

Paul Tucker: National balance sheets and macro policy: lessons from the past

Speech by Mr Paul Tucker, Deputy Governor for Financial Stability at the Bank of England, at the Society of Business Economists' Annual Dinner, London, 28 February 2012.

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The spectre hanging over the world economy these past years – the drag on our recovery – has been deleveraging. Around the world, households, some firms, banks, governments, whole economies are acting to reduce their debt overhang. By selling assets, cutting spending, deferring investment.

What gets delevered – as the ugly phrase goes – is a balance sheet. Balance sheets became stretched. Sectorally. Nationally. Through much of the industrialised West.

The idea of over-borrowing, of overstretched balance sheets, is hardly novel. Economists are taught about the importance of **stocks** of debt; about “budget constraints”, beyond which a borrower’s expected future income, their wealth, is insufficient to service and repay their accumulated debts. But, by and large, economic commentary focuses on **flows** – the path of output, consumption, and investment and the current account balance.

I exaggerate, of course – not least because cumulative flows create stocks. Nevertheless, it is salutary to remind ourselves that less than a decade before **our** crisis broke, we – the West – had been preaching to emerging market economies (EMEs) the necessity of monitoring, and even managing, the national balance sheet. That was in the wake of the Asian and Latin American financial crises of the 1990s. One of the many official reports on the lessons took a mandate about capital flows and turned it into a series of prescriptions on national balance sheets, including being attentive to vulnerabilities and to perverse incentives.¹

The emphasis of the Draghi Report was hardly surprising. Brazil, Mexico, and Russia had suffered from mismatches in the maturity and interest-rate structure of their public debt. For Korea, it had been mismatches in the external funding of the banking sector. In Indonesia, the non-financial corporate sector had been overly reliant on short term, foreign-currency-denominated external debt. In each case, the country’s economy was eventually brought to heel by a run.

It might have been easy for “developed” economies to ignore the Draghi Report. But efforts **were** made to draw wider lessons amongst advanced economies. Thus, in late 2000, the Bank of England ran the first of a short series of annual articles that tried to draw out the implications of the UK’s balance sheet for financial stability. It is worth quoting fairly extensively from that first article:²

“It is advisable for authorities to monitor a range of balance sheet indicators, focusing on variables and relationships that have in the past indicated financial fragility.....the size and structure of the economy’s foreign currency debt are particularly relevant, especially for countries on a fixed exchange rate regime. Sound risk management by the public sector warrants particularly high priority. National authorities need to adopt prudent strategies and practices in managing their own debt liabilities and financial and other assets. They should identify the

¹ See “Report of the Working Group on Capital Flows”, available online at: www.financialstabilityboard.org/publications/r_0004.pdf. It was produced by a group chaired by Mario Draghi, and on which I served.

² See “The external balance sheet of the United Kingdom: implications for financial stability?”, Senior, S and Westwood, R, Bank of England Quarterly Bulletin, November 2000, pages 351–64.

main economic risks to which they are exposed, either directly or indirectly (via the economy as a whole). Bank regulators should measure and monitor liquidity mismatches in banks, in the domestic currency and foreign currencies. If necessary, governments should act to strengthen banking systems and prudential regulation. Other parts of the private sector are generally not regulated, but they should be subject to accounting and disclosure standards which require transparency about the structure of their financial obligations and claims. An adverse signal from any individual indicator does not mean that a country inevitably faces crisis. Rather, indicators should be employed as warning lights, highlighting potential problems and prompting further investigation. A series of warnings may reflect escalating risks.”

My purpose this evening, in the spirit of drawing lessons, is to recapture those insights in the light of our own, advanced-economy crisis. I shall review whether it is enough to look only at current account imbalances for warning signs, or whether gross capital flows, in particular cross-border banking flows, matter too. I will repeatedly come back to the importance of risk premia and balance sheets.

National balance sheets and the crisis

Recently, when events have centred on the euro area, the focus has been on the risk of sovereign default. The underlying issue is the cumulative loss of competitiveness of some economies, and the consequent strains in government balance sheets resulting from their attempts over the years to use fiscal policy to sustain growth. A look at Spain’s external balance sheet reveals (net) liabilities of around 100% of GDP (**Chart 1**). Italy’s net external liabilities are, perhaps, rather smaller than that (**Chart 2**). But in terms of total government debt, Italy’s new administration inherited the greater burden. Put those two facts together and it becomes clear that Italy’s fiscal problem is partly about the *distribution* of debt and resources *within* the country. Japan is, perhaps, not dissimilar.

Go back four-five years, to the beginning of the crisis, and the problem was the mortgage obligations of US households – subprime households in particular were hugely over borrowed. The commercial real estate sector too. Defaults there triggered the crisis.

Every set of defaults and problems around the world has reverberated through the UK, due to London’s role in intermediating international capital flows. We have one of the largest **gross external** balance sheets (**Chart 3**). Although much of it is accounted for by foreign banking activity, the City is not an entrepôt. UK banking is linked to the wider City’s fortunes via complex counterparty-credit exposures and investments. Domestically,³ UK households had accumulated a lot of debt in the run up to the crisis, much of it matched by an accumulation of assets. But households were dependent on economic growth being sustained and on house prices holding up. Property companies likewise, but with the added spice that there had been a boom in commercial real-estate construction. When crisis hit, the government’s balance sheet deteriorated dramatically, because the public finances were highly sensitive to taxes from finance and property and, most important, the UK’s fiscal “automatic stabilizers” are strong. Households and government have subsequently cut spending to repair their balance sheets. The corporate sector has built up what amounts to a cash mountain, some of which will probably find its way into investment as the cloud of uncertainty lifts, helping recovery. Sterling’s 2007/08 depreciation has softened the blow to demand. And if anything, that strengthened the country’s balance sheet because, in contrast to the EMEs discussed in the Draghi Report, the UK’s external liabilities are largely denominated in sterling while our external assets are denominated in foreign currency.

³ See Annex 1.

I could go through many other countries picking out ex ante vulnerabilities in their national balance sheets, and consequent ex post strains. Banking failures brought on a credit crunch, impaired economic growth, lowering wealth, and adding to the debt burden of borrowers, in what threatened to be a vicious circle. But this isn't a speech about the need to reform the "rules of the game" for finance. However levered – and the financial system was obviously horribly over-levered – typically the house of cards collapses only when some over-indebted end-borrowers either default or look like defaulting on their obligations. The balance sheets of borrowers matter too! Which poses a big question of whether there were common, macroeconomic drivers. Was the problem sourced in global savings imbalances? Did monetary policy play a part?

International macro drivers of the crisis

The role of net savings global imbalances

The leading explanation for the macro drivers of the crisis starts with the lessons about national-balance-sheet management drawn by Asian countries in the wake of their crisis in the 1990s. Many decided that they should accumulate foreign exchange reserves in order to guard against external shocks; ie self-insurance rather than third-party IMF insurance with conditionality. National saving rose. One view⁴ is that, together with surpluses in resource-rich economies as global demand for commodities increased, this drove a lot of what followed.

Given that domestic investment in Asia could not keep up with burgeoning savings, *global* saving and investment were brought into equilibrium through a fall in world *real* interest rates, across the yield curve (**Chart 4**). As the risk-free discount rate declined, asset prices rose, including property prices in much of the West. Borrowing for house purchases rose accordingly; and, buttressed by higher collateral values, equity withdrawal and other borrowing for consumption accelerated too. Other things being equal, that relative dissaving in the West would have reduced any global savings/investment imbalance. In terms of international capital flows, the current account surpluses in the East found their counterpart in net external borrowing in the West.

This is a story about *net* capital flows. And that is what my world has in mind when it expresses concerns, rightly, about persistent global macroeconomic imbalances.⁵ Such cumulative imbalances eventually lead to macroeconomic adjustment, which can be painful. Deficit countries end up having to save more (relative to investment) and export more (relative to imports). Exchange-rate regimes come under pressure.

And surely there is a lot to this story. But an explanation resting solely on net flows seems insufficient. Europe provides a striking case. The external position of the Euro Area was broadly flat through the mid-2000s, so if the *net* position were all that mattered, Europe would have been a bystander in the *global* elements of the crisis. In fact, the starting pistol for the crisis in international money markets was fired in Europe in mid-2007, when a Continental investment fund suspended redemptions following the decline in US ABS values. Overall, even before the euro area's distributional issues came to the fore, collective current account balance did not protect Europe from the early phases of the crisis.

Nor had the fall in world real interest rates set off a boom in property prices and mortgage borrowing in, for example, Germany. Yet Germany's banking system was not remotely spared crisis.

⁴ Represented by, for example, Bernanke (2005), "The Global Savings Glut and the US Current Account Deficit".

⁵ See King (2011), "Global imbalances: the perspective of the Bank of England".

So we need richer stories to make sense of what happened.

It is precisely in that spirit that colleagues at the Bank for International Settlements⁶ have stressed the importance of *gross* capital flows. As Cecchetti has emphasised, whereas global current account balances (the counterpart of *net* capital flows) expanded in the twenty years to 2007 from about 1% of world GDP to about 3%, the gross capital outflows of all countries increased from around 3% to over 15% of world GDP (**Chart 5**). And the aggregate international investment position of all countries⁷ increased from under 50% to over 150% of annual world GDP. Opening up the possibility that gross capital flows matter transforms the picture. For example, as Borio points out, Europe's gross capital flows were enormous, accounting for around half of gross inflows into the US in the run up to the crisis. And sufficient of that was invested in US ABS for the US's mortgage crisis to be transmitted across the Atlantic, including to France and Germany, pretty well instantly in 2007 – and **before** the solvency of the banking system was in doubt.

Even if gross and net flows had been equal, wouldn't the **composition** of those flows have made a difference? Had the West's current account deficits been financed by inflows of equity, would the eventual "adjustment" have been less destructive?

The flows were, of course, of debt. The accumulated "excess" savings in the East were largely held in official, risk-averse portfolios, notably central bank fx reserves. Their investments concentrated on fixed-income instruments: initially government bonds, but later mortgage and some corporate securities (broadly matching the composition of capital flows into the US, **Chart 6**). Combined with demographic shifts in the West pushing pension funds into fixed-income, this might have increased global demand for bonds relative to equities, driving down credit and term premia (relative to equity risk premia). For a while there was probably excess – that is to say, unsatisfied – demand for bonds, and that in turn probably had two effects. The generation of new types of supposedly "safe" bonds through securitisation and, in particular, eventually **synthetic** securitisations.⁸ Separately, there was arbitrage **across** asset classes, effected by firms borrowing to buy back their own equity and to acquire others via leveraged buy-outs.

In summary, while the ex ante global savings/investment imbalances plausibly drove down equilibrium world *risk-free* interest-rates, the precise composition of the resulting capital flows will have affected *risk premia* too.

Monetary policy, international banking flows, and global liquidity

The other story aired about macro drivers is the possible role of monetary policy and private sector credit creation. And that too points to a role for risk premia.

Against the grain of established thinking, and now famously, Raghuram Rajan argued at Jackson Hole in 2005 that the Federal Reserve's commitment at the beginning of last decade to keep policy rates low for a prolonged period had fuelled financial risk taking.⁹ While this is now

⁶ See Borio and Disyatat (2011), "Global imbalance and the financial crisis: Link or no link"; and Cecchetti (2011), "Global imbalances: current accounts and financial flows".

⁷ The gross foreign assets of each country's residents, summed across all the countries in the world.

⁸ See Cabellero (2009), "Global Imbalances and Financial Fragility", American Economic Review Papers and Proceedings, Vol 99, No. 2, May 2009, pp. 584–588.

⁹ See Rajan (2005) "The Greenspan Era: Lessons for the future". Speech given at a Symposium Sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming. August 27, 2005 He warned "persistent low interest rate can be a source of significant distortions for the financial sector, and thence for asset prices. Not only does this mean staying further away from deflation so that extremely low policy rates don't have to be used as a tool, it also implies exercising greater supervisory vigilance when those rates are in place to contain asset price bubbles".

posited as the “risk channel” of monetary policy,¹⁰ there has until recently been relatively little empirical work bearing on whether it actually exists.

That may be changing. Amongst other examples, recent work by Jeremy Stein and Samuel Hanson at Harvard and, subsequently, by a Bank of England team¹¹ has found some evidence that changes in Federal Reserve and Bank of England policy rates are accompanied by material (similarly signed) changes in long-term *real* forward rates. This is striking given the usual assumptions about monetary policy being both credible (no effect of cyclical policy on long-term inflation expectations) and neutral (no effect on real magnitudes beyond cyclical horizons). While, I must stress, not *proving* anything, this is consistent with a group of investors responding to lower short-term rates by moving along the maturity spectrum in a “search for yield”. That interpretation is, to my mind, fortified by a finding, for the US, that the effect on long forward real rates is greater when short nominal rates are low. Imagine the behaviour of asset managers who have guaranteed a minimum *nominal* return to investors. This is the “carry trade” – perhaps mythical for many years to many economists as there is a flavour of “irrationality” around it, but part of the fabric of the world for practitioners.

Although current mainstream “structural” models of conventional monetary policy do not work like that, perhaps we should not be too amazed. The thought that injections of central bank money can be transmitted to the wider economy through risk premia, as well as through the risk-free rate, goes back at least to Brunner & Meltzer.¹² It is precisely how the Monetary Policy Committee, and our international counterparts, regard Quantitative Easing as working – influencing term, liquidity and risk premia.¹³ And since prices are the “dual” of quantities, it is hard to see why there should be something special about injecting central bank money into the economy by buying assets rather than via our normal policy lever of the overnight interest rate (and expectations about its path).

This prompts a number of conjectures. One is that maybe monetary policy did contribute to the widespread search for yield, not just along the yield curve but also, as Rajan suggested in 2005, into credit products to earn a spread compensating for illiquidity or complexity.

Another conjecture, perhaps supported by other recent research,¹⁴ is that this may have a bearing on the phenomenon of *cross-currency* carry trades, and thus on the generation of “Global Liquidity”. That is a nebulous concept, but one that central bankers have come to think of as intimately tied up with private sector credit creation (essentially bank lending) across borders.¹⁵ When cross-currency carry trades drive down risk premia, that pushes up foreign asset prices, and can fuel foreign credit growth, through a process that is akin to an

¹⁰ This channel is distinct from the standard channels working through the effect of a lower risk free rate on asset prices, and so on wealth and the availability of credit, eg the so-called “financial accelerator” of Bernanke, Gertler & Gilchrist. On the “risk channel” see, for example, Borio and Zhu (2008), “Capital regulation, risk-taking and monetary policy ; a missing link in the transmission?”

¹¹ See Annex 2

¹² See “Money and the Economy: Issues in Monetary Analysis (Raffaele Mattiolo Lectures”, Brunner and Meltzer (1987). It was also discussed by Governor King in “Challenges for Monetary Policy: New and Old” (1999), discussing the operation of monetary policy when interest rates are low; and in “No money, no inflation – the role of money in the economy” (2002).

¹³ See “Quantitative Easing: An Inflation Report”, Bean (2009); and “The State of the Markets”, Tucker (2009).

¹⁴ See, for example, “Carry trades and risk”, Burnside (2011); Common Risk Factors in Currency Markets, Lustig et al (2011); Crash-neutral currency carry trades, Jurek (2009).

¹⁵ See CGFS (2009), “Global Liquidity – concept, measurement and policy implications”. A report submitted by an Ad-hoc Group chaired by Jean-Pierre Landau.

increase in risk appetite. It is not far fetched to ask whether excess Global Liquidity can result.¹⁶

We thus have two broad stories of what kicked off a period of pronounced credit growth and asset price appreciation. First, a fall in the world safe real rate, due to excess savings in the East. Second, increasing Global Liquidity, transmitted through expansive cross-border lending, kicked off by prolonged accommodative monetary policy. These stories are not at all mutually exclusive.¹⁷ And, most probably, both contributed to exuberance.

But it is not my purpose this evening to revisit how asset-price appreciations that are initially fundamentally warranted can get out of control through the “Minsky” mechanisms of extrapolation of past returns into future targets, herding and myopia¹⁸ – the last no doubt aided by exaggerated market beliefs of what monetary policy can achieve following years of uninterrupted growth. Rather, it *is* important to my purpose this evening that both stories involve shifts in risk premia driven by changes in the supply and demand for financial assets.

Shifts in risk premia, gross capital flows, and balance sheet strains

That story would hardly have interested most *macroeconomists* a few years ago. Financial asset prices were regarded as providing useful information because they are forward-looking and available at high frequencies, but no more; they were not seen as actors. Indeed, many of today’s macro models used in policy making embody an assumption that risk premia are either constant or do not exist; and that therefore asset prices, and so wealth and the cost of capital, are influenced only by changes in the expected path of the risk-free rate and in the cash flows expected from investments.

For anyone who has spent time in markets, that seems at odds with their experience. It is, therefore, of some moment that some recent research has suggested that, for *all* major asset classes, the principal drivers of fluctuations in asset returns are shifts in risk premia rather than in expected cash flows¹⁹ (ie dividend growth for stocks; the path of monetary policy rates for low-risk bonds; default incidence for bonds carrying credit risk; rental growth for house prices etc). Furthermore, some empirical research now suggests that shifts in risk premia *are* key factors in macroeconomic fluctuations.²⁰ This is a big deal.

We have seen massive shifts in risk premia over the past ten years (**Chart 7**) – first a compression and then a blow out. Those shifts seem to be associated with capital flows, channelled through banks and shadow banks, that led to an expansion of Global Liquidity. Balance sheets were left at first fragile and then, when the balloon burst, enfeebled.

In the case of continental Europe, for example, banks had increasingly borrowed short-term from US money funds, only to suffer a slow-motion run when their capital adequacy came to be questioned. And it was placed in doubt partly because banks in those countries spared a

¹⁶ See “Global Liquidity”, M Carney (2011), at the Canada-United Kingdom Chamber of Commerce.

¹⁷ Both play a role in, for example, Obstfeld and Rogoff (2009), “Global Imbalances and the Financial Crisis: Products of Common Causes”

¹⁸ See “Reforming finance: are we being radical enough” Clare distinguished lecture in Economics and Public Policy, Turner (2011) and Discussion by Tucker (2011).

¹⁹ See Cochrane (2011) “Discount rates”, *Journal of Finance*, Vol. 66, pages 1,047–109.

²⁰ For example, Justiniano et al (2011) decompose the drivers of US macroeconomic fluctuations using two different technology shocks: to the relative price of investment and to the transformation of savings into future capital input. They find that the latter shock is the most important driver of US business cycle fluctuations and is almost identical to the observed spread between high-yield (non-investment grade) and AAA-rated corporate bond yields. This echoes work a generation ago by Ben Friedman and Ken Kuttner (1994), “Indicator Properties of the Paper-Bill spread. Lessons from recent experience.”

property boom had, directly or indirectly, financed property bubbles or over-indebted governments elsewhere around the euro area.

In the US, as elsewhere, a supposed business model of “Originate & Distribute” – ie capital market intermediation – morphed into “Originate & Warehouse the large pieces that cannot be distributed, or at least tuck them away in shadow banks we can fund”. This provides a telling example of the perverse incentives that the Draghi Report had highlighted a decade earlier. Booking practices and pricing were distorted by lax overall regulatory capital requirements, a zero-weighting on 364-day committed lines to shadow banks, accounting regimes that recognised unearned profits on highly illiquid securities, and an implicit state subsidy to housing finance from public agencies that were themselves over-levered and profit-maximising.

Policy responses and lessons

Looking back, armed with these conjectures, what could or should have been done as our economy and others accumulated debt?

A few years ago, a couple of us discussed this in the margins of a regular gathering of economists in London.²¹ One thought was that Western governments should have “gone on the biggest infrastructure splurge since Victorian times”, spending the inflows on investment rather than consumption. I can’t help wondering whether all the investment would have been well judged. Another thought was that the UK and others should have tightened fiscal policy, in order to raise national saving and so improve our external position. That would have added to global saving, possibly pushing the world real rate lower, asset prices higher, and so possibly further fuelling private sector borrowing.

But were we trying to answer the right question that evening? As you will have gathered, in effect it was: “If Asia was going to be in surplus, and other things equal the West was going to run the counterpart external deficit, what should we have done?”

As one looks back at the evolution of **sectoral** balance sheets and their role in the origins of the crisis, that question cannot stand alone. The crisis was not rooted simply in our economy’s **external** balance sheet, nor in that of the US.

Does that mean that fiscal policy was and is irrelevant to national balance sheets? Hardly.

On the one hand, it would be odd for fiscal policy to take upon itself the task of actively offsetting shifts in private sector saving through the government balance in order routinely to manage overall (net) national saving. If parts of the private sector are becoming overindebted, the authorities should use other tools to address the problem at source. Similarly, if the composition of aggregate demand is persistently unbalanced, government should perhaps at least see if it can rectify any microeconomic incentives that aggravate the imbalance.

On the other hand, I would argue that the management of a government’s balance sheet cannot be indifferent to the balance sheet of the rest of the economy. It matters if, as was the case in the UK, the public finances are especially sensitive to the well being of highly levered sectors of the economy **and** the automatic stabilisers are strong. That is a recipe for government debt to rocket if banking sector problems choke off credit supply and economic growth. The 1999 Draghi Report urged authorities’ risk monitoring to identify that kind of vulnerability.

²¹ My conversation was with Martin Wolf.

This goes some way towards making the case for the “structural” element of macroprudential policy. We need a **resilient** financial system partly because governments cannot always take the full burden of supporting spending in the economy in the face of a credit crunch.

Monetary policy

But what about lessons for **cyclical** macro policy?

As I have discussed, I think we should take seriously the possibility that monetary policy – and, indeed, impulses in the supply of broad money from bank lending – can affect risk premia. And we need to go the further step of not ruling out that this could sometimes exacerbate medium-term imbalances. That does not, however, drive me to a conclusion that monetary policy should be used for broader objectives than targeting inflation over the medium term. As we learn lessons from one terrible crisis, we must not lose sight of the hardship caused by the inflationary boom-and-bust episodes that occurred until the current monetary regime was developed during the 1990s. And we need to place some weight on there not having obviously been a boom in nominal demand in the run up to the crisis, either here or in the USA, although there were building booms in some countries.

That being so, the question is what to do about the possibility that, occasionally, stimulating demand to offset macroeconomic damage from the crystallisation of one set of imbalances can fuel a new set of imbalances. The question is posed most pressingly about the US. But, in the UK’s recent monetary history, one finds a parallel in the debate in the early 2000s about whether or not there were limits to a strategy of stimulating domestic demand – principally household spending – in order to offset the effects on the medium-term outlook for inflation of pronounced weakness in external demand and business investment after the bursting of the Dot.Com bubble.

Seen in that light, the central question becomes whether the authorities should have tools to check the evolution of stretched balance sheets, particularly in the financial sector, in the face of robust credit growth and asset price appreciation. This goes some way towards making the case for the “cyclical” elements of macroprudential policy.

And that, of course, is a key destination for me this evening. When, more than a decade ago, the Draghi Report exhorted domestic and international authorities to monitor and maybe manage national balance sheets, the term “macroprudential” was used only by Andrew Crockett, Claudio Borio and their colleagues at the BIS.²² Now it is a buzzword – planned in the West and used already in parts of Asia and Latin America.

Macroprudential policy: tempering but not obstructing financial liberalisation

Plainly finance got out of hand. Not for the first time in history. For me, the most instructive chart in Reinhart and Rogoff’s already famous book is the one showing that truly big crises are typically preceded by financial liberalisation (**Chart 8**)²³. This reminds me of what was said when the UK’s Secondary Banking crisis followed not so shortly after 1971’s Competition and Credit Control: “we had the competition but forgot about the control”.

We should not sacrifice the gains to global trade (and to freedom) from the free flow of capital across borders and the capacity to innovate. But we obviously do need to be better equipped to contain excess and to ensure resilience as economic and financial conditions change. That is what macroprudential policy is about.

²² The term actually seems to originate in a late-70s Bank of England paper to the BIS about risks to stability from the recycling of petro dollars. See “The term ‘macroprudential’: origins and evolution”, Clement (2010).

²³ See Figure 3 of Reinhart and Rogoff (2008), “This Time is Different: A Panoramic View of Eight Centuries of Financial Crises”.

One can think about this in a number of ways. And, consistent with my themes this evening, they revolve around risk premia and balance sheets.

The Governor of the Riksbank, Stefan Ingves, has suggested that whereas monetary policy *sets* the path of the (short-term) **risk-free** rate, macroprudential policy (in its cyclical mode) will work on credit and risk premia. In that light, it could in theory be cast as an enriched Taylor Rule, where a single policymaker “sets” both the risk-free policy rate and the credit spread on bank lending.²⁴

This is, of course, an elegant and illuminating thought experiment. But can we do it? The “cyclical” macroprudential tools most discussed are variations of capital or liquidity or margin/haircut requirements. For now, I do not think we know enough about how they will work to *control* spreads and risk premia. And nor would we know precisely where we wanted to put these premia even *if* we could control them. This is not remotely a counsel of despair given the goal here: to choke off tail risk.

Instead, I find it easier to think about the broad goals of macroprudential policy in terms of balance sheets. The regulatory reform Bill currently going through Parliament enjoins the Bank’s Financial Policy Committee to take heed of unsustainable levels of debt, leverage or credit growth, with the aim of ensuring that the financial system becomes and remains resilient. In other words, consistent with the theme of my remarks this evening, the FPC is to act upon the balance sheets of financial intermediaries, and indirectly to influence the balance sheets of other sectors of the economy. That means making judgments about incipient risk to the financial system from its own balance sheet and from borrowers. It means being ready temporarily to raise regulatory requirements above their minimum level when risks from the economic and financial environment exceed anything remotely calibrated into the standards that apply in broadly normal conditions. And it means promptly relaxing those extra requirements once the risk to stability has passed.

This is a massive step. No one is pretending that the policy community knows how to cast it in terms of a numerical target or a uniquely useful set of indicators, against which society can monitor us. And that underlines the importance of Parliament itself approving the instruments granted to the FPC, and of our being sufficiently transparent to enable public scrutiny of and debate about our analysis and policy decisions. The Bank/FSA Discussion Paper on macroprudential instruments published last December was a contribution to that.²⁵

Back to current account imbalances: they do matter

But that is not all that we, policymakers, should be modest about. If, as I believe, macroprudential policy can prospectively fill a gap, we must not pretend that it can be a cure for everything. Even if we had avoided the worst consequences of seriously suboptimal *gross* capital flows – a badly overlevered banking system dependent on flighty wholesale funding – there would still have been the problem of unsustainable global current account imbalances. Whether the eventual adjustment would have been disorderly and how costly is hard to tell.

Net imbalances do matter, and macroprudential policy will not solve the deep problems of the international monetary system; nor will the temporary capital controls employed by some EMEs on “macroprudential” grounds. That question is still with us because those imbalances are, broadly, still with us. And if the surplus countries do not adjust, that poses tough challenges for the rest of us.

²⁴ See “Monetary policy and financial stability – some further challenges”, Ingves (2010).

²⁵ Bank of England and Financial Services Authority staff. December 2011. “Instruments of macroprudential policy”

Lessons for the policy framework

Where does that leave us? Summing up my analysis, it is that we must use financial asset **prices**, in particular spreads, alongside quantities as indicators of risk taking and risk appetite. It is through **credit flows** – domestically and across borders – that risk is built. But it is in **balance sheets** that those risks are housed and come home to roost.

In terms of the **policy framework**, this leads me to suggest the following lessons:

- We must not rely entirely on central banks “mopping up” after financial crises. Not only does it strain our capabilities ex post, it is counterproductive ex ante. If central banks are perceived as writing deep-out-of-the-money put options, then the market, believing it is protected by those tail-risk puts, will itself take more risks than otherwise. We need overall macro regimes that aim to make chronic imbalances and over-indebtedness less likely and less threatening.
- The transmission of monetary policy can be affected by risk appetite, and can itself affect risk-taking behaviour, domestically and globally. We need to be alive to that in forecasting the path of nominal demand, and in assessing global liquidity conditions.
- We also, therefore, need macroprudential regimes to ensure that these mechanisms do not lead to stability-threatening indebtedness or otherwise endanger the resilience of the financial system. We need, in particular, to be ready to contain private sector liquidity creation even when it is not driving excess nominal demand growth. That will amount to arresting occasionally the expansion or leverage of the banking system and shadow banking sectors.
- Given its special role in international finance, the UK owes a special responsibility to the rest of the world to maintain the safety and soundness of the UK-resident financial system. It is therefore very welcome that the IMF has reached precisely that view in its new work on Spillovers.²⁶ The Fund must ensure that we stick at it.
- Reciprocally, the Fund needs to go back to the Draghi Report and incorporate its lessons into Article IV and FSAP reports.
- As the Draghi Report stressed, we must try to identify and remove microeconomic incentives that distort risk-taking behaviour into dangerous channels. And given the interconnectedness of global finance, we – especially in the UK – must be alert even to such distortions elsewhere. US housing finance was a domestic system whose structure led to problems with global spillovers.
- The public finances should be managed with an eye to the nature and extent of risk exposures elsewhere in the economy.
- It is the precise pattern of capital flows, and the resulting composition of the resulting balance sheets, that matter to the stability of the financial system. All macro policymakers – monetary, macroprudential and fiscal – should, therefore, pay attention to the national balance sheet; and to the pattern of gross as well as net capital flows.
- But, in doing so, we and our peers must avoid financial protectionism just as a previous generation learned to oppose trade protectionism. And we must not leave anyone thinking that we can eradicate economic problems.

²⁶ The IMF’s most recent spillover report on the UK can be found at <http://www.imf.org/external/pubs/ft/scr/2011/cr11225.pdf>. That report concluded: “the size and interconnectedness of the UK financial sector make it a powerful originator, transmitter, and potential dampener of global shocks. The stability and efficiency of the UK financial sector is, therefore, a global public good requiring the highest quality supervision and regulation”.

Conclusion

Around the Western world, excess indebtedness became legion during the opening years of the last decade. US subprime mortgages, perhaps the most egregious although by no means the largest example, became the straw that shattered the camel's back. In this metaphor, both the "straw" and the "camel" are balance sheets. Sub-prime borrowers defaulted because they were living beyond their means: their **stock** of debt exceeded their ability to repay. The shattered camels were bank (and shadow bank) balance sheets around the world. Government balance sheets buckled next as they sought to sustain demand and employment.

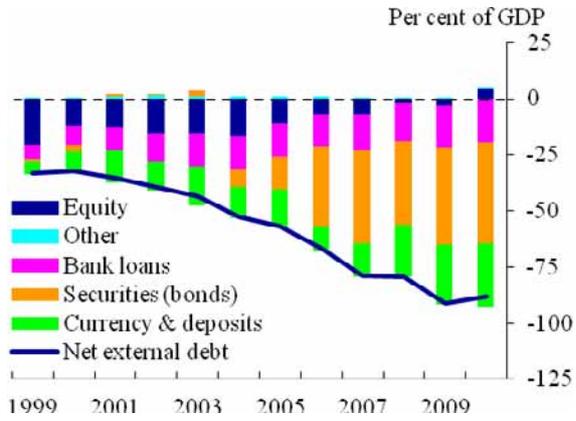
What should financial policy and monetary policy be doing right now?

With credit conditions so tight, it has been asked whether the Financial Policy Committee should be employing macroprudential tools to ease regulatory constraints on banks, with the aim of encouraging them to loosen lending conditions, helping recovery and so reducing threats to stability from default risk. The FPC concluded at its September 2011 meeting that such a step would in fact be counterproductive, endangering stability and jeopardizing recovery. Given their precarious starting position when the crisis broke, the capital adequacy of UK banks is still being rebuilt. Worse still, the lingering threat of a severe crisis in the euro area leaves banks operating in an extraordinarily risky environment. While in other circumstances it might have been possible to relax capital requirements if the worst had passed, it is not a sensible course when the worst might still lie ahead. In current circumstances, gradually building resilience through retained earnings is best for stability and recovery, because it helps preserve the capacity to lend "the day after tomorrow".

This leaves monetary policy with its classic role of underpinning demand. Here and elsewhere, central banks have injected extraordinary monetary stimulus. Exceptionally low short-term interest rates have alleviated some of the burden borrowers face in servicing their debts. Low long-term interest rates – partly a consequence of Quantitative Easing – will have given a lift to asset prices, and so to wealth and the cost of capital. It is arguable that this defers some of the rebalancing needed in the real economy, but overall it reduces the risk of unnecessary destruction of the economy's productive capacity. That stimulus can be sustained only so long as medium-term inflation expectations remain anchored to our target of 2%. We must be alert to the need gradually to withdraw stimulus as and when recovery builds. And we must be alive to the possibility that the alleviation of current macroeconomic problems could sow the seeds, somewhere in the financial firmament, of the next set of imbalances. Where risks to stability do emerge, we must use what other instruments we have to try to temper them. This can never be perfect, but it can be better.

Chart 1:

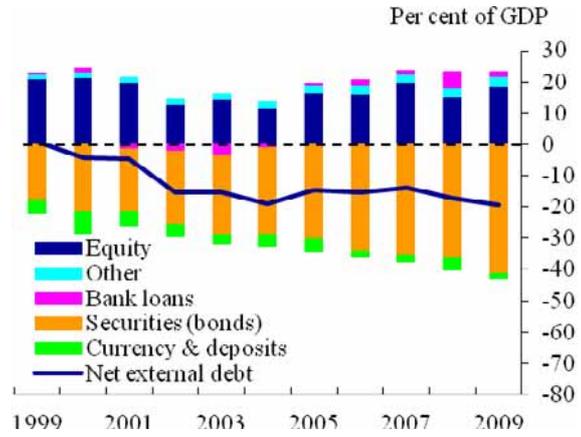
Spain's net external balance sheet



Source: Eurostat

Chart 2:

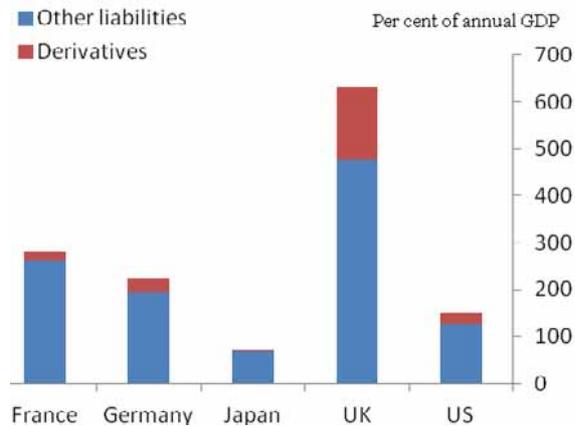
Italy's net external balance sheet



Source: Eurostat

Chart 3:

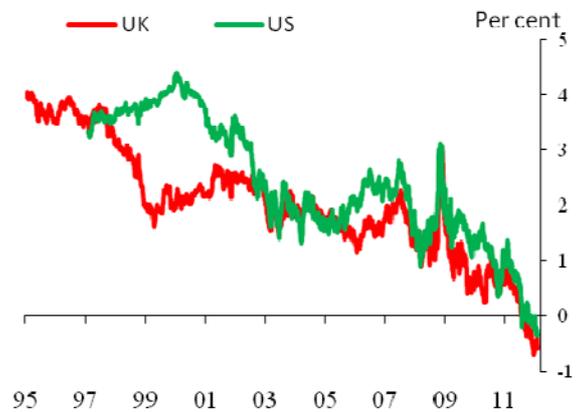
Gross external liabilities



Source: International Financial Statistics.

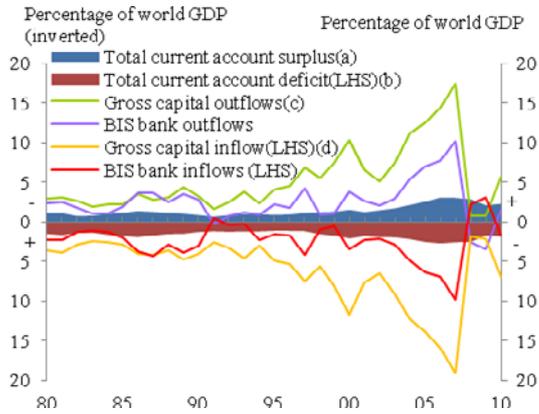
Chart 4:

10-year spot real interest rates



Source: Bloomberg.

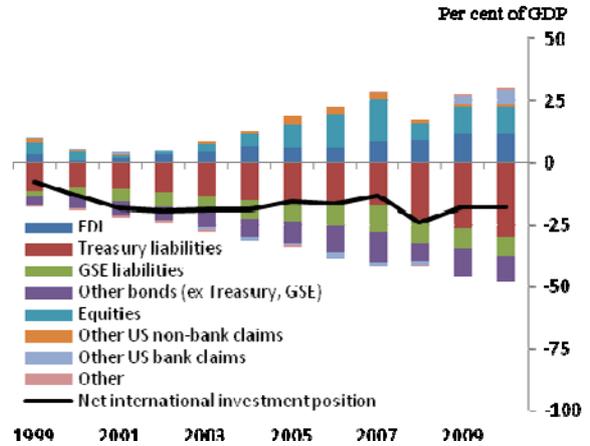
Chart 5:
Gross and net global flows



Sources: Bank for International Settlements, IMF *World Economic Outlook* (September 2011) and Bank calculations.

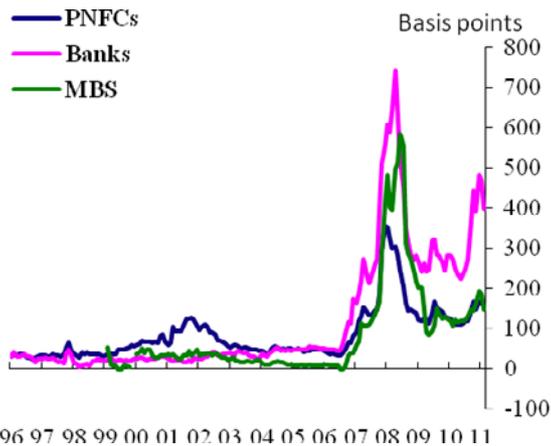
- (a) Sum of global current account surpluses.
- (b) Sum of global current account deficits.
- (c) Sum of global net purchases of foreign assets by residents.
- (d) Sum of global net purchases of domestic assets by foreigners.

Chart 6:
US external balance sheet



Source: Federal Reserve, US Bureau of Economic Analysis.

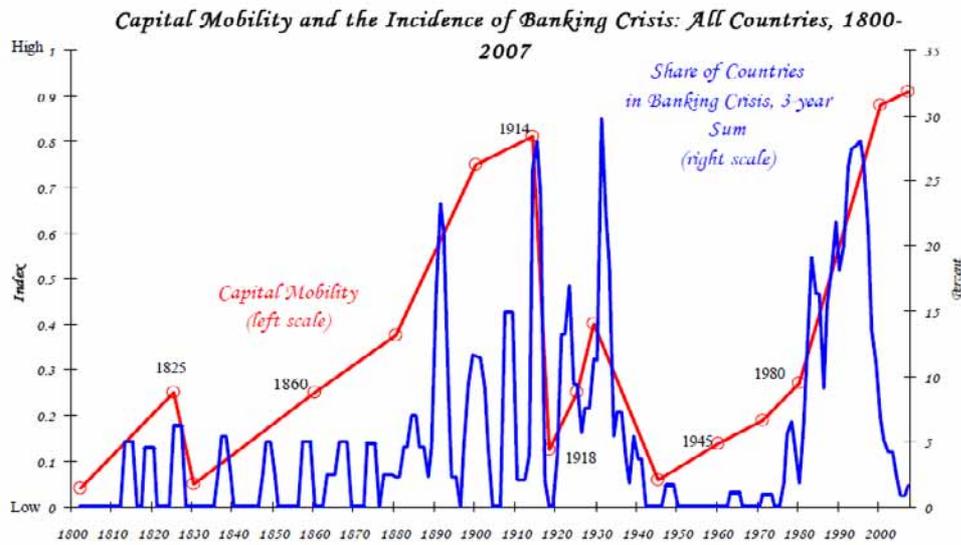
Chart 7:
UK credit spreads



Source: Merrill Lynch.

Chart 8:

Figure 3 from Reinhart and Rogoff

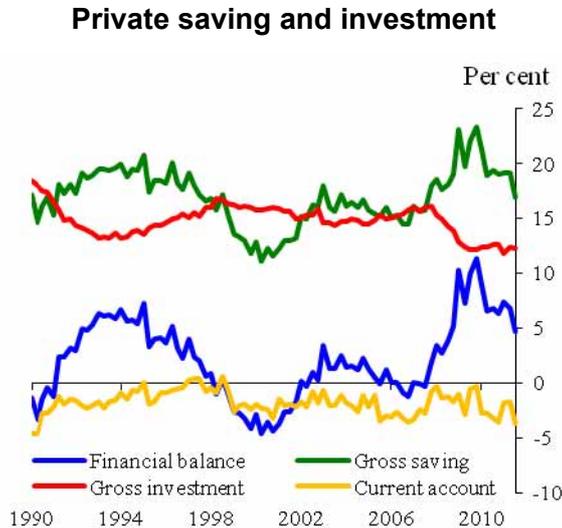


Sources: Bordo et al. (2001), Caprio et al. (2005), Kaminsky and Reinhart (1999), Obstfeld and Taylor (2004), and Reinhart and Rogoff.

Notes: As with external debt crises, sample size includes all countries, out of a total of sixty six listed in Table 1 that were independent states in the given year. On the right scale, we updated our favourite index of capital mobility, admittedly arbitrary, but a concise summary of complicated forces. The smooth red line shows the judgmental index of the extent of capital mobility given by Obstfeld and Taylor (2003), backcast from 1800 to 1859 using their same design principle.

Annex 1: The UK balance sheet and the crisis

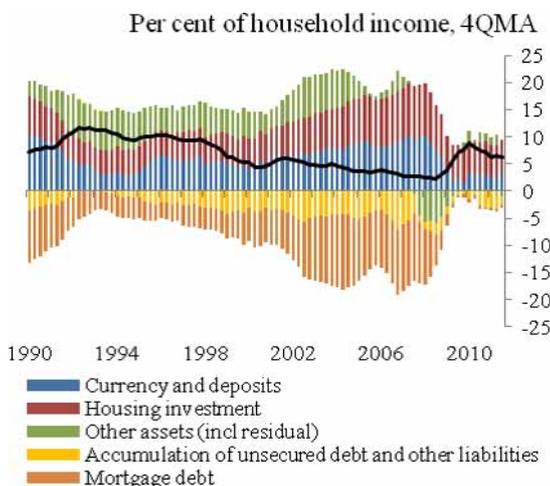
Chart 1:



Prior to the crisis the private sector financial balance had moved from small surplus of around 2% of GDP in 2003 to a slight deficit (**Chart 1**). Housing investment increased by around 1.5pp of national output; but private sector saving *fell* by around the same amount. That was the counterpart of a doubling in the UK's net borrowing from abroad, the current account deficit, to reach around -3% of GDP.

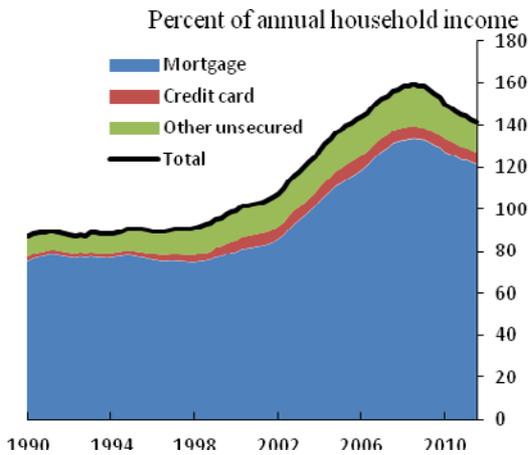
Chart 2:

Household saving and financial flows



The household sector accounted for the fall in private sector saving (**Chart 2**); its saving rate fell to just 3%. Younger households, including first-time home buyers, accumulated mortgage debt to acquire properties whose value was appreciating. Older households, including “last-time sellers” and those scaling down, realised housing equity and invested the proceeds in financial assets.

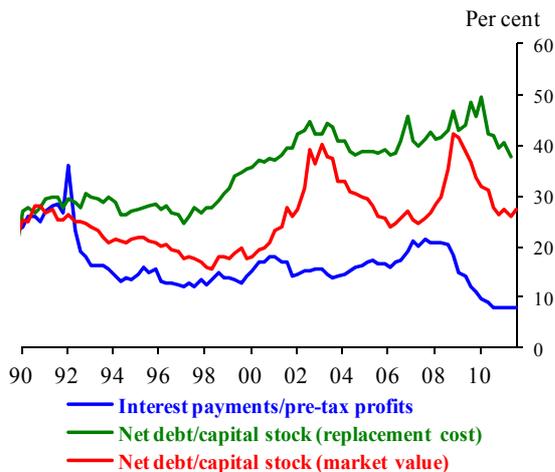
Chart 3:
UK household debt



Overall, household debt rose from 90% of income in 1997 to 160% by 2007 (**Chart 3**); and from 30% of financial wealth to over 50%. In real terms, house prices rose to nearly 2½ times their level a decade earlier; and the ratio of house prices to earnings almost doubled to approach 9x, up from around 5x in 1997.

The corporate sector was a net saver in the five years prior to the crisis, running a financial surplus of 2–3% of GDP. Outside of the real estate sector, companies greatly de-levered after the Telco boom and bust in 2001–2.

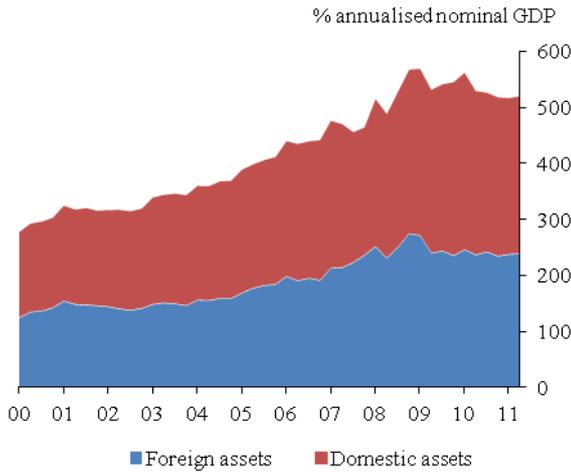
Chart 4:
PNFC capital and income gearing



Overall corporate leverage fell to around 25% on a market value basis and to 0% at replacement cost (**Chart 4**). External fund raising, matched by investment in overseas companies, was high peaking at around 7% of GDP, with bank borrowing the dominant source. Real-estate sector debt, quadrupled as a share of nominal GDP, as commercial property prices soared.

Chart 5:

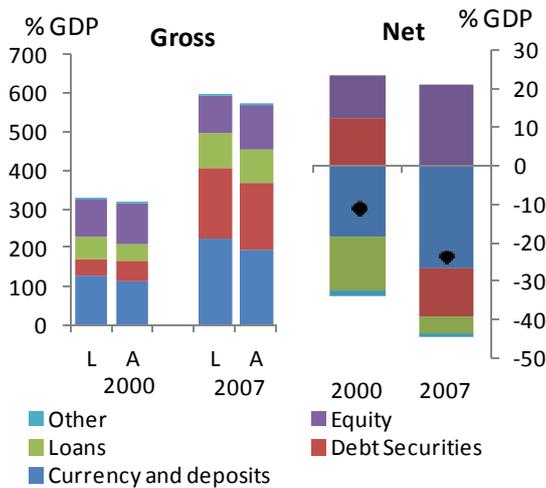
UK-resident banks' total assets



The UK-resident banking sector's balance sheet increased to around 5 times national output by 2007 (**Chart 5**). Banks also increased their business abroad. External assets increased to 2.5 times GDP by 2007, nearly double the level of the early 2000s. Much of this expansion was financed with debt. The average leverage for large UK banks increased from 20x in 2000 to 35x by 2007.

Chart 6:

UK external position



This period of net borrowing increased the country's net external liabilities to 25% of GDP from around 10% at the turn of the century (**Chart 6**). Much of this was accounted for by higher borrowing by the government, with HMG's external liabilities trebling to reach around 9% of GDP. The country's gross external balance sheet doubled in size, reaching 6 times national output by the time the crisis struck. And there was an important mismatch in the maturity of those external assets and liabilities. Net, the UK borrowed short term, through deposits with and short-term loans to the banking sector, with the counterpart assets being long-term and equity-like.

Annex 2: Monetary policy and long-term forward rates

This Annex summarises recent work in the Bank for Paul Tucker's speech to the Society of Business Economists on National Balance Sheets and Macro Policy: lessons from the past.

The spot nominal interest rate on a ten-year zero-coupon government bond can be thought of as the *average* of the short-term interest rates expected to prevail over the ten year period, plus a term premium (which is often thought of as compensating investors for uncertainty around those short-term interest rates). Comparisons between yields on government bonds of different maturities can be used to identify a sequence of *forward* rates (ie the expected short rates at each point in time plus a forward term premium associated with that maturity). Using the information from the yields on inflation-linked government bonds, expectations of nominal short-term interest rates and forward premia can be broken down further into the expected future inflation rate (and an associated forward inflation term premium) and the expected future real interest rate (together with the associated forward real term premia), equation (1).

$$f_t^{\text{nominal}(n)} = (E_t[r_{t+n}] + RP_t^{\text{Real}}) + (E_t[\pi_{t+n}] + RP_t^{\pi})$$

; where $f_t^{\text{nominal}(n)}$ denotes the n-period ahead forward interest rate prevailing at time t; $E_t[r_{t+n}]$ and $E_t[\pi_{t+n}]$ the expectations for the real interest rate and the rate of inflation at that point and RP_t^{Real} and RP_t^{π} the corresponding forward real and inflation term premia.

In principle, then, there are two broad channels through which a decision by monetary policy makers to change their policy rate could affect longer-term interest rates, such as the 10-year government bond yield.

First, the decision could change market participants' expectation of either real interest rates or inflation. It is worth noting two standard bedrocks of monetary economics here. First, long-run neutrality: that, in the long run, monetary policy changes do not have a bearing on real quantities and relative prices (such as the level of economic activity or the real interest rate), but rather affect only nominal variables. Second, if a monetary regime is credible, those long-term nominal variables should be "anchored" around a level consistent with policy-makers' objectives. In a completely credible inflation targeting regime, there should not be a variation in long-term inflation expectations from the 2% CPI inflation target in the UK.

The second possible channel is that monetary policy decisions could affect term or inflation risk premia. A simple test of the effect of monetary policy on long-term interest rates is to compare changes in forward interest rates with changes in short-term interest rates on policy decision days. Following recent work by Hanson and Stein on US data, an unexpected innovation to short-term interest rates is identified by looking at the change in "shock" to 3-month, 3-month forward rates on MPC decision days, and examining the reaction of forward interest rates at various maturities. The sample is restricted to end on 31st May 2007 to avoid effects from the financial crisis and QE as a monetary policy instrument. The change in short-term interest rates is then correlated with changes in forward interest rates at different maturities across the yield curve.

There is a significant positive relationship between changes in short rates and distant forward rates. Further, the effect on forward rates is accounted for by changes in the *real* forward rate; there is no significant effect on forward inflation rates. At the ten-year point, the effect on the forward real rate is statistically significant with a 100bps increase in the short-rate increasing the 10-year forward rate by around 7 bps (**Chart 1**). To put that into context, Bank Rate has been cut by around 5pp since 2007. Taking these results at face value that kind of movement in short rates becomes enough to reduce 10-year forward rates by around 35bps.

Looking across the full forward curve, there is a positive effect on very distant forward rates, with that effect significant up to around a 10-year horizon (**Chart 2**).

Chart 1:
Changes in short rates and 10-year forward real rates on MPC decision days

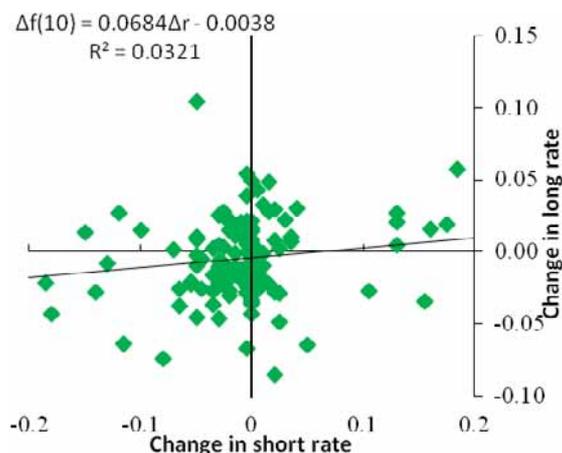
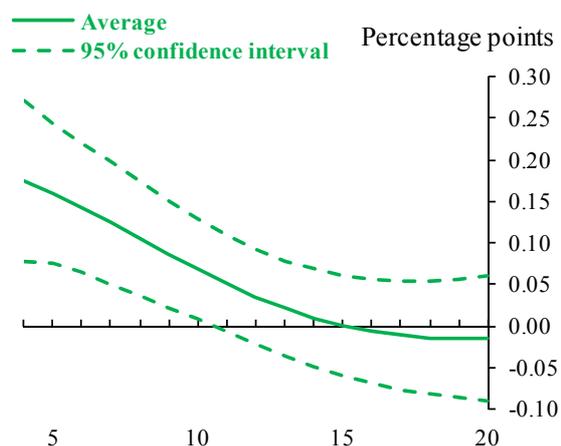


Chart 2:
Changes in real forward rates on MPC decision days following a 100bps surprise change in short rates



It is not possible to distinguish from these exercises alone whether the identified movements in long-term real forward rates are driven by changes in long-term expectations or changes in term premia. Previous empirical work examining the falls in US and UK long-term interest rates over the 2004–2006 period found falls in term premia to have played the dominant role.²⁷ Those studies put forward two possible explanations for their finding: lower perceptions of macroeconomic uncertainty or an effect from a “search for yield” in a low interest rate environment. The correlation found here between changes in short interest rate and distant real forward rates suggest that the possibility that monetary policy can affect risk premia should be taken seriously.

²⁷ See Joyce et al (2011), “Understanding the Real Rate Conundrum: An Application of No-Arbitrage Models to the UK Real Yield Curve” and Backus and Wright (2007), “Cracking the Conundrum”.