disputable a process of calculation, would lead to the risk that recapitalisation could be delayed by weeks, months, or even years, creating the spectre of politicians losing their nerves and intervening to bail out creditors, destroying the efficacy of the special administration procedure. There is great merit in principles that are simple and implementable quickly.

However, simple rules will be exposed to the risk of gaming. That could be decisive for our choice of conversion mechanism. Suppose that we were employing the second mechanism, in which equity and then classes of debt are wiped out rather than diluted, and consider, for example, a bank in which the senior debt is all held by one large investment fund. Then if the bank stays out of administration, these senior debtors have debts worth £10 million. But if it enters administration then they have debts worth £8 million and equity worth £10 million. It is not implausible, therefore, that the senior debtors might prefer the bank to enter administration to staying out. Indeed, having £8 million in senior debt and £10 million in equity might be more than £1 million better than having

“ Given how quickly it would be necessary to implement recapitalisation so as to restore market confidence in the event of a crisis, there are clear advantages in having a mechanism that is spelt out in detail in advance and implemented mechanically ”

a mere £10 million in debt. If so, these senior debtors would have strong incentives to purchase the equity of the company and drive it into special administration. One option could be to purchase that equity and “gamble for resurrection” by engaging the bank in extremely risky ventures.⁵⁰ If these ventures came off, the equity would surge in value, providing high returns to the investors. If these ventures failed, then the bank would be driven into special administration, the debt-equity swap procedure would be initiated, and the investors would gain qua senior debtors.

Thus, under this procedure, near to the boundary there would be greater likelihood of being driven into default. That might appear to decisively favour the first suggested mechanism (dilution) over the second (wipeout). However, on the other hand, near that boundary equity would also become more valuable, making it less likely that special administration would be triggered. So it is perhaps conceivable that a combination of adequate restrictions on the mix of bonds and tough restrictions on the risk-taking of banks that have inadequate capital could considerably mitigate this gaming effect.

Incentives for junior debtors clearly differ markedly between the two mechanism forms. Junior debtors could perhaps theoretically gain from wipeout mechanisms if the volume of junior debt were low relative to the volume of equity, and if the volume of equity were fairly close to the volume the regulator would require. But once volumes of junior debt increased relative to equity, junior debtors would rapidly become much more exposed to risk of total loss under the wipeout mechanism. The implication would be that if equity fell to low levels, it could become very difficult to secure new junior debt. But it is likely that, in the event of a bank run, borrowings from other banks for liquidity purposes would indeed take the form of junior debt. Hence if there were a wipeout mechanism, banks might struggle to secure interbank lending and would become rapidly dependent upon the central bank, making special administration more plausible and making the likelihood of older pre-crisis junior debtors being wiped out greater. The implication is that junior debtors would have powerful incentives to try to discipline the bank’s activities so as to prevent it becoming financially distressed, but that once it became distressed it would be very likely to enter special administration.

Our preferred mechanism

Bearing in mind the above discussion, our proposal is that at the point the bank enters special administration, either the regulator (if the regulator triggered that administration) or the court (if it were court-triggered) would immediately make a statement as to whether the debt-equity conversion triggered at the 14-day point would be on a “solvent entity” or “insolvent entity” basis. The solvent entity conversion procedure would be our first suggested mechanism — namely involving the progressive dilution of equity, with the debt-equity swap treated as akin to a capital restructuring of a going concern. The insolvent entity conversion procedure would be our second suggested mechanism — wiping out equity immediately and then wiping out classes of bonds.⁵¹

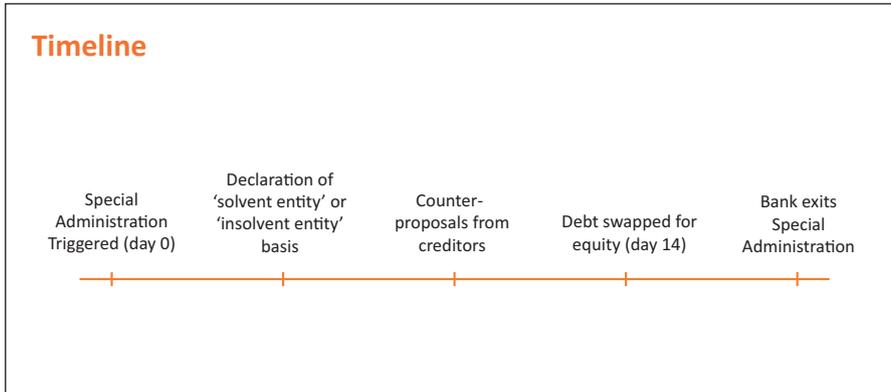
We believe that regulators should state in advance that, when banks have significant holdings of bonds, they would almost always choose the “solvent entity” basis, employing the “insolvent entity” basis only in extreme cases of

⁵⁰ Gambling for resurrection was a notorious feature of the Savings and Loan crisis in the US in the 1980s, in which insolvent banks gambled on high-risk ventures of which the most infamous were schemes to build shopping malls in the desert.

⁵¹ It is of interest to contrast the debt-equity swapping procedures discussed in this section with “convertible bonds”. A convertible bond allows the holder to convert into equity at a pre-agreed share price. A standard “contingent convertible” (CoCo) allows such conversion, but only at some price above the pre-agreed price (so, for example, if the agreed price is £1, the conversion premium is 20%, and the conversion trigger is 150%, then the debt can be converted into £1.20 of equity only if the share price is above £1.80 (£1.20 x 1.5) for some specified period. One proposal is to require banks to hold CoCos that are automatically converted into equity as share prices fall, thereby increasing effective equity buffers. That is not our proposal here. We are, instead, proposing that *all* bonds be subject to conversion.

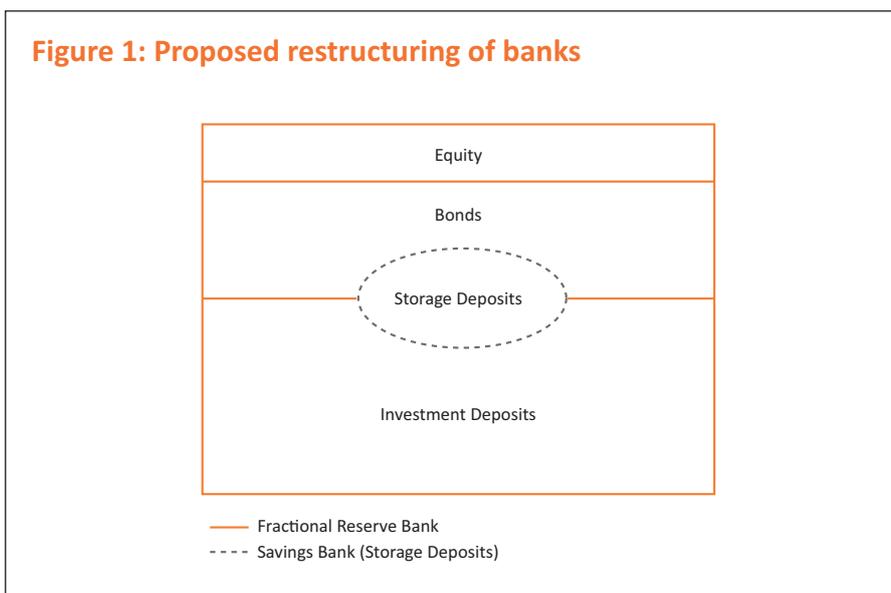
We note also that our procedure, though sharing some similarity of spirit with the US Dodd-Frank requirements (which mandate the imposition of losses on senior and junior unsecured creditors in future resolutions), is again more specific as well as being more explicit in its conception of exposing depositors along with (albeit ahead of) bondholders to risk of loss.

sudden catastrophic losses being revealed. If bond-holdings are exhausted, such that insolvency would impose losses on depositors, neither procedure could be employed and if the bank could not obtain equity injections or trade its way out of trouble, depositors would become exposed to loss.



Could a conversion procedure be enough without exposing depositors?

As discussed in *Incentivising boring banking*, we believe that every bank licensed to accept retail deposits should be required to offer, as a default option for deposits (i.e. if one simply requests a “deposit” then this is what is offered), what we term a “storage deposit” account. This is, in essence, a traditional savings bank, whereby all deposits are 100%-backed by government bonds, legally nested within every fractional reserve bank. In the event of a liquidation, storage deposits would not be exposed to risk (other than the risk of fraud or regulatory failure — against which the government would provide insurance) since they are legally isolated from the other activities of the bank. Anyone that wanted to invest in an account that simply purchased government bonds, participating only in the risk that the sovereign itself defaults, would be able to invest in storage deposits.



The same would not apply to deposits in the fractional reserve component of the bank — what we term “investment deposits”. A special administration regime ought to contain mechanisms for credibly exposing investment depositors to risk. The first and most fundamental reason for this is ethical. An investment deposit is a loan to a bank, a loan on which interest is paid. The moral justification for receiving interest on such an investment is that there is a risk of loss. If the state intervenes to bail out investment depositors, taxing the less rich to keep those with savings wealthy despite their having foolishly, lazily, or unluckily lent to a bank that went bust, the state becomes a device to keep the rich rich. That would be ethically indefensible.

The next point is that, as investment deposits are fundamentally a category of loan to banks, if investment deposits are not at risk then most of the same negative incentives we rehearsed in detail in earlier sections in respect of bank bonds would also apply to the behaviour of banks in respect of investment deposits: banks would take high risks, salaries will be excessive, bank balance sheets would explode to levels that threatened the sovereign, and so on.

Investment deposits are not, however, exactly the same kind of loans as bonds, and we do believe that it is appropriate for:

- Investment deposits to be preferred creditors;
- For there to be special arrangements for investment depositors to have access to their investment deposits in administration (a deposit access fund);
- For an account into which salaries are paid to be insured to a modest limit (at present, we would recommend £10,000).

These points are explored in more detail in *Incentivising boring banking*, but we rehearse the core ideas now.

Investment depositors as preferred creditors

As explained above, a preferred creditor ranks ahead of other creditors. Typically, creditors that have made loans on specific assets (as opposed to general “floating” claims) rank ahead of preferred creditors. We would recommend ranking depositors ahead of any other creditors than the standard preferred creditors in a liquidation (e.g. salaries). A consequence might be that banks would not be able to obtain secured credit other than from the Bank of England (which would need to accept collateral for loans that ranked below depositors).

Once the system had been operating successfully for some time, including a number of occasions in which investment depositors had experienced losses, it might be worth reconsidering the ranking of investment deposits, including the possibility of ranking them below secured creditors. But, in our view, politicians are a very long way, at present, from accepting the principle that any depositor can ever lose any money. Achieving even the minimal exposure to risk involved in investment depositors being strongly preferred creditors of the sort described here would be an enormous advance of principle.

A deposit access fund

When banks used to be permitted to enter liquidation in developed economies, often the key issue for depositors was not that they made large losses on their loans to these banks. Even in the 1930s banking panics in the US, typical depositor recovery rates were above 80%. The key issue for depositors was that the process of liquidation could become drawn out, meaning that depositors could not access their funds for extended periods of time — sometimes as much as two years. So they could not use their deposits to pay their mortgages, or pay back other loans, or to deal with other cash-flow needs that life threw up. And this coincided with a period in which other banks were reluctant to lend. The consequence was that depositors often went bankrupt despite having significant assets in the form of claims on the bank in liquidation.

We propose that this should be resolved, in a special administration regime, by allowing investment depositors to withdraw and deposit funds in the normal way. Special administration would thus be largely “invisible” and “seamless” from the point of view of depositors, unless and until deposits themselves took haircuts or the bank were wound up in ways detailed below. But withdrawals from investment deposits would formally constitute loans from the Treasury. If final resolution of the bank meant that depositors had withdrawn more funds than they had assets after haircuts had been applied, they would owe the balance to the Treasury as a tax obligation.

Insurance of a chequing account for salaries

As discussed above, the payments system is a key conduit, akin to the electricity grid. It would be highly undesirable if people responded to a financial crisis by beginning to be paid in cash, fearing that salaries paid into banks could not be recovered. We propose, therefore, that one account can be designated as the salary chequing account, and as such be insured by the state to a limit of £10,000. No interest should be payable on such an account, but the bank could charge for services.

Resolution procedure for investment depositors

In 2008, making depositors into preferred creditors would almost certainly have shielded them from any risk of loss. The banks that were in trouble typically had ratios of assets to deposits of nearly 200% (in a few cases, such as Northern Rock, much more). Banks would have had to be in epic insolvency, despite notionally being subject to capital requirements creating large buffers of total assets over liabilities, for a depositor that was a preferred creditor to lose out.

But if we introduce the mechanisms discussed above for converting debt into equity, and otherwise create credible mechanisms for exposing bondholders to risk of loss, it is quite plausible that banks will seek to hold much less in the way of bonds. They would be much more reliant upon equity buffers. But any buffer can eventually be exhausted.

Furthermore, suppose that the regulator wrongly assumes that a bank really is a going concern (really can be restored to creating, rather than destroying, value

in its operations) and so converts much of its bonds to equity, but subsequently the bank continues to make serious losses. Eventually there will be no more bonds to convert.

Once all other options have been exhausted, investment depositors must be exposed to risk of loss. There are two broad routes one could take:

- Run-off
- Liquidation

We shall explain these options in turn.

Run-off

Under a run-off regime, the bank would be forbidden from making any new loans (and so, from accepting any new investment deposits). Instead, loans already made would be held to maturity, paying whatever they paid. Once everything had been resolved, depositors would either be entitled to have received all the monies they had deposited (plus whatever interest they were entitled to — we shall return to this wrinkle in a moment) or they would experience a haircut. If, after the point that the bank entered special administration, they had withdrawn more monies than their residual entitlement, they would owe the balance to the Treasury.

Liquidation

Once it became clear that the bank could not be sold or continue to function as a solvent value-generating going concern, the bank's loans would be sold for whatever could be obtained, depositor entitlements would be calculated, and depositors would be paid out (like other creditors). Again, if, after the point that the bank entered special administration, they had withdrawn more monies than their residual entitlement, they would owe the balance to the Treasury.

Interest

Once special administration is triggered, the bank would automatically be closed to new deposits (just as it could not take on, as itself, any other new loans). The receiver (presumably a joint venture of the Treasury and the Bank

of England) could choose to take on additional obligations (additional deposits). We see one case in which this would be justified. If the intention were to maintain the bank as a going concern (perhaps after swapping debt for equity to recapitalise) and it were felt that market sentiment had been disproportionately negative about the

bank's prospects of doing so (and hence that deposits had flowed out prior to administration by more than was warranted by fundamentals), it might be appropriate to re-open deposit taking and try to attract additional investment

“ Since the deposit access fund means depositors face no issue of liquidity, we suggest that the principle to be taken by the receiver should be that of maximising creditor recovery rates ”

deposits by offering an above-market-competitive interest rate. Such deposits would have to be guaranteed by the receiver.

If, on the other hand, the intention were to sell off assets to other banks with depositors kept intact, or if there seemed genuine risk of depositors ultimately losing money, new deposit-taking would not be pursued. In these cases, one would need to consider what would be the appropriate interest rate to pay on embedded investment deposits subject to variable rates (fixed rate depositors would simply stay at their contracted fixed rates).

The following observations guide what we believe to be that appropriate rate. We note that if depositors experienced haircuts, ultimately, in liquidation, there would be monies owed in the form of a tax obligation (including, in principle, interest — though not at the standard penal rate applicable to overdue tax obligations). Formally, monies withdrawn from deposit accounts would be borrowings from the Treasury (not monies withdrawn from the bank). So by not withdrawing a deposit, one is not borrowing from the Treasury. If the Treasury did have to service deposits borrowed, it would need to increase its own borrowing (conceptually — in practice it would probably print additional money in the short-term, withdrawing the funds later when the bank is liquidated). So by not withdrawing a deposit, one does not cost the Treasury the government bond rate to borrow.

Thus, the capital charge structure is very similar to that of storage deposits. These pay out a regulated rate of interest at minimum equal to the government bond rate minus some basis points of service charge. So our proposal is that, in special administration, during the period in which the bank is closed to new deposits, the interest rate paid should be equal to the minimum regulated rate of interest to be paid on storage deposits. We note that this would eliminate the incentive to withdraw funds out of investment deposits in a bank in special administration and switch into storage deposits.⁵²

Which is better: liquidation or run-off?

In our view there is no clear-cut preference between liquidation and run-off, given the rest of our structure — in particular the deposit access fund. Without the deposit access fund there would be a fairly clear case to be made for liquidation — providing depositors with their funds as quickly as possible. But since the deposit access fund means depositors face no issue of liquidity, we suggest that the principle to be taken by the receiver should be that of maximising creditor recovery rates (in particular for depositors). If the receiver believes that the value held to maturity of the bank's loan book is greater than its fire-sale value, the run-off route should be preferred; otherwise liquidation.

One potential amplification to the proposals in *Incentivising boring banking* arises in respect of the deposit access fund when resolution reaches the point that depositors are likely to be exposed to loss. One option would be to deem that, under these circumstances, withdrawals of deposits would be capped at, say, 80% of balances. (The 80% figure is based on typical recovery rates in the 1930s US banking crises.) The point of such a measure would be that under

⁵² Some readers may wonder about the risk for an investment depositor of ultimately experiencing a haircut — does that not make storage deposits superior? But remember: withdrawals are technically loans from the Treasury, and if there is ultimately a haircut it would be applied to investment deposits held at the time special administration is triggered. Thus haircuts are not avoided by switching funds after special administration commences.

53 This concept was proposed by Philip Booth during peer review.

such circumstances it would become likely that withdrawal of the totality of deposits would leave depositors with a tax liability. Capping withdrawals to 80% of balances limits such liabilities whilst leaving depositors with fairly high liquidity.⁵³

5

Conclusion

This report has considered the economic and ethical perils of state guarantees for the creditors of banks. We have argued that such guarantees mean that

- There will be a higher proportion of bonds in the capital structure;
- Capital buffers will fall, and the riskiness of bank balance sheets will rise;
- Liquidity ratios will fall;
- Remuneration schemes will involve more risk-taking;
- The balance sheet of the banking sector will rise, potentially to the point at which it starts to materially raise the risk of sovereign default.

In addition, state guarantees of bank creditors threaten the ethical foundations of capitalism, making it a system in which the poor pay taxes so that the system can keep the rich rich, regardless of how foolish, lazy, or unlucky the loans they have made might be.

And yet, this is precisely how the system has worked in recent decades. Both for reasons of ethics and of economic efficiency, we urgently need to devise mechanisms whereby those that lend money to banks can be forced to lose some of that money if the banks go bust.

We identify two key drivers of the current sorry state of affairs. First, bondholders are too entangled, legally and mechanistically, with depositors for losses to be imposed upon bondholders without also imposing losses on depositors. We believe that depositors should be divided into two categories: those that simply wish to store money in banks; and those investing deposits in banks to get a return. We believe that storage deposits should be 100% backed by government bonds, and can legitimately be insured by the state. Investment deposits, by contrast, should be at risk in principle, but should rank above bonds (even “floating charge” secured bonds) as claimants.

Second, policymakers are confused about the concept of systemic risk. We explore and unpack the concept of systemic risk, arguing that the relevant form in respect of the financial sector is what we term “conduit risk” — that the payments system is a key conduit of economic activity, akin to the electricity grid. This, we believe, justifies the use of special administrative procedures in the banking sector akin to the special administration regimes that apply to vital utilities. We argue that many other notions of “systemic risk” — in particular preventing the failure of financial institutions; minimising financial market volatility; preventing individual investors from losing significant sums of money; eliminating all bank runs; or preventing the failure of firms when such failure

might lead to significant unemployment, perhaps even regionally-focused blight — are not legitimate reasons for special intervention in the financial sector.

To credibly impose losses on bondholders and, in principle, investment depositors, we propose a system of special administration for banks. We suggest that special administration should only be triggered by solvency concerns (including the actual failure to make a payment on a loan), but not by pure liquidity problems (which should be resolved by central bank lending in the traditional way). We argue that the key features of a special administration regime are:

- Depositors must not be exposed to losses from failure unless politicians are willing to allow them to experience those losses. (Hence there must be storage deposits available that offer no risk of loss, and no cap.)
- Investment depositor losses should only occur if bondholder losses are total.
- Depositors must have access to their funds, even when the institution is in administration.
- In special administration, losses should be imposed upon bondholders even when the bank is a going concern.

We propose a mechanism whereby, in special administration, if banks could be viable going concerns, they can be recapitalised by converting bonds into equity. However, we believe it crucial that investment depositors, also, be exposed to the in-principle risk of loss, and we explore mechanisms by which this can be achieved.

Much of the current debate has focused around increasing capital requirements and how to regulate banks such that they “never go bust again”. Apart from the hubris involved here (no system can prevent financial crises without eliminating the innovative virtues of the financial sector), the goal is deeply misconceived. The proper goal should be to devise means by which bank bondholders and investment depositors can be credibly exposed to risk. We want a system in which banks are *more* able to go bust, not less, but in which those failures can be tolerated much better. Company failure is an integral and healthy part of an economically efficient capitalist system. And investors losing money is a vital and ineliminable element of any ethically defensible economic order. No system in which the poor are taxed so as to keep the rich rich despite their foolishness and errors should be considered acceptable, and yet that is the system we have had. Small wonder that Mervyn King said recently that “*Of all the many ways of organising banking, the worst is the one we have today*”.⁵⁴ We agree, but we hope that the ideas in this report can make some small contribution to reform.

54 <http://www.bankofengland.co.uk/publications/speeches/2010/speech455.pdf>



The Bank of England Governor Mervyn King recently said that “Of all the many ways of organising banking, the worst is the one we have today”. In the aftermath of the financial crisis many governments have reacted by shoring up the present system through state guarantees to depositors and bondholders. This groundbreaking report explores the economic and ethical perils of such policies. It finds that these measures will result in an increase in the riskiness of bank balance sheets, greater risk-taking in remuneration schemes, a rise in the balance sheet of the banking sector to the point of materially raising the risk of sovereign default, and materially undermines the ethical foundation of capitalism.

Building on the proposals from our previous report *Incentivising boring banking*, this report argues that depositors should be divided into those that simply wish to store money with banks, which should be 100% backed by government bonds, and investment depositors who should be exposed to risk of loss. It outlines how the ‘conduit risk’ posed by the banking system justifies a special administration regime with semi-automatic debt-equity swap procedures in case of insolvency, and advocates a credible mechanism to allow bondholders to take significant losses while maintaining an orderly payments system.

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