

The Changing Role of Central Banks

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1. Historical Introduction

Central Banks have generally had three main objectives or functional roles. These have been:-

- i) To maintain price stability, subject to the monetary regime in current operation, for example the gold standard, a pegged exchange rate or an inflation target;
- ii) To maintain financial stability, and to foster financial development more broadly;
- iii) To support the State's financing needs at times of crisis, but in normal times to constrain misuse of the State's financial powers. In the past this meant preventing debasement and misuse of the inflation tax. Prospectively it may in future also involve preventing misuse of the bank tax.

Naturally the balance between these three objectives has shifted over time, with support for state financing becoming prominent during war-times. Indeed, several of the first Central Banks to be established, notably the Bank of England and the Banque de France, were founded to help provide war finance. But, absent wars, it is the shifting balance between the Central Bank's monetary policy (stable prices) and its financial stability role that usually generates most interest. In this latter respect, we

may perhaps identify three main stable epochs from the past, with shortish periods of confusion and searching for a new regime/system in inter-regnums between them.

These three periods are (a) the Victorian era, say 1840s until 1914; (b) the decades of government control, 1930s until the end of the 1960s, and the triumph of the markets, 1980s until 2007. The period 1914-1931/33 was a confused inter-regnum including WWI, followed by a failed attempt to re-establish the Gold Standard (Eichengreen, Golden Fetters, 1992). Similarly the 1970s was another confused inter-regnum between the subservience of monetary policies to government control, and the establishment of a free market system, with the Central Bank following a regime of inflation targetry.

Following the on-going financial crisis, Central Banks are now probably on the verge of a further, fourth, epoch, though the achievement of a new consensus on their appropriate behaviour and operations may well be as messy and confused, as in the two previous inter-regnums. But if we want to know where Central Banking may be heading, it is as well to have a good understanding of where we have been, since our historical record provides our only empirical evidence.

A. The Victorian Era: In Praise of the Real Bills Doctrine

The main concern of the great monetary writers of the Victorian age, notably Henry Thornton and Walter Bagehot, was how to reconcile adherence to the Gold Standard with the maintenance of financial stability, especially at times of panic and stress.

[Though the Bank of England was also much concerned about the opposite problem of how to make Bank Rate effective in times of confidence and expansion.] The

answers that came forth mostly took the form of certain rules of thumb, notably the Palmer rule for varying Bank rate (named after Governor Horsley Palmer of the Bank of England, which may, with the eye of faith, be seen as a kind of prototype Taylor reaction function), and the Bagehot rule for acting as Lender of Last Resort, which latter is all too often misinterpreted.

But the rule, or doctrine, that I want to focus on here is that concerning Real Bills. In this respect 'Real' does not mean 'adjusted for expected inflation' as now, but instead 'real' in the sense of being based on actual, 'real', output and/or trade. Whereas the correlate now of 'real' interest rates is 'nominal' interest rates, the correlate of 'real bills' in Victorian times was 'speculative' or 'finance bills'. Since 'real bills' were based on real output and trade, monetising them via Central Bank discounts could not create inflation, so the argument went, since output and money would rise hand in hand. Similarly since they were based on trade/output, they would become quasi-automatically self-financing when the good were eventually sold. In contrast, speculative, or finance bills, were drawn to support asset purchases, notably in stock markets, and hence generated unhealthy asset prices bubbles and busts with accompanying (temporary) inflation and deflation.

During the Victorian era, governments tended to run (small) surpluses during peacetime years. Deficits were generally a function of war. So, the standard assumption was that government paper, bills and bonds, was not related to underlying output/trade. So, under this doctrine, the purchase of government debt was just as reprehensible as open market operations in finance, or speculative, bills. While it may seem crazy now, one reason why the Fed was so reluctant to undertake expansionary

open-market purchases of government debt in the depths of the Depression was that their model told them that this was quasi-automatically inflationary and wrong (see Meltzer, 2003). One reason why it is worth remembering this episode now is that it puts in context the, historically mistaken, claims that have been made by some economists that Central Banks should only now carry out open market operations in government debt.

Another reason for recalling the ‘real bills doctrine’ was that it provided a unifying theoretical basis for both monetary policy (price stability) and financial stability. So long as discounts and lending were strongly directed to ‘real bills’ both price stability and financial stability would be jointly and simultaneously assured. Ever since this Victorian era we have lacked such a unifying theory. So now we wonder whether the single interest rate instrument can, or should, be made to bear double duty, to ‘lean into the wind’ of asset price and credit fluctuations as well as stabilising inflation, and its expectations; or whether a second set of macro-prudential regulatory instruments can be developed to maintain separate control of financial stability.

Of course, the ‘real bills doctrine’ was wrong. It was wrong for the same reason that the real business cycle model, that lies behind DSGE models, is wrong; it assumes implicitly that the private sector is inherently self-stabilising. So long as the government does not make everything worse by misguided intervention, the assumption was that output/trade would always return to equilibrium, so there would always be enough real bills to monetise to keep output at equilibrium and prices steady. When the Great Depression hit, this assumption collapsed. Deflation ensued.

B. The Decades of Government Control, 1930s until the end of the 1960s: The Subservience of Central Banks

The Great Depression and the accompanying collapse of the Gold Standard represented a huge failure for Central Banks. Their objectives, their models and their mental framework all fell apart. Moreover, there was another model waiting in the wings, that of Socialist control by government, a model which was given a massive extra boost by the need to direct economic resources to the conduct of WWII.

Certainly there was not much theory behind the government take-over of monetary policy; it was pragmatic. Initially with continuing depression and deflation governments pressed for low interest rates, once the Gold Standard had been abandoned, and with that for devaluation, at least against gold. Thereafter, with an excess demand for resources during WWII, the standard procedure was to control demand by direct rationing rather than by the price mechanism. By the time that rationing was ended, the selection of the official interest rate had become established in most countries as a governmental exercise, not only in war-time but at all times. This was, perhaps, least so in Germany (after WWII), Switzerland and the USA, where Central Bankers had, for a variety of reasons, some room for manoeuvre and ability to face down political pressures, but for most other countries the politicians, not the Central Banks, directed monetary policy.

This is not to say that Central Banks in these more subservient countries had no influence on the conduct of monetary policies. They were treated by the relevant Minister(s) as expert advisors, alongside the civil servants in the Ministry of Finance

(Treasury). But the Minister usually paid much more attention to the economists in his own Ministry; after all they had his ear. In contrast the Central Bank, certainly in the UK, emphasised their knowledge of market behaviour. These years, 1950s and 1960s, were a period when in the UK, and some other countries, the swollen war-time National Debt was only slowly being worked off, and the foreign exchange markets were often fragile during the Bretton Woods pegged-but-adjustable exchange rate regime. Under these conditions, should the Bank warn that “markets would not like” some proposed policy change, then Ministers would listen with attention. In the UK both Bank and Treasury fiercely guarded those areas where they dominated. The Treasury refused to allow the Bank to publish its own economic forecast, and sought to censor the economic commentary in the Bank’s Quarterly Bulletin. In turn the Bank became exercised and hostile, should the Treasury attempt to second (junior) staff to City financial institutions in order to gain their own market expertise.

With interest rates being held generally low, to support investment and to lessen the cost of servicing the National Debt, there was a need for some additional policy to prevent undue credit expansion, which might threaten both the current account and also inflation. This was provided by direct quantitative controls, of one kind or another, over bank lending, reinforced by exchange controls over international capital movements and by controls over leasing terms, access to capital markets, etc., etc. In the UK there was an attempt to get away from direct controls over bank lending in 1971 with the adoption of the policy of ‘Competition and Credit Control’. But the Heath government were not willing to allow interest rates to rise sufficiently high; the policy failed; and a final version of direct lending controls, known as ‘the Corset’, was reintroduced in 1974, and lasted until 1981.

One of the lessons that had been learnt, rightly or wrongly, from the financial collapse in 1929-33 was that competition within the financial system was dangerous to the maintenance of stability. Such competition pared profit margins and hence the build-up of capital buffers. It encouraged banks to take on more risk in pursuit of higher profits. The more oligopolistic banking systems, for example in Canada and the UK, had fared better than the more competitive and less diversified system in the USA. Consequently many of the 'reforms' enacted in the 1930s were intentionally anti-competitive, limiting the interest rates that could be paid on deposits and limiting the scope of business that various groups of intermediaries could undertake. Thus housing mortgages would only be provided by some specified group of mortgage, housing finance, intermediaries; credit provision or personal sector purchases of consumer durables by another financial group, and so on.

In many countries during this era not only was the amount of private sector credit expansion constrained, but so also were the rates at which they could do such business. Given these constraints, financial intermediaries naturally satisfied the demands of their biggest and safest customers first. There was no call for financial innovation; bank managers were trained to say 'no', rather than 'yes'; and they, and their counterparts in mortgage banking, followed the 3:6:3 rule, i.e. borrow at 3%, lend at 6% and on the golf course at 3 p.m. Lunches were long and liquid. The current nostalgia for the controlled conditions of the post-war period is misplaced.

But such a controlled system is, by and large, a safe system. Between the Great Depression and the 1970s there was a comparative dearth of bank failures.

Table 1: Crisis frequency

Year	Banking crises	Currency crises	Twin crises	All crises
1880-1913	2.30	1.23	1.38	4.90
1919-1939	4.84	4.30	4.03	13.17
1945-1971	0.00	6.85	0.19	7.04
1973-1997 (21 countries)	2.03	5.18	2.48	9.68
1973-1997 (56 countries)	2.29	7.48	2.38	12.15

Source: Table 3.5 from Eichengreen and Bordo (2003).

This was not due to any exertion of effort by Central Banks to maintain systemic stability; instead the controlled, constrained financial system was just a safe, but dull, place. Indeed, the general absence of financial stability problems meant that experience and interest in this field in Central Banks eroded. At the onset of one of the first episodes of instability, the Fringe Bank crisis in the UK in 1973/74, the Bank of England entrusted all supervisory duties to one fairly senior official, the Principal of the Discount Houses, and about 4/5 more junior officials.

So, if during this era the Central Bank, at least in many countries, did not set the official interest rate, since the relevant Minister did, and did not exert much effort in maintaining systemic stability, since the framework of controls saw to that, then just what did it do? It had three main roles:-

- i. Advice on policy;
- ii. The administration of the system of controls, and
- iii. The management of markets.

Although monetary policy, both domestic and international, was generally set by the relevant Minister, he did listen to the advice of the Central Bank. Whereas on domestic monetary issues, the economists at the Treasury (Ministry of Finance) generally had greater influence than those at the Bank (though not so in Italy, where the Banca d'Italia developed an estimable reputation), the expertise of the Central Bank on international monetary issues was unrivalled either in the Treasury or in the Foreign Office.

Perhaps the greatest use of manpower in many Central Banks in this era was in the administration of the government's panoply of controls. In terms of sheer numbers the Exchange Control Department was the biggest segment of the Bank of England in the 1960s. Acting as a go-between, between the Ministry setting the control, often with little understanding of the financial sector, and the regulated financial sector, complaining bitterly and sometimes validly about their imposition, was not a role that Central Banks relished.

It was in their third role, in overseeing the management of markets, that the real kudos was to be found. The three most important positions in the Bank of England, below the Governor and his Deputy, were those concerning the management of the three key markets, the gilt-edged market, the money market and the foreign exchange market. Debt management, liquidity management and fx (foreign exchange) operations were central and crucial. Whereas in all these cases, the over-arching policy strategy was ultimately decided by the government, the parameters of what strategy might be possible lay in the hands of Bank officials, whose tactical skills and experience were renowned.

C. The Triumph of the Markets, 1980-2007

The cabined and constrained financial system of the early post-WWII system was, of course, inefficient. What brought it down was market pressure, as improved information technology encouraged greater international competition. Those less constrained by regulation sought to garner quasi-rents from the more constrained.

The first location where this took place was in the newly-developed euro-dollar market in the late 1960s. Central Bank Governors, meeting at the Bank for International Settlements (BIS) at Basel, quickly identified this market as posing a serious challenge to their prior cosy domestic control systems, and set up their first standing sub-group, then called the Euro-Currency Standing Committee, to monitor its development. But the authorities could not prevent the advent of this market facilitating international capital flows, despite exchange controls. Such capital flows undermined the pegged, but adjustable, Bretton Woods exchange rate system, since it was usually obvious who were the potential candidates for devaluation or appreciation; the speculative profits (enjoyed by 'the gnomes of Zurich' as Harold Wilson termed the speculators) from this one-way bet could be huge. The B.W. system finally collapsed in 1972/73.

Before that collapse all other countries had pegged on to the USA, so faster growing countries, like Japan, had higher inflation than slower growing countries, such as the UK, owing to the Balassa/Samuelson effect. In the USA itself, inflation was restrained by the instinctive, pragmatic monetarism of Fed Chairman McChesney

Martin, under periodic attack from more expansionary (and Keynesian) pressure from Presidents and Congress.

Once the B.W. system had broken down, it allowed countries, previously restrained by Balance of Payments constraints, to “go for growth” and a world-wide boom ensued, punctuated by the 1973 oil price shock. A period of debate between Monetarists and Keynesians was accompanied by a decade of confused policy making in the 1970s and high and variable inflation. This was ended in 1979 by Volcker’s adoption of the (non-borrowed) reserve base system. This quickly led many other countries to adopt a, roughly similar, policy of pragmatic monetarism and monetary targets. But the short-term instability of relationships between monetary growth, however measured, and nominal incomes and inflation soon led to the abandonment of such targets; “We did not abandon the monetary targets: They abandoned us”, Governor Bouey of Canada quipped in 1982.

The story of the search, thereafter, for some other anchor for policy, and its (chance) discovery in 1988 in New Zealand in the guise of an inflation target is well-known. What is, perhaps, less often realised is that the setting of the official interest rate, in order to hit the inflation target, does not need to be done by an (independent) Central Bank. It can just as easily (in an operational sense) be carried out by the Ministry of Finance. Indeed in the UK Chancellors of the Exchequer had the final say on the choice of interest rate, from 1992/93 when, after ejection from the European Exchange Rate Mechanism, the UK adopted an inflation target, until 1997 when Gordon Brown gave the Bank of England operational independence.

What such operational independence for the Central Bank provides is credibility for the policy of inflation targetry. In contrast, a Minister of Finance has conflicts of interest. The best known such conflict is with the desire for a more expansionary policy (especially before an oncoming election). But almost as pressing, when the National Debt is high relative to taxable capacity, is the Minister's desire to keep the interest burden low. Central Bank operations in public sector debt and in rate setting have an immediate and direct fiscal impact. As the burden of National Debt will now rise once more, questions of coordination between fiscal policy, debt management and interest rate setting, which have been largely in abeyance in the last couple of decades, will come to the fore again.

Meanwhile, the development of the euro-dollar market in particular, and of the global financial system in general, was changing the nature and structure of banking, and with it of the regulatory approach to the industry. Previously banks had felt constrained by the available stock of (essentially retail) deposits held with them, whose total was largely outside a banker's control. Their margin of freedom to expand (or reduce) loans to the private sector, given the quantum of such deposits, lay in their ability to offload (or buy) marketable public sector securities (liquid assets). Fortunately for the banks they had been stuffed full of government debt during WWII, and so entered the post-war period in a highly liquid form. So, their ability to expand loans, when direct controls were not biting, seemed to lie in their holdings of such liquid assets. In response, theories about the money supply (Sayers, Modern Banking, umpteen editions) and regulation then (1950s and 1960s) focussed much more on liquidity, and a variety of required liquidity ratios.

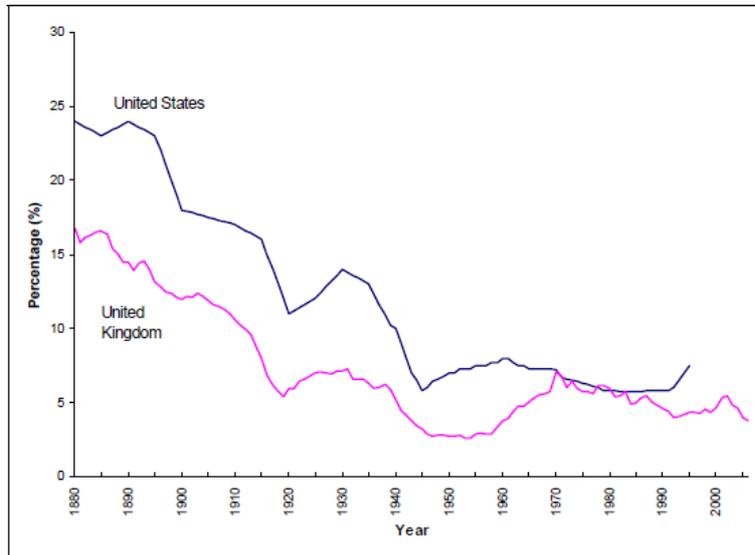
All that got blown away by the development of the euro-dollar and other wholesale markets. Now a banker was no longer constrained by a combination of exogenous retail deposits and available liquid assets. If the banker wanted more funding, he could just borrow it in wholesale markets. Funding liquidity had replaced asset liquidity.

What then determined the size of banks' books? Not cash, since the Central Bank had to provide enough cash to keep market rates in line with the official rate; not liquid assets for the above reason. The answer, of course, was capital. But here there was a problem for the regulators. First, while more capital would make a bank safer, it would, given the unpriced insurance given to bank depositors/bond holders and the tax wedge, lower the return on equity (ROE). In banking, the Modigliani/Miller theorem did not hold. So limited liability equity holders would encourage bankers into adopting riskier strategies (Bebchuk and Spamann, 2010), an encouragement that bankers hardly needed, to don their vestments as 'Lords of the Universe'.

The second concern was that the collapse of a bank, because of a combination of size and interconnectedness, would cause contagious externalities. The financial system was subject to various self-amplifying mechanisms in both the upwards, bubble, and the downwards, bust, phases of the credit cycle.

For both these reasons, banks could not be expected, of their own independent volition, to hold sufficient capital, in order to obtain the best social trade-off between risk and return. Indeed by the mid 1980s capital ratios amongst banks had been declining quite steadily and sharply for some long time.

Chart 1
Capital ratios for UK and US banks



Source: US: Berger, A, Herring, R and Szegö, G (1995). UK: Sheppard, D.K (1971), BBA, published accounts and Bank of England calculations.

Chart 2 in paper by P. Alessandri and A. Haldane, Bank of England, from material presented at the Federal Reserve Bank of Chicago/World Bank event, 'International Financial Crisis: Have the Rules of Finance Changed?', on 24 September 2009

The catalyst to enforce regulatory change was the Mexican/Argentinean/Brazilian (MAB) crisis of 1982. During the 1970s Western, mostly US, commercial banks had intermediated successfully between oil exporting emerging economies, such as Saudi Arabia and Kuwait, and oil importing emerging economies, such as Argentina and Brazil. With other commodity prices quite high and real interest rates low, often negative, the borrowers had no problems in servicing their debts. Paul Volcker's regime switch utterly altered the context. Real interest rates rose steeply and commodity prices tumbled. Neither the borrowers nor the bankers saw the danger quickly enough, lulled by Citibank's CEO who erroneously believed that 'Sovereign

countries do not default'. In 1982 MAB threatened to do just that. Even without default the secondary market valuation of such loans fell so far that, on a mark-to-market basis, most US city-centre banks were insolvent.

Congress was outraged (every financial collapse, 1907, 1929, 1982, 2007/8, provokes Congressional rage; Wall St is not beloved on Capitol Hill) that the banks had put the financial system in such a fragile state, and wanted to insist that all the US banks establish a stronger capital base. But the US banks complained that they would then lose business to foreign banks, especially to Japanese banks, not subject to such reinforced requirements. So Volcker was mandated by Congress to go to Basel to put pressure on the Basel Committee on Banking Supervision (BCBS) to agree on an international standard for bank capital. After difficult negotiations that resulted in the Basel Accord of 1988, now often termed Basel 1. The choice of the mandated capital requirements, a minimum of 4% of risk-weighted assets for tier 1 capital, and of 8% for tier 1 plus tier 2 capital, was not based on much empirical analysis, e.g. stress tests, nor on any theoretical consideration of what might be necessary (for what? Or why?), but rather on the pragmatic basis that this was the highest numerical requirement that could be reasonably expected to be reached, after a transitional period, by the main commercial banks from their current starting point without causing them, or their economies, undue stress.

The initial risk 'buckets' in Basel I were crudely defined, which gave an incentive to banks to securitise those loans/assets whose regulatory requirement was excessive, and to hold those assets where the regulatory requirement was comparatively too soft. It was this latter failing that brought about the further negotiations leading up to Basel

II, whereby the risk weightings were to be based on (the banks' own) risk assessments (the Internal Risk Based, IRB, approaches). While altering the risk weightings, Basel II, made no significant changes to the definition, or required quantum, of capital.

The implicit belief was that this, arbitrarily chosen, level of capital would suffice to act as a guarantor of continued bank solvency. With bank solvency thereby assured, banks should face no difficulty in meeting any (temporary) liquidity requirements by borrowing in efficient, broad wholesale markets. These comfortable assumptions fell apart in August 2007.

Meanwhile the trend in credit expansion to the private sector had for several decades comfortably outstripped the trend growth in bank deposits, (Schularick and Taylor, 2009), though quite why this was so remains unclear. Commercial banks had responded by:

- i. Selling off their liquid public sector debt;
- ii. Borrowing more and more, often on a short-dated basis, from wholesale markets; and
- iii. Securitising their loan books, (originate to distribute).

All this reinforced their exposure to, and fragility in the face of a malfunction in such wholesale markets.

Moreover, during the years of confidence and asset price boom, banks were taking on additional leverage, in each case subject to their own particular set of regulatory requirements. Both US investment houses (broker/dealers) and European banks were

subject to Basel II, but not to a simple leverage ratio. So they increased leverage sharply by filling their portfolios with highly rated (AAA) mortgage backed securities (MBS), which carried a minuscule risk-weighting. In contrast the US commercial banks were subject to a simple leverage ratio, but not at that time to Basel II. So they exploited their position by taking on the riskier tranches of MBS.

But few, whether bankers, regulators or economists, perceived this overall fragility, though many realised that risk was being under-priced. A reason for this blindness was the procyclicality of Basel II, (since risk seemed low, risk-weighted capital appeared to rise!), and of mark-to-market accounting, (when asset prices rise, the resulting capital gains in trading books go straight into profits and enhanced capital). Never had the profitability and capital strength (over the last couple of decades) of the banking sector seemed higher, never had market appreciation of bank risk, as measured by banks' CDS market prices, seemed more sanguine than in the early summer 2007. With the benefit of hindsight, a populist frenzy now blames the excesses of bankers for putting the system at risk, and the weakness (light-touch) of regulators/supervisors for allowing this to happen. But at the time neither bankers, nor regulators, nor virtually all commentators had any appreciation of the (systemic) risks that were being run.

Whether, or not, the inevitable 'blame game' is worthwhile, or justified, the experience of financial crisis, panic in September 2008 to March 2009, and nearly widespread financial collapse, has been so unnerving and shaking that there is likely to be far-reaching changes to the operation and regulation/supervision of the financial

system in general, and to the role and functions of the Central Bank in particular. It is to this latter subject that we now turn in the second Section.

2. The Future Role of the Central Bank?

In the years prior to August 2007, Central Banks had appeared to have almost perfected the conduct of monetary policy. The standard regime was one in which the Central Bank was delegated operational independence to vary the official short term interest rate in order to achieve an inflation target, which target in turn was mandated either in general terms or in specific numerical terms by the democratically elected government. What we now recognize is that the achievement of price stability by this procedure does not guarantee financial stability. That raises first the question whether this standard procedure whereby the Central Bank should dedicate setting the official interest rate to the achievement of its inflation target should be radically altered? My answer to that, which I have developed in other papers – and will not be rehearsed again here – is NO.

The implication of this answer is that a separate additional set of (macro-prudential, regulatory) instruments will need to be developed for the specific purpose of maintaining financial stability.

The second question then, related to the role of Central Banking, is what will be their role in this latter exercise? Should the Central Bank also be in charge of systemic financial stability; or, if not, what should be its relationship with the systemic regulator? This is, actually, a good entry point for examining the changing role of

Central Banks, since the answers, in my view, depend on, and reflect, the essence of Central Banking as an institution.

A. The Essence of Central Banking

Whereas the systemic stabilizer may, or may not, be allocated a new and shiny set of macro-prudential instruments to operate, such as (possibly time and state varying) capital, liquidity and leverage ratios, the traditional focus of stabilisation has been the Central Bank's capacity to lend, and thus to create liquidity, either to an individual bank, as in the Lender of Last Resort, or to the market as a whole, via open market operations (OMO). It would cause massive complications if liquidity management remained the sole province of the Central Bank while a separate financial stability authority was to be established without any command over liquidity management. I infer from that that the financial stability authority has to be given command over liquidity management; but that also implies that the financial stability authority would have command over the Central Bank balance sheet. Indeed the financial stability authority would then, de facto, become the true Central Bank.

Lord Cobbold, former Governor of the Bank of England, is reputed once to have said "A Central Bank is a bank, not a study group". What I take this to mean is that the essence of Central Banking lies in its power to create liquidity, by manipulating its own balance sheet. The question is often asked whether a Central Bank that sets interest rates should also manage financial stability. This question is put the wrong way around. The question should be whether a Central Bank that manages both liquidity and financial stability should also be given the task of setting interest rates.

Unlike the essential role of liquidity management, setting official interest rates is not essential for a Central Bank. As we already saw in the opening historical Section, in many countries and for many decades, it was done by a politician, not the Central Bank. It could easily be done by a ‘study group’, as many Monetary Policy Committees really are, and they could be formally separated from the Central Bank without much loss. Or indeed interest rate setting could be done by a coven of Druids casting runes over the entrails of a chicken. What is important is not so much who does it, as how it is done; the need is for a reaction function that restores equilibrium smoothly and surely after some adverse demand or supply shock. We shall, however, leave our initial question, whether the liquidity managing Central Bank, charged with financial stability oversight, should also set the official interest rate until later.

One of the main concerns of the Bank of England in the 19th century was how to make its Bank Rate effective in the market. Under normal circumstances the main task of the monetary management desk in Central Banks is to undertake OMO, so as to drive market rates into line with the separately set official rate. At such ordinary times, this is a somewhat hum-drum exercise, hardly noticed by most people, but of considerable technical interest to the cognoscenti. But, under conditions of financial disturbance and crisis, liquidity management takes on a life of its own, potentially independent of official interest rates. This is patently obvious once nominal interest rates hit the zero lower bound, so that subsequent unconventional measures, whether quantitative easing, credit easing or the ECB’s suite of market measures, all involve OMO and manipulation of the Central Bank’s balance sheet.

But even when interest rates are above the zero bound, there is a range of freedom to operate liquidity management independently. This margin of freedom may now, perhaps, be greatly augmented by the generalised adoption of the ‘corridor’ system for managing short-term interest rates. In principle at least, the corridor system could be so managed that liquidity policy and interest rate policy could be varied in a largely independent fashion. Thus, for example, official interest rates could be raised to counter speculative attacks on the exchange rate, while at the same time the liquidity of the domestic financial system could be maintained, or even enhanced, leaving market rates at the lower edge of the corridor. For the time being Central Banks are still experimenting with the extra degree of freedom that the corridor system has given them. During the financial crisis many of the innovations in liquidity management were a somewhat ad hoc response to each new twist of the crisis. Looking forward, there is still much to learn and to discover in this field.

One of the more contentious topics in liquidity management is what should be the set of assets in which the Central Bank should operate and hold on its balance sheet. Again, as we noted in the historical Section, fashions change. Under the ‘real bills doctrine’, the commercial paper of the private sector was the preferred asset for OMO. Since WWII, the preferred asset has, in most countries, become government short-term paper, bills or short-dated bonds. But some more fortunate countries have not had to develop a broad market in their own government paper, and they carry out liquidity management through other assets, in some cases foreign exchange, as in Switzerland or Hong Kong.

Whatever asset is used for OMO, it is likely to have fiscal consequences. For example, the UK's quantitative easing has had massive fiscal consequences. Indeed, it is precisely because the fiscal consequences of setting interest rates and undertaking OMO in public sector debt are so great, that their exercise has been delegated to the Central Bank, to avoid the politicians being subject to massive conflicts of interest.

The concern about the choice of market for Central Bank operation should not be so much on its fiscal implications, but rather on the extent to which such intervention might distort relative prices and have a distributional effect, benefiting one set of borrowers rather than another. But this raises a question and a problem. When some financial markets malfunction, so borrowers in that market suffer relative to the rest of the economy, would Central Bank intervention directly in that market just restore the status quo ante, and thereby stabilise an adverse distribution; or is that intervention having a distributional effect which Central Banks ought to eschew? For fervent adherents in the efficient markets theory, there is no contest. For everyone else, the issue is much more nuanced. Fed credit easing, for example in the commercial paper and MBS markets, is a case in point. In practice such questions will probably usually be answered pragmatically, 'needs must'; and such a pragmatic response is, to my mind, preferable to one based on theoretical ideology.

B. Interactions with Government

One of the attractions, to many economists and others, of the standard inflation targeting regime was that the choice of interest rates could be made independent of government, but to achieve an objective democratically mandated. That same separation and independence is not really feasible in the pursuit, by the Central Bank, of its financial stability objective. We have already discussed how a Central Bank's liquidity management, and especially its unconventional measures, will have both fiscal and distributional consequences. Here we shall consider some four or five further ways in which the Central Bank and the government may need to interact.

(i) The Bank Tax¹

The imposition of a tax on banks is an idea whose time has come, especially now that President Obama called for such a tax in January 2010. Governments' fiscal positions are so stretched; banks and bankers are so unpopular; the tax can be justified as a quid pro quo for potential future, or for past, taxpayer support of the banking/financial system. Although the parameters, the tax base, and most other details have yet to be determined, a bank tax is likely to be adopted, either unilaterally in many countries or internationally.

The analogy, which Perotti (2010) makes, is with the inflation tax and seignorage.

There is a temptation for politicians to make excessive use (from an overall social welfare standpoint) of the inflation tax. So a solution is to mandate the Central Bank

¹ I owe the inspiration for this sub-part of this paper entirely to Enrico Perotti, whose basic idea I have shamelessly pinched.

to hold inflation at a desired, low and stable, level, but to pass the proceeds of seignorage to the government.

By the same token there could be a temptation for governments to impose a tax on the banking system that would not optimise social welfare, either by failing to operate in an ex ante preventive fashion, or by being so draconian as to impede the essential intermediation and allocative functions of that system. Perotti's idea is to combine a low basic tax rate with prudential, time-varying surcharges. "Variable surcharges should be chosen by a macro prudential council where central banks play a significant role." The revenue from both the basic rate and the surcharges would flow to the government.

Whatever may be thought of this particular idea, a bank tax will have financial stability implications. It would surely be wrong to introduce such a tax without a full exploration of the relationship between the tax and the financial stability objective.

(ii) Sanctions

The Basel Committee on Banking Supervision has no formal legal status, being only an advisory Standing Committee to the G-10 Central Bank Governor meeting at the BIS in Basel. It could only put recommendations, and suggestions, to the Governors. Understandably, but regrettably, they interpreted this as meaning that it was for each nation State, not for the BCBS, to decide how their proposed standards, especially the capital ratios, should be enforced. So the BCBS never discussed how sanctions might be imposed for short-falls below the proposed ratio(s).

In effect, with no discussion of a ladder of increasingly tough sanctions, the Basel requirements became treated by everyone as minima, to be observed at all times. But, as already noted, such requirements were intentionally designed to raise capital levels above those that banks would want to keep of their own accord. So the available margin of safety, the buffer of excess capital beyond that required, was generally kept quite low by the banks. This led to a poor outcome, in that the banks held a stock of required capital that could not be trenced upon without signalling a crisis occasion, while the usable buffer was just too small. An example of an appropriate ladder of sanctions is given by the FDIC Improvement Act of 1991. The BCBS and the Financial Stability Board, (and the ECB and the European Systemic Risk Board), must overcome their hesitancy about advising on patterns of sanctions. For example, if banks had been prevented by regulatory sanction from paying out dividends in the crisis, the system would have been much more robust.

But sanctions, like taxes, such as the prospective bank tax, depend on (national) democratic legislation and the rule of law. Thus the systemic supervisor, in each country, will have to engage with their own government to get the appropriate pattern of sanctions (and taxes) applied. Regulators have consistently tried to avoid such engagement. That should not continue.

(iii) Debt Management

For over three centuries (1694-1997) a prime function of the Bank of England was to manage the National Debt. But as that Debt declined, both as a percentage of GDP and in relation to the size of the financial market, debt operations became simpler and standardised, falling into a routine pattern. Much the same happened in other

countries. Under these circumstances the transfer, by Chancellor Gordon Brown, in 1997 of such management to a separate and specialised Debt Management Office was hardly noticed or remarked, except by a few historians.

But now many countries face the prospect of sharply rising debt levels, to a point that may, once more, test the confidence of market participants. Debt management is again becoming a critical element in the overall conduct of policy, as events in Greece have evidenced. Debt management can no longer be viewed as a routine function which can be delegated to a separate, independent body. Instead, such management lies at the cross-roads between monetary policies (both inflation targets and systemic stability) and fiscal policy.

When markets get difficult, and government bond markets are likely to do so, the need is to combine an overall fiscal strategy with high-calibre market tactics. The latter is what Central Banks have as their metier. During the coming epoch of Central Banking, they should be encouraged to revert to their role of managing the National Debt.

(iv) Bank Resolution

A Central Bank can only provide liquidity; it cannot provide capital. If liquidation of a failing bank cannot be allowed, and the market will not provide more capital, then the only remaining recourse is to taxpayer funding. That implies that the politicians must have, on behalf of the taxpayer, a leading role and concern in resolution policies and mechanisms, and indeed in the preventative policies that the Central Bank, as systemic supervisor, may be putting in place. So long as taxpayer funding, or (partial)

nationalisation, of failing banks remains a possibility, the relevant Minister has to be involved at all times, and in charge of the resolution exercise itself.

Of course, the necessary involvement of the political authorities could be much reduced if Too Big to Fail (TBTF) or too interconnected to fail never held. And there have been numerous proposals to try to prevent the need for future taxpayer funding and TBTF. For example, Senator Dodd's Bill, as of April 2010, will put more weight on:

- i) The prior completion of 'Living Wills' or 'Funeral Plans';
- ii) The accumulation of a, bank-financed, 'orderly liquidation fund'; and
- iii) The imposition of hair-cuts on unsecured and secured creditors in order of seniority

While there are good arguments in favour of such proposals, I doubt whether such an 'orderly liquidation process' will suffice to end TBTF. The losses that may need to be absorbed, partly as a result of fire sales into unwilling markets, are likely to deter investors from putting additional capital into other banks. So the dynamic market process, as began to emerge after the Lehman bankruptcy (and before the capital injections by governments), could bring a large proportion of the financial system towards default simultaneously. Could any government seriously envisage liquidating half (or more) of its banking system simultaneously? And if they did press on with such massive liquidation, would they be sensible to do so?

Even in the case of one large bank, and even assuming that depositors could be provided quickly with transactions balances elsewhere, the withdrawal of access to

funds by borrowers with unused credit facilities could have a devastating effect on them, especially if the liquidator sought early repayment of outstanding loans. This is not the place to go into more radical ideas, such as Larry Kotlikoff's mutual banking, (similar to Islamic banking with similar drawbacks), or making all banks 'narrow' or tiny, or both. They will not happen, and for good reason.

So, the upshot is that government insurance of the systemically important parts of our financial systems will remain in place for the foreseeable future. As the ultimate provider of such insurance, governments will want, and need, to maintain a close involvement with the conduct of systemic stability.

(v) Interest Rate Setting

I have argued that liquidity management is integral to the management of systemic stability and the essential core of the operation and *raison d'être* of a Central Bank. Thus the institution running systemic stability will be, in practice, the Central Bank. But this institution does not necessarily also need to set the official interest rate. Should that be hived off to a separate body?

Throughout this Sub-Section, I have emphasized that, willy-nilly, the Central Bank in its systemic stabilisation role will have to work closely with Government. Indeed, despite the patent, but in the end hopeless, desire to get away from TBTF, I see the linkages between Central Bank and government becoming stronger, as the bank tax, the need for a ladder of sanctions, the much enhanced role of debt management all conspire to drive government and Central Bank back into each other's arms.

One of the arguments for separating interest rate setting from Central Banking (and systemic stability) is that the former depends for its credibility on independence, whereas the latter is conjoint with government. I have never been much swayed by this. An institution can wear two hats simultaneously. A similar argument is that the combination of responsibilities would lead to conflicts of interest. Again I would tend to argue that the main failures of Central Banks, as interest rate setters, have lain in taking too little account of financial conditions and monetary developments, not too much.

Possibly a more persuasive argument is that the combination of operational independence to set interest rates and liquidity management together with prospective macro-prudential regulation just vests too much power in a non-elected body. There is some force in this.

Arguments against separation mainly rely on the necessarily intimate connection between the two facets of monetary policy. For example, once the zero lower bound to interest rates is reached, then monetary policy, in the guise of inflation targetry, and systemic stability issues become indistinguishable. If you had an MPC separate from the Central Bank, who would decide on credit easing, or QE type measures? And when the official interest rate rises above the zero bound, who would decide on the width of the 'corridor', or the terms and conditions of access to the Discount Window? One could envisage a completely separate body, whose sole function would be to determine the official interest rate, but I rather doubt whether this would be the most sensible approach.

C. Interactions with other Regulators/Supervisors at Home and Abroad

The regulator in charge of systemic stabilisation, which we assume, for the reasons given, to be the Central Bank, should also be a direct supervisor of the main systemic financial intermediaries. It should also have unquestioned supervisory access to such other banks and intermediaries, which it considers may cause, or be involved in, systemic problems. But it need not, and probably should not, be the sole supervisor of even the most important and largest banks. Except in relatively small countries, or countries with few skilled professionals, there is little to be gained by concentrating all supervision within a single institution. Indeed when the focus of supervision differs between supervisory institutions, between the economic, market-based focus of the systemic supervisor and the more accountancy, legal stance of the micro-prudential supervisor, there may instead be actual benefits from having large and systemic intermediaries seen from two differing viewpoints.

Particularly if the Central Bank combines interest rate setting with its essential roles of liquidity management and systemic stabilisation, there is some question whether its role and functions are reaching the acceptable limit for a non-elected body within a democratic society. Under these conditions, it would, in my view, be unwise and inappropriate also to give it the task of micro-prudential supervision, even for the domestic banking system, let alone the much wider set of financial intermediaries, including various forms of investment funds and insurance companies. If the interest rate setting function was to be hived off to a separate body, then there would be more of a case for combining both macro- and micro-prudential function within the Central Bank.

But even then the Central Bank should seek to steer well clear of Consumer Protection issues, and should want to be consulted, but not take the lead, on questions about Product Design, Innovation and Safety. Similarly the actual administration of the resolution of a financial intermediary, when subject to a Special Resolution Regime, is best left to the micro-prudential supervisor, if separate, or otherwise to a specialist body.

So, in a large, developed country there are likely to be, and should be, a number of regulatory/supervisory bodies with focussed specialised purposes. There probably does need to be an oversight, coordinating Committee. My own proposal is that, in normal times and whenever discussing measures for preventing crises, that Committee should be chaired by the Governor of the Central Bank, but that in crisis periods and whenever discussing measures for resolving existing crises, that it would be chaired by the relevant Minister. The distinction between the two cases should not be hard to make.

When we turn to the international, (including here the Euro-zone), context the problem of coordination becomes much more difficult. The basic problem is that the financial system is cross-border, if not global, whereas both the legal structure and fiscal competences remain national. There are two logical possibilities. The first is to make the financial system conform to national boundaries, but this would be anathema both to most of the cross-border financial intermediaries and, more important, to all those upholding the single European market. The second is to harmonise a limited, but appropriate, set of laws relating to the resolution of cross-

border intermediate (Aygouleas, Goodhart and Schoenmaker, 2010) and to provide some form of agreement over fiscal burden sharing. What needs to be done to achieve this latter is now reasonably well discerned (W. Fonteyne, et al., ‘Crisis Management and Resolution for a European Banking System’, IMF, 2010). The problem remains to get political agreement to take this program forward. Absent such agreement, the treatment of cross-border financial crises will remain a dangerous dark hole.

D. Structural Development in the Financial Sector

Direct government intervention in the financial sector in our second epoch, 1930s to 1960s, was consciously so far-reaching that, to some large extent, the structure of intermediation was largely determined by regulation and controls. Then in our third epoch, 1979 to 2007, the ethos changed. The government should set the overall framework, especially the rule of law and the monetary regime, but beyond that structural changes were to be determined by private sector market processes and innovations. Whatever met the test of the market was, *prima facie* at least, considered to be good.

Now we are moving back, perhaps somewhat unconsciously in reaction to the crisis, towards the second more interventionist mode. Perhaps in this coming epoch, intervention will be less draconian, less based on direct quantitative control, and more on the pricing mechanism, perhaps via bank taxes and graduated macro-prudential regulation. But such intervention will still shape the future structural development of the financial system.

What worries me is that the debate on systemic regulation is almost entirely reactive and backwards-looking; that is the focus is on how such regulation might, if in place, have prevented or mitigated the crisis of 2007-10. While this is inevitable, what is also needed is forward-thinking about what should be the desirable future structure of our financial systems, and how the various regulatory initiatives proposed might help to get us there.

Central Banks used to be concerned with such structural issues. They saw themselves as having a deliberate role to play in shaping the developing structure of the financial system. More recently, they have eschewed such a role. As we return to an epoch of greater government (and Central Bank) intervention in markets, Central Banks had better brush up their understanding of, and participation in, such structural issues.

3. Conclusions

The first (Victorian) and third (1979-2007) epochs of Central Banking were characterised by highly successful monetary regimes (Gold Standard and Inflation Targetry), reliance on market mechanisms and independent Central Banks. After an inter-regnum, post WWI, the first epoch came to a crashing halt in the 1929-33 Depression and deflation then led to a period of government domination, direct controls and subservient Central Banks. Now there is a good chance, but not a certainty, that we are entering a fourth epoch, in the aftermath of the financial crisis of 2007-10.

This is likely to involve some return towards the second epoch, with more intrusive regulation, greater government involvement and less reliance on market mechanisms. I would hope that we only go part way back. Instead of Central Bank subservience, perhaps we could have a more even-handed partnership. But the range and scale of interaction with government, on the bank tax, on regulation and sanctions, on debt management and on bank resolution, is likely to increase. The idea of the Central Bank as an independent institution will be put aside.

I do not myself see that this greater extent of interaction between Central Bank and government on those other fronts need prevent the continuation of the present desirable procedure whereby the Central Bank also has operational independence to set the official short-term rate. But some will see an inconsistency. If so, their answer should be to hive off the interest-rate setting function to a separate (study) group (of economists?). But do not confuse the study group with the Central Bank. Cobbold's dictum was valid.

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