

**EMBARGOED UNTIL 17:10 29 SEPTEMBER 2011**

**CREDIT CREATION AND SOCIAL OPTIMALITY  
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(CHECK AGAINST DELIVERY)**

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In 2007 to 2008 the financial system of the developed world suffered a huge crisis. At the peak of the crisis, in October and November 2008, fears that it would produce a new Great Depression were common. By mid-2009 those fears appeared misplaced and regulators turned to focus attention on the reforms needed to make the system safer for the future. But the recovery has been slower than hoped, and the huge scale of the economic and social damage wrought by financial excess and subsequent bust is increasingly apparent.

The immediate priority is to find ways to manage through the current conjuncture of deleveraging and slow-growing nominal demand – and I will comment on whether prudential policy – and in particular macroprudential policy – has any ability to play a role in that respect. But we also need to take the depth and length of the post-crisis recession as a stimulus to question whether we are being radical enough in our efforts to create a better system for the future.

Much of the debate about policy radicalism focuses on financial activities which seem peripheral to the core function of banking and which grew dramatically in the two to three decades running up to the crisis – the proliferation of trading of complex credit securities and derivatives, which formed part of ‘investment banking’. Here there is certainly unfinished business and I will briefly refer to key priorities in this respect. But my focus in this lecture will not be on these ‘new’ features of the financial system, but on the core banking function of credit extension – making loans to customers. The question I will ask is how far we can rely on traditional policy levers to ensure that either the aggregate amount of credit created or its sectoral allocation is socially optimal. The answer I will give is ‘not much’. I will then set out some tentative thoughts on the implications of that for policy.

**Radicalism in response to ‘new’ features of the financial system**

In 2007, before the crisis, the shape of our financial system reflected the culmination of powerful trends in place for 25 or 30 years. These included:

- A dramatic increase in the scale of financial system assets as a percent of GDP, partly explained by increased credit extended to household and corporate sectors, but even more so by a huge explosion of claims between financial institutions, i.e. intrafinancial system claims.
- A dramatic increase in the scale of financial trading activity, in multiple markets ranging from foreign exchange, to interest rate and other derivatives, to commodities.
- The rapid growth of securitised credit and in particular of structured securitised credit, in which loans were originated but then packaged together and sliced into credit

tranches of different apparent credit worthiness, giving us the alphabet soup of CDOs and CDO<sup>2</sup>.

- And the development of credit derivatives, which enabled market participants to take short as well as long credit positions, and to create credit exposures far larger in total than the underlying loans to real economic borrowers.

Faced with these ‘new’ features of our financial system, the pre-crisis orthodoxy was that they were favourable, indeed that they had contributed to a ‘Great Moderation’; making the financial system more stable by ensuring the distribution of risks to investors best able to absorb them and enabling the dynamic management of risks on a day-by-day or hour-by-hour basis. That orthodoxy in turn appeared to justify the enormous rewards enjoyed by many participants in financial markets, rewards which had grown dramatically relative to those enjoyed in the rest of the economy. Bank executives were able, as a result, to convince themselves that not only were they doing well themselves, but contributing to a more efficient financial system.

We now know that much of this orthodoxy was wrong and dangerous, and must be rejected if we are to build a better system for the future.<sup>1</sup>

- We need to challenge the idea that financial innovation is axiomatically beneficial in a social as well as private opportunity sense. Much of it focuses on the zero sum activity of tax avoidance and much of it only creates apparent value added because the buyers of products do not fully understand the risk return characteristics of the products they are being sold.
- We need to challenge the idea that more trading and more market liquidity are always economically beneficial.
- And we need to challenge the idea that the bigger the financial system is the better. It may not be if the industry is involved in rent extracting rather than valued added activities.

We therefore need to keep asking ourselves whether we have been radical enough in our response to the new features of the financial system. We have, I believe, more work to do, some already in hand, some perhaps requiring new initiatives.

- In respect to the trading activities of banks and investment banks, it is not clear that the increases in capital requirement we have introduced so far adequately respond to the risks: the Basel Committee’s current project on trading book capital is therefore fundamental.
- And we clearly have more work to do on ‘shadow banking’, recognising that if we only regulate banks, we may see the distinctive features of banking system risks – leverage and maturity transformation – re-emerging through the complex interaction of money funds, repo markets, hedge funds and banks themselves. The Financial

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<sup>1</sup> See Adair Turner ‘*Reforming Finance: are we being radical enough*’, Clare College Lecture, 18 February 2011, for a more detailed discussion of issues relating to ‘new’ financial activities and specifically to shadow banking activities.

Stability Board's project on shadow banking, which will produce detailed recommendations by autumn next year, is therefore fundamental.<sup>2</sup>

- Finally, I think we may not have thought deeply enough about the drivers and the implications of the massive increase in intrafinancial systems claims which has occurred. And that we may need to consider leaning far more aggressively – via our capital and liquidity requirements – against this proliferation of complex interconnectedness and the risks that result.

So we may need to be still more radical in our response to what was new in our financial system, to those activities which, under the ring fencing proposals of the Independent Commission on Banking (ICB), are more likely to lie on the investment bank and trading side of the fence.

### **Radicalism in relation to unstable bank credit creation**

But it is not on these 'new' areas of shadow banking, structured securitised credit and trading that I will concentrate tonight, but on the traditional activity of banks, familiar long before CDOs were invented, which is the creation of credit through the extension of loans – activities which are far more likely to lie within the ICB's ring fence.

Problems in this core activity were as important to the latest financial crisis, and to previous financial crises, as complex credit structuring and credit trading.

- One of the major banks which failed in the UK was HBOS. And in the story of HBOS's failure, investment bank and trading type activities played little role. HBOS needed emergency liquidity assistance in autumn 2008 because of funding strains arising from reliance on short-term wholesale funds. It subsequently made large losses on plain old-fashioned loans, particularly in commercial real estate.
- Another major bank which failed was RBS. Here, part of the story was indeed related to losses incurred on credit structuring and credit trading activities, to 'investment banking' activity. But over the whole crisis and post-crisis period (2007-2010) RBS actually suffered more losses on plain old fashioned loans than on structured credit trading, across a wide range of sectors but with commercial real estate loans again significant.
- And if we look a little further back, for instance to the Nordic banking crisis of the early 1990s, we see a severe crisis which had nothing to do with not-yet-invented CDOs or CDSs, but was instead a classic banking crisis, a credit boom followed by bust.

Alongside thinking out our response to what was new in the latest crisis, we must therefore ensure that we have thought deeply enough about the drivers of excessive credit growth in the upswing, and the problems created by deficient credit growth in the post-crisis period, and about possible policy responses.

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<sup>2</sup> See FSB Note '*Shadow Banking: Scoping the Issues*', 12 April 2011, for an initial definition of the shadow banking system to be addressed in this project.

## **The fundamental question: Do free markets deliver optimal credit creation?**

The fundamental question is: How confident can we be that the quantity of bank credit supplied and demanded, and the allocation of that credit to different sectors or activities will be socially optimal, if we leave the credit creation and allocation process to free market mechanisms, subject only to the indirect levers of static prudential controls and interest rate based monetary policy? And if the answer is – ‘not very confident at all’ what might follow for public policy?

To answer that we need to go back to the basics of what banks do, what it is that makes them banks. Richard Werner’s work, in particular his book on the ‘New Paradigm in Macroeconomics’ has been devoted to exploring those basics and their implications.<sup>3</sup> Richard derives from his analysis many implications, some of which I agree with, some perhaps not. But I certainly commend his insistence on starting with a clear description of what banks do, rooted in an analysis of historical developments.

### **What do banks do?**

The most distinctive thing banks do, the essence of their function within the economy, is that they create credit and as a result create spending power. A process best understood by stepping through, as Richard does, the stages by which goldsmiths became bankers.<sup>4</sup>

- We begin with someone who has, let us say, 100 pieces of gold, but who does not like the insecurity and inconvenience of carrying gold around, and so deposits it at the goldsmith in return for a receipt. If that receipt is transferrable and becomes accepted by others as a means of payment, then it is itself money. But at this stage we have not created any new money, just turned money into a new form.
- But then the goldsmith realises that since not all depositors demand their gold back simultaneously, he can lend some of it to person B, so that we now have person B holding 50 pieces of gold money, and person A still holding a receipt for 100 pieces of gold while the goldsmith holds 50 of gold and 50 of loans.
- But the goldsmith then realises that the loan which he extends does not need to be the actual gold, that it too could be a receipt for gold, so he lends person B 100 of gold receipts rather than 50 of gold coins and now we have 200 of paper money in circulation. And person B as well as person A is able to spend that money, as long as he is confident that he can generate future resources to pay back the loan when due.

The banking system can thus create credit and create spending power – a reality not well captured by many apparently common sense descriptions of the functions which banks

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<sup>3</sup> Richard Werner, *New Paradigm in Macro-economics, Solving the riddle of Japanese Macro-economic Performance*, Palgrave Macmillan 2005.

<sup>4</sup> While the example presented here involves metallic money to which paper claims are created, the potential for credit and money creation exists equally, and in some ways even more so, in a pure fiat money system in which bank reserves are central bank liabilities. As Stiglitz and Weiss (1988) describe: ‘banks can create credit by printing claims against assets which they hold in reserves. Since these claims are not likely to be redeemed all at once, banks can affect aggregate demand by varying the quantity of claims (vouchers) they issue’. Thus ‘credit is not like any ordinary good: ...it is possible to create credit seemingly out of thin air’. Joseph Stiglitz and Andrew Weiss ‘Banks as social accountants and screening devices for the allocation of credit’. NBER Working Paper number 2710, September 1988.

perform. Banks it is often said take deposits from savers (for instance households) and lend it to borrowers (for instance businesses) with the quality of this credit allocation process a key driver of efficiency within the economy. But in fact they don't just allocate pre-existing savings, collectively they create both credit and the deposit money which appears to finance that credit.<sup>5</sup>

Banks create credit and money. Not surprisingly therefore the dynamics of banking systems – how much credit they create and to which counterparties they extend it – can play a crucial role in the economy. That has implications not only for allocative efficiency and thus potential output, but also for conjunctural developments, for the oscillations of economic growth, of actual output relative to potential output, which are the subject matter of macroeconomics. And one of the most surprising and concerning deficiencies of macroeconomics over the last several decades, has been the limited extent to which it has incorporated detailed descriptions of banking and financial system dynamics within either its theory or its models. Putting right that deficiency and understanding well the functions of banks and the drivers of credit creation and credit allocation is one of the crucial challenges for modern economics.

A good starting point for such analysis is a historic perspective. And what history illustrates is that the role which banks have actually performed has changed radically over the course of the last 50 years.

- Slide 9 shows the aggregate balance sheet of the UK banking system (including both banks and building societies) in 1964. In total it amounted to 46% of GDP. And a large part of what the banking system then did was – as suggested by common descriptions of banking systems – to take household deposits and to lend them to corporates. The household sector was a net depositor into the banking system and the corporate sector a net borrower.
- But over the subsequent 45 years, the scale and the activity of the banking system changed dramatically. Key features of this change include:
  - A dramatic increase in the aggregate balance sheet as a percentage of GDP – from 45% to 497% - an increase explained partly by globalisation, but also by the explosion of intrafinancial system claims to which I referred earlier. So that, by 2007, UK bank loans and deposits to and from the UK real economy accounted for only about a fifth of the total balance sheet of UK banks.
  - A huge increase in lending to the household sector, rising from 14% to about 80% of GDP, with the household sector as a result becoming a net borrower rather than depositor into the banking system.

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<sup>5</sup> Many debt contracts do not of course rely on bank credit intermediation, but directly link investors to borrowers, e.g. through the corporate bond markets. Where debt contracts are not intermediated, the dynamics of credit money creation do not apply. However, it is possible for bank-like functions of leverage and maturity transformation to be performed outside banks through the complex interactions of markets and institutions which together form the 'shadow banking' system. The extent to which such 'shadow banking' activities create money equivalents is explored by Gary Gorton and Andrew Metrick, *Regulating the Shadow Banking System*, September 2010.

- And a significant increase in corporate loans as a percent of GDP but with all of that increase since the mid 1990s, indeed more than 100% of it, explained by increased lending to the commercial real estate sector, with other corporate sectors in aggregate now borrowing little more than they deposit. Many large corporates, in the UK and the US, are indeed now net depositors into the financial system, either directly into banks, or into money funds, which in turn provide wholesale market funding to banks.

Over the last several decades the banking system has thus created a lot more credit and has allocated it in a very different sectoral balance. We must not leap to any conclusion that this changed quantity or changed allocation is necessarily bad. In particular:

- It is not the case that the only socially useful role of credit is to fund new business investment. A larger mortgage market enables life cycle consumption smoothing, allowing people to buy houses without first accumulating the capital required, and that can in itself be a welfare optimising activity.<sup>6</sup>
- And it is not the case that commercial real estate lending is necessarily less valuable than lending to manufacturing companies: in a modern service intensive economy a significant proportion of the capital stock is commercial real estate, and the development of attractive and efficient shopping centres, hotels, and office environments is essential to the quality of life in a rich developed economy.

But the sheer scale of these changes, in terms of both overall quantity and sectoral composition makes the following two questions priorities for economic analysis.

- What drives the quantity of credit extended, what determines fluctuations in quantity relative to GDPs, and should such fluctuations be managed and if so how?
- What drives the allocation of credit to different sectors and activities? And how confident are we that the allocation of credit between competing demands is socially optimal?

### **Regulating banks and continuing inflation: the pre-crisis orthodoxy**

The ability of banks to create credit and money obviously has important implications for the path of nominal demand. And it is potentially dangerous. If loans are extended to poor credits the bank can be insolvent, and if all the depositors want their money back simultaneously, it can suffer a deposit run even if theoretically solvent. As a result, bank credit creation is never, in modern economies, left entirely to free market processes. Instead we have developed:

- prudential controls both on the extent of maturity transformation (i.e. liquidity regulations) and on the degree of leverage (i.e. capital regulation);
- a role for central banks as providers of lender of last resort liquidity insurance; and

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<sup>6</sup> It is possible indeed that increased lending to the household sector can be welfare optimal even if its impact on the level of investment and as a result the rate of growth is negative. In China today, for instance, it is possible that easier availability of household credit, making possible more effective life cycle consumption smoothing, would produce a fall in the savings rate and in investment, a fall in the rate of growth, but an increase in welfare.

- a role for central banks in influencing the interest rate at which credit is extended, with a view in turn to influencing the growth of nominal demand in the economy and as a result the level of inflation.

So we do not by any means leave credit creation entirely to free markets. But for several decades before the latest crisis, policy tended to avoid direct focus on the quantity of credit created, or its sectoral allocation, instead defining its objectives as: (i) a financially stable banking system; and (ii) a stable rate of inflation. The implicit assumption was that both of these objectives were compatible with a wide range of levels of aggregate leverage, i.e. total debt to GDP, that the level of aggregate leverage was not of direct economic importance separate from these two objectives, and that the sectoral allocation of credit resulting from free market competition would be optimal.

And reflecting this assumption we created in the UK, and in most other countries, a separation between the functions of a micro-prudential regulator, focused on the financial stability of individual banks and an inflation-targeting central bank.

The latest financial crisis and the resulting recession have demonstrated, however, that the combination of micro-prudential policies and central bank interest rate policy is insufficient to control credit cycles, and that credit cycles can be major autonomous drivers of harmful economic volatility. In both the upswing and the downswing, static micro-prudential regulations and interest rate policy alone are insufficient to ensure social optimality.

### **Self-reinforcing credit creation in the upswing**

The crucial factor at work is the interaction between credit creation and asset prices, an interaction which creates the potential for what Hyman Minsky called ‘speculative’ and eventually ‘ponzi’ finance.<sup>7</sup> Credit extension to fund the purchase of assets whose supply cannot rapidly respond, such as property, or cannot respond at all, such as land, drives rising asset prices, but those in turn stimulate both credit supply and credit demand in a self-reinforcing cycle.

- Credit suppliers enjoy low loan losses, which swell profits and capital bases, providing revenues for still further credit expansion, and which reassure them in their conviction that lending against assets is relatively low risk.
- And borrowers caught in a cycle of irrational exuberance, assume that asset prices will increase further and borrow more in pursuit of capital gain.

Against such an upswing, neither static micro-prudential regulation nor interest rate policy has adequate power.

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<sup>7</sup> Hyman P Minsky, *Stabilising an Unstable Economy*, McGraw Hill, 2008 (first published 1986). In Minsky’s categorisation “hedge finance” refers to contracts where operating cash flows cover all debt servicing cash flows (capital and interest): ‘speculative finance’ refers to finance where maturing debt is continually rolled over in the expectation of capital gain: ‘Ponzi’ finance entails continued flows of additional debt even to enable the repayment of interest on existing debt. Much US sub-prime lending pre-crisis was clearly speculative on this definition: some was Ponzi in nature.

- The effectiveness of capital ratio regulation is undermined because the process itself generates more capital, both through retained earnings and because higher returns may attract new equity investment.
- And the profits from capital gain are apparently so large, that only very large interest rate increases could possibly slow the bubble, movements which might severely impact real investment in the economy long before they slowed down the speculative boom.<sup>8</sup>

### **Self-reinforcing credit destruction in downswings**

The drivers of credit upswing are therefore very powerful and imperfectly influenced by our conventional policy levers. As long as the upswing lasts the adverse consequences are not apparent – the economy grows, measured wealth increases, and price inflation of current goods and services may well remain highly stable. But when the bubble bursts the consequences are severe, as the factors which drove the credit expansion now operate in reverse, and again on both the credit supply and credit demand side.

- Banks suffering credit losses which erode their capital and their ability to lend funds, and individual loan officers shocked into caution by the speed with which past assumptions about rising assets prices and good credit quality were proved wrong.
- And borrowers cautious in the face of potentially falling asset prices, and of the more general fall in nominal demand which a recession will induce.

The potential for such effects has of course long been familiar to economists. Irving Fisher's essay 'The Debt-Deflation Theory of Great Depressions' published in 1933 identified many of these factors, together with the importance of fire sale effects, bankruptcies and bank failure, in driving down both credit supply and credit demand.<sup>9</sup> The role of credit and money supply collapse has long been identified as one of the key drivers of the US's Great Depression of 1929–33.

And, more recently, the economist Richard Koo, in his analysis of Japan's sustained low growth since 1990 (*The Holy Grail of Macroeconomics*), has focused on the credit demand side, arguing that we need to recognise 'balance sheet' constraints as a key driver of borrower behaviours, rather than assuming that borrowers always assess incremental investment,

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<sup>8</sup> This potential ineffectiveness of interest rates in slowing credit booms reflects the fact, stressed by Stiglitz and Weiss (1988) that the aggregate supply of credit provided is not determined by prices (i.e. interest rates) in a fashion precisely equivalent to the market clearing processes observed in markets for goods. Rather bank credit supply is determined by bank allocation and rationing processes, operating under conditions of highly imperfect information about the credit worthiness of customers. As a result 'in economies characterised by the information imperfections with which we have been concerned here, the price system may well not serve the information-equilibrating role assigned to it by conventional theory' and 'the adjustment dynamics associated with the excess supply of credit may not be self-correcting'.

In addition, however, Stiglitz and Weiss (1992) note that the fact that banks effectively ration credit, participating in a potentially variable fraction of total project returns, means 'not only that banks, in the process of sorting among potential borrowers, do not necessarily chose those loans with the highest total returns, but it also means that when credit is restricted, as through monetary policy, it is not necessarily the projects with the least return that are restricted'.

J Stiglitz and A Weiss, 'Asymmetric information in credit markets and its implications for macro economics' *Oxford Economic Papers*, Volume 44, October 1992.

<sup>9</sup> Irving Fisher, *The Debt-Deflation Theory of Great Depressions*, *Econometrica*, 1933.



consumption and borrowing decisions on an entirely forward looking basis.<sup>10</sup> Thus he argues that, once Japanese corporates realised in the early 1990s that the credit boom had left them with unsustainably high leverage, they focused on generating surplus cash flows to pay down debt, generating a deflationary impulse which, in Koo's argument, required an offsetting fiscal expansion without which Japan's recession would have been far deeper still.

These arguments are compelling. Underlying them is the realisation that the aggregate quantity of bank credit in an economy, and of debt contracts more generally, can grow to sub-optimally high levels – leaving us, once confidence turns and the credit upswing reverses, with an extremely difficult deleveraging challenge. It is precisely such a deleveraging challenge which almost all of the developed economies – the US, the UK, the Eurozone and Japan, now simultaneously face.

And it is an inherent feature of such a conjuncture, that the power of conventional monetary policy, i.e. interest rate policy – to ease the pace and mitigate the impact of that deleveraging is slight. In the upswing, the impact of interest rate increases is somewhat limited by the low interest rate elasticity of borrowing for speculative purposes, but it is certainly not nil. In the downswing, Koo argues persuasively, the reduction of interest rates to zero may in some circumstances be powerless to stimulate credit demand. In some circumstances monetary policy, at least in its conventional forms, is 'pushing on a string'.

### **Macroprudential policy: offsetting the upswing**

A key priority in the aftermath of the latest crisis, is therefore to recognise that the credit cycle is itself a crucial driver of economic activity and of risks to economic activity, and to design and implement new tools which as best possible lean against the strength of that cycle. In the UK that task has been handed to the new Financial Policy Committee, designed to fill the macroprudential gap left by our previous division of responsibilities between a micro prudential regulator and an inflation targeting central bank. One of the key initial tasks of the Committee is to consider what the macroprudential tools should be. Yesterday's press release following our latest round of meetings set out some initial thoughts.<sup>11</sup>

Some of the tools are obvious, and one indeed is already agreed at international level – a countercyclical capital buffer, increasing if the Committee believes that credit is growing in a potentially unsustainable fashion. Such a counter cyclical buffer would offset to some degree the link in the cycle in which increasing profit drives increasing capital resources, which if subject only to a static capital ratio requirement, would enable more credit creation. Other possible tools within the tool kit include countercyclical liquidity requirements, or countercyclical borrower constraints – operating for instance via changes in maximum Loan-to-Value or Loan-to-Income ratios in residential or commercial real estate mortgages.

There are many complex issues relating to the appropriate design of these tools. We need to ensure that we think through any unintended consequences. And our understanding of the appropriate calibration of these tools – how much we might expect credit creation to respond to any given movement in any defined parameter – will inevitably only build up slowly in the light of experience. But in principle it seems likely that we can identify tools which in some

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<sup>10</sup> Richard Koo, *The Holy Grail of Macro Economics, Lessons from Japan's Great Depression*, John Wiley and Sons, 2009.

<sup>11</sup> See FPC Press Release, 20 September 2011, [www.bankofengland.co.uk/publications/news/2011/090.htm](http://www.bankofengland.co.uk/publications/news/2011/090.htm)

combination will be able to lean against the upswing of the credit cycle, mitigating excesses of the type which led to the latest financial crisis.

### **Offsetting the downsizing: can macroprudential levers play a role?**

But our problem today is certainly not excessive credit growth and rising asset prices, at least not in the developed world. Growth in credit has slowed dramatically from its pre-crisis trend with mortgage credit stock growing at a much reduced rate of about 1% per annum, overall bank corporate lending falling by about 4% per annum, and lending to small businesses falling at 7% per annum. This slow credit growth clearly reflects anaemic economic growth, but it may also be a driver of it.

A crucial issue at this point in the cycle is therefore whether macro-prudential policy has a role to play in stimulating rather than constraining credit supply and demand, whether it can be used to push as well as to pull. Or as Andy Haldane, a fellow member of the FPC expressed it in the title of a recent speech – do we have policy levers which can encourage more ‘risk on’ or only levers which constrain lenders and borrowers to take ‘risk off’?<sup>12</sup> The answer is unclear. But what is clear is that if we are to use macro-prudential policy levers to push, we may need to get far more involved in the details of credit capacity within the economy and even of the sectoral allocation of credit, than we have for several decades.

In theory the beneficial impact of macroprudential policies in the downswing should derive simply from the removal of the ‘pulls’ we put in place in the upswing. If we impose a countercyclical capital buffer in the upswing, then removing it in the downswing, allowing a fall in capital ratio, should enable banks to absorb losses without contracting lending. Similarly on the borrower side, removing an LTV limit imposed on the upswing, will help offset the fall in credit demand which would otherwise accompany a fall in asset values.

But there are potential barriers to the effectiveness of these ‘removal of pull’ effects, one specific to the circumstances of today, others more fundamental.

#### *1. Constraints arising from inherited positions*

The factor specific to today’s conjuncture, is that we cannot remove countercyclical buffers if we did not have them in place to begin with. And that we are also seeking to implement a transition to higher underlying capital requirements to create a sounder system for the future. If Basel III had been in place pre-crisis, we would almost certainly have demanded in 2007 that the very largest global banks, hold a 12% Core Tier 1 ratio – made up of the 4.5% minimum, the 2.5% conservation buffer, the highest tier 2.5% global SIFI surcharge, and a 2.5% countercyclical buffer. We would therefore have been in a position now to remove the 2.5% capital countercyclical buffer, making it clear that a reduction in capital ratio was acceptable and natural. But we did not have Basel III in place pre-crisis, we did not have a countercyclical buffer available to impose. In future we will be better placed, but for now we are somewhat constrained by our inherited position.<sup>13</sup>

<sup>12</sup> Andrew Haldane, *Risk Off*, Bank of England, 18 August 2011.

<sup>13</sup> Note that in addition to the countercyclical buffer, which is designed to be able to respond to variations in the credit cycle, the Basel III ‘capital conservation buffer’ is designed to ensure that banks can absorb exceptional losses (whether arising from general economic conditions or from idiosyncratic factors) while remaining above minimum capital ratios. The use of these buffers can also play a role in mitigating excessive deleveraging.

## 2. *Long-term constraints and possible radical responses*

Even in the long term, however, and certainly today, the potentially beneficial effects of any permitted fall of capital ratios in the credit downswing, could be offset if that raised concerns about bank resilience and if that fed through to difficulties in raising funding. The optimal capital ratio at any point of the cycle is arguably a function of both the degree of uncertainty in the environment, and the level of activity in the economy. The former may argue for maintained capital ratios even when the latter suggests that capital buffers should be used up to offset deleveraging.

Two policy responses to this dilemma are possible: both raise interesting questions about how far macro-prudential policy must involve in judgements about optimal bank credit creation.

- The first is to seek to ensure that banks increase the absolute size of their capital (and in particular their equity capital) resources, via earnings retention or discretionary cost controls. If they do this they increase the numerator of the capital ratio, making increased lending compatible with stable capital ratios. That was the logic behind the recommendation after the FPC's June meetings that 'banks should take the opportunity of periods of strong earnings to build capital so that credit availability is not constrained in periods of stress'. This implies restraining dividend distributions: and it would be possible to imagine such a policy being expressed not simply via encouragement but via policy limits on maximum dividend payment rates. But this would amount, we should note, to requiring that some capital which private banks might have chosen to withdraw from credit intermediation activity remains devoted to it. This would be a major divergence from past *laissez faire* approaches.
- But the effective application of such an approach might require us to go still further. For if we simply demand that the numerator of the capital ratio is raised at the overall group level, we have no certainty that that capital will be devoted to ensuring maintained lending to the real economy, let alone to the UK real economy. It could instead be used to support more trading activity or lending outside the UK. And conversely, any bank deleveraging could effect lending to the real economy, rather than reductions in other elements of a balance sheet. The issue therefore arises as to whether we can, by encouragement or any more direct intervention, influence the composition of balance sheet changes in a fashion favourable to the real economy.<sup>14</sup> If lending in the real economy helps maintain economic activity, this could be in the banks' collective self-interest even if individual banks might have chosen a different balance: by influencing the allocation of balance sheet capacity we seek to overcome a collective action problem. But in doing so we are judging that some forms of balance sheet use are more valuable than others – lending to non-financial corporates for instance perhaps more valuable than trading book exposures to support arbitrage or carry trades. That may well be right, but we need to recognise the judgements we are making.
- And if we wish to ensure that such an allocation of balance sheet capacity occurred, rather than merely encourage it, we would have to go further still, requiring that

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<sup>14</sup> The latest FPC press release for instance includes a recommendation that the FSA should 'encourage banks to manage their balance sheets in such a way that would not exacerbate market or economic fragility. For example, at the present time, some actions taken to raise capital or liquidity ratios could potentially worsen the feedback loop between the financial sector and the wider economy.'

increased capital resources could only be devoted to such favoured activities. One way to do so would be to use countercyclical capital tools, or requirements to build up absolute capital resources, not at the level of the banks' group balance sheets, but within ring-fenced units legally excluded from participation in some trading and investment bank activities. The ICB's proposals for ring-fencing have been put forward primarily from a micro-prudential perspective, as a means to improve the resilience of the banking system. But if macro-prudential tools are to have power in the downswing, we may need to consider the relationship between the ICB's ring-fencing proposals and the FPC's development of macro-prudential tools.

### 3. *Credit growth: supply or demand constrained?*

If we want macro-prudential tools to play a 'push' as well as a 'pull' role, we cannot therefore avoid considering options which would have been considered unacceptably interventionist in the pre-crisis period. But we also need to recognise that the impact of even such radical supply orientated interventions remains uncertain. For even if we now had countercyclical buffers in place available to remove, or even if we could ensure that additional capital was devoted to potential credit creation in activities we deemed more likely to be socially useful, we could only be certain that this would help offset the downswing if we were clear that credit growth was constrained by lender supply rather than by borrower demand.

It is clear that the dynamics of the downswing include demand as well as supply-side factors. And it is possible that while the onset of a deleveraging recession is driven by credit supply constraints – with for instance, a clear 'credit crunch' in late 2008 and early 2009 – once the recession has already been induced, credit growth is constrained as much by demand as by supply factors. Richard Koo indeed argues that in Japan in the 1990s demand factors were almost entirely dominant, with measures to increase potential credit supply unlikely thereafter to be effective.

In the UK today, we do not know the balance between credit supply and credit demand factors in explaining the current slow growth of credit – it is one of the key analytical questions on which we must focus attention – but if credit demand factors are significant, macro-prudential tools may face the same 'pushing on a string' problem which stymies the effectiveness of conventional monetary policy.

That reinforces the vital importance of using macro-prudential as well as other policy levers to ensure that leverage never rises in the first place to unsustainable levels from which deleveraging is necessary and inevitable. But it still leaves us uncertain as to how far macro-prudential policy can help us get out of the deflationary position in which we now find ourselves.

### **The sectoral allocation of capital: sub-optimal if left to unconstrained markets?**

One possibility, however, is that if macro-prudential policies have a role to play in the downswing, we may need to be still more granular than the distinction between 'lending to the real economy' and 'other uses of balance sheet capacity' set out above. This is because even within 'lending to the real economy' the balance of supply and demand effects could well differ by sector, and because the economic importance of incremental credit growth to economic growth could too. And that reflects the wider point that if we have reasons for

doubting whether aggregate credit growth and aggregate leverage will always be optimal, we also have good reasons for doubting whether the sectoral allocation of credit produced by free banking markets will be optimal either.

At the core of Minsky's explanation of the unstable credit cycle, is the interaction between asset prices and credit growth – credit growth drives asset prices increases and those asset price increases themselves create incentives and capacity for more credit growth. But if such effects create the potential for excessive credit growth in aggregate, they must also logically create the potential for a misallocation of credit – credit to finance asset price speculation extended at the expense of credit to finance new business projects which do not involve investment in easily marketable limited supply assets.

The potential for such misallocation may in addition be exacerbated by the structure of financial objectives set by bank boards and senior management, operating in conditions of imperfect information and in which the costs of assessing credit worthiness vary (or at least may appear to vary) by category of lending. EPS growth objectives encourage bank executives to find growth opportunities. But growth opportunities in the upswing will seem most easily and rapidly obtainable in those categories of credit where credit quality can apparently be assessed and assured by a focus on the value of the asset financed, rather than on the basis of a deep understanding of specific business prospects. Lending against non-real estate business projects proposed by corporates, and in particular by small and medium enterprises, is inherently difficult and may require the development of sustained and well-informed relationships: lending against asset values appears in the upswing easier and safer.

Of course, *post facto*, that apparent credit quality is often revealed as an illusion; high losses on commercial real estate, for instance, are a recurring feature of almost all banking crises. That raises questions about the financial objectives and management incentives which truly serve even private shareholder interests. But it also suggests the potential for a socially sub-optimal allocation of real capital between alternative investment ends.

We cannot, therefore, be certain that the allocation of capital which emerges from the competition of profit maximising banks will be socially optimal, and indeed it is pretty clear that in many cases it is not. The pre-crisis credit booms in the US, Ireland and Spain were clearly accompanied by the allocation of real economic resources to excessive construction in residential and commercial real estate, leaving behind a large overhang of excess houses and apartments, hotels and office blocks. And if the total investment level in the economy does not grow as a result of the credit boom, that excessive investment in construction sectors must be at the expense of more socially valuable projects which languish unfinanced.

It is less clear whether such a misallocation of real economic resources occurred in countries, such as the UK, where the upswing of the credit cycle in the pre-crisis period was largely accompanied, not by a construction boom, but simply by inflation in the value of already existing assets. This will depend on whether Minsky type speculative credit crowded out other categories of credit as a result of constraints on total bank capital and managerial capacity, or whether it expanded aggregate credit supply by leaving credit supply for other projects unchanged.

But what is clear is that, when the bust comes, the impact of bank deleveraging on credit supply can be disproportionately concentrated on some very socially useful sectors. The pre-crisis upswing of the credit cycle was skewed towards residential and commercial real estate.

But one of the categories of bank credit reduced in autumn 2008 was trade credit, where there had been no pre-crisis boom. That was in part because short-term trade credit can be run off far more rapidly than long-term mortgages. Even if trade credit was not squeezed by excess credit extension to finance asset speculation in the upswing, that excess helped create a squeeze when the bubble burst. And more generally it is notable that even after the crisis, lending to the commercial real estate has been cut less than lending to other corporate sectors, reflecting in part draw down of facilities agreed before the crisis, while lending to small and medium enterprises has fallen most.

### **Applying macro-prudential tools at the sector specific level**

This could imply a rationale for deploying in the upswing macro-prudential ‘pull’ tools which are sectorally focused – and in particular focused on categories of credit which are susceptible to Minsky-type speculative tendencies such as investment in real estate or in financial assets.

It could also suggest a rationale for either macro-prudential policy or other public policies to focus on potential categories of credit during the downswing. And this may be particularly important when, as today, we are seeking simultaneously to manage a way through a recession and to build a more stable long-term financial system.

Under Basel III, we are committed to a transition path to significantly higher equity capital ratios. That has provoked a major debate about whether higher capital ratios will harmfully constrain credit supply either in the long run or in transition. I believe that the theory and evidence both point to long-term benefits far exceeding any transitional cost.<sup>15</sup> But what is undoubtedly the case, is that if there is any danger that higher capital requirements might produce a transitional and harmful reduction in credit growth, this is more likely to apply in relation to increased loans to small and medium enterprises than in relation to residential mortgage finance.

#### *Possible divergence between private and social optimality*

This follows simply because SME loans typically carry significantly higher capital charges reflecting the higher assessed risk. So, if we use the simplified and purely indicative assumptions shown in Slide 21, a 5% increase in equity ratios (from 5% to 10%) could increase the cost of funding of a 20% weighted residential mortgage by only 10 basis points, but increase the funding cost for a 100% rated SME loan by 50 basis points. Not surprisingly therefore the FSA’s analysis of the impact of Basel III, which was one of the inputs to the Basel Committee’s macroeconomic assessment, suggested that the potential impact on the volume of SME loans (the demand for which would fall as the price rises) though still small, could be 4-5 times higher than its impact on residential mortgages.

That of course would not matter if we were confident that the risk weights which banks attach to lending to particular sectors reflect not only their rational private assessments of relative risk and return prospects, but risks seen from a socially optimal point of view – i.e. that the

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<sup>15</sup> For analysis of the long-term impact of higher capital requirements see ‘An assessment of the long-term economic impact of stronger capital and liquidity requirements’, by the Basel Committee’s Long Term Economic Impact (LEI) working group, August 2010. For analysis of medium-term transition costs, see ‘Assessing the macro-economic impact of the transition to stronger capital and liquidity requirements’, Final Report of the FSB/BCBS Macro-Economic Assessment Group, December 2010.

riskiness of the social benefit resulting from a 100% weighted SME loan is five times higher than the riskiness of social benefit arising from a 20% weighted mortgage. If, however, we were confident in an assessment that SME loans – either in general or at a particular point in the conjuncture – involved a different social risk-return trade off than that suggested by private assessments of risk – then there would be a justification for favouring such loans via some aspect of policy.

Two reasons why such a divergence between private and socially optimal risk assessments might arise can be envisaged.

- The first results from the different character of credit assessment processes for different categories of lending, and the potential for organisational and behavioural responses to changed circumstances to differ by lending category. Residential mortgages are typically risk assessed on the basis of quantitative credit scoring approaches, applied on a somewhat centralised basis. Small and medium business loans typically require more judgemental and decentralised assessments, drawing on knowledge gained from continuous business relationships. When recessions follow a period of credit excess, the individuals responsible for credit assessment may have a natural tendency to swing from excessive optimism to excessive pessimism. But this tendency may be more powerful in lending categories where specific individuals are more likely to be held directly responsible for specific losses.
- Secondly, such a dichotomy between private assessment of risk, and true social risk, could arise if there were a collective action problem – with the provision of increased aggregate debt to SME's having potential to stimulate the economy, and as a result to reduce the riskiness of such lending, in a fashion which no one bank could reasonably take into account. The judgement that such a dichotomy exists between social and private assessments of risk is indeed the implicit rationale behind the Project Merlin lending targets.

#### *Can macro-prudential tolls be sectorally specific?*

The question for macro-prudential authorities is whether such considerations should ever find expression in macro-prudential policy levers. In theory this could be achieved through variations in the required risk weights applied to different categories of lending, and therefore in the capital support which they require. Important arguments, both technical and more fundamental, could be made against such an approach.

- Technically a major difficulty arises because the Basel II and Basel III capital adequacy regimes, as applied to the large banks which account for the vast majority of UK lending, do not entail the definition by the regulatory authority of category specific risk weights, but instead require banks, subject to regulatory approval, to model and assess risks themselves on a very granular basis. At present therefore there are for our largest banks no minimum risk weights for, say, small business lending or residential mortgages, which a macro-prudential regulator could vary through the cycle to achieve sectorally differentiated affects. This reflects the whole philosophy of the Basel II approach, (maintained within Basel III) which assumes that risks can be assessed on an individual bank-by-bank basis, and that these risks are best assessed by banks themselves in light of their private objectives. The Basel II methodology therefore entails no role for policy maker judgements about the systemic

consequences of aggregate credit creation either in total across the economy or by credit category, let alone about the relative economic value of different categories of credit. A case can be made for changing this philosophy and introducing category specific minimum weights. But that would amount to a major change from past philosophy and would ideally be progressed on a globally coordinated basis.<sup>16</sup>

- And more fundamentally any intervention at the level of category specific weights varied in the light of macroeconomic rather than narrower financial resilience objectives, would require macro-prudential authorities to make judgements about the economic value of different categories of lending at a particular point in the cycle. A high burden of proof would be appropriate before making such judgements even if we have strong theoretical requirements for believing that the free market of allocation of credit is in some way sub-optimal.
- These arguments might mean that the variation of category specific risk weights, while conceptually appealing, is in practice difficult. It might also be that if we are confident in judgements about the economic benefit of particular categories of lending at a particular point in the cycle, they are more appropriately expressed via other levers of public policy – such as loan guarantee schemes for lending to SMEs,

But the general principle remains important. We cannot be at all certain that the free market allocation of credit, biased by asset price/credit cycles, will be socially optimal. We therefore need to be open to considering options which lie far outside past orthodoxy.

### **The wider issue: should public policy seek to influence credit allocation**

That conclusion may apply moreover not just in relation to credit upswings and downswings, but more generally across the cycle. If the allocation of credit can be biased in a sub-optimal fashion by asset price effects, by organisational and behavioural biases and by imperfect information, then we cannot exclude the need for policy interventions which offset the bias, whether by restraining some categories of credit or favouring others. This could be important not just to manage the conjunctural impact of the credit/asset price cycle, but also to ensure that important investment priorities are funded. The creation of the Green Investment Bank is predicated on such logic.

### **Summary**

We should be very cautious of expecting too much of macroprudential policy: if it manages to dampen the excesses of the upswing of the credit cycle, that in itself will be a major achievement, making future downswings less harmful. But we certainly need to base macroprudential policy and other aspects of policy on realistic assessments of the extent to which private credit creation processes can be relied upon to be socially optimal. The fundamental question which I asked was ‘how confident can we be that the quantity of bank credit supplied and demanded, and the allocation of that credit to different sectors or

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<sup>16</sup> Note that a case for category specific minimum weights could be made on pure financial stability grounds, without reference to judgements about the relative economic value of different categories of lending. Since the quality of the risk assessments which are reflected in risk weights is inherently imperfect, and imperfectly observable by regulators, and since risk weightings tend to be procyclical (increasing when economic conditions turn down) minimum risk weights can help mitigate these uncertainty and procyclicality dangers. Minimum risk weights indeed are effectively category specific gross leverage ratios.



activities will be socially optimal, if we leave the credit creation and allocation process to free market mechanisms, subject only to the indirect levers of static prudential controls and to interest rate based monetary policy'. The answer is not very confident. That implies that macroprudential policy must be based on judgements about the optimal aggregate quantity of credit creation: and that we need to consider carefully how far we can and should make judgements about the economic value of different categories of credit, which in the recent past we have largely avoided.