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SOME ECONOMICS OF BANKING REFORM

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Abstract

Where do we stand, five years on from the start of the crisis, on progress towards banking reform? Major advances have been made, but a lot of unfinished business remains, notably on structural reform of banks. Following a stock-take of current reform initiatives, the paper reviews some economics of public policy towards banks, starting with the rationale for deposit guarantees and lender-of-last-resort support but concentrating on why governments feel compelled to provide solvency support in crisis. It then covers the economics of capital requirements – and loss-absorbency more generally – and examines why such regulation is a better approach than taxation to address systemic risk externalities, and why the public interest requires much more capital than banks would choose. The role of structural regulation in making banking systems safer is then analysed, in particular forms of separation between retail and investment banking such as ring-fencing (as in current UK reforms) and complete separation (as in the US before the repeal of Glass-Steagall). The paper concludes with some reflections on the wider European policy debate in the light of the Liikanen Report on structural reform. A central theme of the analysis is that banking reform needs a well-designed *combination* of policies towards loss-absorbency and structural reform.

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1. Introduction

Where do we stand, five years on from the start of the crisis, on progress towards banking reform? Major advances have been made, both internationally and in some countries – notably the UK – but given the scale of the problems revealed by the crisis, they have been modest overall, and a lot of unfinished business remains. The questions at stake are hugely important for us all, but even for many economists the policy issues can look dauntingly technical, and without clear foundation in mainstream economic principles.

Some might say that those principles should anyway be abandoned because the crisis has demonstrated that they, like many banks, have gone bust. On this view what we need is new economics. Of course new and better economics, with appropriate standards of analytical and empirical rigour, is always to be welcomed, but to jettison established economic principles would be foolish as well as unhelpful in terms of current policy guidance. It would be foolish because, while the crisis has emphatically refuted any notion that the market system always works well under *laissez-faire*, mainstream economics made no claim that it did. On the contrary, at its core is the analysis of various kinds of 'market failure' – market power, externalities, asymmetric information, distributional issues, and so on.

That said, the term 'market failure' hardly lives up to what we have seen since 2007. The whole financial and hence economic system was on the verge of collapse, much of it continues to be reliant on massive state support, which, together with the macroeconomic consequences of the crisis, is in turn imperilling the solvency of some governments. How then can mainstream economics explain what went wrong and what to do about it in terms of financial sector reform?

This lecture is a partial attempt to answer that question. It is entitled 'Some' – rather than 'The' – economics of banking reform because the issues are too big and complicated for a comprehensive account in a lecture of this scope. The discussion is less than comprehensive also because it focuses on banking reform, which is only part, albeit a central element, of financial sector reform. It is partial in another sense too, for I will focus on the reforms recommended by the UK's Independent Commission on Banking, which I chaired from its formation in June 2010 to the publication of its *Final Report* (ICB, 2011) fifteen months later.

The discussion will be non-technical. The crisis has taught, surely, that banking should be central to economics, not the specialism that it became. Where technicalities abound, even the best-intentioned regulatory reform will be frustrated by the manoeuvres of vested interests, which is all the more reason to promote discussion of the basic economics of banking reform.

The plan of the paper is as follows. Following a stock-take of current reform initiatives, section 3 reviews some economics of public policy towards banks, starting with the rationale

for deposit guarantees and lender-of-last-resort support but concentrating on the evident compulsion governments feel to provide solvency support in crisis. Section 4 looks at the economics of capital requirements – and loss-absorbency more generally – and examines from a public economics perspective why such regulation is a better approach than taxation to address systemic risk externalities. Section 5 discusses the role of structural regulation – in particular forms of separation between retail and investment banking – in making banking systems safer. Section 6 concludes with some reflections on the wider European policy debate, especially on the structural question, in the light of the Liikanen Report (2012) published in October. A central theme of the paper is that banking reform needs a well-designed *combination* of policies towards loss-absorbency and structure.

2. Banking reform: where do we stand?[2]

Banking reform is central to the general reform of financial services in the wake of the crisis. Among the areas of wider reform are:

- Macro-prudential regulation – monitoring and addressing by policy intervention risks to the stability of the financial system as a whole (as distinct from risks to individual institutions, the focus of [micro-]prudential regulation)
- Shadow banking – non-bank institutions (e.g. money market mutual funds) that together provide close substitutes to banks' services
- Market infrastructure – e.g. initiatives to shift bilateral 'over-the-counter' derivatives trading onto central counterparties with standardised contracts
- Accounting standards
- Ratings and ratings agencies
- The insurance sector.

Banking reform itself has several broad elements:

- Better loss-absorbency – principally but not only through more and better capital
- Better liquidity
- Recovery and resolution
- Structural reform
- Other – including corporate governance, remuneration, and forms of bank taxation.[3]

Capital and liquidity standards have been reformed internationally in the so-called Basel III standards set by the Basel Committee on Banking Supervision. In essence, banks must

[2] A comprehensive answer to this question is provided country-by-country in Table 3.8 of IMF (2012), which also has a summary at Table 3.2, from which this section draws.

[3] Besides the discussion in section 4 below of taxation as an approach to systemic risk externalities, these issues are beyond the scope of this lecture.

maintain a minimum ratio of capital to risk-weighted assets (RWAs) in their funding structure. Compared with the pre-crisis capital requirements, Basel III is (i) tightening definitions of capital, (ii) raising the minimum equity capital ratio to 7%, and (iii) tightening methods of risk-weight calculation.[4] Risk-weighting performed very badly in the run-up to the crisis, so as well as the 7% minimum equity capital ratio relative to risk-weighted assets, there is to be a requirement that capital (including some non-equity) must be at least 3% of total (unweighted) assets; this will still allow up to 33 times leverage. Banks that are systemically important globally will need up to 2.5% additional equity relative to RWAs. The Basel III capital reforms are due to be completed by the start of 2019. In Europe they will be implemented by an EU Directive known as CRD IV.

While capital regulation aims to safeguard solvency, liquidity regulation seeks to ensure that banks have sufficient high-quality liquid assets and that their maturity transformation is not excessive. Under Basel III attention focusses accordingly on two ratios.[5] The Liquidity Coverage Ratio (LCR) sets a minimum ratio for assets that can be converted surely into cash in the short term. The Net Stable Funding Ratio (NSFR) promotes resilience to longer-term stress.

Recovery and resolution initiatives are led internationally by the Financial Stability Board (FSB), which has set out 'key attributes' for effective resolution, especially in a cross-border context. These include improved recovery and resolution plans (RRPs) for banks, ensuring that national resolution authorities have adequate powers, and cross-border cooperation arrangements for crisis management. Regulatory powers to make providers of debt funding rather than taxpayers bear losses in crisis – 'bail in' rather than bail-out – are an important part of the toolkit being developed. The European Commission (2012a) has proposed a directive on bank recovery and resolution.

Structural reform has only recently received international attention. The main national initiatives have been the so-called Volcker Rule ban on proprietary trading in the US, and retail ring-fencing in the UK.[6] The international debate has now begun with the Liikanen Report (2012) proposal for trading ring-fencing across Europe, and the IMF has recently called for a wider international debate:

> "Despite much progress on the reform agenda, reforms in some areas still need to be further refined by policymakers. These areas include a global-level discussion on the pros and cons for direct restrictions on business models …".[7]

[4] In practice things are much more complex than this simplified sketch. For more, see Box 4.2 of ICB (2011).
[5] For more detail see Box A2.1 of ICB (2011).
[6] The draft legislation on ring-fencing and other reforms is in HM Treasury (2012b).
[7] IMF (2012, summary of chapter 3).

Those pros and cons are the subject of section 5 below, but first let us consider liquidity, solvency and ways of improving loss-absorbency.

3. Some economics of liquidity and solvency

In stylised terms banks raise funding in terms of equity capital, deposits and other debt – the liability side of their balance sheet – and this finances their loans and trading – the asset side. The solvency of a bank depends on whether the value of its assets, if held to maturity, is sufficient to meet its obligations to depositors and holders of other bank debt (bondholders say). Not only insolvent banks can get into difficulty, because banks engage in maturity transformation insofar as they 'borrow short but lend long'. This brings huge efficiency benefits so long as the banking system is stable, but without proper safeguards it jeopardises that stability. It is efficient because it reconciles the freedom for depositors to meet their short-term liquidity needs with the financing of long-term lending both to households (e.g. residential mortgages) and for corporate investment. But such assets cannot be liquidated before they are due to mature without serious loss, so banks are vulnerable to a mass withdrawal of deposits and/or the refusal of bondholders to refinance maturing short-term debt. Even perfectly solvent banks can be vulnerable to liquidity crises of this kind.

The standard framework for exploring these issues is the Diamond-Dybvig (1983) model[8], which in essence has two kinds of equilibrium for solvent banks. (Insolvent and doubtfully solvent banks will be discussed later.) In the good equilibrium only the minority of depositors with current liquidity needs withdraw their funds from the banking system. The bulk of deposit funding remains in place, and there is no need for banks prematurely to terminate existing long-term lending or to refrain from new lending commitments. In the bad equilibrium households, fearing bank runs, do not make substantial bank deposits so banks cannot carry out economically beneficial maturity transformation. A banking 'panic' occurs when things flip from the good type of equilibrium to the bad type: there is a run as depositors generally pull out their funding. Banks have to sell assets in distress, call in loans where possible, and halt new lending. Asset value gets greatly impaired in the process, so it is not irrational for depositors to run if they believe that others will, even if the banks would be perfectly solvent in the absence of panic. The same good/bad equilibrium story can be told in relation to the roll-over, or not, of short-term wholesale funding.

Public policy guards against the bad type of equilibrium in two main ways. The first is by the provision of lender-of-last resort (or 'discount window') liquidity facilities by central banks. The traditional Bagehot advice on this support was to lend freely, but at a high rate and against good security, to illiquid but solvent banks. Second, governments guarantee some categories of deposit, typically retail deposits up to size limits. As with lender-of-last

[8] See also Bryant (1980) and the exposition in Tirole (2006, chapter 12).

resort operations, deposit guarantees do not expose the public finances to risk of loss so long as the crisis is merely one of liquidity, and not one of solvency. However, the distinction between the two is not clear-cut.

The crisis of 2008 was clearly one of solvency, not just liquidity, and government support has gone massively beyond liquidity support – to asset purchases, capital provision, and other forms of bail-out. The European Commission (2012b) estimates that 4.5 trillion euros of taxpayers' money has been deployed to rescue banks in the EU. Governments got so drawn into supporting the banking system – even to the extent of jeopardising their own solvency in some cases – for the simple reason that the alternative of standing back was worse. In particular, governments could not allow interruption, let alone failure, of the continuous provision of core banking services for which ordinary households and small businesses have no ready alternative. Failure of those services would have meant that payment systems, the safeguarding of deposits and the provision of credit in the economy would all have seized up, with incalculable economic and social consequences. The result is effectively a large subsidy to activities that gave rise to the crisis. Objectionable though this is from the point of view of both incentives and income distribution, non-intervention was not 'time-consistent', and pre-commitment not to intervene would not be credible.

One striking feature of what happened in the crisis is that, while providers of equity and holders of subordinated debt lost money, bondholders (even unsecured) as well as depositors generally came out whole, even as public funds were injected on a very large scale. This contravened the natural order of loss-bearing, in which unsecured bondholders should bear losses not absorbed by shareholders, with the taxpayer as loss-bearer of very last resort. Why then did it happen? The essential reason is that bondholders bear loss only in bankruptcy, and governments could not let bankruptcy happen because of the imperative of continuous core service provision set out above. Another reason is that debt ranked equally with deposits, many of which are government guaranteed, in terms of liability to loss. So, in effect, taxpayers were marched from the back to near the front of the queue of loss taking, with large resulting damage to the public finances in the affected countries, even before account is taken of the fiscal consequences of the associated macroeconomic recession.

In principle, the hierarchy of loss-bearing is related to the hierarchy of control rights and hence to risk-taking incentive structures. In textbook terms, equity holders bear first loss and have control rights unless there is bankruptcy, in which case control shifts to bondholders. In practice, of course, there might be various classes of equity, of debt (e.g. secured versus unsecured), of hybrids such as convertible bonds, and in the case of banks of deposits. In normal corporate settings, providers of debt finance, although they don't exercise day-to-day control, can shape corporate decision-making by way of the conditions and/or collateral attached to their debt funding. In particular, providers of debt finance normally have strong incentives to ensure that excessive risks are not run, because they lose

out if risks go bad, whereas upside risk is captured by shareholders and/or employees on highly-geared incentive contracts. Despite banks being highly leveraged compared with other kinds of business, the influence of providers of debt finance to banks has been limited.[9] Depositors have neither the ability nor incentive to exert influence, and neither do bondholders if they expect to be shielded from loss in any event. If contingent liability rests with taxpayers, market incentives to discipline bank risk-taking are poor.

Another striking feature of the government rescues of banks in the crisis was its comprehensive, indeed unfocused, nature. The balance sheets of troubled banks were so broad, complex and intermingled that governments did not have the option of saving some business lines but not others. In particular, they could not target support on the core banking services whose continuous provision is imperative. So, on top of thin loss-absorbency by the private sector, the scope of public support was much more extensive than would have been necessary if banking structures had allowed the option of targeted policy intervention.

The next two sections discuss how to remedy these shortcomings for the future by reforms to improve the ability of banks' shareholders and bondholders, rather than taxpayers, to absorb losses, and to establish more resilient structures for banking by forms of separation between retail and investment banking.

4. Some economics of loss-absorbency

Banking, including retail banking, is inherently risky. Credit risk – i.e. the risk of not being repaid in full – exists with all forms of lending, including to sovereign governments. The protection offered by collateral, such as with residential property mortgages, is not total because asset values can tumble. So even for well-diversified banks, substantial losses are always possible, and for market economies to work satisfactorily the banking system must be able to absorb them without jeopardy to the continuing provision of core financial services. Such resilience was woefully lacking in 2008.

The standard regulatory approach is in terms of capital ratio requirements. But before considering how high they should be, it is worth reflecting on whether they are the right approach. Thinking of financial crises as massive negative externalities, it might seem a more natural economic approach to tax the externality-generating activity to align private incentives better with the public interest, and perhaps to create a fund with the proceeds to deal with possible future crises. For example, Kocherlakota (2010) proposes that "just as taxes are imposed to deal with pollution externalities, taxes can also address risk

[9] Recently, however, there are signs that banks' debt financing costs are becoming more risk-reflective, which helps discipline risk-taking.

externalities".[10] Moreover, taxation might seem the natural offset to the implicit subsidy to risk that arises from the prospect of direct or indirect government bail-outs. But the capital ratio regulation of banks that is used in practice seems on the face of it to be rather different from taxation.[11]

We examine the issues in Coulter, Mayer and Vickers (2012). First, we show that the economics of pollution externalities has limited applicability to banking risk externalities. Inherent in a banking crisis is the inability of banks to meet their financial obligations, so the 'polluter pays' principle cannot be applied to banks after the event. They could nevertheless be required to *pre-pay* in some form, such as via a levy.

Our second point is that, when one compares forms of pre-payment by banks, the distinction between 'taxation' and 'regulation' (i.e. of capital ratios) becomes unclear. For example, compare (i) capital ratio regulation with (ii) a pre-paid capital levy per unit loan to create a fund to deal with future crises. Under some conditions – perfect risk correlation across banks, return on levy funds independent of who manages them, and no net transfers to or from government – options (i) and (ii) are *equivalent*. This indicates that the question is not well posed as 'taxation versus regulation', but involves deeper issues, including the following. How correlated are risks across banks? Who owns the fund of levies while there is no crisis? How are levy proceeds invested while there is no crisis? How are they disbursed if there is a crisis? What happens to control rights in a crisis?

Our third and main point is that forms of taxation, unless in the form of pure capital, are a double-edged sword because while taxation curbs risky lending by raising the price of loans, it thereby increases funding needed per loan. The latter effect increases the potential negative externality from a financial crisis. So unlike pollution externalities, the potential financial crisis externality is itself directly and adversely affected by taxation, unless the taxation takes the form of pure capital. But in that case it is akin to being capital ratio regulation and we have come full circle.

How then to make banks better at absorbing losses? The first and best layer of loss-absorbency is equity capital.[12] What matters is capital in relation to potential losses. Leverage, which is the ratio of bank assets to capital, is one measure of this. Chart 1 shows for UK banks how leverage soared in the run-up to the crisis, to levels of forty and fifty, more than double the historical norm. You do not need new economics to know that leverage at such heights is an accident waiting to happen.

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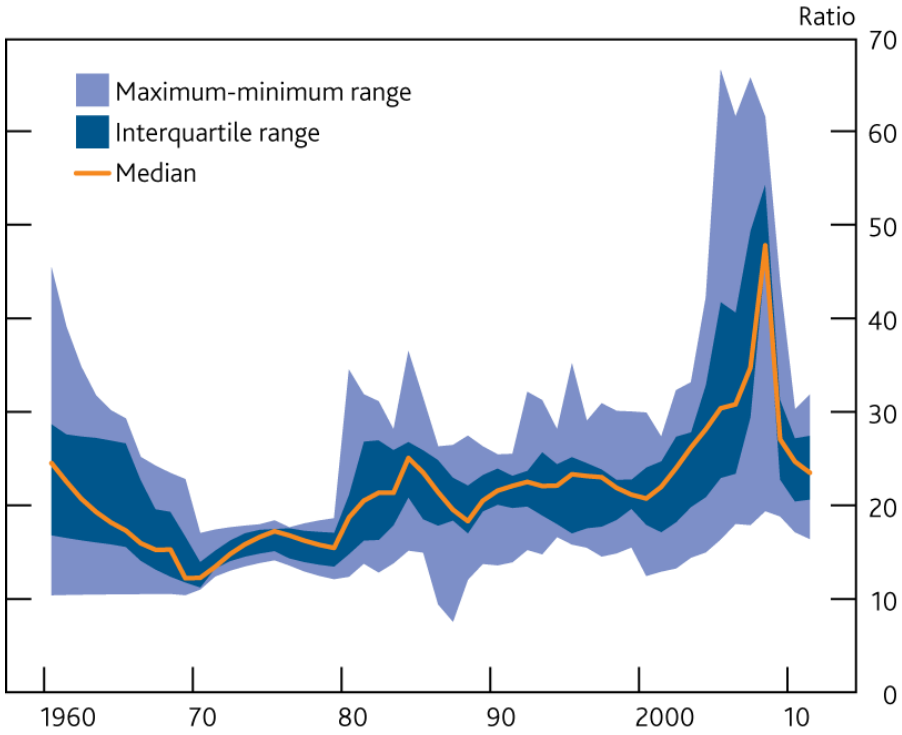
[10] Acharya et al (2012) likewise propose an externality tax on banks on the basis of their expected contribution to systemic risk.

[11] Some forms of taxation to address systemic risk issues are also being introduced in practice: see Coulter et al (2012) for some discussion and references.

[12] Known as Common Equity Tier 1 (CET1) in regulatory parlance. On this and other types of regulatory capital, again see ICB (2011, Box 4.2).

Chart 1: UK banks' leverage



Source: Bank of England *Financial Stability Report*, June 2012, Chart 2.15.

In principle a better measure of capital adequacy in relation to potential losses is capital in relation to *risk-weighted* assets (RWAs). Capital relative to RWAs is the centrepiece of bank regulation internationally under the Basel accords. Risk-weighting makes good sense as an approach but faces problems both in theory and practice. The theoretical issue is that the riskiness of assets, or indeed institutions, in isolation is not the key issue. Rather, it is their contribution to *systemic* risk that matters.[13] The practical problem is the plain fact that regulatory risk weights failed to measure risk in the years preceding the crisis. As risk was mounting, risk weights were falling, and it was this that allowed leverage to balloon despite requirements on banks' capital in relation to RWAs.

As was outlined in section 2, under Basel III banks must have capital of at least 7% of RWAs by the start of 2019. Global systemically important banks will be required to have more, on a sliding scale up to 9.5%. Risk weights are being revised. It is also proposed in Basel III that capital must be at least 3% of unweighted assets, so leverage cannot exceed 33.[14] Although much better than the pre-crisis situation, this still allows a great deal of leverage in

[13] As stressed in Brunnermeier and Adrian's (2011) CoVar approach and by Acharya et al (2012).
[14] This leverage cap relates to Tier 1 capital, which is CET1 plus some additional kinds of capital such as preference shares. So in relation to equity capital in the sense of CET1, the leverage cap is looser than 3%. The ICB recommended that a tighter leverage cap – allowing no more than 25 times leverage – should apply to the large UK retail banks, in line with their higher capital requirements. Alas the Government (HM Treasury, 2012a) has not accepted this recommendation.

the reformed post-2018 world. The obvious, and good, question is: why not move to capital requirements much higher than Basel III?[15]

Many in the banking sector strenuously resist the idea of high capital requirements, arguing that they raise the cost of capital and hence the cost of credit, with serious damage to economic growth. This claim is wholly at odds with the basic proposition of corporate finance theory – the Modigliani-Miller (1958) theorem (MM) – that under particular assumptions the cost of capital is independent of debt-equity structure. Equity-holders require a greater return than bondholders because as first loss-bearers they face more risk. But as a firm increases its equity/debt ratio, the risk of both equity and debt decrease, and the firm's aggregate cost of capital is unchanged. In short, the aggregate value of the firm's paper depends on the underlying value of the firm, not on the proportions of its paper that are debt and equity. Otherwise, moreover, there would be an arbitrage opportunity. If the MM theorem applied to banks, higher equity requirements would entail no long-run cost at all.

Opponents of higher capital requirements object that MM does not apply in reality, and especially not to banks. There are two ways of responding to this. One is to make the blunt yet sound point that, whether or not MM applies, a bank that claims that it must pay its shareholders a 15% (say) annual return on equity, when the risk-free rate is close to zero, is effectively saying that it is a seriously risky bank.[16] The public interest requires that such banks have more equity. The second line of response is to recognise that of course MM does not apply precisely. Like all economic theorems it is conditional on its assumptions, and these are stylised. MM is still a very illuminating benchmark that provides a basis for considering the ways in which reality differs from its theoretical assumptions. The question is then whether more realistic assumptions weaken or strengthen the conclusion that higher equity requirements on banks would not significantly increase costs. In answering this it is crucial to distinguish between (a) *private* costs to current shareholders (and those with highly-geared remuneration) and (b) *social* costs to the economy as a whole.

There are several points to be made – on tax, bankruptcy, the public finances, incentives, regulatory arbitrage, and transition costs. Most corporate tax systems give debt tax advantages over equity,[17] so (perversely in the context of banks) encourage leverage. This private advantage of debt finance goes some way to explaining the private sector resistance to higher capital requirements, but it is not a social cost.

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[15] Admati et al (2010) and Miles et al (2012) argue for capital requirements much higher than Basel III. Kotlikoff (2010) in his Limited Purpose Banking proposal goes so far as to advocate, in effect, 100% capital requirements. Financial activity would be undertaken only by mutual funds not allowed to borrow. That would end banking as we know it, with (in my view but not Kotlikoff's) huge losses of economic efficiency compared with a world of well-regulated banks (as we know them).

[16] Martin Wolf has made this point to particularly good effect.

[17] One needs also to consider how income and capital gains from equity are treated in the personal tax system, but this does not undo the tax advantages of debt.

The next issue is bankruptcy costs. When bankruptcy is costly to suppliers of finance, equity has the merit over debt that it reduces the probability that those costs will materialise. In the case of banks the social costs of bankruptcy are far greater than the private costs, so again there is a wedge between private and social interests. Indeed, as discussed above, the prospective social costs may be so great as to compel governments to stave off bankruptcy by bail-outs. But that undoes the private incentive to guard against it. Prospective bail-outs cheapen the private but not social cost of debt relative to equity.

This leads to a major reason why MM is not fully applicable to banks – the fact that the public finances are to some extent exposed to bank losses, through deposit guarantees and prospective rescues should crises happen.[18] The government, and ultimately the public, are therefore (contingent) creditors of banks. Increasing equity then shifts risk back from the public finances to private investors, thereby increasing private funding costs. But the creditworthiness of the government improves as that happens, lowering government borrowing costs. So MM might hold taking the public and private sectors together, while it fails for the private sector in isolation. Again we have a reason why private and social incentives for greater bank capital may diverge.

Incentive issues are another feature absent from MM that helps explain why financial structure does matter. Principal-agent relationships vary with financial structure, which may create a valuable incentive role for debt in addition to equity.[19] For example, bondholders may well have more incentive to monitor downside risks than equity holders, who are more focussed on upside returns when there is limited liability. But this is hardly an argument for a thin capital layer.[20] And if there is a prospect of taxpayers being on the hook for bank losses, the incentive for bondholders to exert discipline on risk-taking is diluted. Risk-taking that threatens major negative externalities, far from being discouraged, is then subsidised. Only if risk lies fully with private funders of banks will market forces properly discipline risk-taking.

A different line of argument concerns regulatory arbitrage. If banks, but not other financial institutions, had to face much higher capital requirements, then business might migrate inefficiently from banks to those institutions, possibly to the detriment of financial stability overall. Likewise, if higher requirements applied to banks in some countries but not others, then undesirable geographic arbitrage might unintentionally be encouraged. (Such considerations might also help explain private sector resistance to less-than-universal

[18] This is one of the points emphasised in Miller (1990).

[19] Dewatripont and Tirole (1994) provide a theoretical analysis of debt-equity complementarity. The ICB made a number of recommendations to make debt, in addition to equity, credibly loss-absorbent, as described below.

[20] Neither is the idea that it is desirable to have so much of bank funding in terms of deposits that there isn't room for more than a few percentage points of equity funding. Equity could be a significant multiple of its current level without squeezing deposits at all.

increases in capital standards.) This was an important reason why the ICB did not go further above the Basel baseline in its loss-absorbency recommendations, and why, subject to major caveats[21], we recommended that international standards should apply to the international business of UK banks outside their UK retail subsidiaries. If our remit had had wider geographic scope, we might well have recommended still higher capital requirements.

The final issue to mention on MM is transition costs. The MM theorem compares alternative steady states. In practice one has to proceed from the state of affairs that exists now. This gives a further reason for resistance by current shareholders to issuing more capital. Many of the benefits of greater capital are likely to flow to others than current shareholders, especially if the status quo has too little capital. The risks faced by bondholders and the public finances decrease, but existing shareholders do not capture those benefits. In short, increasing equity yields positive externalities, so without regulatory intervention there is insufficient incentive to do it. However, transition costs matter for public policy too. In the current macroeconomic malaise, a rapid increase in required capital/lending ratios could unduly squeeze the denominator, i.e. lending to the corporate and household sectors. While this gives every reason to press ahead with raising capital levels (the numerator), this is an argument to set an unrushed time schedule for capital ratio reform, as the ICB recommended in line with the Basel timetable, but certainly not to shy away from reform.

Higher capital requirements were not the only element of the ICB recommendations on loss-absorbency. We also made a series of recommendations to make debt more credibly loss-absorbent – by 'bail-in', by depositor preference, and by requirements to have sufficient 'primary loss-absorbing capacity' (PLAC) to ensure that there is a layer of bank debt, of a kind not vulnerable to runs, that would absorb loss if a bank got into serious difficulty, without bankruptcy needing to occur.

This requires the establishment of policies and procedures for a situation intermediate between business-as-usual and bankruptcy. In this *resolution* process the authorities seek to sort out the various business of a failing bank in an orderly way that ensures the continuation of core services while minimising the risk of taxpayer liability and wider damage to the financial system. Depending on the nature of the crisis and the bank(s) concerned, resolution is likely to involve different approaches for different aspects of a bank's business. Some assets and liabilities might be sold or taken over by other banks, others wound down, and others put into a 'bridge bank', which might be state owned for a transitional period, so that basic service provision is not interrupted.

Credible resolution needs structural reform so that orderly resolution, rather than indiscriminate bail-out, can be conducted in crisis conditions. Structural reform is the

[21] In particular that large UK banks have credible resolution plans including adequate loss-absorbing debt across their overseas as well as UK operations. The Government has not fully accepted this recommendation – see HM Treasury (2012a, para 3.26) and (2012b, para 2.59).

subject of the next section. Credible resolution also requires loss absorbency much deeper than that ensured by with Basel III equity capital minima. In particular, unless the bank has equity funding well above those minima, which would be desirable but is unlikely given the private/social incentive divergences with respect to increasing equity discussed above, an adequate amount of debt with certain characteristics must be written down or converted to equity, and there needs to be a credible process for this to be done.

This process will not work well for secured debt because its holders have ownership rights over collateral. Neither can it sensibly apply to government-guaranteed deposits, because that would institutionalise taxpayer bail-out, which it is a paramount objective to avoid as far as possible.[22] To reinforce this, the ICB recommended that guaranteed deposits rank ahead of all other unsecured creditors in insolvency. There are also potential problems with very short-term debt being at the front line of loss absorption because as signs of trouble appear it might rapidly dry up, intensifying rather than absorbing distress. This points to long-term unsecured debt as the best kind of debt for loss-absorption in resolution.

As to the processes for loss-absorption, these are automatic for equity – since its value is by definition the difference between asset value and the value of non-equity liabilities. For some kinds of non-equity, there might be market processes, well short of resolution, for loss-absorption. For example, 'contingent capital' is debt that converts to equity if some trigger point, perhaps involving an equity/assets ratio, is reached. The trigger might be set well above the point at which a bank would be taken into resolution, and thereby provide a good prospect of a market solution without regulatory intervention. 'Bail-in', by contrast, is the shorthand name for the imposition of losses (by write-down or conversion to equity) at the point of failure. This could happen by the exercise of regulatory powers in resolution, so long as they exist in law. A central ICB recommendation is that the authorities should have just such powers, and in relation to sufficient debt. They are also a key element of the European Commission's (2012a) proposals on recovery and resolution.

For loss-absorption to be effective there needs to be enough bail-inable debt in addition to types of equity capital. To that end the ICB recommended that, depending on their size and systemic importance, UK banks should have PLAC of at least 17% of RWAs. Equity would be most of this – at least 10 of the 17% – and could be all. The rest is however more likely to be bail-inable debt and perhaps, if a bank wished, some contingent capital too. We recommended further that up to an additional 3% of equity capital could be required of a bank about which there are regulatory concerns about resolvability. This leads naturally to the issue of structural reform.

[22] This point does not apply if there is a big enough deposit guarantee fund, but even large funds can be quickly wiped out in systemic crises.

5. Some economics of structural reform

If the equity capital and other loss-absorbency of banks were so great as to remove all substantial divergence between the private interests of banks and the public interest, there might not be a strong case for public policy to regulate the structures of banks. But there is no realistic prospect of this condition being met, and in particular, the Basel III reforms to capital requirements are insufficient to ensure it. There are two broad, inter-related reasons why structural reform should be an element of banking reform – curtailing the implicit taxpayer subsidy, and limiting the probability and severity of negative externalities arising from banking crises.

The most important structural regulation of banks in the twentieth century was the Glass-Steagall separation between commercial and investment banking in the US introduced by the 1933 Banking Act. Sections 20 and 32 of that Act prohibited affiliation between banks and companies engaged principally in the business of underwriting securities &c. Having been eroded by regulatory permissiveness, these provisions were finally repealed in 1999. Sections 16 and 21 of Glass-Steagall remain in place. Among other things they prohibit deposit banks, but not now their affiliates, from underwriting or trading in corporate securities. These provisions, together with sections 23A and 23B of the 1933 Federal Reserve Act[23], amount to a light form of ring-fencing.

It is no coincidence that the 1933 Banking Act also established federal deposit insurance. The rationale for deposit insurance (see above) has nothing to do with investment banking activities, but without some form of separation there is nothing to stop insured deposits effectively funding them. Since banks are not riskless, and since it would be hopelessly impractical for the authorities to 'price' deposit insurance according to the fluctuating riskiness of each bank's activities, the result is a potentially major incentive distortion in favour of investment banking risk-taking at the contingent expense of the public finances. This not just a point about deposit insurance: the same is true of lender-of-last-resort facilities and the prospect of government solvency support to maintain the continuous provision of core banking services.

Even if the implicit subsidy were eliminated, investment banking risks could still jeopardise core banking services in the absence of structural measures. If there is no separation between the capital that is funding trading and/or international[24] activities on the one hand and the capital supporting core retail services on the other, then losses on the former put the latter at risk. (Qualitatively, but probably not to the same extent, the reverse is true too. But, depending on the nature of the crisis, the authorities are likely to have less, though not zero, concern about a bank's investment banking arm going down.) Separation helps stop damaging contagion spreading within banking organisations.

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[23] See footnote 29 below.

[24] Throughout this paper 'international' should be understood to mean outside Europe.

If and when crises nevertheless happen, separation has the further advantage of facilitating resolution (see above). Indeed it is hard to see how the authorities can apply targeted, as distinct from undiscriminating, crisis management policies unless there is ready separability between different kinds of activities within banks. Depending on the nature of the crisis they faced, the authorities might want to follow quite different approaches for retail banking, given the importance of core service continuity, and wholesale/investment banking. Further, it is hard to see how such separability can be effective, especially in a crisis, without some degree of separation already in place. As well as facilitating crisis resolution, separation can help risk monitoring by supervisors and market participants in normal times too.

There are arguments against separation. One line of objection is that it loses benefits of diversification.[25] For example, there are some situations where a separate domestic retail bank would fail – say because of a domestic property market crash – which would have survived if it had been part of a banking group with wider scope geographically and/or functionally. This is not a compelling point against separation generally, but does have relevance for the design of separation – see below.

Another objection to separation is that, while separation might help get the taxpayer off the hook for risks in international/investment banking, it increases the probability and extent of taxpayer liability for domestic retail banking. But this ignores the role of enhanced loss-absorbency for retail banking to contain that risk. Indeed only by some form of separation can one have higher-than-international capital standards for domestic retail banking while international standards apply to international business. Thus can more resilient domestic banking be combined with continued competitiveness of international banking (without which geographic regulatory arbitrage could also be detrimental to financial stability[26]).

To consider further the pros and cons of separation between 'retail' and 'investment' banking, let us look at some leading possibilities. They vary according to (i) which banking activities are separated from each other, and (ii) the form that separation takes.

So-called 'narrow banking' is the idea that the basic services of deposit-taking and payment systems should be separated from other, inherently risky, banking activities by a requirement that deposits are fully backed by safe liquid assets. This idea faces several problems. First, as the crisis has underlined, even government bonds are not necessarily safe liquid assets. Second, despite large government debts, there might not be enough government bonds to back retail deposits, especially of short- to medium-term maturity.

[25] This objection is invalid to the extent that investors can achieve diversification benefits through their portfolio decisions, without corporate integration.

[26] The risk of geographic arbitrage is much greater in wholesale than retail banking but could become significant in the latter case if national reform diverged too sharply from international standards. The ICB considered that its proposed reforms do not create such a risk.

Third, narrow banking could lead to a very inefficient misallocation of resources. Natural holders of government bonds such as pension funds would find them in short supply, while credit in the economy was deprived of a prime funding source – deposits. Narrow banking would also lose the natural synergy that exists between deposit-taking and the provision of overdraft facilities. Fourth, deposit-taking and payments systems are not the only banking services for which continuous provision is essential; the same is true of some credit supply, which would happen outside the narrow bank. So narrow banking, despite entailing large economic costs, would not address a major part of the problem.

Whereas narrow banking would isolate deposit-taking and payments from all other banking services, the Volcker Rule[27] being applied in the US prohibits proprietary trading by banks (and limits their hedge fund and private equity activity) while allowing them to combine other banking services. The spirit of the Volcker Rule has much in common with Glass-Steagall and with the ICB recommendations, which it influenced. For several reasons, however, we concluded that it would not be right to recommend the Volcker Rule for the UK instead of retail ring-fencing, nor as a supplement to it.

First, as the US experience of regulatory rule-making is showing, the rule seeks to draw a line in a very difficult place. For one thing, it is hard to distinguish – both in theory and practice – between customer-oriented market-making by banks and proprietary trading. Second, we concluded that the rule does not go far enough for the UK because there is a wide array of investment banking activities beyond proprietary trading from which core retail services should have a degree of insulation. Third and on the other hand, the rule goes further than necessary by prohibiting proprietary trading anywhere in an entity that does banking.[28] Ring-fencing, by contrast, separates trading &c from retail banking but allows it elsewhere in banking groups. Fourth, the Volcker Rule must not be viewed in isolation but in its US context, which differs from the situation in the UK and elsewhere in respect of both risks – e.g. banks in the UK have proportionately much more international exposure – and regulation. In particular, US regulation restricts banks' dealings with affiliates, which can be seen as a degree of ring-fencing.[29]

More far-reaching than the Volcker Rule would be to separate trading, including market-making, from commercial banking. The Liikanen (2012) proposals for the EU recommend

[27] The rule is enacted by section 619 of the Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010. Chapter 7 of Acharya et al's (2011) comprehensive economic analysis of the Act covers the Volcker Rule. Congress weakened the rule as proposed by Paul Volcker by allowing banks to engage in hedge funds and private equity to some extent.

[28] We therefore did not recommend the Volcker Rule *in addition* to ring-fencing. That would however be a coherent policy combination, and it is perhaps at least as worthy of debate as the 'Volcker *versus* ring-fencing' question.

[29] In particular, dealings between banks and their affiliates are limited and constrained by the Fed's Regulation W, which implements sections 23A and 23B of the Federal Reserve Act of 1933, which section 608 of the Dodd-Frank Act has substantially widened and strengthened.

such an approach, together with measures to boost loss-absorbency, as discussed in section 6 below. Separation of trading avoids difficulties of distinguishing between types of trading and gives retail banking insulation from a wider range of trading risks than the Volcker Rule. But it does not give any protection to domestic retail banking from other banking risks. For example, separation based on trading, without more, would still allow a retail bank to buy assets (e.g. covered bonds issued by other financial institutions or overseas mortgage-backed securities[30]) giving rise to exposure to non-retail financial and international risks, so long as it intended to hold rather than trade those assets.

In part for these reasons, the ICB central structural recommendation for UK financial stability is retail ring-fencing. The draft legislation to implement ring-fencing begins by giving the regulators the 'continuity objective' of protecting the continuity of provision in the UK of 'core services', which are taking deposits from individuals and SMEs, and related payments and overdraft services.[31] UK institutions with permission to carry out core services – 'ring-fenced' bodies – may not carry out 'excluded activities' or contravene 'prohibitions'. Dealing in investments as principal is the only excluded activity initially specified, albeit a very broad one (and very much wider than the Volcker Rule). The Treasury may specify others as judged necessary for the continuity objective. The draft legislation likewise empowers the Treasury to prohibit ring-fenced bodies from entering into transactions of specified kinds or with kinds of counterparty, and to make geographic and ownership prohibitions (e.g. on having branches outside Europe).

Depending how the Treasury exercises these powers, they enable implementation of the ICB recommendation that the following should not be permitted within the retail ring-fence: services to non-EEA customers[32], services (other than payments services) resulting in exposure to financial customers, 'trading book' activities, services relating to secondary markets activity (including the purchases of loans or securities), and derivatives trading (except as necessary for the retail bank prudently to manage its own risk). These activities have in aggregate accounted for most of UK bank balance sheets in recent years. There is however a wide range of commercial banking activity that is neither required to be in the ring-fenced body nor excluded/prohibited from it. This includes taking deposits from customers other than individuals and SMEs, and lending to large non-financial businesses. It will be up to the banks and their customers whether such business is transacted within or

[30] Shin (2012) shows the importance, in the run-up to the crisis, of European global banks in intermediating between US households (e.g. holders of money market mutual funds) and US borrowers (e.g. subprime mortgage borrowers) through the shadow banking system.

[31] HM Treasury (2012b). The draft legislation also provides for depositor preference – i.e. deposits covered by the government's deposit guarantee scheme would rank senior to other debt in insolvency.

[32] However, the Government's view is that ring-fenced banks could have counterparties and hold assets outside the EEA provided that this did not create a barrier to resolution – see HM Treasury (2012a, para 2.33). This is a questionable relaxation of the ICB recommendation, though without non-EEA branches the ring-fenced banks might be unlikely to have many such exposures.

outside the ring-fenced body. This flexibility is efficient and consistent with the continuity objective for core services.

The permitted interactions between a ring-fenced body and the rest of a group to which it belongs will be determined by regulatory rules. Among other things these will ensure that such interactions are on a third party basis, and that the ring-fenced body's independence is strongly secured.

The strongest guarantee of independence would be fully to split retail and investment banking – i.e. to prohibit investment banking altogether in a group that does retail banking. The Glass-Steagall legislation in the US from the 1930s to the 1990s was a form of full separation.[33] So why not adopt full separation rather than ring-fencing? Part of the answer is that it is likely to entail considerably higher costs than ring-fencing, as synergy benefits are lost.

Second, depending on the form of the next crisis, financial stability might be greater with ring-fencing than with full separation. In particular, with full separation there is no availability of non-UK-retail banking resources to ameliorate a retail banking crisis resulting from, for example, a slump in UK retail and commercial property prices. This reflects a diversification benefit of universal banking – the possibility that wholesale/investment banking, or retail banking elsewhere in the world, is performing well while domestic retail banking is not. If, on the other hand, UK retail banking were conducted only by similar, undiversified, stand-alone institutions with correlated risk profiles, there would be vulnerability to some kinds of domestic shock. So if the draft UK legislation went further, and banned dealing in investments as principal, non-European business, &c, from any group doing core activities – rather than banning them from the ring-fenced body – the result might worsen, not improve, financial stability.

Third, while there are some kinds of future crisis in which full separation would give stronger insulation of retail banking than ring-fencing, such as a shock emanating from outside Europe, the design of ring-fencing can offer important protections against such shocks. For example, the enhanced buffer of capital and loss-absorbent debt, plus depositor preference, guards against an international reputational crisis hitting retail banking. This solvency protection both reduces the risk of deposits running and makes more straightforward the provision of central bank liquidity if they nevertheless did so.

The ICB judged, therefore, that its recommended reform package would achieve the main aims of full separation at less cost, and without creating the risk to financial stability that could come from having an undiversified stand-alone UK retail banking sector. It is possible that, with the implicit government guarantee curtailed, some banks might choose to

[33] But as the history of Glass-Steagall itself shows, full separation is no guarantee against erosion over time.

split themselves. That would be desirable if the distorted incentive arising from the implicit guarantee was the reason why they combined investment banking with retail banking. But tilting incentives in favour of separation by removing a distortion is a much more proportionate policy response than mandating full separation.

6. Reflections on the European debate

This is a timely moment to reflect, in conclusion, on European banking reform. The European Commission (2012b) published its roadmap towards eurozone banking union in September, and in October the high-level expert group chaired by Erkki Liikanen, Governor of the Bank of Finland, published its proposals for reforming the structure of the EU banking sector.

The Liikanen (2012) proposals have a lot in common with the ICB proposals for the UK in respect of both economic rationale and policy prescription. On structure, banks above certain size thresholds would have to conduct their trading activities in a separate legal entity from their deposit banking activities. Both could be within the same bank holding company but each would have its own capital. The trading entity could do a range of banking activities but not take insured deposits or provide retail payment services. As with the UK reforms, this is a form of ring-fencing – with a flexibly-located fence – and a move to *structured* universal banking. In addition, the Liikanen report proposes that further separation could be required by regulation if deemed necessary to ensure resolvability and the continuity of core service provision. Despite the structural focus of its remit, the group also made recommendations to enhance loss-absorbency – notably to build up bail-inable debt and to improve the robustness of risk weights in capital regulation. Finally, there are proposals to strengthen the corporate governance of banks.

There are also some differences between the Liikanen and ICB proposals. This is hardly surprising given that the ICB was focussed on the (atypical) facts of UK banking and was making recommendations, in a way fully consistent with EU law, for UK policy, whereas the Liikanen group was asked to make recommendations for the EU as a whole taking account of the enormous diversity of banking arrangements across the Union. One difference is that Liikanen would allow the deposit bank to engage in securities underwriting.[34] But securities underwriting by its nature creates large risk exposures – considerably more so than normal market-making and typical derivatives trading, which the deposit bank may not do. Liikanen also appears at first sight to be more permissive on the range of assets that the deposit bank could hold for non-trading purposes, although private equity investments, and

[34] The contrast with Glass-Steagall, which completely prohibited securities underwriting by banks, is striking. The Liikanen report does however appear to create scope for securities underwriting to be excluded from some deposit banks under its proposal that further separation can be required if necessary for their resolvability.

loans and unsecured credit exposures to hedge funds, SIVs, &c would have to be held in the trading entity.[35] This still leaves open the possibility of a wide range of deposit bank exposures to other kinds of financial institution, and to non-European entities, which on the ICB's recommended approach the ring-fenced body could not take on. As the debate on the Liikanen proposals unfolds, these issues will doubtless be clarified.

The debate on European banking reform is entering a new phase now that structural reform is explicitly on the agenda. It is also fundamental to the moves towards eurozone banking union – with common supervision, deposit guarantees and measures of recapitalisation. A banking union with well-capitalised and safely structured banks has much more prospect of economic and political success than one without. In the latter case, banking union could mutualise, and thereby risk enlarging, the implicit government guarantee to banks, contrary to the shared European and international objective of curtailing it. Banking reform is needed whether or not there is banking union, but banking union needs banking reform.

[35] See Liikanen (2012) paragraph 5.5.1, which indicates that, unless resolution plans require otherwise, interbank lending, participation in loan syndications, plain vanilla securitisation for funding purposes, private wealth management and asset management, and exposures to regulated money market funds would be permitted in the deposit bank.

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