

Central Banking after the Great Recession

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Introduction

The UK's inflation targeting framework is now a full quarter of a century old, while the Bank of England's Monetary Policy Committee has just celebrated its twentieth birthday. For the first fifteen of those years, growth was steady and inflation close to target. Indeed, according to the available statistics, it was the most stable period since the dawn of the Industrial Revolution. No wonder, Mervyn King christened it the 'NICE decade' – Non-Inflationary Consistently Expansionary. And, of course, the UK was not alone: many other advanced economies were enjoying similarly benign macroeconomic conditions. Nudging policy rates up or down in the region of 4-6% served to keep our economies growing and inflation on track. We thought we had this central banking malarkey well and truly cracked.

After Hubris, of course, came Nemesis, in the shape of the 2007-8 North Atlantic Financial Crisis and its sibling the 2010-12 Euro-Area Debt Crisis. The task of maintaining macroeconomic stability turned out to be far harder than central bankers imagined, while the recovery after the twin crises has been agonisingly slow. Policy rates have been near their effective floor for almost a decade, while central bank balance sheets have ballooned as a result of large-scale asset purchases. A major tightening of the regulations governing banks and other financial institutions is underway. And we are all trying to work out how to design and implement macro-prudential policies effectively. Central banking has never looked more daunting.

In my remarks this evening, I want to reflect on some of the challenges facing today's central bankers. Are we just passing through a period of purgatory before normal service is resumed? Or are we confronted by a new world that demands more radical solutions?

Context: The Low Natural Real Interest Rate

Let me start with a few words about the underlying economic context, and especially the apparent decline in the underlying real rate of interest consistent with macroeconomic equilibrium – the Wicksellian natural real rate of interest. While central banks can, within reason, set any policy interest rate they like in the short

run, if they are going to achieve their inflation objective, the nominal policy rate will necessarily converge to the sum of the natural real rate of interest and the target inflation rate; if the policy rate is consistently held lower (higher), then there will be excess (insufficient) aggregate demand relative to the economy's capacity and, at least with a conventional Phillips Curve relationship, inflation will explode (implode). The natural real rate of interest is therefore of central importance as, for a given average inflation rate, it will determine the average level of nominal interest rates. It will also determine how much room for manoeuvre the central bank has before it runs up against the effective lower bound on policy rates that arises because banks always have the option of turning their reserve deposits into cash, while households and businesses always have the option of holding cash rather than bank deposits.

Now we cannot observe the natural safe real rate of interest directly. But if market participants expect output in the future to be roughly in line with potential – as would be necessary if the inflation objective is to be met – then the long-term real interest rate on relatively safe bonds ought to provide a rough guide to it. Figure 1 therefore shows a measure of the 'world' 10-year risk-free real interest rate, derived from the inflation-indexed sovereign bonds of the G7 countries (excluding Italy) by King and Low (2014). Notably, this has fallen steadily from around 4% in the mid-1990s to around zero today and is clearly not just a reflection of the extraordinary monetary policies adopted after the financial crisis.

It is also worth noting that this appears to be a relatively unusual period, historically speaking. The only analogous period in the past couple of hundred years when the underlying real rate of interest appears to have been so low for so long is the decade or so after World War II (see, for instance, Reinhart and Sbrancia, 2015; and Hamilton, Harris, Hatzius and West, 2015). But this was a time when market interest rates were subject to caps and segmented capital markets ensured a captive domestic audience for government debt – so-called 'financial repression' – and not at all like the contemporary world of liberalised financial markets.

An important corollary of this substantial fall in the natural real rate is that central banks have ultimately had little choice but to accept that their policy rates need to be

at least four percentage points lower today than twenty years ago. Criticisms from politicians and commentators that such policies are penalising savers, driving up asset prices, etc., rather miss the point that the decline in real and nominal rates over the past twenty years ultimately reflect underlying real forces in the world economy that central bankers are powerless to change. Nevertheless, the fact that technocratic central bankers make the proximate decision as to the level of interest rates, plays into some of the political economy considerations that I will come to later.

The conventional framework for thinking about the factors driving the downward trend in the natural real interest rate is portrayed in Figure 2, which shows the international market for loanable funds, together with the corresponding natural real rate of interest. The figure is drawn making the conventional assumption that substitution effects dominate income effects, so that saving (SS) is increasing in 'the' real interest rate, while investment (II) is decreasing. Clearly the observed fall in real interest rates is potentially attributable either to an exogenous fall in the propensity to invest (i.e. a leftward shift in the II schedule) or an exogenous increase in the propensity to save (i.e. a rightward shift in the SS schedule) or to some combination of the two. Identifying which, together with the underlying causes, is clearly important for evaluating the likely future path of the natural rate.

What does the evidence suggest about the relative importance of shifts in savings and investment propensities in the past? Figure 2 suggests that the behaviour of the global savings/investment ratio should help identify which is to blame. Figure 3 shows the savings/investment share for the world. The savings and investment shares for the advanced economies (AE) and the emerging and developing economies (EME) are also shown separately, with the corresponding gap between savings and investment reflecting the region's external surplus or deficit.

In fact, the global savings/investment share has been surprisingly stable, with just a very modest upward trend in the years leading up to the financial crisis, a sharp decline during the Great Recession, followed by a resumption of the gentle upward trend. That suggests that both sorts of factors have indeed been at work, with savings factors slightly dominating for much of the period, coupled with a sharp and persistent fall in the propensity to invest following the financial crisis.

There is now quite an extensive literature on the possible sources of the shifts in savings and investment propensities. When the downward trend in underlying real interest rates was first spotted, Bernanke (2005) famously laid the blame on a ‘savings glut’ in China, reflecting low fertility rates, an inadequate household safety net, and underdeveloped domestic financial markets.

Demography is, however, likely to have had a more widespread impact on saving behaviour. To begin with, longevity has been increasing, unmatched by an equi-proportionate rise in retirement ages. That should tend to raise the savings rates of those in work. But the composition by age is also important. Broadly speaking, the young consume what they get, the middle-aged save during their peak earning years, and the old dissave. Consequently, the difference in the population shares of the middle- and old-aged cohorts is important in determining aggregate savings propensities. Figure 4 shows the past and prospective evolution of the population shares of the middle-aged (40-64 years of age) and old (65 years and older) for the world excluding China, and for China, where the demographic structure has been changing especially rapidly. The figure also shows the difference between the two cohort shares as, together with their respective income profiles, this is what really matters for aggregate savings. This difference has been rising steadily for the past couple of decades, has just peaked and is projected to fall quite sharply over the next three decades. The coincidence of the timing of the upward leg of the difference in population shares with the trend downwards in real interest rates is highly suggestive.

Finally, the financial crisis and the regulatory response has led banks to shrink their balance sheets, which in turn has been associated with a tightening in the supply of credit. Moreover, highly-indebted households and businesses have also cut back spending in order to reduce their vulnerability to future adverse shocks. This must have been an important factor in the past few years.

As far as shifts in the propensity to invest are concerned, weak aggregate demand and heightened uncertainty since the financial crisis has surely played a role. In Summers’ (2013, 2014) ‘secular stagnation’ thesis this is exacerbated by the

constraints on monetary policy imposed by the interest rate lower bound and the unwillingness of governments to use fiscal policy more aggressively, leading to a malign feedback loop.

Authors such as Gordon (2016) have gone further, arguing that the weakness in investment is more deep seated and driven by dwindling opportunities for innovation, together with slowing growth in the working population. Gordon, for instance, argues that the rapid growth of the past 250 years was on the back of three great 'general-purpose' innovations – the steam engine and the railroads; electricity and the internal combustion engine; and the digital revolution – and that the main gains from these have now been realised so that the rate of total factor productivity growth is returning to the slower rates experienced before the Industrial Revolution. Were this to be the case, the future would indeed be bleak. But personally I do not find this argument that persuasive, which seems to speak more to our limited abilities to see what possibilities the future may hold. While productivity growth has certainly been weak over the past few years – on both sides of the Atlantic – much of that may just be a legacy of the financial crisis and will fade in due course.

Moreover, past experience suggests that it can take a long time for the effects of new technologies to be fully felt. For instance, the 70s and 80s saw a similar productivity slowdown, leading Robert Solow famously to remark in 1987 that "You can see the computer age everywhere but in the productivity statistics", just before it finally *did* show up in the data! With us only just beginning to explore the possibilities of artificial intelligence (AI), it seems rather premature to conclude that the digital revolution has run its course (for more in this vein, see Brynjolfsson and McAfee, 2011). Moreover other recent scientific advances, such as nano-technology and genetic engineering, also offer extraordinary future possibilities (Moykr, 2013).

The foregoing discussion treats the factors driving savings and investment as exogenous to monetary policy decisions. Economists at the BIS, most notably Claudio Borio, take a somewhat different view. In particular, he has argued that while setting the policy rate in line with the Wicksellian natural real interest rate may be consistent with achieving macroeconomic equilibrium today, it may nevertheless be associated with growing financial imbalances that are prone to result in a future

financial crisis, requiring an even lower natural rate subsequently in order to maintain short-run macroeconomic equilibrium (e.g. Juselius, Borio, Disyatat and Drehmann, 2016). Hence, the economy moves through a sequence of ever larger boom-busts in financial markets, even though inflation outturns point to the achievement of macroeconomic equilibrium.

This is an important qualification. Indeed, one does not need to assume periodic financial crises to make the argument fly. Monetary policy operates through a variety of channels, the primary consequence of which is to encourage private agents to bring forward spending from the future to the present. It is thus well suited to filling in temporary shortfalls of demand relative to supply. It is less well suited to making good long-lived shortfalls in demand. Stimulatory monetary policy should be a bridge, rather than an ever-extending pier. A better response to a problem of weak demand when the natural real interest rate is low is to look to fiscal and structural policies that encourage investment and discourage saving.

A key issue is whether or not the current state of affairs is the new normal. The prospective rise in the population share of the retired relative to that of the middle aged provides one reason for expecting some upward pressure on the future natural real interest rate. And though the AI revolution may well pose difficult social challenges, it should at least lead to an increase in the demand for funds to invest in robots and the like. So there are, I think, some reasons to expect the natural interest rate to recover. And were that to happen rapidly, it could be associated with sharp falls in asset prices. But just as the original decline took a couple of decades, so it seems likely that the reversal will itself be gradual. Central banks will therefore need to operate against the background of a low natural real interest rate for some while yet.

The Implications for Monetary Policy

As noted above, the most obvious consequence for central bankers of a low natural real interest rate is that, for a given average inflation rate, the effective lower bound on policy rates (ELB) is more likely to bite. Ahead of the crisis, this was thought to be only a minor issue in the prevailing benign macroeconomic climate, such episodes

would be infrequent and short-lived (e.g. Reifschneider and Williams, 2000). Recent experience clearly suggests such optimism was unwarranted: a lower natural rate coupled with larger and more persistent adverse demand shocks means that such episodes are likely to be both frequent and persistent.

In such circumstances, there are broadly two approaches when the ELB bites. The first is to directly relax the ELB constraint in some way. The second is to raise demand today by lowering future interest rates instead.

Relaxing the ELB Constraint

The most obvious way to relax the ELB constraint would be to raise central bank inflation targets from 2% to, say, 4%, thus providing an extra two percentage points room for manoeuvre (e.g. Blanchard, Dell’Ariccia and Mauro, 2010). This seems like a no-brainer, but there are at least three counter-arguments. First, 2% inflation is probably near enough to price stability for households and businesses largely to ignore it but that ceases to be the case when inflation is running at 4%; being able to forget about inflation probably has considerable social value even if it does not figure in economists’ models. Second, even though it might have been helpful if inflation targets had been higher at the outset of the crisis, raising them when many central banks have been struggling even to meet their current targets is hardly conducive to maintaining credibility. Finally, an increase in the inflation target could also engender expectations that fiscally-challenged governments might be tempted to press for even higher inflation in order to inflate away the real value of nominally-denominated debt, generating a rise in the inflation risk premium.

Instead, central banks could seek to relax the nominal lower bound constraint itself. Here several more exotic options have been suggested: removing scope for avoiding negative interest rates by getting rid of cash altogether (Rogoff, 2016); raising the opportunity cost of holding cash by taxing it (Gesell, 1916); and letting the price of cash relative to reserves fall over time (Buiter, 2009, after Eisler, 1932). The first two are likely to be politically unpopular, especially as their overt purpose is to make it more costly for people to transfer purchasing power over time, while the last has the same effect indirectly.

Manipulating the Yield Curve: Forward Guidance

In practice, central banks near the ELB have relied on boosting aggregate demand by pushing longer-term real interest rates down instead, either through steering market expectations of future policy rates downwards ('forward guidance') or through large-scale asset purchases ('quantitative easing' or QE, for short).

In the academic variant of forward guidance, committing to keep policy rates 'low for long' lowers the future real interest rate not only by lowering the future nominal interest rate but also by generating excess future inflation (e.g. Woodford, 2012). Such a policy is, however, time-inconsistent as once the emergency is over, the central bank has no incentive to validate its past promise to generate an inflationary boom while policy makers cannot tie the hands of their successors. Consequently promises that rates will stay 'low for long' are only likely to be credible for a rather short period ahead¹.

In practice, such guidance has been more directed to better communication of central banks' reaction functions – what is sometimes referred to as 'Delphic' guidance – rather than an 'Odyssean' attempt to implement a time-inconsistent policy path (Moessner, Janssen and de Haan, 2015). Certainly that was the intention of the guidance introduced by the MPC in August 2013, which linked even the mere contemplation of a policy rate increase to unemployment falling to at least 7% so as to pre-empt a premature rise in market interest rates. Commentators and market participants, however, focussed on the central projection for when that condition would be met, essentially turning a statement about a reaction function into an unconditional expectation about when rates would rise. But, of course, the failure of productivity growth to recover as expected meant unemployment reached the critical point of 7% much earlier than we anticipated, leading to scorn about the value of

¹ Woodford has suggested that the path under commitment could be approximated by instructing the central bank to pursue a target for the level of prices or nominal income rather than inflation, so that any shortfall during the emergency period has to be subsequently made up. But all this does is to re-locate the time-inconsistency problem to the setting of the target, which can always be changed ex post. It therefore fails to provide a convincing solution.

MPC's forward guidance. In my view, this episode provides a good illustration of the potential pitfalls in trying to communicate even reasonably simple state-contingent policy guidance.

Manipulating the Yield Curve: Asset Purchases

In any case, the more important weapon in dealing with the current ELB episode has been purchases of assets – typically, though not exclusively, longer-term government bonds – by the central bank and paid for by the creation of more bank reserves ('quantitative easing' or QE for short). In the US, euro area and UK, central bank balance sheets have swelled to around a quarter of annual GDP, while in Japan and Switzerland it is nearer 100% (Figure 5).

The transmission mechanism of QE potentially operates through three channels: a portfolio-rebalancing channel, whereby the re-investment of the proceeds from the asset sales into substitute assets results in a generalised rise in asset prices, so lowering the cost of capital and raising spending through wealth effects; a bank-liquidity channel, whereby the increase in bank reserves prompts an expansion in credit supply; and a signalling channel, whereby asset purchases reinforce expectations that policy will remain accommodative. On the MPC, we placed most weight on the first of these and event studies, of which there are now quite a few for several jurisdictions suggest that asset purchases equivalent to 10% of GDP can be expected to lower ten-year bond yields by 50-100 basis points (see Table 1, taken from Gagnon, 2016), though there are reasons to expect the effects to be more pronounced when markets are dysfunctional.

Could the central bank ever run out of assets to buy? This seems difficult to imagine as purchases need not be confined to government bonds but could include private credit instruments, equities, housing, even fine art! And those assets could be foreign, as well as domestic in nature. So the logical limit to central bank asset purchases is an awful long off. But buying a broad range of private assets does take the central bank into territory that is more naturally the domain of the fiscal authorities and carries implications for the institutional set-up governing monetary policy. I shall say more on this later.

QE has, it is fair to say, been somewhat controversial, and has become more so over time. Some of this criticism is misplaced but some has more substance. The misplaced criticism is that QE ‘distorts’ market prices. It is certainly true that QE affects market prices – that is its aim. But in what sense is it a *distortion*? Bank reserves paying the policy rate are very similar to short-term Treasury Bills, the main difference being that only commercial banks can hold reserves. So conventional QE is akin to a debt management operation that shortens the duration of the consolidated public sector’s (i.e. amalgamating the central bank into the public sector) liabilities. We do not get exercised about the Debt Management Office’s issuance decisions, so why should we be so concerned about the Bank of England altering the structure of public debt for macroeconomic reasons?

A more salient criticism is that by raising asset prices, QE has a distributional impact, benefitting the asset-rich and penalising those planning to accumulate assets. It therefore benefits not only the wealthy but also older people, while the young lose out². Of course, conventional interest rate policy in normal times has distributional effects: raising rates benefits savers and harms debtors, as well as destroying jobs (and *vice versa*). But, by and large, the movements are seen as temporary and are accepted as a necessary by-product of the central bank pursuing its mandate to stabilise inflation. In principle, QE should be viewed in the same light, but in practice to the uninformed (or cynical) observer, it looks like a policy to help the rich. Whether the monetary policy remit needs to be modified to take account of such distributional concerns is something I also return to below.

Helicopter Money

Before turning to the governance of monetary policy, however, I want to take a little detour on the subject of ‘helicopter money’, which some have advocated as an antidote to a lack of aggregate demand at the ELB, especially when fiscal space is limited (e.g. Bernanke, 2002; Buitier, 2014; Turner, 2015). In his classic paper on the optimum quantity of money (Friedman, 1969), Friedman imagined a permanent monetary injection accomplished by showering the economy with dollar bills from a

² Note that this is at variance to the popular perception that QE has penalised pensioners by lowering annuity rates. Extant pensioners are, of course, unaffected, while those about to retire are subject to an offsetting revaluation in the value of their assets.

helicopter. Because this extra cash is costless to produce but valued by households, it raises wealth and aggregate demand. Analytically, it is equivalent to a bond-financed temporary income tax cut combined with conventional, though permanent, quantitative easing in which the central bank buys the newly issued bonds and then keeps them on its balance sheet indefinitely. The monetary leg of this means there is no problem of Ricardian equivalence that might arise if only the first leg were carried out.

Now unlike some central bankers, I do not object to such a policy on principle, provided that it is undertaken in pursuit of the central bank's monetary policy objectives rather than to bail the government out of a fiscal hole. But there are two substantive practical issues.

First, while the injected cash pays no interest, once that cash is deposited in banks it will be converted into bank reserves that do bear interest (remember that reserves are very similar to Treasury Bills). Consequently the policy in practice creates an additional liability of the consolidated public sector (government plus central bank), so potentially re-introducing a problem of Ricardian equivalence. This could only be avoided if banks' reserve holdings are somehow compensated at a lower rate.

Second, the monetary injection is supposed to be permanent. But central banks can always withdraw the extra high-powered money by selling assets if it is necessary to meet their monetary policy objectives: in effect, the Friedmanite helicopter also has a big vacuum cleaner attached! As today's government and central bankers cannot constrain their successors, how then is the original injection to be made credibly permanent, especially as it constitutes just a part of the stock of high-powered money?

Indeed, one can go further. The monetary injection will turn out to be permanent if, but only if, it is consistent with meeting the inflation objective in the future. And, of course, that is equally true of the quantitative easing already undertaken; it will be unwound if, and only if, it is consistent with meeting the inflation target in the future. So I cannot see that there is some distinctly new and untried policy here that

is yet to be enacted by governments and central banks. Rather, like Moliere's Monsieur Jourdain, they have been doing it already.

The Governance of Monetary Policy

Let me now turn to the governance arrangements for monetary policy. Academics are sometimes wont to talk about 'central bank independence' as though the central bank is a distinct and separate institution from government. The reality could not be more different. All central banks are ultimately creatures of the state, either in actuality or potentially. They derive their tasks from the state and the state can take those powers away should it wish. The one possible exception is the European Central Bank, which derives its powers by virtue of an international treaty, with a new treaty being necessary to rescind or expand those powers.

Consequently, rather than talk about central bank independence, it is more helpful to think in terms of the tasks that are delegated to it by government and where the precise arrangements governing the principal-agent relationship may vary according to the nature of the task in question. A central bank may be delegated a high degree of independence for some of its functions, but have very little in others.

When does it make sense to delegate a function? There are several relevant criteria.

First, there has to be a good reason for delegation rather than the principal (government) carrying out the task. That could be because of the technical complexity of the task – that applies for bank supervision, for instance. Or the principal may place too much weight on short-term objectives relative to the long term. That is relevant for monetary policy, where there may be a temptation to exploit the short-run Phillips Curve in order to generate higher activity, even though in the long run it just leads to higher inflation.

Second, if the task is delegated, it needs to be properly delegated and not subject to discreet influence from the principal. But, as a *quid pro quo*, the agent also needs to be accountable for delivery of its mandate. That seems to be a minimum requirement in a democratic society. It thus requires both a well-defined goal against which

performance can be assessed and appropriate mechanisms for public accountability, such as appearances before the representatives of parliament.

Third, the execution of the agent's task ideally needs to have only limited impact on other objectives that are not within its remit and that are the responsibility of the principal, or else be open to mitigating action by the principal. Obvious examples here are fiscal and distributional consequences.

Broadly speaking, I think the monetary arrangements introduced by the new Labour government in 1997 have proved to be pretty well designed. At least during my time on the Committee, the government never once attempted to influence our decisions. Inflation has on average been close to target and the volatility of inflation has been quite low. And the specification of the remit, which allows the MPC to accept temporary deviations of inflation from target in order to limit the volatility of output and employment, has allowed it to respond sensibly to supply shocks – it has not behaved as an 'inflation nutter'.

Some critics claim that the regime failed because it resulted in an excessive focus on stabilizing inflation and ignored the consequences for financial stability and thus contributed to the financial crisis and subsequent Great Recession. To me, though, the true failure lay not in the monetary policy regime but rather in the prevailing pre-crisis wisdom that financial institutions could be trusted to handle the risks on their balance sheets appropriately, and in policymakers' lack of appreciation of the consequences of a plethora of distorted incentives. Even if the Chancellor's remit to the MPC (and the statutory objectives of the US Federal Reserve and the European Central Bank) had included an explicit mention of financial stability, I doubt that it would have resulted in much difference in monetary policies. That said, I think the addition in 2013 of financial stability risks as a reason for MPC to choose to undershoot the inflation target, when they cannot be dealt with through macroprudential policies³, is an eminently sensible addition that allows explicitly for the

³ "Circumstances may also arise in which attempts to keep inflation at the inflation target could exacerbate the development of imbalances that the FPC may judge to represent a potential risk to financial stability. The FPC's macroprudential tools are the first line of defence against such risks, but in these circumstances the MPC may

sort of 'leaning against the wind' policy advocated by the BIS (see e.g. Borio and White, 2003; White, 2006, 2009).

The salient question, however, is whether the regime remains fit for purpose in a world of persistently low natural real interest rates and periodic large-scale asset purchases. In such a world, the distinction between monetary and fiscal policy becomes increasingly blurred, while distributional consequences also become more prominent.

Let me start with the fiscal aspects. On the presumption that the central bank's profits ultimately belong to the exchequer, monetary policy will have fiscal consequences even in normal times as it affects the intertemporal consolidated government budget constraint through its impact on seigniorage (it also has indirect effects via tax revenues and unemployment benefits, of course). But because the monetary base in advanced economies is typically quite small relative to GDP in normal times, the flow of seigniorage is typically also pretty small.

The management of the central bank's balance sheet becomes a more significant fiscal issue when there are large quantities of government bonds or private sector assets on one side, matched by a corresponding issuance of reserves on the other. Asset purchases will typically take place when the policy rate is at or near its ELB and the yield curve is upward sloping. They will therefore tend to benefit the exchequer. As an illustration, the Bank's Asset Purchase Facility (APF) presently passes over more than £10 billion a year to HM Treasury. By contrast, periods of monetary policy tightening will reduce the fiscal contribution of the central bank, potentially increasing tensions with the Treasury. As that effect is larger, the bigger is the central bank's balance sheet, it makes sense to start the process of shrinking the balance sheet early during the exit from an ELB episode.

Fiscal considerations are even more prominent if the central bank buys private credits. If the central bank buys assets without government consent which

wish to allow inflation to deviate from the target temporarily, consistent with its need to have regard to the policy actions of the FPC."

subsequently default, then it is likely to find itself under attack for squandering public money. Moreover, choosing what to buy represents an intervention in the allocation of credit, and invites political pressure to intervene to support certain businesses, industries or regions or censure for supporting businesses that are behaving badly⁴. And purchasing equities in any scale is even more contentious as it involves the acquisition of control rights, i.e. it is equivalent to part-nationalisation, something that is deeply political. The central bank can seek to avoid this by committing not to exercise those rights, but the pressure to intervene may become intense if the company in question is taking politically sensitive decisions (e.g. paying excessive bonuses, relocating production abroad, etc.).

For all these reasons, the fiscal authorities need to be represented and to “own” the fiscal consequences of the central bank’s asset purchase decisions. Here, I think, the APF is well designed being an off-balance sheet vehicle in which the Treasury fully owns the economic interest, even though the MPC decides the quantum of assets to purchase. Moreover, whenever the MPC wants to increase the stock of assets held there is first an exchange of letters with the Chancellor of the Exchequer to solicit his or her consent.

The contrast with the US experience is instructive. There, the Treasury’s response to the crisis was somewhat hamstrung by its relationship to Congress. Instead, the Federal Reserve took a range of actions that strayed into fiscal and political territory, relying on the powers granted to it under Section 13(3) of the Federal Reserve Act, which allow it to use its instruments as it sees fit in “unusual and exigent circumstances”. However, there is a significant body of opinion on Capitol Hill, especially within the Republican Party, who think the Fed went too far in its actions, resulting in subsequent moves to limit the Fed’s powers and to increase its accountability.

What about distributional concerns? While the distributional consequences of asset purchases are, to a large extent, just a reflection of the underlying real equilibrium,

⁴ A mild example of this arose in 2016 after the Bank of England announced that the expansion of the APF to include purchases of certain high-quality corporate debt as well as gilts. As it happened, the list of eligible companies included Apple, who had just been the subject of a damning tax judgement by the European Commission, exposing the Bank to criticism for supporting a company indulging in excessive tax avoidance.

that will not insulate the central bank from political and popular pressure to pursue alternative policies, exemplified by Theresa May's remarks in her first party conference speech as Prime Minister⁵. That invites the question of whether the mandate for the MPC should be modified to include distributional considerations explicitly as a legitimate reason for missing the inflation target, alongside the accommodation of cost shocks and financial stability concerns.

I confess such an extension would worry me greatly. It is one thing for the MPC to use its 'constrained discretion' to limit the volatility in employment in the face of supply or cost shocks. It is quite another for the MPC to choose to refrain from cutting interest rates or undertaking asset purchases in order to protect one segment of society at the expense of another. That goes to the heart of what politics is about and such decisions should not be left to technocrats. If the government of the day is unhappy about the 'bad side effects' of the monetary policies necessary to maintain macroeconomic stability, then it seems more appropriate for them to take appropriate mitigating fiscal action instead. And, *in extremis*, if a government was set upon the need for a different monetary policy, it would be better to do it openly by invoking the override clause in the MPC arrangements, thus making explicit that it is the decision of elected politicians, not technocratic central bankers.

Financial Stability

I cannot finish without also saying a few words on the maintenance of financial stability. Central banks, with their ability to supply unlimited amounts of the ultimate settlement asset, have long held a key role in responding to financial panics. The financial crisis saw substantial innovation in lending facilities of the major central banks, providing emergency funds for longer, against broader collateral and to a wider range of counterparties. As far as the Bank of England is concerned, the ability of banks to pre-post collateral, including raw loans, means that they have more certainty about the credit that will be available to them in the event of an

⁵ "While monetary policy – with super-low interest rates and quantitative easing – provided the necessary emergency medicine after the financial crash, we have to acknowledge there have been some bad side effects. People with assets have got richer. People without them have suffered. People with mortgages have found their debts cheaper. People with savings have found themselves poorer. A change has got to come."

emergency and at what price. That seems to me a great improvement on the pre-crisis arrangements with their ‘constructive ambiguity’.

Central bank lending is invariably made against collateral and usually applies significant haircuts. Consequently, the associated risk to the exchequer is low. At times, however, the implied risk to the public finances will be non-negligible, so it is appropriate that the fiscal authorities are not only alerted but in the lead if significant sums of public money are put at risk. So the protocol that requires the Governor to alert the Chancellor (as well as the Chair of the Treasury Committee) at the earliest possible opportunity seem to me entirely right and proper.

The more novel development since the financial crisis, however, is the increased reliance on macro-prudential policies that seek to head off financial stability risks pre-emptively. And a continuation of the unusually low natural safe rate of interest is likely to be conducive to further episodes of financial instability, as savers and investors are encouraged into riskier assets in order to generate higher returns. Moreover, such a ‘search for yield’ becomes particularly dangerous when combined with leverage. Property – both commercial and residential – represents a particularly vulnerable asset class, as we know that leveraged real-estate booms have often been the precursor of financial crises (see e.g. Jordà, Schularick and Taylor, 2016).

I do not want to say very much today about the kit in the macro-prudential tool box, other than to caution that we should be careful not to expect too much. We have relatively little experience in deploying such policies and they may turn out to have only limited traction, especially in periods of ‘irrational exuberance’ when financial institutions are likely to be strongly motivated to seek ways to circumvent them. For that reason, we should see macro-prudential policies as a complement to, rather than a substitute for, the post-crisis regulatory actions seeking to increase the robustness of the financial system.

A few words on the institutional framework for macro-prudential policy are, though, appropriate, as the case for delegation is weaker – or at least more complex – than for monetary policy. Returning to the three criteria I discussed earlier, there is certainly a good reason for delegating macro-prudential policy to an independent

agent. There are high technical demands placed on decision makers. And during the boom phase of a financial cycle, risks tend to appear low and financial institutions and investors are prone to claiming that ‘this time is different’; it takes a very determined government to take the punch bowl away just as the party is getting lively, especially if an election is in the offing. That much is similar to monetary policy.

The other criteria for effective and legitimate delegation are, though, more debatable. The objective of macro-prudential policy is to limit the build-up of systemic financial risks but – at present, at least – there is no accepted and continuously observed indicator of systemic risks analogous to the monetary policy objective of inflation. While the FPC, for instance, employs a dashboard of indicators to explain their decisions, there is often likely to be room for disagreement on whether action is necessary or not. This disagreement is likely to become more pronounced during the upswing of a financial cycle. Effective monitoring and accountability are more elusive. Finally, some macro-prudential actions – such as limiting the availability of high loan-to-income or loan-to-value mortgages – impinge on clearly identifiable sections of the electorate. Consequently they are likely to prove contentious unless there is clear public support for the delegation of such powers.

Balls, Howat and Stansbury (2016) suggest that a solution to this lies in introducing an additional layer of political oversight in order to bolster political legitimacy, while retaining operational independence. The open question is whether at the same time that creates a back door through which the time-consistency problem that delegation is meant to solve can re-enter. In any case, I expect debate to continue not only on the technical aspects of macro-prudential policies but also on the most appropriate governance arrangements.

Concluding Remarks

Central banks, including the Bank of England, have come a long way in the past quarter of a century. During the NICE decade, it looked like we might have finally hit upon a successful and durable monetary framework. But the economic environment has looked considerably more challenging since the financial crisis and the ensuing Great Recession, necessitating innovative responses in both the monetary and

financial policy spheres. Looking ahead, there are reasons to expect the natural rate of interest to recover somewhat, as the present bulge of middle-aged around the world pass through into retirement, and new technologies stimulate a renewed demand for funds to invest. But so long as the persistently low natural real rate of interest lasts, policy rates are likely to continue to be constrained from time to time. And that means unusual central bank policies, such as large-scale asset purchases, need to remain an option on the table.

Those unusual policies have also led central banks into territory that falls more naturally into the political domain. The line between monetary and fiscal policies has become more blurred. And persistently low interest rates and the asset-price effects of QE have focussed attention on the distributional consequences of monetary policy. Handling the resulting tensions so as to retain the benefits of delegation, while maintaining democratic legitimacy represents a challenge. My guess is that the present monetary policy framework remains broadly fit for purpose and will prove up to that challenge. But the framework for macroprudential policy is yet to be tested in anger.

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Table 1: Estimated effects on 10-year bond yields of quantitative easing worth 10% of GDP

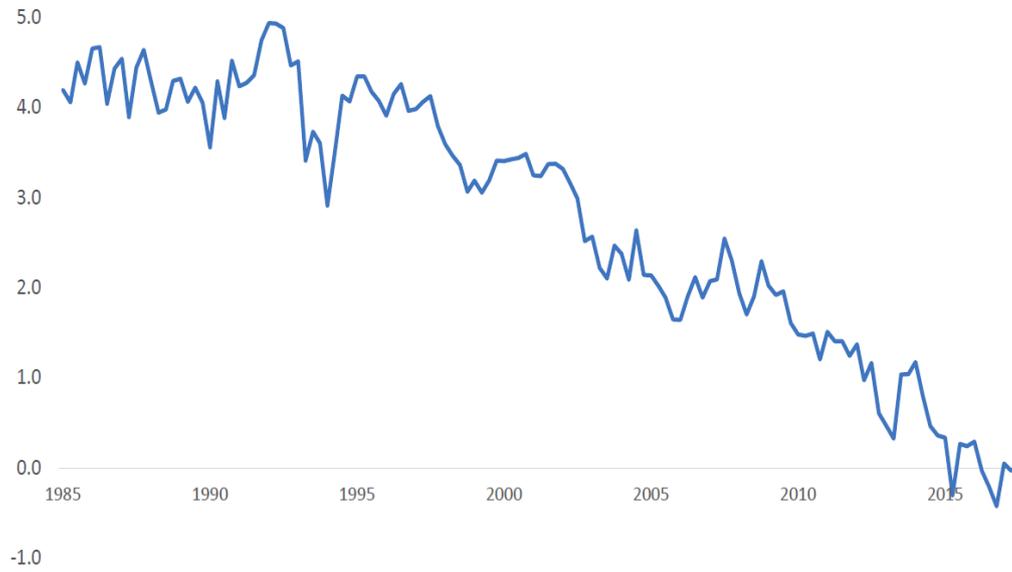
| Study | Sample | Method | Yield reduction (basis points) |
|--|-----------|---------------------|--------------------------------|
| United States | | | |
| Greenwood and Vayanos (2008) ^a | 1952-2005 | Time series | 82 |
| Gagnon, Raskin, Remache & Sack (2011) | 2008-09 | Event study | 78 |
| | 1985-2007 | Time series TP only | 44 |
| Krishnamurthy & Vissing-Jorgensen (2011) | 2008-09 | Event study | 91 |
| | 2010-11 | Event study | 47 |
| Hamilton & Wu (2012) | 1990-2007 | Affine model | 47 |
| Swanson (2011) | 1961 | Event study | 88 |
| D'Amico & King (2013) | 2009-10 | Micro event study | 240 |
| D'Amico, English, Lopez-Salido & Nelson (2012) | 2002-08 | Weekly time series | 165 |
| Li & Wei (2012) | 1994-2007 | Affine model of TP | 57 |
| Rosa (2012) | 2008-10 | Event study | 42 |
| Neely (2012) | 2008-09 | Event study | 84 |
| Bauer & Neely (2012) | 2008-09 | Event study | 80 |
| Bauer & Rudebusch (2011) ^b | 2008-09 | Event study TP only | 44 |
| Christensen & Rudebusch (2012) ^b | 2008-09 | Event study TP only | 26 |
| Chadha, Turner & Zampolli (2013) | 1990-2008 | Time series TP only | 56 |
| Swanson (2015) ^b | 2009-15 | Yield curve TP only | 40 |
| Christensen & Rudebusch (201d) ^b | 2008-09 | Event study TP only | 15 |
| United Kingdom | | | |
| Joyce, Lasasosa, Stevens & Tong (2011) | 2009 | Event study | 78 |
| | 1991-2007 | Time series | 51 |
| Christensen & Rudebusch (2012) ^b | 2009-11 | Event study TP only | 34 |
| Churm, Joyce, Kapetanios & Theodoris (2015) | 2011-12 | Intl. comparison | 42 |
| Japan | | | |
| Fukunaga, Kato & Koeda (2015) | 1992-2014 | Time series TP only | 24 |
| | 2013-14 | Event study | 17 |
| Eurozone | | | |
| Middeldorp (2015) ^c | 2013-15 | Event study | 45-132 |
| Altavilla, Carboni & Motto (2015) ^d | 2014-15 | Event study | 44 |
| Middeldorp & Wood (2016) ^c | 2015 | Event study | 41-104 |
| Sweden | | | |
| De Rezende, Kjellberg & tysklind (2015) | 2015 | Event study | 68 |

Note: a. Greenwood & Vayanos scaled the effect relative to the size of the Treasury market. The estimate here is based on the ratio of Treasury debt to GDP in 2015. b These studies further differentiate between signaling effects and portfolio effects. The reported estimate is for the portfolio effect only. c. The smaller estimate is for German bonds and the larger one is for Italian bonds. d. The estimate is for an average of Eurozone bonds.

Purchases normalised to 10% of GDP. There are 100 basis points in 1 percentage point. Most studies present a range of estimates. This table displays the study's preferred estimate if one exists; if not, it presents the midpoint of the range. For event studies, we normalise by purchases of all long-term bonds, not only government bonds. Some of the non-event studies include non-government bond purchases and others do not. "TP only" denotes studies that attempt to estimate the term premium component of movements in bond yields. For event studies, the normalisation is based on GDP in the final year of the event.

Source: Gagnon (2016)

Figure 1: “World” 10-year risk-free real interest rate



Source: King and Low (2014) updated.

Figure 2: Global capital market

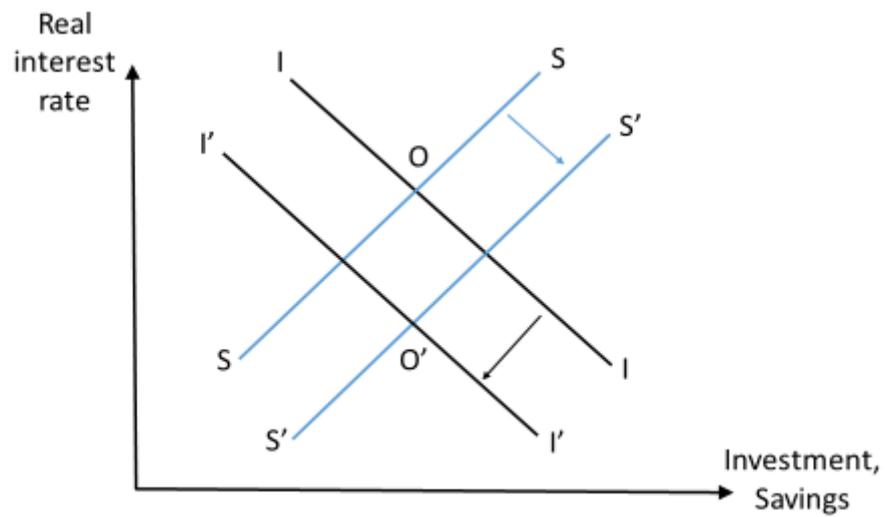
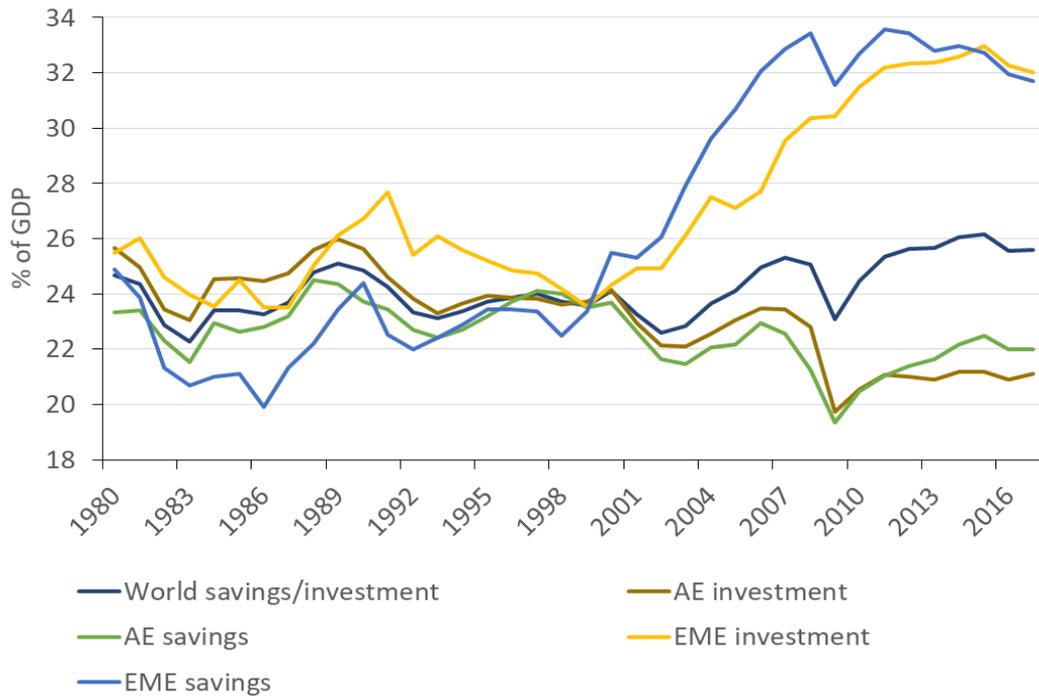
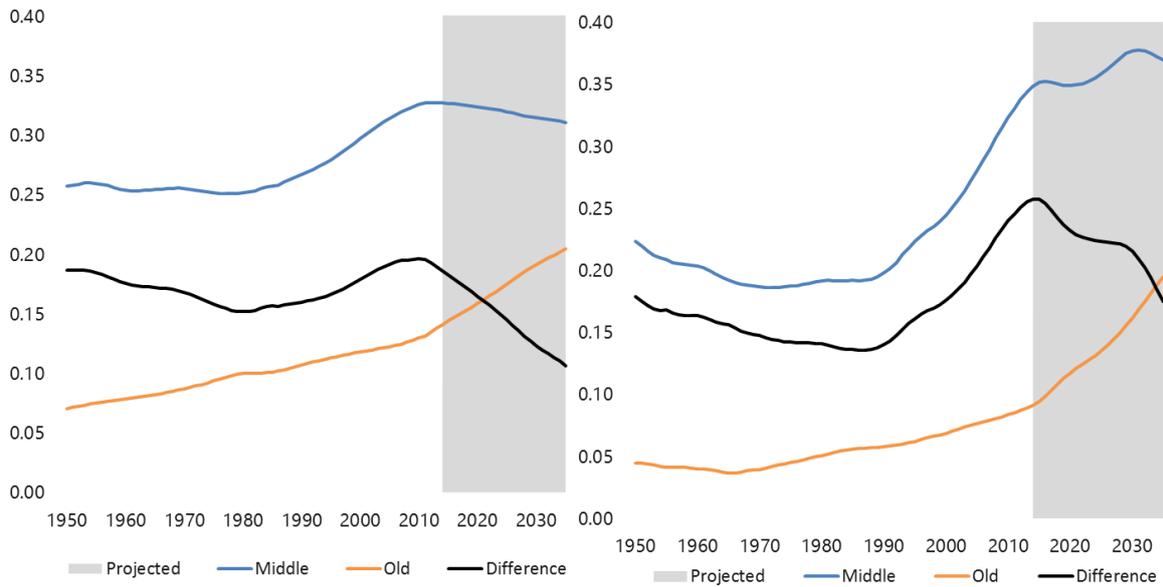


Figure 3: Savings and investment shares (% of GDP)



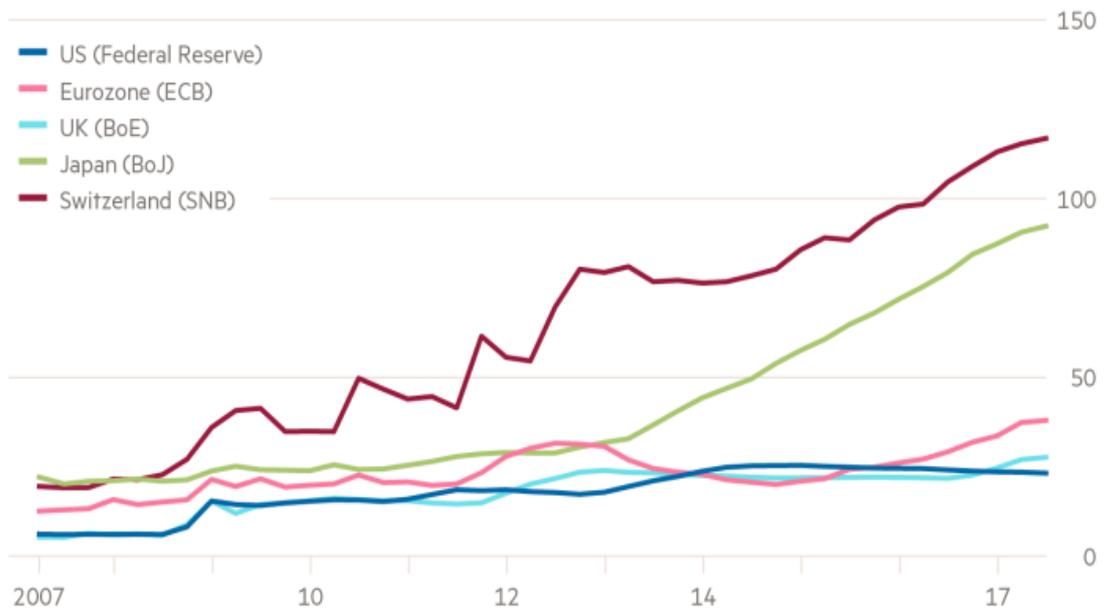
Source: IMF WEO database

Figure 4: Past and projected population shares



Source: United Nations

Figure 5: Central bank balance sheets (% of GDP)



Source: Martin Wolf, *Finan*

Rt Hon Ed Balls

[This response draws extensively on the M-RCG Working Paper I have written with Anna Stansbury and James Howat ‘Central Bank Independence Revisited: After the financial crisis, what should a model central bank look like?’. Grateful thanks to Anna and Eleanor Hallam for helpful comments on an earlier draft of this response and to Sir Richard Lambert for inviting me to participate.]

Thank you.

It’s a great honour to respond to Sir Charles Bean’s distinguished Wincott lecture tonight.

Like many of you here tonight, I have a history with the Wincott Foundation – it is a full 25 years ago that I was awarded the Wincott prize for the Young Financial Journalist of the Year.

At the time, I was an economics leader writer at the Financial Times, working closely with the FT’s then Chief Leader Writer, Martin Wolf, and I had just written a Fabian pamphlet advocating – highly controversially – that rather than repeat the ERM debacle by joining the Euro, the next Labour government should instead make the Bank of England independent.

Martin told me that it was a good essay, that he agreed with it, but that it would undoubtedly kill off any chance I might have of a political career in the Labour Party.

Ironically, five years later, it was the incoming Labour government that made the Bank independent, in the teeth of passionate opposition from the Conservative party, led by Shadow Chancellor Ken Clarke, who went on to vote against the legislation.

Of course, the Opposition soon changed its mind, as it did later on the national minimum wage. And these two big reforms have stood the test of time.

Because if there is one thing I have learned over the last 20 years in politics, it is that, for all the sound and fury, huff and puff and disagreement between the parties, the only reforms that actually last are those which become part of the cross-party consensus.

And 20 years on, Bank of England Independence is certainly one of few reforms that has lasted and become part of the national consensus.

Of course, one of the main reasons why Bank of England independence has worked well and become consensual has been the high quality of the members of the Monetary Policy Committee, internal and external.

Back in 1997, we consciously set out to build a cadre of economists who could move easily between the worlds of policymaking, academia and business and finance. I am pleased to say a number of them are here tonight.

And Charlie Bean is a doyen among them, one of the finest British economists of the last fifty years.

After more than forty years distinguished service, Charlie is continuing to straddle these different worlds as both an academic and a senior policy maker at the Office of Budget Responsibility.

The OBR, another controversial reform which I hope will remain part of the cross-party consensus. Although a warning: to take that status for granted would be very foolish indeed.

So to Charlie's excellent lecture and his central message: that 'independence' is a misleading label, that a central bank can never be 'a distinct and separate institution from government' and that getting the institutional design and accountability right is vital.

That was very much the view we took in designing the new system in the run up to 1997.

Interestingly, senior Treasury officials had assumed the new Labour government would delay a decision on independence in order to then go for a Maastricht compliant 'ECB-style' model.

But that was not our plan.

We were certainly influenced by a recent 1994 DeBelle and Fischer paper which had shown a goal-dependent but operationally independent central bank delivered better outcomes than Bundesbank-style inscrutability.

We were also conscious that to win the argument with the media, the trade union movement and the wider public, we could not be seen to hand complete power to set mortgage rates over to 'inflation nutters'.

But - remembering past Chancellorial tensions with Governors Norman and Cromer - we were also very clear we needed to get away from what we saw as the destabilising personalisation of the 'Ken and Eddie' show.

So we consciously established a British-model of what we called 'operational independence' with the Chancellor setting a symmetric inflation target, appointing four external members to a nine-strong MPC and requiring named votes to be declared in published minutes.

I think it was initially a bit of a shock to Eddie George to find out that the Governor could be out-voted. But it is a great strength of our system that we established collective decision-making in which individuals could disagree publically with the consensus without fearing for their job.

Alongside the symmetry of the target and the open letter system, this open and public debate between MPC members was one of the reasons why the MPC quickly

established its public credibility and ended up being much more flexible and activist than anyone expected. It certainly raised the level of public debate.

I want to come back to this issue of ‘personalisation’ at the end, because I think there remains one important and troubling issue with the current regime and which Charlie does not address in his lecture.

As well as being clear that the case for delegation is sound and getting the accountability right, Charlie also rightly says that to work, delegation needs to have only a limited impact on other, wider objectives of government and highlights two, distribution and fiscal policy.

Of course, monetary policy has a distributional impact – individually and regionally. That is one of the reason why Eddie George unusually decided speak at the TUC conference in 1998 - to reassure its members that the MPC wasn’t partial, that it cared about stability and jobs in every part of the country. Thanks to his skill, and the MPC’s decisive response to the crises of 1998, this argument was won.

But as Charlie suggests, winning this argument with the public depends importantly on both the monetary policy objective being clear and intuitive and also on the policy instrument - the interest rate - being simple, the same for everyone and clearly cyclical.

Which is in marked contrast to fiscal policy, where the Chancellor makes conscious tax choices favouring one group rather than another. The fact that the distributional impact of monetary policy, while real, is both temporary and second order rather than overtly discriminatory is another reason why the consensus has held.

As for Charlie’s other wider objective, fiscal policy, over the first ten years of the MPC, the fiscal implications of monetary policy were benign and indeed beneficial, with lower long rates providing a fiscal boost.

One aspect Charlie perhaps underplays is the sensitivity of communication between institutions.

Because while the impact of monetary policy on fiscal policy was benign, this did not stop both the Bank and the Treasury worrying at the outset that the MPC commenting on fiscal matters – overtly or covertly - could be a source of tension and draw the MPC into politics, just as Chancellorial comments on interest rates might undermine independence.

As a result, on monetary policy Gordon Brown adopted a self-denying ordinance. The Chancellor simply chose not to comment. Indeed, the only time he was tempted to, pre-2007, was when we at the Treasury were worried that the MPC was being too tardy in raising rates. I certainly once attracted media attention for saying publically that we would ‘back the MPC in all the difficult decisions they have to make’ with an emphasis on the word all. Mervyn was unhappy.

On fiscal policy, the self-denying ordinance went the other way with the MPC - and usually the Governor - deciding not to comment overtly on fiscal policy. Of course, in monetary policy actions speak louder than words and Chancellors were always aware that the MPC would inevitably act if policy was seen to be loosened irresponsibly. And this was an argument we regularly deployed to keep the Prime Minister and Cabinet colleagues in line – ‘it might look a good idea, but what if the MPC disagrees and then raises mortgage rates’? That was always enough to persuade Tony Blair.

The one area of the new system post-1997 where inter-institutional comment was expected, and indeed encouraged, was financial stability. With Eddie George’s strong support, and enhance the Bank’s oversight of systemic stability issues, we established a new Deputy Governor for Financial Stability and a regular Bank Stability report, as well as a private monthly Standing Committee with the Treasury and the FSA.

So it was disappointing to me to learn from Paul Tucker that, in the mid-2000s, the

Bank and the FSA fell into a pattern of not properly scrutinising, let alone commenting on, each other's actions.

That was never the plan. Any more than the MPC was discouraged to look at how financial risk could put the inflation target at risk.

Of course, as Charlie says, none of these structural issues – institutional, remit or communication - explain why the Bank, the FSA and the Treasury failed to see the 2007-08 crisis coming.

As John Kingman reminded me only last week, at our class at King's, back in the summer of 2006 the Standing Committee looked hard at the question of whether British banks had too little capital and concluded that they had more than enough capital to cope with any likely eventuality. That was a misjudgement, which all three institutions shared with the boards of the banks themselves. As I have written, we also war-gamed our crisis-management procedures at the end of 2006. We just didn't see the risks at the end of our noses.

Of course, as Charlie reminds us, after a successful first decade, the period since 2007 has been one of challenge, complexity and indeed purgatory for central bankers with interest rates bumping against the zero lower bound, massive QE dragging them into political controversy and fiscal policy doing little to pull its weight.

There have been rather more political tensions than before: Ben Bernanke's view that US fiscal policy should have done more, Congressional complaints about the Federal Reserve's new powers, Bundesbank worries about the ECB's mandate and Gordon Brown, at the recent Bank of England '20 Years On' conference complaining angrily about Governor Mervyn King's personal fiscal commentary in 2009 and 2010.

And after a period of - the ECB excepted - international convergence in central banking towards inflation targeting and operational responsibility, we have seen both new powers and a new divergence in central banking structures, as I have

documented in a recent Harvard paper with my co-authors Anna Stansbury and James Howat, which Charlie kindly cites.

Many of these new reforms are, of course, untested. It is not yet clear what the new model for convergence will be.

Not least because, as Charlie says, we do not know how long this unusual period will last and what will come next.

I do not know if Charlie is right that the current period of very low real interest rates will, in time, come to an end and that we will return to something more recognisable. I hope he is right and that it happens soon.

But in the meantime, I share his scepticism that forward guidance, helicopter money or changing inflation targets will do any good.

On the latter, Charlie argues that it would be risky to shake-up the public consensus we have built around the current inflation target. I would add that - shocks aside - central banks have found it trouble enough to meet their current ones let alone a higher target.

I also share his frustration at some of the more conspiratorial arguments against QE, not least from our own Prime Minister, which also persuade me the Bank was right to require a political direction to stray into wider asset purchasing - actions which quickly become first-order distributional. There is a lesson here, I believe, for macro-prudential policy, which I will return to.

One aspect of policy Charlie didn't address today is whether central banks have been left to do too much of the aggregate demand heavy lifting. He has made the case before that, with long-term interest rates so low, fiscal policy could have played a great role.

Indeed, this was an argument - in a UK context - made then and subsequently by senior staff at both the IMF and the OECD, albeit they were then publically

contradicted by the most senior political leadership of the organisation they worked for.

One proposal that Anna, James and I have floated is whether, in the exceptional circumstances of the zero lower bound, the central bank should have the right – if they choose - to send the government an open letter explaining how fiscal policy is making it harder for to monetary policy to meet the inflation and asking for help. I can see the case. But the circumstances have to be exceptional. And even then, there is a risk of the central bank being led into politically deep and treacherous waters.

Let me end, like Charlie, by talking about financial and macro-prudential policy where we have seen significant reforms since 2010:

- splitting prudential and conduct regulation;
- establishing the Prudential Regulatory Authority as an arm of the Bank;
- legislating for new capital requirements, macro prudential tools and regular stress-testing;
- and establishing a new Financial Policy Committee in the Bank of England to use those tools.

As Charlie says, judged by his criteria – clarity of purpose, effective accountability and concerns about fiscal and distributional impact - the case for delegation and operational independence in the operation of these powers is, and I quote, ‘weaker – or at least more complex - than for monetary policy’.

Prima facie, as with interest rates, there is definitely a case for politicians to delegate technically difficult and contentious macro-prudential decisions to independent experts.

But there are risks. There is clearly a big overlap between the remits of the MPC and the FPC; relative to the inflation target, the definition of financial stability is opaque at best; the transmission issues are much less well understood by economists let

alone the media and the public; and, as a result, the minutes of the FPC are much less well understood, scrutinised and debated.

Moreover, in the operation of macro prudential tools, the distributional impact of FPC decisions are much more likely to be first order, with different levers overtly discriminating between different groups of individuals or institutions. While if and perhaps when things go wrong, the direct fiscal impact of financial policy interventions can be very substantial.

This is not an argument against delegation. But there is a real danger of the FPC and the Bank being drawn into deep political waters – making very unpopular decisions in pursuit of poorly understood objectives which, given the huge concentration of power now in the Bank, could well leave the institution with a lot of egg on its face if things go wrong. I worry this could also put the consensus for monetary policy independence at risk.

In our paper, we do not argue for throwing the baby out with the bath water and going backwards on the recent reforms. Instead, as Charlie discusses, we advocate adding a new and additional strategic oversight entity, modelling loosely on the US FSO, chaired in person by the Chancellor, with the Governor and Deputy Governors all present.

In normal times, its task would be to set, monitor and keep under review the remit of the FPC: delegating to the FPC the operational responsibility for using macro-prudential tools to meet the remit, but making clear that this remit has direct and immediate political backing.

Charlie is right, of course, that it is always possible - as now - for the Chancellor to weaken the FPC remit if pulling the macro-prudential levers gets uncomfortable. But, unlike now, such a decision would have to be discussed, debated and minuted at the new oversight entity, making any such change harder rather than easier.

I also believe that in a crisis, the fact that this body already exists and has been operational would lead to better decision-making. Already under the rules, if the

Bank expects the possible use of public money, it has to trigger the formal engagement of the Chancellor. But the discussion forum would be ready and well-established.

And there is another reason why I believe this reform is necessary.

I said at the start that I would return to the issue of personalisation.

Even before the reforms of this decade, the job of being Governor of the Bank of England was an onerous one. In the new system we expect the Governor, as Chair of the MPC and FPC, to be a monetary and financial policy expert, to be skilled in the most complex economic policy communication and also to manage an onerous but opaque system of accountability.

As I wrote in the FT a few years back, when a vacancy last arose, 'Wanted: a Governor of the Bank of England - only super-humans need apply'.

Now currently, of course, we are blessed by a Governor who, if not super-human, is certainly doing an excellent job.

But I do think the concentration of power in the Bank and the personalised nature of aspects of the role makes the job harder and the risk of conflict with the Government greater than necessary.

Not in monetary policy-making, of course, where the clarity of the inflation target and the collective processes of the MPC prevent personalisation.

Nor in fiscal policy where, while the occasional stray remark from a Governor can cause consternation, the collective responsibility of MPC decisions, minutes and the inflation report generally prevent personalised fiscal commentary.

In macro-prudential policy, the FPC also operates collectively, although the fact that FPC votes are not published is a weakness. And I am also a little concerned that only the Governors, and no external members, attend both the MPC and FPC, meaning there is a danger of outside members not being fully in the loop. One solution would be to merge the two committees. Another would be to follow the Malaysian model and allow any member of either committee to trigger a joint meeting if they have concerns that their remit is being jeopardised by the action or inactions of the other committee of which they are not a member.

But there is one aspect of personalisation which remains unaddressed.

At present, as I understand it, it is 'the Bank', which triggers the involvement of the Chancellor in an impending crisis if public money might be at risk.

Which means the Governor, advised by a Group of deputy Governors who managing separate and sometimes conflicting objectives.

Imagine the Deputy Governor and head of the PRA having a big concern about an institution. The Governor has a meeting. Hears these concerns. And then sums up that, in his or her judgement, the situation is not so serious or that moral hazard concerns dominate and therefore that there is no need to call the Chancellor.

Far-fetched? Absolutely not in my experience.

Here again, I think our proposed strategic oversight body can solve the problem. All the Deputy Governors would be statutory members. All would have the right to trigger a meeting and share their concerns. There would be no Governor-veto. Any Deputy Governor has a direct line to the elected Chancellor.

In his excellent lecture, Charlie has highlighted a number of complexities and challenges which arise from the Bank's new wider remit. I have added to them in my response. Because while many of the reforms introduced in 2010 are sensible enough, I do believe they remain work in progress.

I do believe we can reach a long-term consensus, which secures operational responsibility in monetary and financial policy for the long-term. But there is still some work to do. And I certainly don't think we should wait until the next crisis before we try to get this right.

Thank you.

ENDS

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