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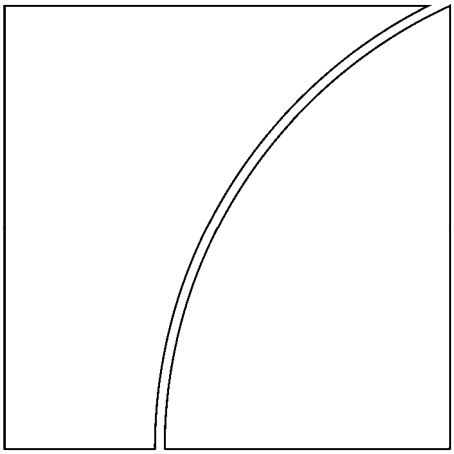

# BIS Papers

No 45

# Whither monetary policy? Monetary policy challenges in the decade ahead

Seventh BIS Annual Conference
26–27 June 2008

Monetary and Economic Department

March 2009

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# Foreword

On 26–27 June 2008, the BIS held its Seventh Annual Conference on "Whither monetary policy? Monetary policy challenges in the decade ahead" in Luzern, Switzerland. The event brought together senior representatives of central banks and academic institutions to exchange views on this topic. BIS Paper 45 contains the opening address of William R White (BIS), the contributions of the policy panel on "Beyond price stability – the challenges ahead" and speeches by Edmund Phelps (Columbia University) and Martin Wolf (Financial Times). The participants in the policy panel discussion chaired by Malcolm D Knight (BIS) were Martin Feldstein (Harvard University), Stanley Fischer (Bank of Israel), Mark Carney (Bank of Canada) and Jean-Pierre Landau (Banque de France). The papers presented at the conference and the discussants' comments are released as BIS Working Papers 273 to 277.

## Conference programme

### Thursday 26 June

| | | |
|---|---|---|
| 10:00 | Registration and refreshments | |
| 11:00 | Opening remarks: | William White (Bank for International Settlements) |
| | Chair: | Guillermo Ortiz, Bank of Mexico |
| 11:15 | **Session 1:** | **In search of monetary stability: the evolution of policy regimes** |
| | Paper title: | *In search of monetary stability: the evolution of monetary policy Some reflections. Experience – Lessons – Open issues* |
| | Author: | Otmar Issing (Centre for Financial Studies) |
| | Discussants: | José de Gregorio (Central Bank of Chile)<br>Allan Meltzer (Carnegie Mellon University) |
| 12:45 | Lunch | |
| | Chair: | Durmus Yilmaz (Central Bank of the Republic of Turkey) |
| 14:15 | **Session 2:** | **Monetary policy communication** |
| | Paper title: | *Talking about monetary policy: The virtues (and vices?) of central bank communication* |
| | Author: | Alan Blinder (Princeton University) |
| | Discussants: | Benjamin Friedman (Harvard University)<br>Y V Reddy (Reserve Bank of India) |
| 15:45 | Coffee break | |
| | Chair: | Tito Mboweni, South African Reserve Bank |
| 16:15 | **Session 3:** | **Expectations formation: beyond rational expectations** |
| | Paper title: | *Inflation expectations, uncertainty and monetary policy* |
| | Author: | Christopher Sims (Princeton University) |
| | Discussants: | Athanasios Orphanides (Central Bank of Cyprus)<br>Lars Svensson (Sveriges Riksbank) |
| 18:00 | End of day one | |
| 19:00 | Reception followed by formal dinner | |
| | Keynote address by Edmund Phelps (Columbia University) | |

## Friday 27 June

| | | |
|---|---|---|
| | Chair: | Donald Kohn (Board of Governors of the Federal Reserve System) |
| 09:00 | **Session 4:** | **Changes in monetary policy transmission** |
| | Paper title: | *Has the monetary transmission process in the euro area changed? Evidence based on VAR estimates* |
| | Author: | Axel Weber (Deutsche Bundesbank) |
| | Discussants: | Marvin Goodfriend (Carnegie Mellon University)<br>Arminio Fraga Neto (Gávea Investimentos) |
| 10:30 | Coffee break | |
| | Chair: | Hamad Saud Al-Sayari (Saudi Arabian Monetary Agency) |
| 11:00 | **Session 5:** | **Price stability and the external dimension** |
| | Paper title: | *China's financial conundrum and global imbalances* |
| | Authors: | Ronald McKinnon (Stanford University) and<br>Gunther Schnabl (Leipzig University) |
| | Discussants: | Ricardo Caballero (Massachusetts Institute of Technology)<br>Michael Mussa (The Peterson Institute for International Economics) |
| 12:30 | Lunch | |
| | Luncheon remarks by Martin Wolf (Financial Times) | |
| | Chair: | Lucas Papademos (European Central Bank) |
| 14:00 | **Session 6:** | **Credit frictions and monetary policy analysis** |
| | Paper title: | *Credit frictions and optimal monetary policy* |
| | Author: | Michael Woodford (Columbia University) |
| | Discussants: | Olivier Blanchard (Massachusetts Institute of Technology)<br>Charles Goodhart (London School of Economics) |
| 15:30 | Coffee break | |
| 16:00 | **Panel discussion: Beyond price stability: the challenges ahead** | |
| | Chair: | Malcolm Knight (Bank for International Settlements) |
| | Panellists: | Martin Feldstein (Harvard University)<br>Stanley Fischer (Bank of Israel)<br>Mark Carney (Bank of Canada)<br>Jean-Pierre Landau (Banque de France) |
| 17:30 | Close of conference | |

# Conference participants

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Saudi Arabian Monetary Agency

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Massachusetts Institute of Technology

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Banco Central de Chile

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Philip Turner
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# Opening remarks

William R White[1]

This conference is occurring at a propitious time, as any reader of the daily newspapers is well aware. For over a year now, headlines in the *Financial Times* have almost daily recorded a new source of trouble or unease in both the global financial and economic systems. Yet, when we began to plan this conference over a year ago, the "Great Moderation" was still on. Thus our interest in the topic of "Whither monetary policy?" had far less dramatic origins than the need to respond to unexpected setbacks.

One motivation was almost philosophical. In particular, some of us at the Bank for International Settlements, and that certainly includes me, are firmly of the view that economists actually know far less about how the economy works than they would like others to believe. The implication of such a view is that it is particularly when things are going well that we should be asking ourselves "why", and assuring ourselves that it has been good judgment and not just good luck. That form of questioning is consistent with an old line of Mark Twain's:

> "It ain't the things you don't know what gets you, it's the things you know for sure that ain't so".

Or the similar thought expressed more recently by Donald Rumsfeld (and quite sensibly too):

> "There are known knowns…There are known unknowns… But there are also unknown unknowns. There are things we don't know we don't know".

The fact that conventional views about how the economy works have changed so much in the past also supports the view that our beliefs might yet change again. To refer to an old joke, "Even an economist, when he sees something happen, will admit it is possible". Consider that, at one time, people believed in a Phillips curve that allowed long-run trade-offs between inflation and unemployment. There was also a school of thought that inflation was cost-driven, as opposed to demand-determined. In the 1970s, the dominant view was that inflationary expectations were sticky and the short-run Phillips curve was flat, leading to the important conclusion that it would be too costly to try to reduce inflation through monetary restraint. The one thing all these beliefs had in common was that they were wrong. And we must also add another observation, that the world in recent decades has changed immensely and continues to do so – in the real, financial and monetary spheres. In the light of all this change, the argument that we need to rethink old beliefs about how best to conduct monetary policy becomes even stronger.

As Otmar Issing will shortly remind us, monetary regimes have changed repeatedly over the years. Current disagreements among major central banks on important policy issues are perhaps an early sign that further changes are yet to come. Perhaps the most important of these contentious issues has to do with the role of money and credit. At the Federal Reserve, the use of such indicators to guide the setting of the policy rate is minimal. Indeed, a few years ago the Fed even stopped publishing data for their broadest monetary aggregate. In contrast, you are all aware of the importance attributed to the monetary "pillar" by the European Central Bank. Its origins lay in the long-held belief of the Bundesbank, dating back to the hyperinflation of the 1920s, that monetary indicators had a low-frequency association

[1] Economic Adviser, Bank for International Settlements

with future inflation. Whether that is still its principal source of usefulness is perhaps more open to debate. The Bank of Japan approaches monetary policy decisions using "two perspectives", with the second perspective relying in part on longer-term trends in credit (rather than monetary) growth. While carefully nuanced, the second perspective seems to be a vow never to repeat the boom-bust cycle that so scarred Japan in the 1990s; in effect, the issue is deflation as much as inflation. As with the Federal Reserve's experience of the Great Depression, the ECB and the Bank of Japan continue to be influenced by their different but defining historical events.

Nor is this the only area where there have been significant differences of view as to how monetary policy should be conducted. The Federal Reserve has argued vigorously that credit bubbles affecting asset prices are difficult to moderate using monetary tightening, and that the remedy might be more costly than the disease. Rather, monetary easing can be effective in cleaning up the damage afterwards and restoring economic growth. Others in the central banking community have expressed different views, suggesting not only that monetary policy might have a role to play in the upside, but also that monetary easing in the bust phase of a credit cycle might not prove very effective, or that its effectiveness might come at the cost of further economic and financial imbalances. And to add to the list of issues where different views are held, which measure of inflation should be the focus of the central bank's attention, headline or core? And what is the best policy instrument for a central bank to target, the overnight rate or three-month Libor, as practiced by the Swiss National Bank? Evidently, there was plenty to discuss even before the summer of 2007.

But the shocking developments since the letters of invitation were sent out have given the debate about monetary policy a new urgency. Far from being completely tamed, inflation is now back with vigour at the global level. Virtually every country in both the advanced market and emerging market economies now has a level of inflation that significantly exceeds explicit or implicit targets, and there is growing concern that inflation expectations and wages could also spiral upwards. At the same time, housing markets in a number of countries are spiralling downwards, with growing concerns that this will have a significant effect on consumption and GDP growth for perhaps many years in the future. Finally, beginning in the US market for subprime mortgages, but spreading out in waves to touch virtually all markets and all types of financial institutions, the global financial system is in disarray. In a number of important countries, efforts by banks to raise capital are faltering and credit conditions are tightening to the detriment of borrowers and spending. Where this will all end is effectively impossible to predict.

How could circumstances have changed from so good to so bad so fast? Answering this question points us in the direction of new paradigms, in effect resolving the differences of view just referred to, and new policy frameworks to avoid repeating the same errors in the future.

Most fundamentally, it could be that central banks have put too much emphasis on achieving near term price stability. Or to put it another way, they have allowed the achievement of price stability over a long period to blind them to two possibilities. First, that a long period of extremely rapid monetary and credit expansion might, in the end, still have inflationary consequences. One need not be a "monetarist" to agree that "inflation is always and everywhere a monetary phenomenon". And second, that the same monetary cause was leading to the buildup of other significant problems in both the real economy and the financial system.

Some commentators have been suggesting for some time that inflation globally might have been temporarily suppressed through the influence of rising supply potential due to a whole host of factors, not least globalisation. The associated danger noted was that demand growth, encouraged by very easy monetary policies, would eventually prove excessive as "slack" was progressively used up. At the same time, there has been growing concern about rising "imbalances", which we at the BIS define as marked and sustained deviations from

historical norms. In the economic sphere, I would mention very low household saving rates in many countries, with associated high internal and external debt levels. In the financial sphere, unusually high asset prices (houses, equities, high-risk bonds, etc) were also thought worrisome, as was the clear deterioration in credit standards over many years for both corporations (cov-lite) and households (subprime). The associated danger noted was that these imbalances might mean revert, causing a significant decline in economic growth potentially accentuated by financial instability. In the event, all of these dangers now seem to be materialising simultaneously. This is not a good place to be.

Against the backdrop of economic history and the history of economic thought, two controversial ideas are suggested by these latest developments. The first is that monetary and financial stability are not separate objectives, but intimately related. The second is that the horizon over which one pursues price stability can have a big effect on the outcome. Even with actual and near term inflation projections under control, the unwinding of imbalances of the sort just noted could culminate in outright deflation over a longer term horizon. Policy should be conducted so as to recognize this rather different threat to price stability.

There is no doubt that developments in the financial sector can lead directly to problems in the real sector. In this regard, some might think not only of outright fraud but also of new developments such as subprime mortgages, structured products, SIVs, etc, with a clear capacity to cause financial difficulties. But even here, we must recognise links to the credit cycle and the monetary conditions underlying it. Both Irving Fisher and Hyman Minsky referred to fraud and Ponzi finance as late cycle phenomena. And it could be plausibly argued that it was monetary conditions which created the underlying demand for houses and these new mortgage-related instruments in the first place. More specifically, with the stance of monetary policy very accommodating and interest rates low, the search for yield led many in the financial sector to engage in the kind of reckless behaviour that now threatens financial stability. And to look at this in a more dynamic way, Raghu Rajan has suggested that these same circumstances also gave strong encouragement to the development of new instruments (like structured products) whose express purpose was to push the risks so far out into the tails that investors might think they could be effectively ignored. We now see that this misperception has also contributed to the current lack of financial stability.

As to whether low inflation guarantees continuing good economic performance, economic historians would remind us of the global depressions that began in 1874 and 1929. They would remind us too of the severe troubles faced by the Nordics and the Japanese in the early 1990s and by other countries in Asia after 1997. In none of these cases was the turmoil preceded by any significant degree of inflation. However, in each case the rate of credit expansion (again, often associated with the development of new financial instruments or financial deregulation) had been very rapid. As for the history of economic thought, many prewar business cycle theorists noted that, in economies benefiting from increases in productivity, prices should naturally be falling. They feared that monetary efforts to prevent this from happening would lead to “excessive” credit creation (that is, more credit than could be financed by voluntary saving at full employment), which would in turn lead to the dangerous imbalances just referred to.

At the least, given current circumstances, these issues deserve to be thought about. Indeed some of us would go further and suggest that we need a “macrofinancial stability framework” for conducting both monetary and regulatory policies, one that would use both instruments to lean in a systematic way against credit excesses in the upswing of the cycle. On the regulatory side, the recently released US Treasury blueprint for regulatory reform seems to go in this direction. On the monetary side, a number of central banks also seem to see some merits in these suggestions. It is of course a fact that such a framework would suggest that, from time to time, it might be necessary to raise interest rates even when near term inflation seemed well under control. But if the price of not doing so was a subsequent “bust” that

actually threatened deflation, that would probably be thought a deviation from price stability that was even more dangerous.

The papers prepared for this conference touch upon many of the contentious issues I have just referred to, but also many others pertinent to the effective conduct of monetary policy looking forward.

The issue of how inflation expectations are formed remains debatable, at least in the minds of policymakers. Can we simply assume that an explicit, forward-looking framework for maintaining price stability will condition expectations, even if actual inflation were to rise significantly and for an extended period? Or rather, has the remarkable stability of inflation expectations to date simply been a product of the fact that inflation has been low? We may get an answer to this sooner than we would like. And, in this latter case, are expectations more likely to be driven by measured inflation (biased downward by hedonic pricing and other factors), or perceived inflation (biased upwards by things purchased daily, like food and petrol)?

Change in the transmission mechanism of monetary policy is another topic that will be discussed. A principal concern must be whether lower policy rates in industrial countries, particularly the English-speaking countries, will stimulate demand, as has traditionally been the case. One complication is that higher debt service levels, or lower asset prices, might get in the way. Another complication, assuming that long-term rates are increasingly set in international markets, is that long rates might fail to decline with short rates. Indeed, lower policy rates (particularly in the United States) might even cause risk premia to rise, pushing the dollar down and long rates up. These are important complications evoking the notion of "pushing on a string". And to all of these complications must be added the possibility of significantly tighter credit conditions arising from weakened banking systems.

The external dimension of the search for domestic price stability also deserves attention. In small open economies with floating exchange rates, monetary tightening can lead to very substantial exchange rate increases and capital inflows. Not only can these cause problems on the way up, but they can reverse sharply and disruptively as well. In larger economies with exchange rates more or less fixed against the dollar, the danger is that monetary conditions suitable for the US are transmitted to countries for which they are quite unsuitable. A further by product, as appreciating countries lean against this trend through intervention and monetary easing, could be a global trend to excess liquidity. And this in turn raises the question of whether there is any role for the international coordination of monetary policies and, if so, how this might be done. At the very least, it might be suggested that domestic polices err when they are based on the belief that increases in food and energy prices can be ignored in the first instance because they are "external" shocks. For the world as a whole, they are clearly internal, and being largely demand driven they likely warrant a more immediate response from monetary policy.

These issues and a number of others will certainly keep us occupied and, I hope, interested over the next two days. Before closing, may I thank all of the participants for your willingness to join us at this Seventh BIS Annual Conference, with a particular thanks to the authors of papers and their discussants. The high professional standing of the people attending attests to how successful this Annual Conference has become. Clearly, both academics and central bankers do realise that they have something to learn from each other.

In that regard, I want to thank Janet Plancherel for overseeing the logistics, this year as well as in many previous years, and Bill Nelson, Kostas Tsatsaronis, Andy Filardo and Christian Upper for their help as well. But above all, my thanks, and I hope the thanks of all of us, to Claudio Borio, whose intellectual leadership and organisational skills have been crucial to this endeavour right from the start. Thanks to him. Thanks to you all. Now let the debates begin.

# US monetary policy and the prospective structural slump

Edmund S Phelps[1]

I am really delighted to have this opportunity to talk about monetary policy – the last time I discussed the subject at length was about four decades ago![2] My point then was that it was a huge mistake to see monetary policy as a static problem of engineering the desired balance between unemployment and inflation. *Optimum* policy solves a dynamic problem: it foregoes the temptation of short-term benefits in order to keep a lid on the expected inflation rate; it invests in a temporary cutback of jobs to lower the expected inflation rate if the rate is too high. Now everyone on Bloomberg and CNBC understands that monetary policy aims to manage inflation expectations. But how much more do they – or we – understand?

There are two questions on my mind. One is, what *is* policy these days, or, at least, what is it *not*? Is policy still the Taylor rule? The second question is, what *should* policy be, or, at least, what changes in policy would we agree would be better? I will focus on Federal Reserve monetary policy, but I hope my commentary has some application to policy at other central banks as well. Inevitably another question arises: On what conditions will high employment mainly depend?

After setting the stage, I will argue in answer to the first question that the present policy discussion is confused in invoking the Taylor rule to explain the cut of interest rates to a low level – or it confuses me in seeming to invoke the Taylor rule. As I see it, a faithful and circumspect application of the Taylor rule did not call for rate cuts last autumn. So, after the misguided cuts, it would appear to call for interest rate hikes.

I will then go on to argue, in answer to the second question, that, with each increase of the unemployment rate in relation to the medium-term natural unemployment rate, the Taylor rule is unconvincing in calling for a cut in the current real expected interest rate in relation to the *natural* real interest rate. The basic difficulty is that the Taylor rule is incomplete without some model of the natural real interest rate – the moving anchor in relation to which the Taylor equation would have the central bank set the expected real interest rate. The natural real interest rate could go up or down after the shock that underlies an increase in the unemployment rate. Which way it jumps depends on what households plan to do with regard to the level and subsequent growth of their consumption. A policy of this kind harkens back to Friedrich Hayek and the notion of "neutral money", which was further developed by the Dutch banker B O Koopmans. (If there are bulls and bears, they cannot both be right, so their differing expectations cannot be simultaneously met. A neutral policy would disappoint the two in counterbalancing ways.)

Finally I will note that the intense concern with whether interest rates are too low or about right, all things considered, is a bit like earnest discussion over the best position of the deck chairs on the sinking *Titanic*. The return of considerable unemployment means that the

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[1] Director, Center on Capitalism and Society, Columbia University, and the winner of the 2006 Nobel prize in economic sciences. This paper expands upon a lecture at the Borsa Italiana, Milan, 11 June 2008 and a dinner speech at the 7th Annual BIS Conference on Monetary Policy, Lucerne, 26 June 2008.

[2] The main publications were my paper "Phillips curves, expectations of inflation and optimal unemployment over time", *Economica*, vol 34, no 135, August 1967, pp. 254–81, and my book *Inflation policy and unemployment theory: the cost-benefit approach to monetary planning*, Macmillan (W W Norton), 1972.

failure over large parts of the West to bring about complete or nearly complete economic inclusion will only get worse. Our countries will need somehow to find the structural reforms that can offer a return to sustainable high employment and high productivity if they are ever to be able to offer full inclusion to the marginalised in society – an inclusion that has long been an official promise and never an achievement.

## Structural shifts in housing, banking and business investment

It is troublesome for policymaking – and a stain on the economics profession – that a large segment of the public has been taught to diagnose every downturn of employment from a long-sustained plateau as a decrease of "aggregate demand", or of "effective demand" as Keynes called it – the volume of the circular flow of money racing around the economy. Such a Keynesian interpretation of an employment downturn puts popular pressure on a country's central bank to set interest rates accordingly. If employment is down because of reduced aggregate demand, the problem can be solved – at zero cost – through rate cuts and the ensuing rise in the money supply. The monetaristic way of thinking also makes it difficult or impossible for the central bank to communicate its thoughts, if any, on what underlying structural forces might lie beneath the downturn.

This time, though, there are forebodings of "stagflation" – lower employment without the solace of lower inflation. Economists with structuralist intuitions instinctively feel that the present downturn is the effect of structural shifts, not the undoubted shift in aggregate demand. They doubt that a central bank should drag out the effects, which it cannot forestall forever. If employment is down owing to shifting structures, gearing the money supply to prop up employment would generate inflation exceeding expectations.[3] Inflation expectations would sooner or later break loose.[4] The mission would then have to be called off. Some of the central banks that have refrained from making rate cuts may be thinking this way.

We have a difference of opinion and of policy. Yet the structuralist view is rarely articulated and argued. What among the noticeable *non-monetary forces* are the main drivers in the present downturn? As important, what are the *non-monetary channels* through which these forces have *structural* impacts on the economy – and thus finally on the labour force and the natural rate of unemployment?

1. Two distinct forces have come out of the housing industry. First, there is the end of the *equilibrium part* of the housing boom. Something like 70 per cent of the rise in the inflation-adjusted price of houses in the United States from 1997 to 2006 appears to be here to stay, justified by increased rentals on residential units in many big cities from New York to Los Angeles. A corresponding spate of house building would have developed had only the justifiable price rise occurred. Yet even such a "precision boom" comes to an end once the thirst to own more houses has been slaked. At that point, home building must subside to the level needed to replace old properties that have been shut and to house fresh increases in the population. Construction workers in the housing industry and loan officers in the banking industry then suffer job losses – even as prices and rentals on houses remain high.[5]

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[3] Even if money went on being printed merely as fast as usual, the contraction of jobs and output supply would force a one-time lift in the price level, which might – or might not – raise inflation expectations.

[4] The central bank's reservoir of credibility is not bottomless. Even if some force should pull the natural rate back down before the Fed backs down, the credibility expended would leave less available next time.

[5] Suppose that, at time $t_0$, a step increase in rentals was suddenly and correctly foreseen to occur at future time $t'$. The price of houses would immediately jump in anticipation of the higher prices prevailing when the rental increased. The ratio of rental to price (the "rental rate") would be reduced but offset by the anticipated capital

Second, there is the decline in real house prices as the market gives back the excessive part of the rise in real house prices – the part not justified by realised rentals.[6] The decline leads to an additional structural contraction in the demand for labour in the housing and banking industries. Obviously this force, too, has a contractionary impact on employment in construction and banking.

Does this industry-specific job loss entail a loss for *total* employment in the economy? The loss of jobs in the construction industry, which is quite labour intensive, fails to induce an offsetting rise. Total employment does not bounce back, since a full re-employment of the jobless workers elsewhere in the economy would require real wage cuts that would exceed what some workers would be willing to accept. (In my models, only if all workers in the economy found their wealth had fallen in the same proportion as the economywide market-clearing would the wage fall enough to re-employ everyone. But there is no reason for the fall of housing wealth to have such an impact on workers' total wealth.)

2. Another set of structural forces operating to contract employment flow from the overextension of credit by the financial sector, primarily in the form of subprime mortgages, as engendering another set of structural forces. These are forces that, though non-monetary and related to the end of the housing boom, cannot be subsumed under the housing forces just analysed.[7] For one thing, the bursting of the bubble in house prices caught many investment banks with packages of mortgages (called collateralised debt obligations) not sold off to the rest of the financial sector. The prospect that a massive amount of these CDOs might become non-performing made banks reluctant to try to sell them and caused worries that the banks would not be able to find buyers for them in a timely way. With the safety of banks lending to other banks put in question, the big banks have found it hard to borrow from one another.

This "illiquidity" and resulting "seizing up" in the "plumbing" of the credit markets is one force causing a cutback in the supply of loans to the business sector and to the housing industry. Hedge funds are investing more in liquid assets, less in venture investments, to raise their liquidity at a time when many assets are illiquid.

Also among this set of structural forces is the enormous increase in bank assets of uncertain value relative to current bank capital – thus excessive leverage. Hence, some of the big banks may be operating in a condition of uncertain solvency, which makes their share prices vulnerable to rumours of unacknowledged or undetected insolvency. In this situation, a decision by management to make loans to the business sector as usual would raise added hazards of bankruptcy, takeover or closing.

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gains needed to generate a total yield competitive with the world real interest rate, taken to be an exogenous constant. In the phase until *t*′, the rental rate is declining and the capital gain rate is rising in compensation. In the phase after *t*′, the price must be rising at a vanishing rate as the rest point is approached. Assume the contrary: that the price is sliding back to its ultimate rest-point level, having overshot. Then the rental rate would be rising on top of a vanishing capital loss rate as the rest point was approached. But that is impossible if, as supposed, the world economy dictates a real yield that is constant over time. QED. The equilibrium trajectory ABB′A′ in Figure 1 depicts this story. It is a paradox that, through this trajectory, the rising housing *stock* drives a rising housing *price*.

[6] In Figure 1, the *disequilibrium* trajectory is depicted by ABCD. The bubble burst at point B.

[7] How can these *banking* forces be treated as fundamentally non-monetary? And why should they be? I feel that we gain clarity – at little cost – by supposing, contrary to factual details, that the financial sector lends and invests out of savings from households in the form of common stock, commercial paper, and so on, the market for which is broad and liquid. These instruments are the medium of exchange. Housing output expands or contracts in response to *relative* price and the *real* or *product* wage. It may be of little consequence that in fact what we call money is used as the medium of exchange.

This capital insufficiency has driven banks to cut their supply of finance for all kinds of business investment. (The managers may see it in their interest to deleverage by boosting their capital – eg issuing more equity. The owners of ordinary shares may see it in their interest instead to deleverage by decreasing lending. But both avenues leave less finance for business.) In theoretical terms, we may say that the *uncertainty premium* has been pushed up and that force impacts on the generality of investment projects, most of which pose some Knightian uncertainty owing to strategic issues and shifting structures. In fact, we observe over the past year that credit spreads have all widened; further, bank lending to business has shrunk in that time and mortgage lending has all but stopped.

It is straightforward to argue that an increase of the uncertainty premium drives down employment (driving up the natural rate of unemployment correspondingly). In the models I use, uncertainty about new loans or investments forces the value put on an added unit of a business asset to cover not only the cost of acquiring the added unit but also the uncertainty premium. In the terminology of taxation theory, the premium drives a *wedge* between the value of an added unit of the asset and the cost of acquiring it. An increase in the premium widens the wedge. As a result, the rest point to which the economy tends in the medium term – the new and lower plateau around which it will tend to fluctuate pending any new major forces – will exhibit a lower level of asset prices, thus a lower level of investing of all kinds in the business sector and housing industry, and in the medium-term rest point lower levels of the stocks of the business assets, including the stock of employees in business. A diagram depicts this in Figure 2.

3. Another category of structural force consists of productivity relative to wealth per worker (hereafter, wealth). In my framework, productivity is positive for employment, wealth negative (other things equal). Those forces are slow-moving but can wield mounting influence. One pattern is an increase in the trend growth rate of productivity without an immediate and offsetting increase in the growth of wealth supply. As productivity gets ahead of wealth, the wage-to-wealth ratio is also increased and thus so is the labour supplied; but as wealth catches up, the wage ratio and employment fall back. A case in point is the relatively fast productivity growth from 1990 to 2005: the wealth ratio was falling until about 1995, and employment was rising from 1992 to 2000. (Actually, the wealth ratio overshot the mark, as we all know, falling to earth from 2000 to 2002. And productivity took off again in 2002, but this time wealth did not fall behind, owing to the housing boom.)

The slowdown of productivity growth in the US economy over the past three years, taken as a whole, is of concern in this respect as well as others. When households revert to their habits of saving, the ensuing growth of wealth will be a *drag* on the wage-to-wealth ratio and thus the labour supplied – *if* productivity does not grow at a matching rate.

Furthermore, the slower pace of productivity is likely to damp business *expectations* for productivity growth over the medium-term future. This spells a reduction in the trend growth of the profits that business firms would expect from any new investments they undertook. The effect of that, in turn, would be a drop in the shadow prices that firms place on the business assets in which they invest, including the customer and the trained employee. An end result is a decrease in investment demand and, thus, cutbacks in jobs in commercial construction and other capital goods industries. Again, such localised job cuts do not induce an equal and opposite increase in jobs elsewhere in the economy.[8]

[8] There is potentially another category of structural force raising unemployment in the United States and the West generally: a slowdown of output or a speedup of consumption in China and the Middle East. Either development, in raising world interest rates, would impact negatively on the shadow values and prices that American businesses place on added employees, customers and office space.

It is important to add that in *open* economies (which have by no means been excluded here), the same structural forces exert structural effects through an additional channel. When structural forces, by reducing the value, or shadow price, placed on unit additions to the business assets, causes investment demand (and consumption demand) to drop, the *real exchange value* of the currency is weakened as well: either the nominal exchange value falls or the price and wage levels fall. (A basket of domestic output is worth less in foreign goods.) That result is necessary for export revenues to increase enough to pay for the (ultimate) increase in the import bill or, at any rate, to increase in anticipation of paying later for the increase in the import bill. The depreciation of the currency's real exchange value "stimulates" a diversion of some domestic output to export – although finding buyers in many cases will take some time – but not an increase of total output and employment. Yet domestic firms, now better shielded from overseas rivals, will act more like monopolists – raising their markups, which is equivalent to cutting their supplies. Through this channel, then, employment is unambiguously decreased.

It will be no surprise that the analysis here rests on a body of pre-existing "structuralist" models,[9] which differ from the Mundell-Fleming model of a small open economy. The latter is thoroughly Keynesian: there is no *structure* in production; the entirety of investment activity revolves around a single capital good, which is produced in the same way as the consumer good. In that model, a fall of the dollar has only an expenditure-switching effect, which *stimulates* exports and consumption demand at domestic producers – thus *boosting* employment until money wages adjust to nullify the effect. In contrast, the structuralist models recognise the *variousness* of investing – constructing office space (more labour intensive than production in the consumption sector), training new recruits for work as employees, and price cutting (or other methods) aimed at acquiring new customers. Several statistical tests performed from around 1990 to 2003 consistently show that a weakening of the real exchange value of the currency augurs a decrease of employment.

4. Finally, there are the steeper prices of imported oil and of a range of imported primary products, from metals to soya. Beneath that structural force are underlying forces. There is the rapid growth in Asia. Some countries have driven up oil prices by allowing their capacity to dwindle in the expectation of better prices later or by subsidising oil. The prices of some foodstuffs increased when subsidies to energy products raised the opportunity costs of growing many primary products, such as soya, and some of those subsidies did little to reduce the price of energy.

Obviously, the higher prices on these intermediate imports cost a country some of its national income. But what is the effect, if any, on total employment? It is commonly supposed that economics gives compelling reasons to believe that an increased oil price pulls down employment. True, the usual textbook analysis points to a decline in the marginal productivity of labour once employers, in an economy move, give employees less oil to work with, and the resulting fall in the real wage is supposed to reduce the amount of labour supplied, thus contracting the labour force. But it cannot be assumed that the incentive wage offered by firms will not decrease in the same proportion, thus averting a rise in unemployment. It may be that the percentage fall in the marginal productivity of labour is roughly matched by the percentage fall in the marginal productivities of capital and land. In that case, the income from wealth falls as much as the real wage. Once suppliers of labour recognise that proportionality, they may (depending on their preferences) be willing – theoretically, at any rate – to go on supplying the same labour as before, thus swallowing the drop of their real

[9] The basic models are collected in my *Structural slumps: the modern equilibrium theory of employment, interest and assets*, Harvard University Press, 1994. See also H Hoon, E Phelps and G Zoega, "The long stagnation and monetary policy in Japan: a theoretical explanation", in W Semmler (ed), *Monetary policy and unemployment: the US, euro-area, and Japan*, Routledge, 2005, pp 107–32.

wage. That case suggests that the economy should be able to continue with unchanged employment and perhaps even an unchanged sense of prosperity. This "neutrality" of oil is the dream of central bankers!

Another channel would appear to lead to employment contraction. Since consumer goods normally require these intermediate products for their production, the increased cost of the intermediates will normally bite into the profits earned by producing consumer goods; this in turn will decrease the value, or *shadow price*, of the capital goods used in the production of the consumer goods. The difficulty, however, is that the *opportunity cost* (in units of the consumer good) may *also* be decreased as a result of the drop in the real wage caused by the price increases on the intermediate products. So the net effect on the production of capital goods (from office space to trained employees) is still ambiguous!

Empirically, though, it does appear that oil prices are a negative for jobs. How, then, to obtain an unambiguous implication of employment contraction?

- It could be supposed that it is the *value* of household wealth (hereafter, wealth) – not the *income* from that wealth, as above – that matters for the reservation wage (thus the size of the labour force) and for the incentive wage employers need to pay (thus the medium-term natural unemployment rate). Then, after the oil shock, there might be expectations of some recovery of the rentals earned on capital in the home country, which would cushion wealth from falling proportionately as much as the income from wealth – eg energy savings.

- It could be supposed that oil is sufficiently important for the production of capital goods that the opportunity cost of that activity falls less than the real wage falls. The employment in the production of capital goods would tend to fall, which would pull down total employment.

- The employment effect coming through the real exchange rate channel is negative, as argued under item 3 above. (I am referring to the real depreciation prompted by the need to pay sooner or later for the higher import bill, not the real depreciation occurring by mere accounting when some of the foreign prices increase exogenously.)

  Actually, the idea that a high oil price is devastating for prosperity is over-blown. The impression that employment is apt to collapse under the weight of a high oil price arose in the mid-1970s recession, following the 1973 oil shock. Some economists, including me, showed that the higher oil price could so increase costs of production as to make the increase in the *unit cost* of producing national output, given the *money wage*, exceed the increase in the *price* that buyers of national output would be willing to pay, given the *money supply*. Then a secondary contraction of output would occur, leading to lower employment. But today the central banks do not keep their hand on the money supply – they set interest rates and let the money supply increase freely with any increase in the demand for it. (Whatever the money price we have to pay for our bread, our central banks will be there for us!) Furthermore, oil today receives a much smaller share of GDP than it did three decades ago. In the 1970s we economists were unaware that the increased unemployment of that decade was caused not by energy prices but mainly by the end of the extraordinary productivity growth that prevailed from 1955 to 1975.

There are structural forces working the other way, of course. Export demand is still increasing fast. The information and communications boom is not dead yet, judging by the considerable venture capital activity in Silicon Valley, but I do not see it poised for growth at a

rate faster than that in recent years.[10] My sense is that the four categories of contractionary forces outweigh the expansionary force of exports. The decline of total investment – business plus residential – in the United States has been about as large over the past 12 months or so as the rise of US exports; but the former reflects a decline of wealth that has reduced consumer demand and thus has weakened the dollar and further reduced output and employment. That effect is reinforced by the fact that the dollar has *weakened* in the past year (as well as the year before), not strengthened, from an already weak level.

There would not seem to be any other way to explain the recent contraction of employment and rise of unemployment. The recent disruptions do not appear to be mainly the result of monetary forces. The dip of interest rates and concurrent investment boom in the United States in 2002–05 was not associated with any acceleration of the money supply, either M1 or M2 – certainly not if we normalise the money stocks by productivity multiplied by active-age population, which serves to remove the trend and allow for surges in productivity and population. Likewise, the 2006–08 deceleration of output and more recent employment downturn in the United States are not associated with a deceleration of the money supply, either M1 or M2.

### How far has "natural" unemployment risen? More than actual unemployment?

This analysis, as just noted, points to a future with a relatively *high* natural rate of unemployment – certainly high relative to the remarkably low natural levels to which we became accustomed in the second half of the 1990s and the first half of the 2000s. How high?

It might be thought that the natural rate is now back to the unemployment level of the mid-1990s, particularly 1995 and 1996 – a tranquil period in which both the actual unemployment rate and the inflation rate were neither rising nor falling. This also happens to be the range in which the actual unemployment rate has been during the past couple of months (as of this revision, at the end of July 2008). Is that a plausible estimate of the medium-term natural unemployment rate – the level to which the equilibrium pathway takes the unemployment rate?

There is evidence to suggest that the natural unemployment rate is higher than that benchmark level. The level of real stock market capitalisation in the United States expressed as a ratio to business product is lower now than it was in 1995. The real exchange rate is much lower. There is also the evidence that the Fed, in driving short-term real interest rates into negative territory, has been digging in its heels to try to brake the descent of employment. This suggests that when the Fed takes its foot off the brake, the economy will lurch downhill for some further distance. Finally, if the actual unemployment rate is below its new medium-term natural level, our models prepare us to see signs of a *general* rise of prices – the "core" included. We do see that – the sharply higher prices in auction-type markets being the most conspicuous, of course. The core part of the CPI has risen in the past two years about 1 percentage point above what would have resulted had the Fed been hitting its target on average. Judging by this evidence, the natural rate today significantly *exceeds* the 1995–96 benchmark.

If so, I would remark *en passant* that the US economy and some economies in western Europe, too, were saved from a dreary decade by their housing booms – aided by optimism

[10] The possibility of productivity growth about as fast as in 1995-2005 cannot be ruled out, however. Recall that productivity in the US economy has suffered a *fall* as a result of the malallocation of labour and the malinvestment of capital up to 2007, owing to the establishment of the "wrong prices" on assets, companies and industries. The *re*-allocation of much labour and much capital will surely deliver a bonanza for national income and GDP calculated at the constant prices after the fall.

about productivity and by cheap oil. One might imagine that the housing boom came at the expense of the information and communications boom. But, throwing my previous analysis into reverse, it is easy to see that the expansion in the housing industry, which is highly labour intensive, raised real wages (above where they would otherwise have been) and total employment: it did not simply move labour and capital in equal proportion from the business sector to the residential construction sector with no effect on employment and real wages. Furthermore, in this age of the global economy, a housing boom does not have to suck blood from some other investment activity in order to live. The US economy could have both booms – and it did. Now the US faces a future without benefit of a boom for the foreseeable future. And the housing boom, an expansive banking sector, rapid productivity growth and cheap oil together had a beneficial effect on the natural unemployment rate that was far greater than imagined.

The bottom line: recent developments have driven the *natural* medium-term unemployment rate *above* or, in the best case, *to* the level it tended to be in the mid-1990s, before the internet boom in the second half of the 1990s and the housing boom of the first half of the 2000s – a level in the neighbourhood of 5.5%. (If GDP and share prices level off, unemployment will go on rising owing to productivity growth.) The fact that neither inflation expectations nor the core inflation rate have broken loose from their moorings does not refute the existence of the natural rate; it simply suggests that the Fed enjoys a reservoir of credibility.

## Suspected mistakes in current policy thinking

For a couple of decades we have been accustomed to interpreting monetary policy in terms of the Taylor rule. But this rule has no operational significance without specification of how two of its crucial elements are to be estimated: the medium-term natural rate of unemployment, to which the actual rate of unemployment is supposed to be tending, and the current (or maybe the medium-term) natural real rate of interest, which would be the observed interest rate if the economy were at its medium-term natural level and the (expected) inflation rate were at its target level. As a consequence, it may be impossible to be sure that a central bank is or is not following the Taylor rule.

As I see it, the Federal Reserve is *not thinking right about the natural rate of unemployment.* The Fed appears to believe that the medium-term natural unemployment rate is well *below* the present level of 5.5%. The Taylor rule would have a central bank respond to an unemployment rate above its medium-term natural level with a *cut* of the policy rate (the federal funds rate in the United States) on the grounds that the unemployment rate, when so elevated, will cycle back to its unchanged medium-term natural level; so in cutting the policy rate the central bank would be shaving something off the trough of the cycle. Of course, the Fed's early rate cuts may have been driven by a gut feeling that banks might collapse if rates were not cut. But now the rationale for keeping rates low appears to be the feeling that the low rates serve to "cushion" the economy against what would otherwise be a worse trough and to reduce the "tail risk" that the unemployment rate will go very much higher before turning around.

But if one believes that the forces driving up the unemployment rate are structural forces and that most or all these forces will not turn around, then it is not clear (to me at any rate) what the rationale is for setting rates at unusually low levels. Some say it is to "forestall" foreclosures and bank closings. But if unemployment and the short real interest rate are bound to meet their medium-term natural destiny, the foreclosures and closings will happen anyway. Others say low rates are really a response to the present (and temporary) illiquidity at banks. But the Fed could lend to banks without upping the money supply. Perhaps it is believed at the Fed that the medium-term natural unemployment rate will be low again – will

no longer exceed the present unemployment rate – once the illiquidity is resolved. But there is no lack of other structural forces driving the natural rate above recent levels of the actual rate.

I am not saying that the Taylor rule is wrong to suspend concern about inflation expectations when the unemployment rate has drifted well above the natural unemployment rate; I am saying that the Taylorian analysis justifying low rates is inapplicable, since unemployment is *below* the medium-term natural rate, not above it.

I agree with Taylor that it can make sense to tolerate a worsening of expectations over some medium term in order to avert an avoidable rise of unemployment or speed its decrease. This property is one of the virtues of the Taylor rule. But it is one thing to cause or aggravate a worsening of inflation expectations for some time in order to *damp* a transient rise of unemployment and quite another thing to *slow* a rise of unemployment the full extent of which will occur anyway. The former serves to shave off the troughs – the worst extremes of unemployment – while the latter prolongs below-natural unemployment a while before the inevitable trough materialises. It would seem to me groundless for the Fed to believe that the economy will soon gain back some of its lost strength and dangerous for it to act on that belief by holding down short-term interest rates as long as unemployment is high or appears to be heading high. Likewise it would be risky for the European Central Bank to meet calls to freeze the short-term nominal interest rate in the face of increased expectations of inflation: that would be tantamount to *reducing* the *expected real* interest rate when inflation expectations are already too high, and maybe rising, merely to postpone for a time whatever rise in unemployment is going to be imposed by structural forces. *Sooner or later,* expectations of inflation (or of deflation) become so far from the target as to *force* a central bank to set the expected real interest rate at the level consistent with the emergence of the natural unemployment rate in order to prevent any further deterioration of inflation/deflation performance. (Without such action, the inflation (or deflation) rate would explode until it hits a natural ceiling or floor.)

The reply, it has occurred to me, is that when those forces reduce employment they also reduce the rate of return to investing and thus the "natural rate of interest". But here, as I see it, the Fed is *not thinking right about the natural rate of (real) interest either!* First, the present rate of return on equities is about 5.5%, according to Barton Biggs, which is far higher than the policy rates set by the Fed (after adjusting for inflation); and that rate of return could go higher if share prices give up optimistic hopes of prosperity just around the corner. Second, the rate that households require on loans will drive real rates of interest once the economy settles into its new growth path. Since their new wealth levels will be sharply reduced relative to the future wealth levels to which they can look forward as they recoup – leaving their present consumption sharply pinched relative to their future consumption – the expected real rate of interest they require is going to be a lot higher than it has been in recent years. So, it appears that the present near-zero real rates are not sustainable. Inflation would become appreciable, causing expectations of inflation to get out of hand. Moreover, it is hard to see how the Fed could lend for long at rates that undercut the private sector: it would run out of ammunition.

In the present circumstances it would make sense for monetary policy to start raising the expected real rate of interest at the short end until it matched, and finally exceeded, the expected inflation rate.

## Possible lines of fresh thinking

The most plausible prospect for the US economy over the medium term – until the next boom – is a dull labour market: the unemployment rate fluctuating between 5 and 6% (or a little more), with higher unemployment rates for black males and Latino males hard hit by the

end of the housing boom. Prospects will be much worse if confidence in the value of business and financial assets collapses.

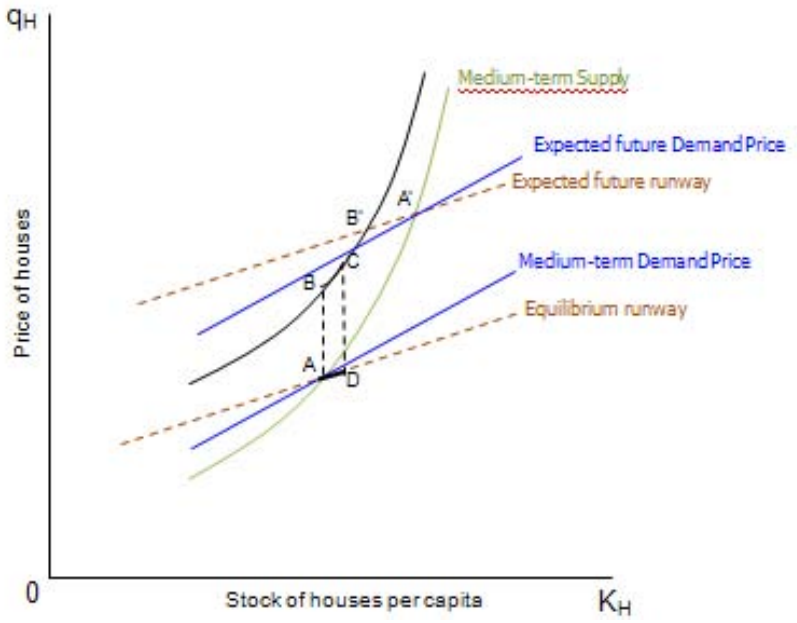
Whatever the best monetary and fiscal policies are in the present situation, the fixation on those policies has diminished the incentives anyone might have had to think “outside the box”. Who would listen? Yet ideas for new initiatives are apt to be our best bet. They may be indispensable.

For a decade I have been making a case for low-wage employment subsidies – paid to employers at firms over a certain size and graduated according to the pay rate. Such a program would serve to pull up wages and employment among workers from disadvantaged groups. That would contribute to economic inclusion and social integration. My sense is that this is the right time for this initiative.

Yet such subsidies will not suffice for high prosperity. It is necessary also – in the US economy and the European economies even more – to increase economic dynamism: the financial sectors seem not to be very oriented towards innovation; corporate governance and management practice seem to have failed (with exceptions) to encourage strategic vision; in Europe the labour markets are another hindrance to innovation. More dynamism would lead to more novelty and change, thus to more mental stimulation and problem-solving, thus to the development of talents (in Rawls’s words) and to the expansion of capabilities (in Sen’s words). It would also encourage originality, exploration and innovation in the business sphere. In these ways, more dynamism can serve to reduce unemployment and expand participation, which alone would be of great benefit and would widen opportunities for lives of adventure and self-discovery – thus to lift the human spirit.

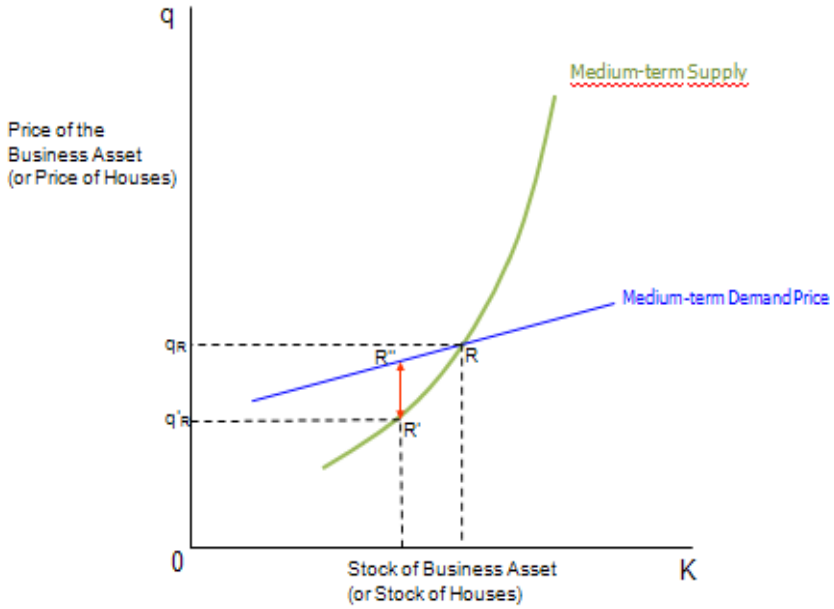
# Appendix

## Figure 1




The sudden expectation in the initial state A of a future step up in rentals, thus demand, causes the house prices to jump to point B. The economy is then expected to transit to B′, thence to A′. But a collapse occurs at a point like C if these expectations are seen to be groundless. In that case, the price drops to point D, resulting in a housing depression and a gradual return to A.

## Figure 2




There is in general an uncertainty premium, represented by the wedge R′R″ between the demand price (which price must be high enough to cover the premium), and the supply price, which reflects the net price – the observable price of which supply is a function. The rest point moves from R to R′, where the price is lower and the stock smaller.

# Global monetary and financial disorder: the role of the global imbalances

Martin Wolf[1]

> "[T]he years since the early 1970s are unprecedented in terms of the volatility in the prices of commodities, currencies, real estate and stocks, and the frequency and severity of financial crises." Robert Aliber.[2]
>
> "The current financial crisis in the US is likely to be judged in retrospect as the most wrenching since the end of the second world war." Alan Greenspan, Financial Times, March 16th 2008.
>
> "Inflation is always and everywhere a monetary phenomenon." Milton Friedman.

Two storms are simultaneously buffeting the world economy: an inflationary commodity-price storm and a deflationary financial one. What explains this combination of a "credit crunch" in the US with soaring commodity prices and rising inflation across the globe? Are these unrelated events or part of a bigger picture?

The answer, I am going to suggest, is the latter: they are related. In particular, they are related via two phenomena – the global savings glut and the global "imbalances" or pattern of current account surpluses and deficits – that are themselves, at least in part, the result of a dysfunctional global monetary *cum* financial system. Furthermore, I will argue, these imbalances are the result of a "fear of deficits". This is itself the consequence of the failure of the global monetary cum financial system to transfer capital to emerging economies safely.

## Revival of inflation

Inflation is a sustained rise in the price level: the result of too much money (or purchasing power) chasing too few goods and services. A one-off jump in commodity prices is, of course, not inflation. Nor need such a jump cause inflation. Yet a *continuous* rise in the relative price of commodities is a symptom of an inflationary process. Whenever excess demand hits, the goods whose prices rise first are those with flexible prices, of which commodities are the prime example. Commodity prices then are a pressure gauge. If we look at what has been happening in recent years, the gauge is showing red.

The Goldman Sachs index of commodity prices has doubled since early 2007. The upward movement in commodity prices has persisted for more than six years. It looks indeed as though too much extra demand is pressing on too little ability to increase global supply.

Inflation is the result of too much demand chasing too few goods and services: put simply, the world economy has been growing faster than, with present technology and resources, it can sustainably do. The ability to expand supply is, of course, a real phenomenon. The supply of energy is the most important of all real economic phenomena. Our industrial civilisation is, after all, based entirely on fossil fuel.

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[1] Associate Editor and Chief Economics Commentator, *Financial Times*, London.

[2] Robert Aliber and Charles Kindleberger, *Manias, Panics and Crashes* (Palgrave, 2005).

Since the end of 2001, the real price of oil has risen some six-fold. Today, it is higher than since the beginning of the previous century. As the World Bank notes in its Global Development Finance 2008, global oil supply stagnated in 2007. This, argues the report, "contributed to the large decline in stocks in the second half of 2007 and to sharply higher prices"*. These increases may prove temporary, as happened after the spikes of the 1970s, permanent or, worst of all, ongoing. We do not yet know.

The result of the pressure of demand on supply has been unexpectedly big increases in overall inflation: the consensus for world consumer price inflation in 2008 has jumped from the 2.4 per cent forecast in February 2007 to the 4.3 per cent forecast in June 2008. The jumps in the inflation expected in 2008 are considerably bigger than this in the emerging economies, where the weight of food in consumption is particularly high.

Yet how can we have what seems to be incipient global inflationary process when the US economy and those of other significant high-income countries are slowing down? The proximate reason is that the latter matter less than they used to. The underlying explanation is to be found in the forces driving both global demand and supply.

## Role of imbalances

On supply, I have nothing further to add to what I have just said. On global demand, however, two big things are happening: convergence and the consequences of the imbalances. Under convergence comes the accelerated growth of emerging economies, above all of China and India. Under imbalances come the interventions in currency markets aimed at supporting competitiveness.

Charles Dumas of London-based Lombard Street Research notes that, at purchasing power parity, China now generates a little over a quarter of world economic growth in a normal year, while emerging and developing countries together generate 70 per cent. Even at market exchange rates, the growth of China's gross domestic product is as big as that of the US, in normal years for both countries.

This is a fundamental transformation in the balance of the world economy. The emerging countries are also in a good position to keep on growing, largely because they have such strong external positions. The reason this is important for global inflation is twofold: first, the growth patterns of these economies are extremely resource-intensive – China, for example, uses almost as much energy as the US despite having an economy that is half the size at purchasing power parity and a quarter at market exchange rates; second, these economies are continuing to grow very fast, even though the US and, to a lesser extent, other high-income countries are slowing down.

This brings me to the second point, the savings glut and the role of imbalances, which I discuss at length in a forthcoming book, *Fixing Global Finance*. We need to understand two things that have happened.

First, as Ben Bernanke correctly argued, a global savings glut emerged over the last decade. The single best indicator of that glut has been the low real rate of interest at a time of fast global economic growth. Behind this glut lie three phenomena – the savings surpluses or, more precisely, excess of retained profits over investment, of the corporate sectors of the advanced countries, the persistent savings surpluses of a number of mature economies, particularly Japan and post-post-unification Germany and, last but not least, the switch of the emerging economies into ever large current account surpluses. The latter, in turn, has had three elements: the shift of crisis-hit emerging countries from deficit into surplus, particularly after the Asian financial crisis, the rise of China as the world's largest capital exporter, despite also being the world's biggest investor and, more recently, the surpluses of the oil

exporting countries. China's current account surplus equals those of Germany and Japan combined.

In aggregate the forecast current account surpluses of the twenty largest surplus countries is forecast by the International Monetary Fund at about $1,700bn this year. My back of the envelope calculations suggest that these surpluses are equal to about a seventh of world gross saving and close to twice as large a share of the savings of the capital surplus countries themselves: these capital flows then are enormous.

What have been the consequences of the emergence of savings gluts concentrated so heavily in a relatively small group of countries? I will discuss just two.

First, it should go without saying that the world balance of payments or patterns of savings surpluses and deficits must add up to zero. This reality is sometimes forgotten even by economists who take pride in the frugality of their own country and condemn the profligacy of those who spend what their own citizens choose to save.

In practice, they have added up over the past decade as a consequence of the responsiveness of household savings and spending in a relatively small number of high-income countries of which the US was far and away the most important. This spending was further stimulated by the rapid rise in house prices that were the result of the low real interest rates, low inflation and so low nominal interest rates and extremely elastic supply of credit. A long period of economic success – the "great moderation" no less - bred huge excess. The elasticity of credit, stimulated by low real interest rates and financial innovation, allowed the US household sector (and also that of the UK) to run unprecedently large financial deficits over a long series of years. The result, we already know, is the financial crisis we see today.

As Harvard's Kenneth Rogoff has argued, this is just another emerging market crisis, but this time the emerging market was found inside the US. It also is another reminder of why large net capital flows have proved so destabilising: they only work if the borrowers are making investments able to service the loans. This is just as true if the borrowers are inside the US as if they are in emerging economies. In this case, unlike in emerging market economies in the 1980s and 1990s, there was no currency crisis. But there was a crisis in the domestic counterpart of the external capital flows.

Meanwhile, what has been going on in the providers of capital? In the case of the emerging economies, the answer is that they have been intervening in their currency markets on a simply enormous scale. Over the seven years to March 2008, global foreign currency reserves jumped by $4,900bn, with China's reserves alone up by $1,500bn. Almost all of this increase was in emerging countries who have engaged in what is surely the biggest "self-insurance" programme in world economic history. Indeed, 70 per cent of today's reserves have been accumulated over this period.

Why have they done this and what are the consequences? Ronald McKinnon would argue that the state is pursuing a rational policy of fixing exchange rates, as a monetary anchor, while the balance of payments surpluses are simply the result of excess savings. But many emerging economies have intervened in currency markets on a huge scale, principally in order to keep export competitiveness and current account surpluses up (or current account deficits down). "Never again," said the emerging countries hit by crises in the 1980s and 1990s; "not even once," said China.

My differences with Ronald McKinnon are fundamentally two.

First, he believes that the real exchange rate is determined by the savings surplus, while I argue that the causality for the countries targeting the real exchange rate (and that is what they are, without doubt, doing) is the other way round. In other words, countries target a nominal exchange rate and try to keep inflation down. They do so by pursuing monetary, fiscal and regulatory policies intended to curb domestic demand and so make room for the surplus on net exports. I am not suggesting they can do this forever. But they can do it for a very long time.

The current account tail wags the economic dog – this being a mirror image of what I think has happened in the US over the past decade. It is, after all, US assets that the intervening countries have been targeting and so the US exchange rate that they have been holding up, the US current account deficit they have been financing and US longer-term interest rates that they have been keeping down. A trade deficit is contractionary: for any given level of domestic demand, it lowers domestic output. Thus, the US needed to expand domestic demand, in order to offset the contractionary effect of the external deficits. Some groups within the economy needed to spend more than their incomes. The most important such group turned out to be households. Thus the growth in US household indebtedness that led to today's "credit crunch" is a direct result not just of the global imbalances, in general, but of the exchange-rate targeting policies of a large number of emerging economies.

Second, I believe the principal motivations for the real exchange rate targeting are not to provide a monetary anchor, but to pursue export-led growth, accumulate reserves and, above all, minimise the risks historically associated with running sizeable current account deficits: this, in other words, is not so much "fear of floating" as "fear of deficits" and the financial crises they almost unfailingly brought.

What are the consequences of these policies? In a word, they are expansionary. The results normally include rapid rises in net exports, low interest rates, aimed at curbing the capital inflow, and expansion in the monetary base, despite attempts at sterilisation. The Chinese economy has been overheating as a direct result of this trio of effects.

## Today's inflationary predicament

Today, the Federal Reserve is trying to re-expand demand in a post-bubble US economy. The principal impact of its monetary policy comes, however, via a weakening of the US dollar and an expansion of those overheating economies linked to it. To simplify, Ben Bernanke is running the monetary policy of the People's Bank of China. But the policy that is at least arguably appropriate to the US (I am not going into that debate before this audience) is wildly inappropriate for China and indeed almost all the other countries tied together in the informal dollar zone or, as some economists call it, "Bretton Woods II".

Thus, not only have the imbalances proved hugely destabilising in the past, but they are going to prove even more destabilising now that the US bubble has burst. When most emerging economies need much tighter monetary policy, they are forced to loosen still further. The result is strongly negative real interest rates in countries where they should clearly be positive.

What we see then is an incipient global inflation. Yet the central bank with the greatest influence on global monetary policy is the one confronting the post-bubble credit crunch. Its post-bubble predicament is made worse by the soaring energy prices that result from the strong growth of the world economy.

This then is a global challenge. The advanced countries are no longer the global driving force: they are importing inflation. If the world had a single central bank and a single currency, the former would surely tighten its monetary policy, in light of the evidence on the constraints on the rate of growth of potential global supply.

We do not have such a global central bank. The central bank that is closest to playing that role – the Federal Reserve – is responsible for about a quarter of the world economy. Its region is, of course, also the most economically depressed large one. It is as if the ECB were setting its monetary policy to meet the conditions of Spain alone. The results are likely to be highly inflationary.

## What is to be done?

Let us go back to first principles.

First, the world as a whole cannot import inflation: if every central bank assumes that the rise in commodity prices is the product of policies made elsewhere, general overheating is likely to be the result. Worse, if that feeds into expectations the world will be depressingly similar to the 1970s. We are not there. Policymakers must ensure we never do get there.

Second, global monetary policy is too loose, despite the adverse impact of the credit crisis on high-income countries. In many emerging countries output is growing quickly, with inflation rising strongly. If, as seems likely, the world economy cannot grow as fast as people hoped only a year or two ago, emerging economies have to be part of the adjustment. This will become still more obvious when, at last, the high-income countries recover fully.

Third, the biggest monetary policy requirement is a tightening in emerging economies, many of which now have strongly negative real interest rates. A precondition for such a tightening is a relaxation of exchange rate targeting.

Fourth, if such relaxation of exchange-rate targeting is not going to happen, then the Federal Reserve has to take account of the global impact of its monetary policies, working, as they do, on the policies of the rest of the world's central banks. For this reason, at least, it is likely that Federal Reserve has already cut too far.

## Conclusion

We have an incoherent global monetary system, with a quasi-global central bank concerned about just one region of the world economy and the monetary and financial consequences of current account imbalances created by exchange-rate targeting. I have argued here that both the financial crisis of today and the inflation are, at least in part, the consequence of this dysfunctional system. Change will, and must come. Let us hope it happens before we relive anything similar to the 1970s.

# Remarks on "Beyond price stability: the challenges ahead"

Martin Feldstein[1]

Although the title of this conference is "Monetary Policy Challenges in the Decade Ahead," the program calls this final session "Beyond Price Stability – The Challenges Ahead." Unfortunately, I don't think we are ready to go ***beyond*** price stability. Price stability remains a key challenge, perhaps ***the*** key challenge for the years ahead, although current conditions show the importance of other problems, including the stability of credit markets and asset prices.

I will comment on three subjects: 1. the relation of commodity prices and inflation; 2. anchoring inflation expectations; and 3. the stability of credit markets and asset prices.

## 1. The challenge of commodity price inflation

During the past year the prices of perishable food commodities and nonperishable oil and metals rose as much as 100 percent. Why did that happen and what should the central banks do about it?

The rise in the prices of agricultural commodities is easier to explain. The cause was not a supply shock like failed harvests. Nor was it the result of a general global rise in demand triggered by easy monetary policy. The primary reason was the increase in the demand for food in the rapidly growing countries of Asia – especially China and India – and of the middle east.

Moreover, the rise in demand for agricultural commodities in those countries was not due to easy money but rather to the impact of rising ***real*** incomes on the pattern of consumption. In particular, the substitution of meat consumption for vegetarian commodities caused a very substantial rise in the demand for grains and other such commodities.

Even a relatively small increase in global demand coming from these high growth countries can cause the price of the agricultural products to rise very sharply. Because supply is virtually fixed in the short-run and the price elasticity of demand is very low, it takes a very large rise in the price to equate supply and demand. In a simple text book analysis for a single perishable commodity, the rise in the price is equal to the initial proportional rise in demand divided by the sum of the absolute demand and supply price elasticities. With completely inelastic supply in the short run and a demand elasticity of 0.1, a rise of demand in India, China and the Gulf countries equal to 10 percent of the previous global demand would cause the equlibrating price rise to be 100 percent.

In addition, some countries responded to the global rise in particular commodity prices – particularly the price of rice – by banning the export of those commodities from their own country. This held down the domestic price of rice in those countries but caused the price of rice to rise even more sharply on the global market.

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The rise in the price of oil is more complex to analyse because the increase in the spot price reflects expectations about future supply and demand and therefore about future prices.

As Hotelling explained, the spot price is linked to the future price by the requirement that the price is expected to rise at the same rate as a risk adjusted rate of interest. Although risk conditions and temporary shortages may modify the precise link, the basic relation remains that a rise in expected future demand or decline in expected future supply will cause the spot price to rise.

An important implication of this is that commodity prices should not be expected to rise as much in the coming year as they did in the past year. With time, the price elasticities of both demand and supply will rise, implying that equilibrium prices would decline if there were no further rise in the level of demand in China, India and the Gulf countries. Even if prices remain high, they are very unlikely to continue to rise by 100 percent in the coming year.

If commodity prices do rise less, headline inflation will decline if monetary authorities can avoid the second round effects of wage earners trying to maintain their real incomes.

A key requirement for the Federal Reserve and other central banks is therefore to convince participants in labor and product markets of two things:

- First, that the increase in commodity import prices implies a decline in real incomes that must be accepted and that cannot be offset by a rise in nominal wages. Mervyn King has made that bad news very clear to the British public. Household surveys in the United States indicate that Americans also understand this.
- Second, that the central bank will act to prevent a wage-price spiral and will thereby cause the headline inflation rate to decline.

The ability to achieve these two things will differ among the central banks. I think the Federal Reserve will succeed in preventing the wage-price spiral for four reasons:

- Labor contracts in the United States have no automatic inflation indexing of the type that contributed to the wage-price spiral in the 1970s.
- Unions are very weak. Only 7.5 percent of private sector workers are unionised.
- There is substantial slack in the labor market after payroll employment has declined for six successive months.
- Households appear to understand that the rise in gasoline and food prices implies a fall in the level of real income that cannot be recaptured by pressing for higher wages.

## 2. Anchoring inflation expectations

There has been broad agreement at this meeting about the importance of anchoring inflation expectations. Athanasios showed that the ECB has succeeded in reducing medium term inflation expectations in the euro area. The Federal Reserve has also been relatively successful. Although the CPI rose by 4.2 percent over the past year and is expected (according to household surveys ) to rise at more than five percent during the coming year, the corresponding five year expected inflation rate is only a bit above three percent.

I want to make five quick points about anchoring inflation expectations, several of them in response to issues raised at this meeting.

## 2.1. The broader public

I believe that the ***broader*** public and not just the financial community is concerned about inflation and monetary policy. The central bank must therefore communicate to a broader public as well as to the technical experts.

The public may not understand the mechanism of monetary policy but they do worry about inflation and the risk of recession. Financial news is not just for the Financial Times and the Wall Street Journal.

## 2.2. Danger of talk without action

Alan Blinder warned about the dangers of "open mouth policy" without serious follow-through. Recently, Ben Bernanke and others have said they are "very concerned about inflation" and are "determined not to let inflation expectations rise"

If I am correct, the Fed is very unlikely to raise the federal funds rate by more than a token amount during the next six months, even though the current federal funds rate of 2 percent represents a negative real rate relative to core inflation and a rate that is less than half the CPI inflation rate.

There is a similar problem with respect to the dollar. There has recently been a coordinated effort by the Treasury and the Fed to talk up the dollar. Yet it is very unlikely that the Fed will raise interest rates to support the dollar and even less likely that the Treasury will intervene in the foreign exchange market. The dollar rallied for a few days after the Treasury and Fed statements before falling again and is now at 1.58 per euro and 107 yen per dollar.

## 2.3. Inflation targeting

A formal inflation target is advocated as an effective way to anchor inflation expectations. The British and euro area members know that the respective central banks are committed to achieving inflation rates of approximately two percent. Lars Svensson explained how everyone in Sweden knows the similar goal of the Swedish central bank.

Although the Fed does not have a formal inflation target, it now publishes a three year forecast of inflation that summarises the views of the individual FOMC members. Since each member states a forecast based on what that member believes to be "appropriate policy" during the next three years, each member's "forecast" can be interpreted as that individual's target inflation rate. It is of course not clear how to interpret the average of these different conditional forecasts since the members clearly have different views about what is "appropriate policy."

Perhaps more significantly, this three year forecast (most recently a range of 1.7 percent to 1.9 per cent for core inflation) is not a number that the public knows so it cannot be doing anything at this point to tie down inflation expectations. It refers moreover to the core PCE which is a number that is also not known by the general population.

## 2.4. The cacophony of multiple statements

Several participants expressed the view that it can be harmful to hear different views in speeches by the FOMC members and to know that the voting about interest rate moves was not unanimous. I disagree. An outsider wants to know – and needs to know – whether a Fed decision to tighten or ease was a close vote that could easily be reversed by new evidence during the coming month. In the recent context, it is quite informative that only one or two FOMC members disagreed with the policy decision enough to vote against it.

A minority view may also be very helpful at times as a way of providing an authoritative voice to educate those who care about monetary policy. I remember reading the speeches of Henry Wallich in the 1970s when he was a strong voice of dissent about the policies that were then producing stagflation.

### 2.5. The short-run Phillips Curve

Most (but not all) economists believe that there is a short- run Phillips curve relating unemployment and inflation. I understand the political problem for a central bank that has to admit that it is sacrificing "growth" and employment in the short run in order to contain inflation. But a central bank that denies the existence of the short run Phillips curve loses credibility among its most sophisticated audience.

An appropriate strategy for each central bank is therefore to combine an explicit recognition that a tight money policy will slow growth in the short run with a statement that containing inflation this way will produce stronger growth and lower risks for the longer term.

## 3. Financial stability

In the United States we are now seeing major financial instability. The financial markets are dysfunctional in a way and to an extent that I have not seen in more than 25 years as a careful observer and participant in those markets. Financial institutions are severely impaired and the value of financial assets – especially mortgage backed securities and credit default swaps – are depressed and often difficult to determine.

These financial problems were triggered by a bursting of the house price bubble in mid-2006. Although other aspects of the financial market in which risk was severely mispriced could have triggered the current crisis, the decline in house prices was inevitable. At the peak, house values were $20 trillion. They have fallen $4 trillion since then. . Further declines are inevitable, with an estimated $3 trillion to $4 trillion further in losses to get back to a normal valuation level.

Some 20 percent of homeowners with mortgages now have negative equity in their homes. If nothing is done to change the likely path, that will rise to 40 percent a year from now.

I believe that creates a risk that house prices will continue to decline below a "normal valuation" level, spurred by defaults and foreclosures. We are already seeing record levels of defaults and foreclosures. A serious downward spiral of house prices would hurt consumer wealth and spending, stimulating a decline in GDP. The defaults would further weaken financial institutions.

The value of mortgage backed securities and therefore of the capital of financial institutions cannot be determined with any confidence as long as the risk of a downward spiral of house prices remains.

The dramatic reduction in the market value of financial institutions (Citigroup at $18 a share is one third of its value a year ago) reflects reductions in the banks' capital and therefore in their ability to lend and to buy assets.

Why did all of this happen? And what could the Fed (or other central banks) do about it?

By my count, there are at least 7 contributing causes to the current financial instability. I will list them quickly.

(1) The low federal funds interest rate early in the decade and the Fed's promise to keep it low contributed to the housing boom, the availability of adjustable rate mortgages with very low teaser rates, etc.

(2) There was inadequate supervision of banks by the Fed, the Office of the Controller, and the state banking supervisors, including inadequate attention to asset quality and inadequate attention to capital adequacy, especially with respect to off balance sheet assets.

(3) The poor quality of the credit rating process used by Moody's, S&P and others allowed subprime and other poor quality assets to be packaged into CDOs with most tranches classified as AAA or even better (the so-called super-senior securities). This permitted the selling of those securities to US banks, foreign banks, and others who held them with inadequate capital because of their excessively favorable credit rating. The Fed and other supervisors should have been more alert to the terrible mispricing of risk.

(4) Government legislation (the Community Reinvestment Act) encouraged home ownership by low income and minority individuals who could not afford the mortgages that they assumed. The Federal Reserve enforced rules that required banks to make such loans by denying those who did not have adequate "community lending" the right to acquire other banks, to raise dividends, etc.

(5) The extensive securitisation of mortgages means that individual borrowers with problems cannot renegotiate with lenders as they would if their mortgages had remained with the originating bank.

(6) The legal system of "no recourse" mortgages in many states (meaning that creditors can take the house when the borrower defaults but cannot take other assets or income) and the creditors' practice of not pursuing debtors even when the creditors have the legal right to do so makes the housing market sensitive to falling prices and high loan to value ratios. Defaults and foreclosures are at a 30 year high and, as that further depresses prices, are likely to rise in a self-reinforcing process.

(7) The compensation systems at banks and investment banks encouraged excessive risk taking. Many of those who initiated or approved investments with strong returns but substantial risks of substantial delayed losses were nevertheless compensated for the early performance of those investments.

What could the Fed do – what could it have done – to avoid these problems?

- avoid the very low interest rates and promise of sustained low rates
- improve supervision of asset quality and capital
- provide oversight to the credit ratings used by banks and the capital associated with supposedly highly rated securities
- push back on the mischief produced by the Community Reinvestment Act

But looking ahead it is important to bear in mind that banks have become only a small part of the complex credit markets. Attempts to reduce risk in the banking system may only shift that risk taking activity to other financial institutions or other financial markets.

I am also afraid that there is little or nothing that the Federal Reserve can do now to prevent a downward overshooting of house prices, perhaps the greatest risk now to the financial sector and to the economy. That requires action by the Treasury and the Congress, perhaps along the lines of the mortgage replacement loans (that I described in "How to Stop the Mortgage Crisis," *Wall Street Journal*, March 7, 2008).

In summary, the primary challenge for the central banks in the decade ahead is to achieve and maintain price stability. Anchoring inflation expectations is a key part of this process. More needs to be done to determine the best way of doing so. Going beyond price stability to financial stability, there is much to be done along the lines that I suggested to deal with the current crisis and to prevent similar problems in the future.

# Flexibility versus credibility in inflation-targeting frameworks – remarks on "Beyond price stability: the challenges ahead"

Mark Carney[1]

It is an honour for me to participate in this panel alongside Martin Feldstein and Stanley Fischer. Just as central bankers are forward looking in the conduct of monetary policy, it is entirely appropriate that the BIS coordinate a session that looks beyond price stability to the challenges ahead. With the challenges that we currently face, it is understandable that some may desire greater flexibility in the conduct of monetary policy. However, the value of this greater flexibility depends on the extent to which it detracts from monetary policy credibility. I will concentrate my brief remarks today on the themes of flexibility and credibility.

I would like to state at the outset that what follows is a discussion of ideas worthy of consideration. It should not be seen as having any bearing on the current conduct of monetary policy in Canada. The Bank's current inflation-control agreement with the Government of Canada will remain in effect until the end of 2011. Changes to our agreement with the Government, if any were desired by both parties, would only come into effect thereafter.

## Arguments for greater flexibility

There are two broad classes of arguments for greater flexibility in the design and application of monetary policy frameworks. The BIS has done a great deal of useful work on asset-price targeting in particular and on the complicated interplay between monetary policy and financial stability in general. My fellow Canadian, Bill White, framed the discussion about flexibility for inflation targeters with his paper "Is Price Stability Enough?"[2] In this paper, Bill argues that policy-makers should respond flexibly to shocks that create persistent financial imbalances. In particular, he suggests that policy-makers should extend the inflation horizon and pre-emptively tighten policy when faced with such shocks. This would have the practical consequence of purposely deviating from the inflation target temporarily in order to avoid more costly deflationary busts down the road.

Others argue that globalization creates similar imperatives. For instance, throughout this decade, there has been a secular disinflation (relative to target) in goods prices, reflecting the efficiencies from creating global supply chains and outsourcing some production to emerging markets. Some suggest that these same emerging markets are creating *persistent* commodity-price inflation.[3] Finally, the current international monetary order – wherein a large dollar block coexists with floating currencies – may create additional shocks, including low long-term interest rates and unevenly distributed exchange rate adjustment. Should any of

[1] Governor of the Bank of Canada.

[2] BIS Working Paper 205, April 2006.

[3] That view is certainly not unanimous, as I argue in "Capitalizing on the Commodity Boom: the Role of Monetary Policy" (speech to the "Commodities, Economy, and Money" conference, Calgary, 19 June 2008).

these forces be taken into consideration in either the design of monetary policy frameworks or the choice of monetary policy parameters?

## Flexibility and adjustment

Arguments for flexibility in monetary policy frameworks can be considered in the context of the broader principle that policy flexibility helps lower adjustment costs. In theory, social welfare is reduced when there are constraints on the ability of policy-makers to optimize economic adjustment. Policy frameworks should be flexible enough for the natural adjustment processes in the economy to determine the speed of adjustment to shocks. Throughout this decade in Canada, we have seen how policies that promote flexibility in labour and product markets reduce adjustment costs. In contrast, policy constraints on market prices – such as fixed exchange rates or subsidized energy prices – make adjustment to economic shocks more costly. If a shock is major and has widespread consequences, such rigidities impose costs on other countries because those flexible prices must adjust in an unnecessarily large or rapid way.

In the face of large and possibly persistent shocks, the design and parameterization of monetary policy frameworks depends *in part* on the trade-off between flexibility and credibility. This, in turn, is a function of both, the extent to which (inflexible) rules enhance credibility and our ability to make the judgments required to deploy any flexibility in a credible manner.

The principle of policy flexibility is already embodied in our macroeconomic models. When we calculate the policy response to shocks in these models, it is optimal for policy to allow inflation to return to target at different speeds, depending on the type and characteristics of the shocks hitting the economy. This implies different amplitudes of the inflation cycle and different time horizons for inflation to return to target.

In contrast, the parameters in today's inflation-targeting frameworks generally do not vary with the type of shocks hitting the economy. For example, the numeric value of the target itself is held constant in the face of all shocks, even though it might sometimes be beneficial to temporarily adjust it to lean against the wind. This point can also be cast in terms of making the operational target – i.e., core inflation – a function of the shocks hitting the economy. As well, the band or confidence interval around the target is held constant, even though it may sometimes be beneficial to worry less about inflation volatility in a period of highly volatile, but transient, shocks. Finally, the time horizon for returning inflation to target is usually held constant. As a consequence, it can be too short to factor in fully the longer-run disruptions associated with, for example, building asset imbalances.

The current parameters are not arbitrary. In Canada, the 2-per-cent target for the total consumer price index reflects the measurement bias inherent in the CPI, the risks associated with the zero lower bound and concerns about downward nominal wage rigidities. The 1-percentage-point range around the target reflects the unconditional variance of the inflation process.[4] The 18- to 24-month time horizon reflects the lagged response to monetary policy action.[5]

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[4] It can also be argued that the range should be conditional on the nature of the shock to inflation.

[5] Note that in Canada, unlike some countries, the CPI fully captures the direct effect on inflation of changes in house prices in the "owned accommodation" component of the CPI, which includes mortgage interest cost, replacement cost, property taxes, house insurance, maintenance and repairs, and "other owned accommodation expenses." This component represents 16.5 per cent of the CPI basket.

This inflexibility has significant value. It provides clarity of objectives and holds central bankers accountable. When policy lacks credibility, it can be beneficial to have simple inflexible elements in the framework because they demonstrate the policy-makers' commitment to that policy. If the inflation target is achieved, it enhances the credibility of the central bank and creates a virtuous circle whereby increased policy credibility further anchors inflation expectations, which then contribute to a more stable macroeconomic environment, which, in turn, enhances policy credibility. We should be careful neither to underweight the value of resulting simple heuristics nor to minimize the risks of complicating them.

## When to be flexible?

Once credibility is achieved and the operation of the framework better understood, could credibility be retained if the parameters were adjusted to reflect the characteristics of the shocks hitting the economy at any particular time? Flexible inflation targeting works well with temporary or one-off shocks. Whether it can adapt to address unique but longer-lived shocks (such as an asset boom or secular changes brought by globalization) is the pertinent question. What constitutes a "unique" shock? Can we expect authorities, if they are granted flexibility, to be sufficiently disciplined not to decide that *all* shocks are uniquely virulent? Everyone always thinks they live in interesting times.

Financial imbalances certainly are interesting. However, it is not clear that monetary policy-makers should be the first line of defence. Recent events in a variety of jurisdictions demonstrate the shortcomings of the current system where the degree of financial stability is a by-product, rather than an objective, of regulatory policy. Central banks, as guardians of macroeconomic stability, naturally ask whether they should play a role. It does not necessarily follow that that role extends to the conduct of monetary policy. Central banks may have the ability to foresee macrofinancial instability. Whether they have the appropriate tools to prevent it is another matter. I am most sympathetic to the idea that policy-makers should consider the development of macroprudential regulations to restrain procyclical liquidity creation among financial institutions. The design and scope of such regulation remains to be determined and in many jurisdictions, including Canada, there are the added complications of determining where to house this regulatory authority and how to coordinate it with other regulators.[6]

If the regulatory framework is appropriately designed, could it be reinforced by monetary policy? Professor Issing provides one answer. He argues that the ECB's monetary pillar can act as a signal for flexibility, perhaps in the monetary policy horizon, in the presence of excess credit creation. Michael Woodford agrees that money and credit can have a useful role, but cautions against incorporating them in the monetary policy reaction function.[7]

Do those situations that arise from the globalization process create a case for additional policy flexibility? There are some practical difficulties such as the conflicting implications globalization may have for consumer-price inflation. For example, its impact on manufactured goods prices argues for a lower target; its impact on commodity prices for a higher one.[8]

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[6] For a full discussion, see M. Carney, "Principles for Liquid Markets" (speech to the New York Association for Business Economics, New York, 22 May 2008).

[7] See the presentations by Issing and Woodford to this conference, published by the BIS (Working Papers No. 273 and 278).

[8] Some of these effects are not that material. Recent Bank of Canada research estimated that, on average, the direct effect of consumer goods imported from China reduced the inflation rate by about 0.1 percentage points per year from 2001 to 2006. See L. Morel, "The Direct Effect of China on Canadian Consumer Prices: An Empirical Assessment" (Discussion Paper No. 2007-10, Bank of Canada, 2007).

Moreover, these conflicting forces are basically price-level effects, though ones that could go on for some time. Similarly, the current international monetary order argues for tighter policy due to artificially low long-term interest rates and for looser policy in countries that have seen excessive exchange rate appreciation. Further complicating matters is the fact that the globalization process is neither monotonic nor relentless. Its impacts will wax and wane over time, raising the question of how frequently policy parameters might be adjusted in the face of these shifting trends. In the pursuit of flexibility, how do we prevent this from looking terribly arbitrary?

These difficulties are not trivial, so considerable care needs to be taken. The benefit of greater flexibility may not be worth the risk of forfeited credibility, particularly if it simply adds to confusion about the conduct of policy. This points to the overriding importance of communication, rightly stressed by Alan Blinder.[9]

The current environment underscores many of the strengths of flexible inflation targeting. The commodity-price shock has resulted in inflation rising above target in a number of jurisdictions. Provided expectations are well-anchored, policy appropriate, and communication effective, people will look through this spike to the eventual return of inflation to its well-understood target. Of course, this implies the need for short-term flexibility in the target, but a well-designed inflation-targeting regime allows for temporary deviations from target in the face of shocks. Provided the framework retains credibility, that flexibility can and should be used.

## Price-level targeting

There is one final consideration. Inflation-targeting regimes have one element of flexibility that could potentially reduce credibility: their use of an annual inflation measure that allows monetary authorities to overlook price-level adjustments which they believe to be one-off events. Bygones are bygones. This is not a problem when shocks are small and symmetrical because the price level will fluctuate around the level consistent with the inflation target. Indeed, that has been our experience in Canada over 15 years of targeting inflation. Shocks have been random and the price level has ended up almost exactly where one would have expected it since we adopted a 2-per-cent target. However, if shocks were large and one-sided and policy did not respond, the price level would drift from the expected path. Such a persistent error would reduce credibility over time.

It is worth considering whether targeting the price level would enhance policy credibility in the face of a large, persistent shock. If anticipated, temporary price-level drift could be accommodated by extending the horizon, while credibility would be retained by the fact that the drift would be tracked and eventually reversed. If unanticipated, the promise to correct it which is central to price-level targeting could preserve credibility. The Bank of Canada is currently pursuing a research agenda to determine the gains from adding greater price-level memory to the inflation-targeting framework.

## Conclusion

To conclude, constraints in the policy framework may have helped to gain credibility for the framework when it was new, but now that it is better understood, it is time to ask whether we

[9] See the presentation by Blinder to this conference, published by the BIS (Working Paper No. 274).

can do better. In principle, we could do better by making inflexible elements more flexible or by giving the framework more memory about the price level to compensate for any loss of credibility. Doing so should increase social welfare by allowing policy to be better aligned with the natural adjustment processes in the economy, thereby adding to the social welfare benefits that come from delivering low, stable, and predictable inflation.

# Remarks on "Beyond price stability: the challenges ahead"

Jean-Pierre Landau

I have been asked this morning to step in for Mark Carney. This sentence contains two important pieces of information: first, I am not Mark, and I could not even dream of matching the quality of his remarks; second, I had to improvise these comments, and I want to apologize for that.

I thought I could return to two topics that have been extensively discussed during this conference and this panel: (1) communication and expectations and (2) commodities.

## 1. Communication and expectations

Drawing on both sessions 2 and 3 of yesterday's discussions, I have several points to make that, taken together, I think send an important message:

- Many Governors insisted on the need for central banks to communicate extensively and reach beyond financial market participants to a broader audience of policymakers and the general public alike.
- One may feel reassured when looking at long-term inflationary expectations: the graph presented by Governor Orphanides shows that the expectations have moved little so far and remain well anchored at levels consistent with price stability. However, as pointedly remarked by Olivier Blanchard, what matters in current circumstances is the behaviour of wage and prices setters, which is most likely based on their short-term expectations and of which we know very little.
- The uncertainty about short-term expectations and behaviours is compounded by the unsettled nature of the current period. After more than fifteen years of the "Great Moderation", we are facing a sort of regime change. Many people have had no direct experience as adults of the relatively inflationary environment they are now confronted with. How are they going to react? To what extent will "perceived" inflation – much higher, in many countries, than actual inflation – influence their behaviour? Does it matter to them whether the shock is described as transitory or permanent?
- I wonder whether this is not a case in which "rational inattention", as analysed yesterday by Christopher Sims, may play a role. In such an uncertain and new environment, wage and price setters will consider only a limited set of information. The question, of course, is how this limited set will be defined. Will it be backward oriented, with adaptative expectations, so that wage and price setters will assume that inflation (or, alternatively, the price level) will return to its past trend? Or will the information used to set wages and prices be based on current, or perceived, inflation?
- I have neither the information nor the expertise to answer that question. But I have a feeling that this process may not be totally beyond the control of central banks; that, beyond the anchoring of expectations in the medium run, there might be some value in trying to influence expectations in the shorter term. And, to that extent, communication with the general public may have to play a bigger role than usual.

Such communication would aim at reducing the gap between perceived and actual inflation and, if successful, would complement – and even substitute for – effective action, to use the distinction introduced by Benjamin Friedman. Communication would complement effective action because the time horizon of communication would be shorter than that of normal policy lags and in that sense would not obviate necessary measures. But it could also substitute for stronger action in the future.

- I am aware that such an attempt to influence expectations has two major difficulties. The first is instrumental: central banks are not fully equipped for that type of communication. The second difficulty is more fundamental: central banks don't want to put their credibility at risk when formulating a short-term diagnosis for the general public. For instance, we don't know how much of the current commodity price shock is temporary and how much is permanent. So communication on that score would have to be very clear and balanced. That is an enormous challenge, but it might be worth devoting more resources to it than is presently done.

## 2. Commodity prices

The rise in commodity prices is the most pressing challenge to the monetary policies of all countries. Understanding what is happening is crucial. The dominant view is that we are facing a real shock, with imbalances between supply and demand combining, at least for the oil market, with very low (short term) elasticity to produce the kind of price upswing we have seen over the past twelve months. The facts and arguments to support that consensus are very strong.

But, just for the sake of argument, I would like to propose a small thought experiment. Let us imagine an economist looking extensively at the stock market between 1995 and 2002 and then going on sabbatical to an island that has no communication with the rest of the world. When brought back to civilization, she is presented with a set of stylized facts about commodities markets. Those facts include (1) starting in 2003–05, a trend of increasing (and sometimes accelerating) prices for a wide range of commodities, (2) a very convincing "fundamental" explanation: this time, not a productivity shock, but an increase in relative scarcity, (3) a very permissive monetary environment and, finally, (4) increasing amounts of capital flowing into financial vehicles, which has allowed investors to take (leveraged) positions on the future movements in commodity prices.

My guess is that the economist would say, "Wait a minute, it seems clear that commodities are becoming a financial asset class of their own and should be regarded as such; also, our past experience with stock markets suggests that strong structural changes and large portfolio reallocation can combine to produce new dynamics in the movement of prices; and this may lead to the kind of volatility that creates problems and difficulties for monetary policy".

My point here is simply that the trend shift in commodity prices is very recent, and we should keep an open mind as to its many possible causes. At the very least, it is worth considering the relationship between commodity prices and monetary policy in all its dimensions. Increasing prices are a constraint on monetary policies. They may also be a result of monetary actions already taken and of those still being made all over the world today. This might be a good starting point for the kind of broader approach to macro financial stability so aptly and forcefully advocated by Bill White.