Beyond Inflation Targeting

Policy Exchange

The New Paradigm for Central Bank Policy

A Collection of Essays

Edited by Helen Thomas

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Policy Exchange

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Foreword

By Helen Thomas

Global imbalances, bankers' bonuses, light-touch regulation: all have been blamed for causing the banking crisis and ensuing recession. But one potential villain lurks in the background, hidden behind technical jargon and protected by tradition: the central banker. We all know that the build-up of risk in the system precipitated an almighty bust, but let's not forget who controls the key determinant of the price of risk: the central bank through its monetary policy.

Monetary policy is, in normal times, the main determinant of interest rates. From these, multiple decisions are made: where to invest? How much to lend? How much to borrow? Other factors feed into these decisions, but the most important of these is the interest rate.

It is clear therefore that the actions of central banks have serious ramifications for everyone.

Their actions, however, appear to be rooted in technocratic language, and therefore little understood. Over the past few decades, the paradigm of central banking has moved towards something known as inflation targeting: where interest rates are set in order to meet an annual target for inflation.

This policy was adopted in the UK in 1992 after the ERM debacle, and, until the banking crisis began, it was felt that inflation targeting had delivered the Holy Grail: low and stable inflation, with low and stable inflation expectations, and steady GDP growth. Now it's clear that its success was a chimera.

The early 2000s saw the bursting of the dot com bubble and the 9/11 terrorist attacks, which set the scene for a deflationary environment.

At the same time the growth of China flooded the world with liquidity – both as an exporter of cheap goods and labour, and as a buyer of investment assets. The former led to deflationary pressure on the asset boom created by the latter. The response for an inflation-targeting central bank was to fuel the fire. Low inflation meant interest rates were dropped; and they stayed low despite the boom in asset prices (as these prices are not explicitly included in most inflation measures).

In the UK, this problem was exacerbated in 2003, when the then-Chancellor, Gordon Brown, changed the Bank of England's inflation target from the Retail Price Index (RPIX) to the harmonized EU measure, HICP (renamed the Consumer Price Index in the UK). CPI notoriously lacks any kind of housing cost component meaning that the Bank was effectively mandated to ignore the impending house price boom.

At the same time, the inflation target was amended by less than the difference between the two inflation measures: the target was lowered from 2.5% to 2%, when RPIX was 2.9% and CPI was only 1.4%. Notice, that by changing the target at this time, the bank would be below target on the new measure, but above it on the old one. *Ceteris paribus* this meant that the Bank could keep interest rates lower than it would have done, as the then-MPC member Stephen Nickell commented at the time: "[the switch] will involve slightly looser monetary policy for a limited period than would otherwise be the case"[1].

Fast-forward to the summer of 2008: Lehman Brothers still exists, but Northern Rock has disappeared. Meanwhile, oil prices hit highs just shy of $150 per barrel. The Bank of England continues to discuss interest rate hikes, and their August Inflation Report does not include even one mention of the word "recession". The continued credit and liquidity squeeze appears irrelevant to the Bank, as it continues – as per its mandate – to focus on inflation.

1 Speech by Stephen Nickell "Two Current Monetary Policy Issues", 16th September 2003, p.1.

We know how this story ends: interest rates only fell once the crisis was underway. We believe it's now time to re-visit the conditions that precipitated the crisis, and address the apparent failings of a pure inflation-targeting regime.

Policy Exchange recently hosted a seminar to discuss the issue of what might lie "beyond inflation targeting". Some of the speeches made at this event are reproduced here, along with contributions from others. The authors encompass a wide range of views: from simple amendments to the current framework, to the complete abolition of Central Banks.

Andrew Lilico argues for a small but important variation to inflation targeting: that instead of the target being for an annual change in the inflation rate, it should instead be a target for the future path of prices (i.e. for the average inflation rate over the long run). This, he claims, would reduce long-term volatility in the inflation rate and so increase investment and growth. It would also, importantly for the discussion here, mean that (a) periods of low, below-target inflation could be "saved up" to offset later higher-inflation periods; (b) this would help avoid a flaw in inflation targeting that tends to encourage asset price cycles; and (c) it would also help a price-level targeter to escape from a deflationary depression much more smoothly than an inflation targeter.

Rebecca Driver broadly defends the current inflation target in its current form, but she and **Stephen Green** argue that there should also be a macroprudential requirement to adjust the amount of capital held by banks. Stephen indicates that the Bank of England should use information from the FSA to pursue a specific countercyclical capital control policy, whereas Rebecca believes a separate macroprudential committee should monitor systemic risk and adjust capital ratios accordingly.

Andrew Smithers takes these suggestions to their logical conclusion: there must be two targets – inflation and asset prices – and accordingly, there must be two weapons with which to

control them – the interest rate and minimum capital requirement respectively.

Against this emerging consensus, it is worth considering a greatly pared back role for the central bank altogether. **James Tyler** gives the Hayekian view of a world in which markets set prices, and central bank control is removed.

In practice, however, central banks will remain in control. Amending the Bank of England's mandate would have a profound effect on the economy; the causes of the current crisis give policy makers good reason to do so.

1. On the merits of price-level targeting

By Andrew Lilico

Remembering the key advantages of inflation targeting

Inflation targeting was intended to allow management of the real economy whilst maintaining low and stable inflation. Managing the real economy requires policy-makers who know something that the market does not. It might seem that policy-makers should therefore simply state what they know, but in a market economy, if the monetary authority wants to tell the market something, the best way is to change a price, e.g. an interest rate. To interpret interest rate signals, the market needs a grammar for interpretation. That is what the inflation targeting framework is: a grammar allowing the central bank to communicate its informational and interpretational advantages to the market in the form of interest rate changes. Because inflation targeting is simple and comprehensible, the language of interest rate signals is quite clear and macroeconomic management can be effective.

Targets with multiple pillars and complex sub-conditions are much more difficult to interpret, and the central bank's message is much less likely to come through clearly. If we are to change the framework (which we now must), we should seek, if we can find it, to change to something else as clear and simple as inflation targeting, only without its drawbacks.

One alternative that preserves many of the merits of inflation targets, but without important drawbacks that we shall discuss below, is *price-level* targeting.

How does Price-level Targeting differ from Inflation Targeting?

Long-term price stability

If 2% inflation is better than 0% inflation, then the price level targeted could rise 2% each year. However, for simplicity let's compare an inflation target of 0% with a price level target of 100 (defining the starting price index as 100).[2]

Suppose actual inflation is 2% for two years, raising the price index to 104.04. In the third year if 0% inflation is the target, the monetary authority will attempt to keep the price level at 104.04, while the authority targeting a price level of 100 will attempt to deflate prices back to 100. This is the key difference: under inflation targeting we let bygones be bygones while under price-level targeting we attempt to remedy our past failures.

Consequently, *the long-term price level (and hence the long-term inflation rate) is more certain under price-level targeting than under inflation targeting (ceteris paribus)*.

Short-term inflation volatility

It is natural to believe that *the year-on-year inflation rate may differ more under price-level targeting than under inflation targeting* (i.e. short-term price volatility may be higher), because unexpected rises in the price level may be followed by attempted reductions in the price level (or rises below trend).

This is not *always* true, though. An inflation targeter that cares about output will, after an inflationary shock, tend to move inflation back to target in proportion to the output gap: if output is way above trend inflation will be reduced more rapidly than if output is only just above trend. Similarly, a price-level targeter will bring down the price level in proportion to the output gap. So since inflation is the *change* in the price level, under price-level targeting movements in the inflation rate will be proportional to the *change* in the output gap, rather than the *size* of the output gap.

2 Clearly there are important questions here about how to define the price index – for example whether it should include only consumer prices, how housing costs should be included, how to avoid perverse feedback when interest rates change, and whether geometric or arithmetic inflation measures are to be preferred. We shall not discuss these issues here.

If there are moderate nominal rigidities in the economy, then when there are output shocks they will tend to be at least moderately persistent. If, for example, some shock raised output by 1.0% compared with trend, under moderate nominal rigidities output might still be, say, 0.8% above trend a year later, and 0.64% above trend a year after that. In such cases the *change* in the output gap is only 0.2% or less of output – *smaller than the size* of the output gap.

So, typically, *if there are moderate nominal rigidities* (so that output shocks are moderately persistent) *and significant output shocks are sufficiently rare* (so that the unwinding of output shocks is, on average, the main driver of changes in output) *then the volatility of the short-term inflation rate will be lower under price-level targeting than under inflation targeting.*

Even when short-term price movements *are* more volatile under price-level targeting, that does not mean they are more uncertain, because *the extra volatility is predictable*. Extra short-term volatility is not the same thing as extra short-term uncertainty.

Some general advantages of price-level targeting

Higher economic growth

Inflation uncertainty adds a risk premium to interest rates. Higher interest rates mean that some investment projects become unprofitable at the margin, even though they would be expected to make a profit if the inflation rate were certain. This reduces economic growth. The greater long-term inflation rate certainty of price-level targeting means that *price-level targeting offers the prospect of greater economic growth and prosperity.*

There are inflation-indexed contracts, including, for example, the ability to vary the interest rate year-on-year and to sell out of one mortgage to buy into another. But the degree of such indexation provides merely partial insurance against inflation volatility

risk, and comes at a price. If we did not face the risk, and did not need to buy that insurance, we would be wealthier.

Reduced need for fine-tuning policy interventions

Price-level targeting generates its own credibility

A monetary authority seeking to maximise the welfare of its citizens has a permanent incentive to create surprise inflation. This increases equilibrium inflation expectations, thereby introducing an inflationary bias.

Price-level targeting reduces or even eliminates the incentive to create surprise inflation. The costs of surprise inflation are higher, and the incentive is actually to generate a rather harmless price level bias with no average inflation bias at all.[3]

Price-level targeting is self-regulating

Provided that credibility is maintained, *a price level target tends to be maintained by market forces without much need of intervention.*

Suppose that the year 1 price level is 100 and that the ideal inflation rate is 0%, so that the permanent price level target is 100. Consider an item originally worth £100, which I am indifferent between keeping and selling at that price. Suppose a deflationary shock reduces prices 5%, so my item now becomes worth £95. If the monetary authority has not yet done anything (e.g. not yet changed interest rates) but everyone has full confidence that it will act if necessary, will I sell for £95? The monetary authorities are going to return the price level to 100, so my item will soon be £100 again. Why should I sell for only £95? On the contrary, I should find someone foolish enough to sell for £95 and buy his items, making an easy profit.[4]

Since other people will also be doing this, the price of £95 items will be bid up back to £100, quite independently of any policy response. So the market will itself tend to keep the price level at the target without much need of intervention, provided that the monetary authorities really are prepared to intervene if necessary.

3 For more on this, see Svensson, L.E.O. (1999), "Price-Level Targeting versus Inflation Targeting: A Free Lunch?", *Journal of Money, Credit & Banking,* 31(3), pp277-95

4 Technically-minded readers should note that this discussion glosses over issues of discounting and positive long-term real interest rates. Think of there as being no discounting and a zero long-term real interest rate, for simplicity. Then note that since inflation that returns the price level up to 100 will be above-trend (the trend rate being zero), real interest rates during the transition will be necessarily below-trend (i.e. negative). Hence the option to buy the good at £95 and sell later at £100 will deliver strictly superior expected returns to the option to sell today at £95 and invest the proceeds until prices return to 100. The argument could also be run in terms of a non-storable non-durable consumption good — we leave this as an exercise for the reader.

Advantages relevant to the run-up to the Credit Crunch and its depressionary aftermath

Price-level targeting deals in a smoother way with real cost effects from factors such as the internet, the deflationary "China effect" and supply-driven oil price spikes

As well as monetary drivers of inflation/deflation, there are also real supply cost effects. These might be deflationary – for example if some new technology like the internet reduces costs or if the supply of cheap Chinese labour drives down production costs. They might be inflationary – for example if the market power of oil suppliers increases (e.g. the OPEC cartel) or if natural resources start to become scarcer more rapidly than expected.[5] On average, real supply costs fall, but made up of smallish real cost reductions most years with occasional larger real cost rises concentrated into particular years.

Under inflation targeting, because bygones-are-bygones, the small real cost falls most years mean interest rates can stay lower during the periods without real cost rises. But very high interest rates would be needed to meet the target in periods when there are inflationary shocks. If an inflationary real cost shock is serious, policymakers may say they can "see through" the temporary inflationary effect, and accommodate it. So, after taking account of the policy response, inflationary shocks raise the price level by more than deflationary shocks reduce it – the opposite of the effect on real costs. Thus, during the 1990s and 2000s, inflation was not happily permitted to go below target to accommodate the small China or internet cost-reducing effects each year, but the oil price spike of 2008 was accommodated.

This also meant that interest rates were too low, relative to the economic ideal, a point we shall return to below.

Under price-level targeting, by contrast, the deflationary real cost shocks need to be "saved up" so as to offset the inflationary

5 Much commentary naively confuses changes in particular prices – e.g. the oil price – with changes in the overall price level. We emphasize that this distinction is not relevant to the question being raised above, but will gloss over the details.

cost shocks. (Because of the bygones-are-bygones property, inflation targeting has no mechanism for saving up price level changes across years.) So, in the 1990s and 2000s, under a price-level targeting regime every year inflation would have been slightly lower and interest rates slightly higher, as the monetary authority saved up room to deal with any inflation real cost shocks that might turn up.

Price-level targeting does not automatically give rise to asset price cycles

Credible inflation targeting regimes generate asset price cycles, because of the bygones-are-bygones property. If an inflation target is credible and we have some reason to provide excess liquidity (say, because we are countering the dotcom bust), then if the regime is credible that extra money won't go into current expenditure but instead goes into financial assets to save against the day that the inflation targeter will hike interest rates aggressively to mop up the liquidity. But because the money is in financial assets, it isn't turning into measured inflation (immediately), so the inflation targeter doesn't need to mop up the liquidity early, even if the money drives up asset prices. Eventually, if people start to doubt whether the inflation targeter will ever hike rates, there will be a wealth effect associated with the elevated asset prices and inflation will come. But that might be sufficiently far into the future that the inflation targeter does not need to care about it today, and even when he does care there will only be a short-term impact – for after that, bygones will be bygones as far as the inflation target is concerned. Because of this feature, inflation targeting regimes act too late against asset price booms.

Price-level targeting, in contrast, does not have the bygones-are-bygones property, and does not have the same problem of acting late as a consequence.

Price-level targeting offers escape from a low-employment equilibrium

An inflation targeter will attempt to combat a deflationary depression early, by preventing the initial fall in prices. However, suppose that it fails, and prices fall. If the economy has extensive nominal rigidities, it is not inconceivable that in extreme circumstances a new low-price-level quasi-"equilibrium" could continue for some time.

If this happens, inflation targeting will not help. The price level might stabilise at the new equilibrium, so that an inflation-targeting authority would take no action, except perhaps to attempt to stifle a recovery in prices if it started. Fiscal action might be taken, but would probably lead to a rise in prices if it were successful.[6] Then the fiscal and monetary authorities would be working against each other. Perhaps in practice the monetary authority's inflation target would be changed – increased significantly to aid the recovery in prices. If so, what is being targeted here (albeit implicitly) is not the inflation rate, but the price level. *If the price level were explicitly the target from the start then early action could be taken to aid the recovery in prices, and to work with fiscal measures rather than against them.*[7]

Price-level targeting allows a lower average-inflation rate

In developed small and medium-size economies which do not use discretion, since there will tend to be cost-reducing innovations that make a small decline in the price level over time optimal (say, 0.5%-0.75% per annum), a price-level (or average-inflation) target can average trend deflation.[8] Because of its problems in dealing with deflationary depressions, it is not appropriate for an annual inflation-targeting regime to target even modest deflation in this way (any target equating to materially less than a 2% rise in the cost of living is probably risky). But since price-level targeting does not face the same technical problems in escaping from

6 Note that in the scenario under consideration the quantity of monetary base is assumed not to have fallen much, so that the fall in prices is associated with a fall in the broad money supply associated with a fall in the money multiplier (e.g. because people become less willing to use money substitutes such as credit cards). But in the medium term the money multiplier must depend on structural features of the economy, rather than ephemeral monetary conditions. An economic recovery will be associated with a return of the money multiplier to its previous levels (approximately), and hence to an expansion of the broad money supply and thence to inflation.

7 This issue is explored in considerably more detail in Lilico, A. "The liquidity trap and price-level targeting", *Economic Affairs* Vol 22 (2), June 2002. For a more involved analysis, see Svensson, L.E.O., "Escaping from deflation and a liquidity trap", Talk at Hong Kong Monetary Authority, December 2002, http://www.princeton.edu/svensson/papers/hk212.pdf

8 For more on this claim, see Lilico, A., "Could deflation be ideal?", *Economic Affairs* Vol 23 (1), March 2003.

a deflationary low-employment quasi-equilibrium, these low average-inflation rates can be sustained more safely.[9]

Drawbacks of price-level targeting

The costs of long-term price stability

Long-term price stability is not unambiguously good. As in the case of technological improvement reducing costs (or, say, an earthquake destroying supply), sometimes the desirable equilibrium outcome is for the price level to change more than had previously been anticipated. A price-level targeting regime would attempt to reverse these equilibrium shifts in the price level. Under inflation targeting, they would be resisted as they occurred, but then accepted. *The biggest trade-off from the use of price-level targeting is between the costs and benefits of certainty in the long-term price level.*

One important implication will be that price-level targeting may be inferior to inflation targeting in certain rapidly developing economies in which annual shocks dominate underlying trends.

The danger of not being allowed to do it

In order to deliver all of the technical advantages of price-level targeting (in particular, properties such as self-stabilisation with fewer interest rate changes) credibility must be very high. That means that there must, *inter alia*, be confidence that the monetary authorities will be permitted to do some fairly extreme things in fairly extreme cases. Some central bankers doubt whether politicians would actually allow this to happen, and thus doubt some of the technical results concerning price-level targeting's advantages.

Price-level targeting vs average-inflation targeting

Price-level targeting requires the government to commit to a long-run path for inflation. But how can the government commit to what will happen in ten years' time, when it may be a completely different

9 There are other, more technical, advantages to price-level targeting, such as that its performance is better when there is more uncertainty over how the economy works. We shall not explore these here. Interested readers should consult Cateau, G (2008), "Price Level versus Inflation Targeting under Model Uncertainty", Bank of Canada Working Paper 2008-15, http://banqueducanada.ca/fr/res/wp/2008/wp08-15.pdf

government in power? In contrast, an inflation target offers politicians the opportunity to be judged on something concrete over a reasonable political timescale. The electorate can decide that it wants to elect a government which will set a higher or lower inflation target, and that will happen. Might not the likelihood of a change to the price level target at some point in the future undermine the credibility of the regime?

One way around this is to use "average-inflation targeting", under which an incoming government would state its target (say 2.0%) for the average inflation rate over the next Parliament. If the electorate always liked the same average inflation target, an average-inflation targeting regime would be just like a price-level targeting regime. But, in any event, many of the gains of price-level targeting would still be present under average-inflation targeting.

In conclusion, we have seen that price-level targeting allows us to learn from the failures of inflation targeting without throwing away all its strengths. We should be considering its use in the UK.

2. How to strengthen the UK's monetary policy framework

By Rebecca Driver[10]

The introduction of inflation targeting has coincided with a period of strong growth, low inflation and significantly lower aggregate volatility. In particular, the volatility of real output growth in 1998-2008 was half that of the period 1976-1997, while the volatility of inflation fell by a factor of five.[11] At the same time inflation fell from an average of 7.2% to 2.6% and real output growth rose from an average of 2.3% p.a. to 2.7% p.a.

Today, however, we are in the midst of a severe recession and have seen a major dislocation in the financial system, at significant cost to the taxpayer. A strong and stable economy is a vital component of long-run competitiveness, so it is important to get the economic policy framework right. If we do not want this episode to be repeated, what should we fix?

My personal view is that we should retain the inflation-targeting framework, but establish a mechanism to deal with asset price bubbles using macroprudential regulation in a way that is coordinated with monetary policy.

The benefits of inflation targeting

When Gordon Brown made the Bank of England independent in 1997, and gave the Monetary Policy Committee responsibility for achieving the inflation target, he was effectively giving them responsibility for the day-to-day management of the economy. Was this a mistake?

10 The views expressed in this paper are those of the author and not necessarily those of the Association of British Insurers or its members.

11 Based on the RPIX measure of inflation.

The UK's inflation-targeting framework has clear strengths. It is transparent, symmetric and free from political interference as part of the election cycle, all of which are important. But the strengths of the inflation-targeting framework are not just theoretical, it has delivered clear benefits in terms of improved economic outcomes. Even when you include recent outturns, on average growth has been stronger, inflation lower and the economy more stable.

The evidence suggests that this was not purely good luck on the part of policy makers. The regime has had to cope with significant shocks, including 9/11, the Asian crisis, the Russian crisis, the collapse of Long Term Capital Management (LTCM) and the bursting of the dotcom bubble.

More importantly, there is clear evidence that the introduction of inflation targeting led to a structural shift in the process determining inflation. Luca Benati shows that the behaviour of inflation over time has depended on the monetary policy regime.[12] Under stable regimes with clearly defined nominal anchors, such as inflation targeting, inflation is purely forward-looking. This has been the experience under inflation targeting in the UK. In regimes, such as the United States, where the policy framework does not provide a clear anchor, inflation remains significantly more persistent. In other words, by making people less backward looking, inflation targeting helped ensure policy is more effective.

Would price-level targeting be better?

Of course inflation targeting is not the only regime that provides a clear nominal anchor. Price-level targeting has become increasingly popular as a potential option, particularly within the theoretical literature. So much so that Canada has contemplated switching from inflation targeting to price-level-path targeting.[13]

However, overall the benefits are assessed to be quite small. Donald Coletti *et al* suggest that the benefits for Canada of switching from

12 Benati, L (2008), "Investigating inflation persistence across monetary regimes", the Quarterly Journal of Economics, 1005-1060.

13 Price-level-path targeting is a version of price-level targeting where the price-level target increases each period at a specified rate, but no drift is allowed in the price level. Bygones are not bygones.

inflation targeting to price-level-path targeting are 0.5% of the benefits of switching from the previous regime to inflation targeting.[14] Oleksiy Kryvtsov *et al* also find that even under perfect credibility the benefits are small.[15, 16]

In addition, Donald Coletti *et al* show that the relative benefits of the two regimes will depend on the importance of inflation stabilization compared to output gap stabilization.[17] Inflation targeting is better at stabilizing the output gap.

There is also the issue of the transition. Oleksiy Kryvtsov *et al* show that where the switch to price-level targeting from inflation targeting is not perfectly credible, the switch may actually be welfare reducing.[18] Essentially the central bank needs to be overly aggressive in order to establish the credibility of the new regime and if this persists for more than ten quarters welfare may fall.

Overall therefore the benefits of a switch to price-level targeting are likely to be small and there are risks if the regime switch is not completely credible. The key question though is would price-level targeting have prevented the current crisis?

I would argue that the answer to that is no. The reason is that if you compare like-with-like, from when the Chancellor changed the inflation target to 2% inflation measured using CPI in 2004 until the start of 2007, the price level was below what the price level should have been under a 2% price-level-path target. In other words, under the equivalent price-level-path targeting framework, monetary policy would have needed to be even looser at the point when the asset price bubbles were building up. The same would also have been true if the target had remained 2.5% inflation measured using RPIX, which includes a measure of house prices.[19]

Why was a good monetary policy framework not enough?

Two explanations for why, despite having a good framework for monetary policy, we were unable to avoid the current crisis are: errors by

14 Coletti, D, Lalonde, R, and Muir, D (2008), "Inflation targeting and price-level-path targeting in the Global Economy Model: some open economy considerations", IMF Staff Papers, Vol 55, 326-338

15 Equivalent to a permanent reduction in the standard deviation of inflation of about 0.05 percentage points.

16 Kryvtsov, O, Shukayev, M, and Ueberfeldt, A (2008) "Adopting price-level targeting under imperfect credibility: an update" Bank of Canada Working Paper 2008-37.

17 op.cit

18 op.cit

19 For a description of the difference between CPI and RPIX and the impact on inflation, see Mervyn King, (2004), Speech at the Annual Birmingham Forward/CBI business luncheon, http://www.bankofengland.co.uk/publications/speeches/2004/speech211.pdf

policy makers who failed either to spot the asset market bubbles emerging or to react; or lack of an appropriate instrument to deal with the risk of asset markets derailing the macroeconomy. The explanation matters because it gets to the heart of what needs fixing. Although mistakes may have been made, in the case of management of the economy I believe the latter is the main explanation.

The factors underpinning the current crisis, and in particular the mispricing of risk that was at the heart of the crisis, had been recognised for some time.[20] Monetary policy in the UK may have been too loose in the run up to the crisis, but even those countries that had managed to avoid the build up of domestic asset price bubbles have seen both recession and financial market turmoil. The problem was in the US, where house price inflation peaked at the highest level for 20 years in 2005 as a result of loose monetary policy and the trend in securitisation led the banking sector to underestimate risk. The crisis was exported. Domestic monetary policy alone was not enough.

This is maybe not surprising. Interest rates, which are the main instrument of monetary policy, are not well suited to addressing asset price bubbles, let alone foreign asset price bubbles. Controlling an asset price, such as house prices, requires large changes in interest rates that would undermine the stability of the economy.[21] Furthermore, it is not automatically the case that the bursting of an asset price bubble leads to a recession, as the dotcom bubble illustrates, so taking a very risk averse stance via monetary policy will have real costs.

This suggests that there are two additions to the policy framework that would have proved useful in the current crisis: better cooperation at international level and a mechanism for translating concerns over asset prices into action using prudential supervision. The former would increase the likelihood of problems being addressed at source, while the latter would provide a more effective instrument to address the build up of asset price bubbles and a way of reducing the risks associated with disasters.

20 For example the Bank of England's Financial Stability Review in July 2006 noted that there was an unusually low premium for bearing risk and that corporate credit risk was possibly under priced.

21 See Charles Bean, (2004), "Asset prices, monetary policy and financial stability: a central banker's view", speech at the American Economic Association meeting, San Diego.

Effective global cooperation is extremely important, but an issue for another debate. Instead I want to concentrate on the domestic policy framework.

Macroprudential regulation and asset price bubbles

If better prudential regulation is the answer, does that simply mean better supervision?

Individual supervisors clearly have an important role in spotting where the practices of an individual organisation give cause for concern and acting accordingly. They should continue to have this responsibility. Indeed there needs to be a strengthening of prudential supervision at company level in the UK.

This alone however will not be enough.

Analyses of banking crises often show that supervisors of individual institutions feel unable to intervene. The reasons given are that it is hard to say no when an institution appears to be making large profits, particularly when its business model is not out of line with the practices observed elsewhere. Supervisors of individual companies struggle to address systemic risks.

Part of what has been missing therefore is a way to link macroeconomic risks and prudential capital rules. What is needed is a framework where the capital requirements in the banking sector can be tightened in periods where it becomes clear that there is a systemic build up of risk within the economy.

This is not the same as reserving over the course of the economic cycle – building up capital in good times to release in the bad. It is not that higher levels of capital may not be appropriate, but using economic growth to adjust capital would probably not prevent a similar crisis. The current crisis may have generated a recession, but it did not emerge from macroeconomic instability in the traditional way. Over a ten-year period,

between 1997 and 2007, the lowest level of GDP growth in the UK was 1.8%. The sharp reduction in macroeconomic volatility, which is a desirable feature of the current regime, makes it harder to pick out what marks a cycle.

An alternative to a pure counter-cyclical capital adequacy regime would be a formal mechanism where regulators can adjust the amount of capital the banking sector as a whole is required to hold in response to emerging risks in asset prices. The aim should be to ensure risks are spotted early and acted on while the rest of the economic climate is relatively benign. As the risks go away, capital requirements can then be eased to ensure that banks do not need to hold uneconomic amounts of capital.

What might this mechanism look like? Although relatively little research has been done on macroprudential frameworks of this sort, it is likely that some of the insights from the literature on monetary policy would apply. In particular, those responsible would need to be independent from government, to avoid political business cycles creeping in via the back door. The use of a separate instrument, capital requirements, would help, as it is well established that trying to hit multiple targets with a single instrument is ineffective.

Changes to capital requirements would need to concentrate on the build up of long-run systemic risks, rather than short-term macroeconomic fluctuations, and should therefore be relatively infrequent. Once announced, implementation of any decision to change capital requirements would need to be delayed for a period of roughly a year, to allow institutions time to build up the necessary capital. This is important because capital requirements are not an effective tool for short-term economic management and constant changes to capital requirements would undermine the ability of financial institutions to plan effectively, leading them to hoard capital unnecessarily.

It will be important that changes to capital adequacy requirements are coordinated with monetary policy, to reduce the risk of key elements of policy working against each other. Clear and transparent communication would also be extremely important, so that it can influence expectations around asset prices in the same way that the Monetary Policy Committee can influence expectations about the macroeconomic outlook.

I believe that possibly the most effective mechanism to achieve this would be the creation of a Macroprudential Committee, involving all the key players, so the committee should include members of the MPC, the FSA and independent experts. The government should be responsible for setting its mandate, in order to ensure accountability, but should not be a formal member of the committee. Instead a senior Treasury representative should act as an observer, to raise issues that are relevant to the discussion, and help with overall coordination under the Tripartite regime.

If the new committee were based at the Bank of England, this would ensure that the committee's decisions were joined up with the conduct of monetary policy and the analysis of the different policy options could be done on a consistent basis. This suggests that it might be appropriate for the Governor to chair it.

This set-up would give the Bank of England's new statutory objective for financial stability teeth. It would underpin better cooperation between the FSA and the Bank of England and provide a formal mechanism for systemic policy concerns to be acted upon, even where they are not judged to have serious implications for short-term economic outturns.

The task of this committee would not be easy: equilibrium asset prices are difficult to measure, making it hard to know absolutely when a bubble is emerging;[22] some asset price bubbles may be more likely to pose systemic risks to financial stability than others; and different asset prices can often pull in

22 For example there are over six different ways to measure equilibrium exchange rates, see Rebecca Driver and Peter Westaway, (2005), "Concepts of Equilibrium Exchange Rates", in R. Driver, P. Sinclair and C. Thoenissen, eds. *Exchange Rates, Capital Flows and Policy*, Routledge.

opposite directions. However, if done well it could provide the missing link between macroeconomic policy and macroprudential regulation and be of long-run benefit to the economy.

3. Time for the old lady to retire?

By James Tyler

I want to talk about two things today;

Number 1: Free markets did NOT cause this crisis… Governments did. Number 2: Inflation targeting has failed. Money has failed. What should we do?

Free markets did not cause this problem. In theory, markets work by reacting to prices and directing capital towards where it will be most productively used. This is how wealth is created. Usually this works well, but markets are made up of humans, and can be fooled into overshooting by false signals. Bubbles build up, expanding until people lose confidence. Bubbles then burst. It's a corrective process that, relatively benignly, irons out imbalances. The problem only comes when bubbles go on for too long, because once they get too big, the pop can be terrifying. And that's what we've got now - one hell of a big bang.

False signals have caused a spectacular mal-investment in real estate and its derivatives. But these false signals did not come from the market, but from government.

False signals came from Greenspan's introduction of welfare for markets. Markets were taught that no matter how much risk they took, they would always be saved. 1987, 1994, 1998, 2001: each bust was bigger than the last, and disaster was only staved off with aggressive rate cuts and increased money supply. Clearly this was

not laissez faire. Just think if events had been allowed to take their course. I bet if LTCM had gone bust then a badly burned Wall Street would have learned a lesson and Lehman's would still be around today. In 1999 Clinton mandated that Fannie Mae and Freddie Mac reduce lending standards. The poor were encouraged into debt. This intervention triggered a race to the bottom of lending standards as commercial banks were forced to compete against the limitless pockets of Uncle Sam.

False signals came from deposit insurance. Deposit your money in a boring mutual? Why bother when you can lend it to a lump of volcanic rock in the Atlantic at 7% and be guaranteed to get your money back.

The Basle banking accords required banks to replace rock solid reserves with maths. Government-protected and regulated ratings agencies produced negligent ratings duping pension funds, who were obligated to buy high quality paper, into buying junk cleansed by untested mathematical models.

Central banks create boom and bust.

But most damaging of all was the absurdly low interest rates set between 2001 and 2004. The resultant glut of cheap money fuelled an unsustainable boom encouraging more mortgages to be taken out, and pushing property prices ever higher. The market responded by pushing scarce economic capital towards highly speculative property development.

As prices rose, people remortgaged and borrowed to consume more. This unchecked process tended to be destructive, as scarce economic capital flowed out of our economy and headed to those economies efficiently producing consumer goods, such as China. Rampant asset inflation clouded our ability to see this depletion process in action. Everyone had a great time whilst the party lasted, not least Governments who were incentivised to let it run, blinded by ever larger tax revenues.

But all parties come to an end, and central banks had to prick the bubble eventually. Interest rates went too high, sub prime

collapsed, and then all property prices plummeted. Trillions of dollars were ripped out of the financial system, and the credit crunch began.

But, despite its complexity, there was nothing new or unpredictable about this process. All the great busts of the 20th century were preceded by Government sanctioned fiat currency booms.

In the 1920's, the Fed pursued a "constant dollar" policy. This was the era of innovation, Model T Fords, radios and rapid technological advancement. Things should have got cheaper for millions of people, but money supply was boosted to try and keep prices constant. All that extra money flowed into the stock market, pushing prices to crazy levels, and we all know how that ended.

In the modern day, targeting price changes has been an utter disaster for us too.

It let the Bank of England pretend they were doing their job, when money supply was growing at a double digit rate. It let the authorities relax whilst an economy-threatening credit bubble was building up. And it gave Gordon Brown the leeway to convince people that boom and bust was over.

Things should have got cheaper.

Inflation targeting made no allowance for globalisation, the rise of India and China, and the benign falls in general prices that should have been triggered. Think about it; if all those cheap goods were to become available, consumer prices should fall. We would have had greater purchasing power, and become wealthier for it.

But, the Bank of England was aiming at a symmetrical 2% plus or minus 1% target. Falling prices in some goods necessitated stimulating rises in others. They unleashed an avalanche of under priced debt and we had our own crazy asset boom.

Inflation targeting was a myopic policy.

Governments make terrible farmers. When a central bank sets interest rates, they set the price of credit. Inevitably they create distortions.

Consider this: Governments cannot set food prices without causing a glut – or painful shortages. Now, food is a pretty simple commodity, yet we all understand that central planners simply cannot gather enough information to set the price accurately. It has to be left to the spontaneous interaction of thousands of buyers and sellers to set the price.

So, why do we think that enlightened bureaucrats can put an exact price on something as vital, yet complicated, as credit? Let's wake up from this fantasy. There is a better way.

Let the invisible hand do its time honoured job. Leave interest rates to be set by the millions of suppliers and users of capital. Get the central planners out of the way. It's the way it used to happen. The period of fastest economic growth the world has seen was in America between the Civil War and the end of the 19th century. Money was free and private and the Fed did not exist.

So, how do we get back to freedom in money? Fredrich Hayek – the great Austrian economist – did the best thinking on this. What he proposed was that private firms should be allowed to produce their own currencies, which would then be free to compete against each other. People would only hold currency that maintained its value, firms that over-issued would go bust. Producers of 'sound' money would prosper.

History gives us plenty of successful examples of private money working well: 18th Century Scotland had competing banks, all with their own bank notes. People weren't confused. It worked. There are many other examples. In the modern age, technology makes the prospect of monetary competition even more tantalising. Mobile phones, oyster cards, smart tags, embedded chips, wireless networks, the internet. Prices could flash up in the shopper's preferred currency.

Here's an idea of how to kick the process off: Tesco want to get into banking, so why not currencies as well? Tesco would print one million pieces of paper. Let's call them Tesco pounds. They would be redeemable at any time for £10 or $15. They would then be auctioned, and the price of a Tesco set.

Anyone who owns a Tesco has a hedge against either the sterling OR dollar devaluing, therefore the Tesco has an additional intrinsic value. Maybe they'll auction at £12.

Tesco would specify a shopping basket of goods that cost £60. It would promise that 5 Tesco Pounds would always buy that weekly shop. The firm would use its assets to adjust the supply of Tesco Pounds so that they kept this value stable.[23] They would need to otherwise their shelves would be cleaned out!

As central banks inflated the sterling and dollar away over time, the convertibility into these currencies would matter less. We would be left with a hard currency that meant something. There would be other competitors and a real choice about which money to hold your wealth in.

McDonalds has a better credit rating than Her Majesty's Government, so would people be happy to hold Big Mac tokens? At least it will be a free choice.

Currencies would sink or swim depending on how well they performed. What's more, firms issuing the currencies would come up with different ways of maintaining their value. Some would offer gold. Manufacturers may use notes backed up by steel, copper and oil. Let's see what a free market chooses. Somebody might have a brainwave and come up with an idea that nobody has thought of; that is what free markets do best.

I can guess the reactions that my proposal might inspire in some. How would the man on the street cope? Well, nobody would outlaw the Government's money, and people could carry on as before. Through the operation of the market, we would find out what worked best. Step-by-step, the economy would be transformed and standards driven up.

In economics, spontaneous orders are always so much more rational and stable than planned ones.

In conclusion, this is not a crisis caused by free markets. A free and unregulated market in money has not existed for over a century. This is a Government crisis. A crisis over the monopoly of money.

23 Further reading, see Robert Shiller's research paper for Policy Exchange, "A Case for a Basket" (2009).

Inflation targeting seemed so persuasive, but it was a false God, and we deserve better. Stability and sound money can only come if we put the money supply back where it belongs, under the control of the free market.

4. Time to manage supply as well as demand for credit[24]

By Stephen Green

There is a paradox about macro-economic demand management in an open economy. A central bank can raise interest rates and yet monetary conditions end up looser. In a world of open capital markets, the central banker's principal instrument for constraining economic excesses – setting interest rates – has been blunted.

The problem is that the authorities have had only one weapon in their monetary armoury. They need two. It is time for a second weapon to affect the supply of credit, to augment interest rate policies which mostly affect the demand for credit.

To understand the problem, you need only look at the UK economy before the credit crunch began to bite in the summer of 2007. Although the Bank of England raised its key policy rate several times in the middle of the decade – from a trough of 3.5% to a peak of 5.75% – these actions did little to constrain the credit boom. Sterling strengthened significantly, but its ascent was accompanied by growing problems: looser lending conditions, narrowing credit spreads, booming house prices on the one hand; and an increasingly unbalanced real economy on the other. Employment in manufacturing fell at around the same rate as it rose in financial services and in construction – too many engineers in the bank dealing rooms, too much construction and not enough investment in other areas.

Over this period, the UK economy was increasingly at the mercy of global capital flows. As the Bank of England raised interest rates, foreign investors became ever more willing to lend to UK financial

24 Reproduced with kind permission from the Financial Times, 26th April 2009

institutions to take advantage of so-called "carry trades". In the middle years of the decade, interest rates in other key currencies were significantly lower than those in the UK. For a while, for example, it was attractive to borrow in Swiss francs or yen and re-invest in sterling to take advantage of a positive interest rate spread in a world dominated by a search for yield.

These inflows contributed to the problems now facing the UK. They supported sterling's value, even as the current account deficit deteriorated significantly. The financial system found itself awash with funds as inflows into the UK increased rapidly. Lending increased, helped along by easier terms. Then, heightened risk aversion over the last 18 months or so contributed to a sharp fall in cross-border capital flows globally. Sterling fell sharply. The UK banking system ended up short of funds. The credit crunch was the inevitable consequence.

In our world of open capital markets and vast cross-border capital flows, the tasks facing monetary policymakers have become much more complex. They have to manage an inflation target over time whilst avoiding risks to the financial system. Monetary policy works best if changes in the policy stance are smoothly communicated through the banking system as a whole. If the waxing and waning of global capital flows distort this process, monetary policy works a lot less effectively.

Although the Bank of England has an instrument to influence the demand for credit – interest rates – it has been blunted by global capital flows. An increase in bank rates, for example, will – other things being equal – reduce demand for mortgages. It may also, however, attract funds from abroad thereby leading to an increase in the supply of mortgages, which may also be linked to looser lending standards.

So what would a tool to manage the supply of credit look like? The best approach would be for the authorities to adopt a counter-cyclical capital ratio policy for banks. This would strengthen both macro-economic management and macro-prudential management:

in other words, it would help both to balance the real economy and to ensure stability in the financial system.

This is in line with proposals in the Turner Review. During the good times, banks operating in the UK would be obliged to hold more capital against their loan volumes. In this way, the profitability of pursuing market share in an environment of seemingly limitless funds would be reduced, thereby insulating the UK economy from the worst excesses associated with carry trades. During the bad times, capital ratios could be lowered to ensure that, if funding began to shrink or banks became more risk averse, there would not be a dangerous contraction in bank lending.

Calibrating this approach would require careful and subtle policy management. It would be unlikely to be as simple as a lock-step approach in which the bank capital ratios were adjusted mechanistically in synchronisation with interest rates.

How, therefore, should this policy be run? Within the tripartite structure, both the Bank of England and the Financial Services Authority (FSA) have an interest in its effectiveness. One possible approach would therefore be for the deliberations of the Monetary Policy Committee to include bank capital ratios as an explicit topic in its assessment of macro-economic conditions and policy requirements, and for the FSA to be represented appropriately in these deliberations. There should be a clear convergence here between the perspective and responsibilities of the Bank of England and the FSA.

There are collateral issues to be addressed as flagged in the Turner Review, particularly with regard to lending through branches of foreign financial institutions, in order to help make this approach fully effective. But one thing is for sure: if we do not address this problem, we will again face the challenge of an unbalanced real economy and an overheated financial system sooner or later.

Conversely, if we can get this right, the prospect is for a better balanced, more competitive UK economy, with a more sustainable growth trajectory.

5. Central banking: beyond inflation targeting[25]

By Andrew Smithers

Our current troubles are the result of inept central banking arising from two errors made by the Federal Reserve and others.[26] The first was to claim that the value of equities and other assets could not be even roughly known, and the second was to claim that falls in asset prices, if they were to occur, could be readily offset by monetary policy.

In 2002 Stephen Wright and I wrote a paper explaining why the Federal Reserve should adjust its policy, not only in the light of expected inflation but also if stock market prices reached excessive levels. But at that time we doubted whether "this view would yet receive support from the majority of economists"[27]. As I write today, it is quite hard to find economists who disagree. Opinions tend to be moved more quickly by events than by arguments, and this change is no doubt the result of financial turmoil and the dramatic loss of output in the real economy. Among central banks, the ECB has already acknowledged that central banks need to take asset prices into account when setting monetary policy[28] and there are encouraging signs that even the Federal Reserve has decided to reconsider its attitude.[29]

Asset prices are an important transmission mechanism whereby changes in interest rates affect the real economy, but these changes are ephemeral. If monetary policy is too easy for too long, asset prices are temporarily driven a long way above their fundamental values and the strength of their mean reversion becomes stronger

25 The issues discussed in this article are examined much more fully in *Wall Street Revalued – Imperfect Markets and Inept Central Bankers* by Andrew Smithers, which is due to be published by John Wiley and Sons, Ltd. in July 2009.

26 See Monetary Policy and Asset Price Volatility by B. Bernanke and M. Gertler published in the Federal Reserve Bank of Kansas City Economic Review 1999 4th Quarter pp 17 – 51.

27 World Economics Vol. 3 No. 1 Jan-Mar 2002 *Stock Markets and Central Bankers – The Economic Consequences of Alan Greenspan* by Andrew Smithers and Stephen Wright.

28 See *ECB favours using monetary policy as asset-price tool* article in the Financial Times 15th May, 2009.

29 As reported, for example, in "Troubled by bubbles" by Krishna Guha in the Financial Times 16th May, 2008.

than the influence of interest rates. We know from recent experience that when this happens central banks lose control of their economies. Massive fiscal stimulus and unusual monetary policies then become necessary and the risks of both inflation and deflation rise.

To avoid a repetition of our current troubles, central banks will need to identify which asset prices matter, how to value them and what steps to take before they reach excessive heights.

The assets which matter are equities, house prices, and the return which investors receive from holding illiquid assets, which I will loosely term the "price of liquidity". Central banks must understand how to value each of these and they will therefore have to overcome the confusions that result from the residual influence of the Efficient Market Hypothesis ("EMH"). Although its invalidity in its strict form has been known for some time, economists have been slow to put a new paradigm in its place. This is a habitual problem[30] and has given rise to the unkind comment that "Science advances obituary by obituary." While recent events are likely to accelerate the interment of the EMH, we are left with some residual difficulties. Although economists have generally discarded the EMH, the habits of thought that went with it often remain. A frequently encountered example is the assumption that the equity risk premium can sensibly be used for valuing assets or predicting returns, despite the evidence for its instability. There is also a risk that the justified reaction against the EMH will go too far. Instead of assuming that financial markets are perfectly efficient, there is a growing tendency to assume that they are simply irrational casinos.

If markets are perfectly efficient, there can be no difference between price and value and, if price changes are wholly irrational, then value has no effect on prices and thus no practical relevance. No rational analysis of the prices of assets relative to their values can thus be made on the basis of either of these two extreme views. There is also ample evidence against them, as stock markets appear

30 As famously formulated by T.S. Kuhn, notably in the *Structure of Scientific Revolutions,* University of Chicago Press 2nd edn. 1970 first published 1962.

to be imperfectly efficient systems in which prices revolve around their equilibrium values. We are therefore experiencing a paradigm shift in which the EMH is being replaced by an "inefficient market hypothesis", which has had two necessary parts. The first was to show that existence of value around which prices rotate is, unlike the EMH, a testable hypothesis.[31] The second was to provide a rational explanation as to how share prices diverge from their equilibrium values and develop the momentum which accompanies these changes.[32]

I am optimistic that investors and the financial press are becoming increasingly aware of the ways in which stock markets can be sensibly valued despite the nonsense regularly published on the subject, particularly (but not only) by investment bankers. Good progress has also been made with regard to the valuation of the other key asset prices. House prices have received a lot of attention in recent years[33] and the work suggests that housing bubbles can be identified. The "price of liquidity", whose importance I have also emphasised, has also been given prominence by the Bank of England.[34]

It is increasingly accepted that central banks must not ignore asset prices, as the recent announcement by the ECB shows. As the valid criteria for valuing assets become more widely understood, the debate will increasingly focus on the levels at which action should be taken to restrain their excesses and the steps that should be taken. Even when we have achieved a greater degree of agreement on these issues than we have today, central bankers will still need to exercise judgement when deciding whether or not the stock market, house prices, or the price of liquidity are approaching a dangerous level. The evidence suggests, however, that these judgements are much less difficult than those which central banks are currently required to make, such as the size of the "output gap". It is generally agreed that, in the absence of swings in inflationary expectations and the impact of changes in international prices,

31 See *Valuing Wall Street* by Andrew Smithers and Stephen Wright, McGraw-Hill March 2000 and *Wall Street Revalued – Imperfect Markets and Inept Central Bankers* by Andrew Smithers op.cit footnote 25.

32 See *An Institutional Theory of Momentum and Reversal* by Dimitri Vayanos and Paul Woolley, The Paul Woolley Centre Working Paper Series No.1 FMG Discussion Paper 621. November, 2008.

33 For example, *A Spatio-Temporal Model of House Prices in the US* by Sean Holly, M. Hashem Pesaran and Takashi Yamagata, (2008), forthcoming, *Journal of Econometrics*.

34 *Decomposing credit spreads* by Rohan Churm and Nikolaos Panigirtzoglou Bank of England Working Paper No. 253 and Lewis Webber and Rohan Churm *Decomposing corporate bond spreads* Bank of England Quarterly Bulletin 2007 Q4 page 233.

inflation will tend to fall if an economy is operating with a positive output gap and rise if it is without one. Judging whether (at the current level of output) there is a positive or negative gap is thus extremely important for central banks, but it has also been shown to be extremely difficult.[35]

Once it has been accepted that central banks can monitor the difference between the value and the price of assets, the next step is to consider the policies that should be implemented should they get out of line. The concern with asset prices must not replace the aim of stabilising consumer prices, but should be an additional responsibility. Although the failure to address asset price bubbles is the cause of our current troubles, the introduction of inflation targeting by central banks has been a considerable success and we should not go backwards and discard the valuable advances that have been achieved.

If central banks have only one policy instrument, namely short-term interest rates, the only possible response to asset bubbles is to "lean against the wind", as suggested by Lucas Papademos, Vice-President of the ECB,[36] and Sushil Wadhwani, former member of the Bank of England's Monetary Policy Committee,[37] among others. This requires central banks to raise interest rates in response to asset prices when this would not seem justified by the outlook for consumer prices over the usual policy time horizon. Had this been the policy of the Federal Reserve during the bubble that developed in the late 20th Century, it seems likely that the stock market would not have risen to the heights it did and the Federal Reserve would not have needed to reduce interest rates then as much as it did in order for the US economy to recover from the 2001 recession, which followed the sharp fall in the stock market. The subsequent recovery would then have been of a more traditional and orderly kind and the second round bubbles which broke in 2007 would not have occurred. It is in the nature of things that we cannot prove what might have been. Whether or not leaning against the wind

35 The difficulty of this decision is well set out in a paper by Athanasios Orphanides and Simon van Norden on *The Unreliability of Output Gap Estimates in Real Time* CIRANO November, 2001 and subsequently in 2002 in the Review of Economics and Statistics, Vol 84, pp. 569-583.

36 See footnote 28.

37 Sushil Wadhwani, *Should Monetary Policy respond to Asset Price Bubbles? Revisiting the Debate.* National Institute Economic Review No. 206 October, 2008.

would have produced a better outcome for the economy must therefore be a matter of judgement. What can be said, unequivocally, is that the actual outturn of events, which followed very different policies by the Federal Reserve, has been of a kind that we will wish to avoid if possible in the future.

It would, however, surely be better to add another policy instrument to central banks' armoury. One possibility, which seems to me to be the best so far proposed, is that central banks should have the power to vary commercial banks' minimum capital ratios. This has been proposed as a way of offsetting the tendency of banks to exaggerate cycles[38] but, as this problem is associated with the rise and fall of asset prices, there is no conflict in using it also as a way to dampen asset prices. The two objectives are in particular harmony when one of the asset prices under consideration is the "liquidity price", as this indicates when lenders have become by past standards, insufficiently risk averse. It is in just these conditions that a constraint on excessive ease in bank lending is clearly desirable.

My conclusions are therefore that central banks must, in the future, be concerned with asset as well as consumer prices and that they should be given an additional policy weapon, so that they have two weapons as well as two targets. I would, however, caution that this does not mean that the economy can be managed without periodic recessions. It seems to me to be likely that by responding to asset as well as consumer prices, it should be possible, though difficult, to avoid major recessions; it is probable that periodic mild recessions are the minimum price that we must pay to avoid a major one.

38 See Markus Brunnermeier, Andrew Crocket, Charles Goodhart, Avinash Persaud and Hyun Shin *The Fundamental Principles of Financial Regulation*.

For all its aura of respect and credibility, inflation targeting in the UK didn't prevent a house price boom and bust, a bond market boom and bust, and the most serious recession and financial crisis for seventy years. Time to try something else… but what?

Beyond Inflation Targeting considers how annual inflation targets might be modified or abandoned. This collection of articles seeks to expose the failings of the pursuit of an annual inflation target, and suggests alternative methods for conducting monetary policy. Expert contributors offer perspectives from economics, central banking, the trading floor, and commercial banking.

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