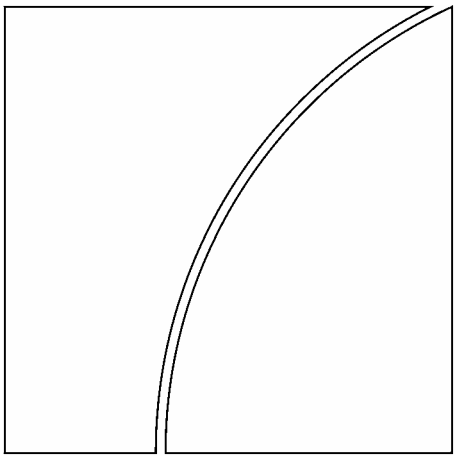
BANK FOR INTERNATIONAL SETTLEMENTS



BIS Working Papers

No 205

Is price stability enough?

by William R White

Monetary and Economic Department

April 2006

Abstract

No one in the industrial countries should now question the substantial economic benefits associated with reducing inflation from earlier, high levels. At the same time, history also teaches that the stability of consumer prices might not be sufficient to ensure macroeconomic stability. Past experience is replete with examples of major economic and financial crises that were not preceded by inflationary pressures. Conversely, history shows that many periods of deflation, based on rising productivity, were simultaneously characterised by rapid growth. Recent structural changes in the global economy imply that this history might have more contemporaneous relevance than is commonly thought. If so, the implication is that policies directed to the pursuit of price stability might have to be applied more flexibly and with a longer-run focus than has recently been the case.

JEL Classification Numbers: E44, E50, E60
Keywords: financial stability, economic policy, price stability

BIS Working Papers are written by members of the Monetary and Economic Department of the Bank for International Settlements, and from time to time by other economists, and are published by the Bank. The views expressed in them are those of their authors and not necessarily the views of the BIS.

Copies of publications are available from:

Bank for International Settlements
Press & Communications
CH-4002 Basel, Switzerland

E-mail: publications@bis.org

Fax: +41 61 280 9100 and +41 61 280 8100

This publication is available on the BIS website (www.bis.org).

ISSN 1020-0959 (print)

ISSN 1682-7678 (online)

Contents

1. Introduction[1]

What should be the principal objective of monetary policy and under what conditions might the pursuit of that objective be constrained by other considerations? In the aftermath of the "Great Inflation", experienced by most industrial countries in the 1970s, the answer to this question was obvious. Central banks should pursue single-mindedly the objective of reducing domestic inflation to a low level. This was seen, at the time, as the key contribution central banks could make to maximising output growth and, hence, human welfare over time. They should then take steps to prevent inflation from rising again over the one- to two-year (near-term) policy horizon implied by perceptions about the length of the lags in the monetary transmission mechanism.

More recently, in light of sporadic episodes of deflation and threatened deflation in some countries, this same objective of keeping inflation at a low positive level has been restated in a rather more symmetrical way. Prices should neither be allowed to rise nor fall to any significant degree. The extent to which this consensus prevails is also reflected in the growing number of countries which have announced explicit inflation targets, often with the strong support of the international financial institutions. Closely related, there has been a clear trend towards giving central banks instrument independence to facilitate the achievement of this objective and holding them accountable for doing so. In sum, it is now the conventional wisdom that the principal objective of central banks should be to pursue price stability vigorously.

It will be argued in this paper that price stability is indeed desirable for a whole host of reasons. At the same time, it will also be contended that achieving near-term price stability might sometimes not be sufficient to avoid serious macroeconomic downturns in the medium term. Moreover, recognising that all deflations are not alike, the active use of monetary policy to avoid the threat of deflation could even have longer term costs that might be higher than the presumed benefits. The core of the problem is that persistently easy monetary conditions can lead to the cumulative build-up over time of significant deviations from historical norms – whether in terms of debt levels, saving ratios, asset prices or other indicators of "imbalances". The historical record indicates that mean reversion is a common outcome, with associated and negative implications for future aggregate demand.

In a recent paper, Romer and Romer (2002) have argued that macroeconomic policymakers in the United States were basically using the right empirical model to conduct monetary policy in the 1950s. That is, policymakers at that time recognised the high cost of inflation, and were rightly convinced by Keynesian arguments that active monetary and fiscal policy could be used effectively to lean against it. They argued further that these insights were somehow lost in the 1960s and 1970s, allowing inflation to become well entrenched, but then (and fortunately) the eternal verities were rediscovered and inflation was resisted once more. Romer and Romer thus conclude that we are essentially back where we were in terms of our understanding of economic and, above all, inflationary processes.

In contrast, it will be contended here that any historical exegesis needs to be extended in time, and thus in scope, to encompass the debate which took place before the occurrence of the Keynesian revolution. The literature produced by the Austrian school of economics in the interwar period concluded that the Keynesian focus on aggregate measures in the economy, like the overall measure of inflation, provided an inadequate bellwether for identifying emerging macroeconomic problems. Rather, the Austrians focused on the impact of changes in relative prices leading to resource misallocations and subsequent economic crises. Moreover, this literature treated economic developments as part of dynamic processes in which past events had an influence on the future. The long run was not just a series of short runs. In our modern world, where journalists, politicians and other non-academic commentators constantly use such terms as "excessive", "unbalanced", and "unsustainable", these pre-Keynesian insights might still have a capacity to enlighten. In the more

[1] A revised version of a paper presented at the Swiss National Bank Festschrift seminar at Gerzensee on 20-21 January 2006. Comments are welcome prior to the publication of the Festschrift volume in 2007. The views stated herein are those of the author and are not necessarily the views of either the Bank for International Settlements or those that have commented on the paper already. Nevertheless, my thanks to Stefan Gerlach, Már Gudmundsson, Ulrich Kohli and Øyvind Eitrheim for helpful comments, and to Claudio Borio both for comments and for ongoing stimulus about these and related issues over the course of many years.

formal models used by academics, these concepts are rarely present, perhaps because they are so difficult to model quantitatively in the first place.[2]

A starting point for the analysis in this paper is the explicit recognition of an increasingly obvious fact. Under the joint influences of deregulation and technology, the global economic and financial system has undergone massive change in recent years. The liberalisation of the real economy, in particular the re-entry into the global trading system of such giants as China and India and developments in the global financial system over the last twenty years, have profoundly changed how economic processes work. We are increasingly distant from the highly regulated period following the Great Depression and the Second World War, when our current policy frameworks were developed. Indeed, the structural landscape looks more and more like that seen in the 1920s and the decades prior to World War I. It would not seem implausible, in the light of all this underlying change, that our policy frameworks might also need revision.

Sections 2 and 3 below are positive rather than normative. They attempt to document that the costs of not having near-term price stability, as well as the benefits, may have been overestimated. Taken together, they make a prima facie case for re-evaluating the current, conventional monetary framework. In Section 4, such an evaluation is carried out, with arguments for maintaining the status quo being confronted with the arguments against. In Section 5, an outline is presented of what an adapted and improved monetary framework might look like.

To summarise the policy implications, it is concluded that the longer-run implications of monetary policy actions should be given greater weight than they have been. The challenge will be to combine the pursuit of longer-term price stability with more flexible, and nuanced, use of the policy instruments directed to that objective. Meeting that challenge will involve changes in how central banks act, in particular the indicators they look at when setting monetary policy, as well as changes in how they communicate what they do to the public.

2. Deviating from price stability: have the costs been overestimated?

Before evaluating the costs of not having "price stability", it would be best to define what central bankers currently mean by the term. For most central banks, the "price" component is defined as some aggregate measure of the prices of currently produced goods and services.[3] Depending on taste, this could be either the CPI or some NIA deflator, with or without some sectoral exemptions to purge the series of undesired volatility. Over the longer run, these series tend to move quite closely together so that the distinctions between them are less important. However, over shorter time periods, like the one- or two-year horizons conventionally targeted by central bankers, definitional differences can be significant. For example, the upward trend in energy prices in recent years has driven a wedge between measures which include such prices and those that do not. As for the definition of "stable", the conventional approach would be to define it as some low level of inflation, say between one half of one per cent (to account for upward measurement bias) and 2 to 3 per cent per annum. Implicit in this definition is also the view that any measure of deflation (where prices actually fall in aggregate) is not consistent with price stability.

The benefits of achieving any public policy objective are not absolute, but must be assessed against the costs of doing so. Today, the costs of achieving low inflation would be assessed as significantly lower than they were thought to be in the 1960s and 1970s. At that time, many believed there was a long-run trade-off between inflation and unemployment, implying that low inflation meant permanently

---

[2] In his Nobel prize lecture, reprinted in Hayek (1975), Hayek warns about putting excessive reliance on empirical "proofs" in economics at the expense of a coherent theoretical explanation. He argues that economic processes are inherently so complex and constantly changing that the appearance of structural stability is almost always misleading. Interestingly, Keynes shared this view as described in Leijonhufvud (1968). For some more recent scepticism, see Summers (1991).

[3] It is worth noting that in the pre-war literature, two things stand out. First, there was generally no precise definition given of what was meant by inflation. This is perhaps not surprising given the rather primitive state of data collection at the time. Second, the discussion was always premised on the idea that credit creation was at the heart of the inflation process. That the evident shortcomings of the "Monetarist" experiment in the 1970s should have led to a wholesale rejection of this centuries-long association warrants a study on its own.

higher unemployment. Even as that belief began to fade, reflecting the insights of Friedman (1968) and Phelps (1968) into how shifting expectations would render vertical the long-run Phillips curve, there was still resistance to trying to reduce inflation through market processes. In part, this was because of the perception that even the short-run costs could be substantial. One strand of thought was that the short-run trade-off was very flat, implying that a large unemployment "gap" would be required to move inflation materially. A related strand of thought was that inflationary expectations were very "sticky" and thus disinflation would not receive much support from a ratcheting down of the Phillips curve in inflation-unemployment space. This kind of thinking led to a preference for wage price controls and other non-market processes, along with a belief that "gradualism" in reducing inflation would do so at the lowest cost over time. What is interesting, now that inflation has been reduced to low levels, is that similar views currently prevail about both sticky expectations and shallow trade-offs. The implications of this are examined below.

While the assessed costs of achieving price stability tended to fall over time, the assessed benefits rose in tandem with central bankers' actual experience of living with high inflation. It was not a pleasant experience. Perhaps the first observation was the disquietening tendency for unleashed inflation to move ever higher when not firmly resisted by macroeconomic policies. In many countries, particularly when exacerbated by the negative supply side shocks of the 1970s, the battle for factor shares led to a spiralling of wage and price pressures that moved steadily upwards. This eventually led to the conclusion that just stabilising inflation, once it had reached a level high enough to significantly affect economic decision-making,[4] was simply not a viable option. The memories of hyperinflation in post-war central Europe, arguably the defining macroeconomic event of the century for Germany, provided further support for this view. Indeed, this historical experience had already led to the Bundesbank and the Swiss National Bank being given much more independence than was typical at the time.

The costs of high inflation were increasingly recognised as having micro and macro as well as social dimensions. By way of summary, inflation posed a threat to high, sustained economic growth and social stability. At the micro level, the principal concern was that large aggregate price movements were clouding movements in relative prices and interfering with the information content of the price system. The interaction of large price movements and the tax system, which had never been designed with this in mind, provided another source of concern about economic efficiency and long-term growth potential. At the macro level, increased uncertainty about prospective price movements, and the clear potential for an eventual policy response and resulting recession, which indeed often materialised, added a costly risk premium to financing costs. Together with people's desire to hedge themselves against inflation, this led to an unwelcome shift of real resources away from productive investments into property, both residential and non-residential. In turn, since much of the financing came through banks, this raised concerns about potential instability in the financial system should property prices begin to fall.

Finally, at the social level, it became increasingly evident that a further effect of inflation was to redistribute wealth in an unfair way. This threatened belief in the integrity of both the economic and the political system. Perhaps recognising the truth of Keynes' much earlier observation, "Lenin was right. There is no subtler, no surer means of overturning the existing basis of society than to debauch the currency", the political establishment and the citizenry of the industrial countries eventually became convinced that inflation had to be brought down and kept down. As noted above, this rightly continues to be the conventional wisdom today.

This said, another aspect of today's conventional wisdom concerning inflation should also be noted, particularly since it has some bearing on the subsequent discussion of deflation. That is, one-time upward shifts in the price level should be tolerated to the extent they do not threaten to generate increases in inflationary expectations and second-round effects on prices. Such temporary increases in measured inflation, say, arising from a negative supply shock to production capacity, can facilitate the relative price adjustment which is needed to respond to the supply shock. The alternative possibility, resisting an aggregate price increase, would demand that other prices fall to effect the

[4] While the tolerable level of inflation is generally considered to be below 2 to 3 per cent, most careful studies of the "costs" of inflation have difficulty identifying such costs below a threshold of around 10 per cent. This discrepancy perhaps reflects the belief that inflation above the lower limit would quickly accelerate to breach the upper one.

relative price shift. Since this is generally thought to involve greater economic costs, this has not generally been thought of as the preferred alternative.[5]

An objective assessment of the costs of deflation (in contrast to inflation) is rendered more difficult by the comparative rarity of such events in recent decades and, partly as a result, the prominence typically given to the appalling experience of the United States during the Great Depression of the 1930s. Clearly, this was their defining macroeconomic event of the last century. Yet it must also be recognised that, in historical terms, the association between price declines and massive output and job losses was almost a unique event. Looking back over a much longer historical period,[6] a number of studies indicate that many periods of mild deflation prior to World War I were associated with continuing strong increases in output, some with only mild recessions, and just one or two with sharp falls in output. Moreover, looking at some more recent periods of deflation, or near deflation, the overall economic performance of the affected countries was not seriously compromised. In Japan, mild deflation did not lead to a cumulative downward spiral in consumer spending, premised on prices being expected to be still lower in the future, even though the after-effects of the corporate excesses of the 1980s were severe. In China, mild deflation had no discernable effect on growth rates, which were maintained at extremely high levels.

Categorising deflations in terms of "The Good, the Bad and the Ugly", terms made famous by a well known film,[7] has considerable merit in that it underlines that not all deflations are the same. This leads to the need to analyse why the costs of deflation differ and, in turn, the issue of how costly a deflationary period in the global economy might be today. This understanding would be relevant for determining what price should be paid for an insurance premium against such an event happening.

"Benign" (perhaps a more accurate term than "good") deflations in which output growth remained strong have historically generally been associated with positive supply shocks. In particular, in the period prior to World War I, technological innovation, rapidly rising productivity and globally mobile factors of production often led to both falling aggregate prices and sustained business activity. Lower prices contributed to higher real wages, while higher productivity allowed the share of profits in factor incomes to be maintained or even increased. In this environment, asset prices also remained strong and monetary and credit aggregates tended to rise as well.

"Bad" deflations have been those in which deflation was accompanied by recessions of normal size. Such circumstances were often produced by slackening demand, in a situation where inflation was already at a low level. Broadly put, the costs of such mild deflations would not seem likely to be much different than those of mild inflations. At the micro level, there would be concerns about the weakened content of price signals, interactions with the tax system and arbitrary wealth transfers. At the macro level, a preference for cash over risky investments might further slow growth potential over time. This said, it could not be ruled out that a bad deflation might turn into an ugly one. Hayek referred to this as a «secondary depression» and accepted that it should be resisted by monetary policy.

An "ugly" deflation, like that of the 1930s, has its roots in three nominal rigidities. The first rigidity is that of nominal wages. If prices begin to fall while wages do not, then real wages rise and profits are squeezed. This then feeds back on lower employment and lower investment, with the associated reductions in demand further supporting price declines. The second rigidity is the zero lower bound for nominal interest rates. If prices move down, and are anticipated to move even lower, the ex ante real rate of interest rises and cannot be offset by further nominal declines. This has further negative implications for investment, but also for debt service requirements more broadly. Debts denominated in nominal terms are the third rigidity, and they can affect both the consumer and corporate sectors. Evidently, the severity of the effect on debt service requirements will depend not only on the rate of

---

[5] A recent, massive study of pricing behaviour by European firms casts some doubt on this. Downward price movements for individual products are as common as increases. Moreover, downward price movements seem more responsive to demand conditions than do price increases, in part because customers see price increases in response to demand pressures as "gouging". This implies a concave short term Phillips curve, which is not the conventional wisdom. See Dhyne et al (2005).

[6] See Chapter IV in each of BIS (1999) and BIS (2003). Also Borio and Filardo (2004) and Bordo and Filardo (2005).

[7] Suggested for use in this context by Borio and Filardo (2004).

deflation, but also on the level of nominal debt outstanding.[8] Finally, the historical evidence indicates that related weaknesses in the financial system can also seriously exacerbate a downturn.

Considering the structural characteristics of today's global economy indicates that it may have more traits in common with the world prior to World War I than that of the Great Depression. To this extent, current concerns about avoiding deflation might be overstated. In particular, a pattern of ongoing economic liberalisation, occurring both domestically and internationally, has contributed to an ongoing series of positive supply shocks that have pushed down the prices of internationally traded goods and services.[9] Moreover, the same forces in association with new communication technologies have sharply increased the proportion of output that is internationally traded. In many countries, the United States especially but also many emerging market economies, productivity growth has also increased measurably. In spite of this downward pressure on prices, profit shares have in recent years widened significantly. Clearly, productivity growth has contributed to a lower rate of growth for unit labour costs, but nominal wages have also been remarkably subdued in many countries. The recent growth in the global labour supply can serve as an explanation. Moreover, as was the case prior to World War I, both labour and (especially) capital are now highly mobile. Thus, increases in labour compensation in the industrial countries are currently restrained by the use of foreign workers to remove bottlenecks, and by the credible threat that whole factories could be moved to lower cost jurisdictions.

The same conclusion can be reached through considering the extent to which nominal rigidities might (or might not) play a role today in transforming a "benign" deflation into a "bad" or even "ugly" one. The first rigidity, that of real wages, would seem from the historical comparison above not to be an obvious problem. However, the second, the potential for policy rates to hit the zero nominal bound and for real rates to rise uncontrollably, must be a source of greater concern given how low policy rates currently are in most industrial countries. But it is also worth noting that the ratcheting up of ex ante real rates also depends on falling prices (ex post) being extrapolated into the future. Put otherwise, it depends on their perceived persistence in the inflation process. Fortunately, the empirical evidence referred to above indicates that inflation persistence has fallen sharply in recent years, as indeed was the case prior to World War I.[10] The fact that falling prices in Japan, over the last eight years, do not seem to have led to consumers "postponing" purchases in anticipation of further falls must also be judged a positive sign. Indeed, household savings rates fell more in Japan over the last decade than they did in the United States, albeit to a higher level.

There is also the third issue of debt contracts being defined in nominal terms. There can be little doubt that current debt levels in some countries are very high. This applies particularly to government debt in Japan, corporate debt in Europe and household debt in the United States and a number of other English speaking countries. Falling prices and nominal revenues could then have the potential to seriously undermine the capacity to service debt, and could lead to disruptive bankruptcies. At this juncture, such concerns might seem to provide clear support for the view that insurance against deflation is worth having. However, such a conclusion must be qualified to the degree that (as will be argued below) high debt levels may themselves have been encouraged by easy financing conditions in the past.

Finally, most current indicators show that the financial institutions in most of the industrial countries are very healthy,[11] although certain fragilities can be identified looking forward. In particular, the opacity and complexity of the financial system today shrouds in secrecy who finally bears the risks, and

---

[8] In the background stands a further asymmetry. The fact that debtors can go bankrupt has evident effects on their spending capacities, but also on creditors as well.

[9] All the changes noted in this paragraph are well documented in Galati and Melick (2005) and the more than thirty empirical papers to which they refer.

[10] The absence of "persistence" prior to World War I, that is, the rejection of the unit root condition in the inflation process, owed much to the operation of the gold standard. Thus, when prices went down, they were normally expected to go back up. Today, we have something similar, assuming the credibility of monetary regimes having the objective of keeping inflation at a low positive level. Mean reversion in the expected price level might be even further encouraged by committing to a price level rather than an inflation target. Whether this credibility would prove as robust as the operations of the gold standard remains to be seen.

[11] It is clear that the severity of the 1930s depression was exacerbated by the weakness of banking systems, at a time when they had unprecedented dominance over the financial system as whole. This was not the case prior to World War I, nor is it the case today in most of the larger industrial countries.

increases the likelihood of operational problems. More broadly, the reliance of banks in many countries on revenues from dealings with the household sector, already heavily indebted, could in the future prove a source of financial vulnerability. Yet, as just noted above, these exposures might also have increased over time in response to successive episodes of monetary easing and associated credit expansion.

3. Maintaining price stability: have the benefits been overestimated?

This section begins with an analysis of some of the other objectives that have traditionally constrained central banks from pursuing price stability in a single-minded way. While the importance of these may have been downgraded, as the objective of price stability has been upgraded, there are good reasons why their influence persists. Also note that, while many central banks have been given a formal mandate to pursue price stability as their primary objective, many have not. In part, this may reflect the belief that objectives other than price stability, even if only over relatively short periods, might also bring benefits.

After considering these traditional constraints, attention is then directed to a set of problems that have again gained prominence in recent years. In particular, attention is drawn to financial and other forms of economic disruptions associated with "booms and busts" in credit growth, asset prices and significant deviations in spending patterns from earlier norms. Historically, there have been repeated episodes of this sort, despite the general maintenance of price stability in the periods preceding them. After some reflections on how earlier economic theorists explained this phenomenon, an attempt is made to indicate why these historical allusions might have some relevance today.

3.1 Traditional constraints: output growth and exchange rates

If one accepts that there is no long-run trade-off between output and inflation, then concerns about maintaining output growth cannot be viewed as being in fundamental opposition to the pursuit of price stability. If, as is normally the case, the price objective (initially under control) is under threat from excessive or deficient demand, the pursuit of the former automatically implies a monetary policy which runs countercyclical to the business cycle. Tightening, for example, resists both excessive demand and the inflationary pressures they generate. Yet, less fundamentally, there are circumstances where concerns about output growth do have an independent influence on policy decisions. In the formal literature, it is commonly assumed that the loss function the monetary authority is trying to minimise includes deviations of output from potential, as well as inflation from its targeted level. More practically, attempts to move forecast inflation back to target too quickly can cause more severe cumulative output losses than a slower and steadier process. A convex, short-term Phillips curve has properties sufficient to lead to this kind of behaviour on the part of the monetary authorities.

Confronted with supply side shocks, however, there can be a more fundamental conflict between price stability and output growth. For example, an oil embargo raises prices and reduces aggregate supply. In countries which are net oil importers, this is equivalent to a tax increase, which also reduces aggregate demand. When this happened for the first time in 1974, macroeconomic policy tried to lean against the output costs, with devastating effects as both inflation and inflationary expectations rose sharply. Learning from this mistake, the decision was taken in 1979 to lean against the price effects. Today, as noted above, the conventional wisdom would be to accept the direct, first-round price effects but not any subsequent pass-through effects.

A second traditional constraint, that of the exchange rate and the possibility of associated external imbalances, has been a recurrent concern of the Swiss National Bank and many others. The pursuit of domestic price stability, in a world of highly mobile capital flows, implies that the exchange rate must be allowed to float.[12] Monetary tightening in the interests of reducing inflationary pressures could, in some cases, lead to a degree of nominal and real exchange rate appreciation that would significantly

[12] Simultaneously having an independent domestic monetary policy, a fixed exchange rate and highly mobile capital flows is referred to in the modern literature as the "Impossible Trinity".

worsen the current account balance. This could increase the likelihood of a future exchange rate crisis, and might in any event demand a degree of domestic resource reallocation that could prove discomforting if forced to occur very quickly. Similarly, monetary easing might lead to a run on the currency with similar effects of opposite sign. Whether driven predominately by concerns about the level of the exchange rate, and its effect on real variables, or its rate of change and the effects on financial variables, the monetary authority might either wish to, or feel forced to, factor such considerations into its decisions.

Normally, extended resistance to pressure for the nominal exchange rate to appreciate would lead to domestic inflation that would ensure a real appreciation of the currency in any event. Confronted with such inflationary tendencies, monetary policy would be tightened and the nominal exchange rate allowed to rise. However, in Asia in recent years, absent any overt signs of domestic inflation, it has been possible to continue to resist currency appreciation through a combination of massive, sterilised intervention and easy domestic monetary policies. In fact, real interest rates in Asia have been close to zero for some years. To date, these policies have not been manifestly bad for Asian countries. Real growth has been rapid, and large exchange reserves have been accumulated as "insurance" against any possible repeat of the Asian crisis of the late 1990s. However, looking forward, problems could eventually arise in Asia having to do with either domestic inflation or "imbalances" of various sorts. The parallel between Asia today and Japan in the late 1980s is not wholly fanciful.

If this is only a potential problem, arising in the context of stable Asian prices, another problem is already evident, and on a more global scale. The region as a whole has built up a large trade surplus, which is the counterpart to a significant part of the US trade deficit. This outcome reflects not only undervalued Asian currencies, but also lower long rates in the United States as accumulated foreign exchange reserves have been reinvested in bonds, largely denominated in US dollars. While, to date, price stability has been maintained in both the creditor and debtor countries, the global financial system has nevertheless become increasingly exposed to unprecedented external imbalances.[13] Moreover, the conviction of foreign exporters to the US that domestic prices in dollars cannot be raised, even should the US dollar fall relative to their own currencies, has significantly reduced the "exchange rate pass-through". While there must be limitations to this process, the failure of relative prices to adjust stands as a significant impediment to increased US competitiveness and an orderly current account adjustment.

3.2 New constraints: fixed capital, debt and financial stability

Lessons from economic history

The historical record provides stark evidence that a preceding period of price stability is not sufficient to avoid serious macroeconomic downturns. Perhaps the most telling example is that of the Great Depression in the United States in the 1930s. The period was characterised by massive and continuing losses in terms of both employment and output, accompanied by a cumulative deflation process and associated financial distress in response to accumulated debt. Indeed, almost one third of US banks failed over the course of the 1930s.[14] The crucial point is that this outturn was not preceded by any noticeable inflation. Indeed, prices were essentially stable for most of the 1920s and were actually showing signs of measured deflation before the decade drew to a close. Rather, the period was characterised by rapid technological innovation, rising productivity, rapid increases in the prices of equity and real estate and strong fixed investment. Behind these developments were ongoing technical innovations in the financial sector, not least the much greater availability of consumer credit.[15]

Turning to more recent history, Japan has been in a protracted period of sub-par growth for well over a decade, with the GDP deflator falling almost 10 per cent on a cumulative basis. With growth averaging only around 1 per cent annually between 1992 and 2004, the unemployment rate rose from a low of

---

[13] See White (2005b).

[14] In this regard, the tightening of monetary policy in 1931 within the framework of the gold standard was distinctly unhelpful.

[15] See Eichengreen and Mitchener (2003).

2 per cent in 1989 to a high of 5.5 per cent in 2001. At the same time, the banking system showed increasing signs of stress, and a number of bankruptcies were recorded in spite of strong and continuous state intervention. As with the earlier US experience, this very poor performance was preceded by a sharp increase in credit, asset prices and fixed investment. Notably, however, there was again no prior acceleration of overt inflationary pressures. As for the Japanese financial sector in the 1980s, it was both subject to the ongoing influence of technological innovation and, more importantly, was in the process of financial deregulation.

Still more recently, attention could be drawn first to the financial crisis in South East Asia in the late 1990s. For some countries the costs could be measured as double digits of GDP, with associated increases in unemployment, and the banking systems were also significantly affected. In a number of cases, deflation threatened to, or actually did, emerge. Similar to the US and Japanese cases, these difficulties were not preceded by any inflationary excesses but rather by sharp increases in credit, asset prices and fixed investment. On the financial side, an important influence was exerted by large-scale capital inflows, which subsequently and suddenly reversed as the crisis worsened.

Finally, the same general point could be made about the rather different stresses imposed on the real and financial system by the failure of LTCM and the Russian debt crisis in 1998, and the collapse of global stock markets in 2001. These disruptive incidents also took place in an environment of effective price stability. As with the episodes above, each was preceded by significant evidence of financial overreach (accelerating credit growth, rising leverage, rising asset prices). And, in both the United States and Europe, there was a sharp increase in business investment directed largely to the technology, telecommunications and media sectors believed to epitomise the "New Era" then thought to be emerging.

These facts are as easy to describe as their implications are hard to deny: price stability was not enough to ensure high, sustained growth. What is harder to do is to present an analytical explanation for these costly events, given the absence of the expected catalyst of rising inflation. In the following parts of this section, two relevant points are made. First, recourse is made to some of the central tenets of pre-war Austrian theory and how that model contrasts with the Keynesian analytical approach still used by most central bankers. Second, an attempt is made to show how structural changes in the economy, both real and financial, might have rendered these theoretical insights of more practical relevance today than they were during the 1950s, 1960s, 1970s, and perhaps even the 1980s. In short, history might still matter.

Lessons from the history of economic thought

A useful starting point might be the Keynes-Hayek debate of the early 1930s. This was conducted in the early days of the Great Depression against the backdrop of a previous half century or more of substantial business cycle variations.[16] While Hicks (1967) contends that the debate captured the imagination of the economists of the time, it has since been generally forgotten. Both Keynes and Hayek began by accepting some common insights. The first is that a monetary economy is fundamentally different from a barter economy. The second is that both built upon the Wicksellian framework which emphasised the problems associated, in a monetary economy, with the financial rate of interest deviating from the so-called natural rate of interest.[17] These similarities noted, their thinking subsequently led them in quite different directions.

Laidler (1999) notes that the IS/LM model, still the workhorse in the stable of most central bankers,[18] is essentially a one period model in which the short run and the long run are effectively indistinguishable. Its central message is that deviations between the financial and natural rate will create either deficient or excessive aggregate demand leading to unemployment and (in a fuller model) inflation, respectively. Both are undesirable in themselves. In contrast, the passage of time is a central feature

---

[16] This debate has been well chronicled in Cochran and Glahe (1999).

[17] The financial rate of interest is the rate at which commercial banks stand ready to lend. The natural rate is rather determined by real factors, in particular those having to do with saving and investment.

[18] See Blinder (1988) and Blinder (1999). Blinder implicitly associates the Keynesian model with the IS/LM apparatus developed by Hicks. As Leijonhufvud (1968) has made clear, this association loses much of the richness of Keynes' thought, particularly about capital markets and the role of immeasurable expectations.

of Austrian theory and, short of the long run, credit creation need not lead to overt inflation. Rather, relative prices are the key to future outcomes. Deviations between the financial and natural rate lead the financial system to create credit which encourages investments that, in the end, fail to prove profitable. The underlying reason for this is that the investments tend to be directed to the production of goods and services for which the level of demand anticipated never in fact materialises. While many have rightly criticised the specifics of Austrian capital theory, the concept of erroneous investment processes driven by credit creation is still noteworthy. Moreover, while most Keynesian models assume a relatively smooth adjustment from one equilibrium to another, the Austrians stressed growing imbalances (cumulative deviations away from equilibrium) and an eventual crisis whose magnitude would reflect the size of the real imbalances that preceded it. The underlying reason for this last observation is that the capital goods produced in the upswing are not fungible, but they are durable. Mistakes then take a long time to work off.

As is now well known, the Austrian approach dropped from sight in most parts of the world, in part because it offered no hope in the face of the crisis of the 1930s. Moreover, the Keynesian approach subsequently offered highly satisfactory performance in the post-war period, barring the 1970s as discussed above. Indeed, since the early 1980s the conventional approach to macro policy has produced truly stellar macroeconomic outcomes. Growth in most industrial countries (excluding Japan) has been both higher and less volatile, while inflation has been sharply lower but also less volatile. Against this historical background of success, it might seem strange to suggest that the pursuit of low, positive inflation by central banks should be complemented by concerns about financial "excesses" and "imbalances" that are more in the Austrian spirit. It is argued immediately below that there are plausible reasons to warrant such a re-evaluation. As a complement, it will be further argued in Section 4 that there is a reasonable chance that the good performance seen to date might not be sustainable.

Why history might still matter

One reason to warrant a reappraisal of the current conventional approach to monetary policy is that the structure of the global economy has changed remarkably in recent decades. In particular, financial liberalisation has increased the likelihood of boom-bust cycles of the Austrian sort. Moreover, integration of big countries into the world economy and the liberalisation and globalisation of the real economy, as discussed above, appears to have had material affects on the inflation process and the transmission mechanism of monetary policy. Consider each development in turn.

The structural changes in the financial sector in recent decades have been profound. Some combination of technological change and deregulation has led to a quickening process of disintermediation from banks, growing reliance on market processes, globalisation and institutional consolidation.[19] In short, we now have a liberalised financial system which seems much more likely to show boom-bust characteristics than the previously repressed one. Bordo and Eichengreen (2000) convincingly document the decline of such incidents internationally, in response to the imposition of financial controls in the 1930s and 1940s, and their subsequent rise as these controls were gradually taken off.

The dynamics of the process can be described in the following way. Buoyed by justified optimism about some particular development, credit is extended which drives up related asset prices. This both encourages fixed investment (as per Tobin's q), and increases collateral values, which supports still more credit expansion. With time, and underpinned by an associated increase in output growth, this process leads to increasing willingness to take on risks ("irrational exuberance"), which gives further impetus to the credit cycle. Borio et al (2001) provide evidence that credit spreads, asset prices, internal bank risk ratings, ratings from agencies and loan loss provisions all demonstrate this tendency to procyclicality. Subsequently, as exaggerated expectations concerning both risk and return are eventually disappointed, the whole process goes into reverse. As undershoot replaces overshoot, the dampening effect on the real economy of high debt levels and weak investment becomes particularly notable. Frequently, but not necessarily, the financial system is itself weakened and exerts a further dampening effect on the real economy.

---

[19] See White (2004a).

This analysis of events does not seem at odds with the descriptions presented above of the many economic and financial disruptions seen over the last decade or two. While generally not preceded by overt inflation, they were all characterised by rapidly rising credit, asset prices and fixed investment. Indeed, it also seems consistent with the subsequent and extended weakness of fixed investment in Germany, Japan, South East Asia and the United States after earlier periods of strong investment growth. In sum, there are stronger grounds today than in earlier decades for looking at financial sector developments, and their potential to threaten rapid and sustainable output growth, as new indicators which ought to help guide the conduct of monetary policy.

By the same token, structural change in the real economy might also imply that there are grounds for questioning the use of traditional indicators in the conduct of monetary policy. While reserving normative prescriptions for Section 4, there is clear empirical evidence that the inflation process has changed markedly in recent years.[20] The pass-through of exchange rate changes and other costs to domestic prices is much reduced. The influence of domestic output gaps on inflation seems on the wane. Indeed, recent work by Bordo and Filardo (2005) suggests that, for many countries, global measures of capacity utilisation are already exerting a significant degree of influence over domestic measures of inflation. Estimates of the short-run slope of the Phillips curve have fallen in many countries, and the persistence of inflation (after shocks) has fallen significantly in many countries.

Far from having a common understanding of what is going on here, as suggested by Romer and Romer (2002), a number of competing hypotheses can be suggested. Both real (increased international and domestic competition and productivity) and nominal (increased central bank credibility) forces might be in play. Unfortunately, this lack of clarity as to root causes also implies some considerable uncertainty with respect to the appropriate conduct of monetary policy. Taken together with the identified changes in financial structure, there seems then to be a prima facie case for re-evaluating the current framework for conducting monetary policy.

4 Evaluating the conventional policy framework

In the preceding sections, support has been provided for two propositions. First, serious macroeconomic downturns can occur in fiat money economies even if they are not preceded by overt inflationary pressures. Put otherwise, the many benefits of stable prices do not extend to excluding such extreme events. Second, just as there is a willingness to tolerate the first-round effects of negative supply shocks on inflation, there should perhaps be a similar willingness to tolerate deflation arising from positive supply shocks. The costs of "benign" deflations are difficult to evaluate, and would, in any event, have to be balanced against the costs of avoiding them. In this last section of the paper, the implications of these joint insights in choosing a framework for the conduct of monetary policy are assessed.

The section is in four parts. First, the salient characteristics of the current "orthodox" framework are presented. These cover not just the objective(s) of monetary policy but also the way in which the instruments of monetary policy are used in the pursuit of the objectives This is followed, second, by arguments for maintaining the status quo, and then, third, the arguments against. Fundamentally, the issue comes down to the merits of a more static analysis ("so far so good") versus a more dynamic approach focused on where the current path might be leading.

4.1 The conventional policy framework

It must be recognised that monetary policy is conducted with significant differences in emphasis across currency areas. Thus, any single description of how monetary policy is conducted risks becoming a caricature.[21] Moreover, the conduct of monetary policy is constantly evolving in practice. Central bankers do react to shortfalls in their own performance, to unexpected side effects of what

[20] As noted above, see Galati and Melick (2005).

[21] This risk is perhaps greatest in the case of the Swiss National Bank and the European Central Bank.

they do, and to new intellectual insights (White, 2002). Nevertheless, looking back over recent years, the "orthodox" framework for conducting monetary policy would seem to comprise the following five propositions.

First, the primary objective of monetary policy should be to maintain inflation at a low positive level. Given the presumed lags in the effects of monetary policy, this implies targeting a forecast of inflation for two years ahead. In some jurisdictions this objective is publicly declared (as in "inflation targeting"), whereas in others it is implicit in what the authorities both say and do.

Second, the principal instrument for achieving the objective is use of the short-term policy rate under the direct influence of the central bank. In most jurisdictions, this influence is exercised through some combination of announcements of rate corridors and market operations affecting the provision of reserves to the banking system. In recent years, in Japan, where the policy rate has effectively been at the zero nominal bound, the authorities have relied upon "quantitative easing". This has been conducted through announcing and implementing targets for the aggregate level of excess reserve holdings in the banking system.

Third, the forecast of future inflation, whose evolution guides the setting of the policy instrument, relies primarily on the influence of "gaps" in the product and labour markets. Thus, estimates of capacity utilisation and the natural rate of unemployment play a central role. The use of other indicators of future inflation, such as the rate of growth of monetary and credit aggregates, are sometimes referred to (especially in continental Europe), but still play essentially a secondary role.

Fourth, asset prices are important only to the extent they exert pressure on "gaps" and subsequent inflation. In any event, asset price "misalignments" are difficult to identify and cannot be effectively resisted since this would require interest rate increases that would be destructive elsewhere in the economy. Conversely, any slowdown in economic activity associated with an asset price "bust" can be effectively resisted through an easing of monetary policy. This could impart a degree of asymmetry to the conduct of domestic monetary policy in the face of such disturbances.

Fifth, conduct of monetary policy in light of the four principles above implies a significant degree of willingness to allow the foreign exchange value of the domestic currency to float. To the degree that countries wish to resist this, another important asymmetry must be highlighted. Countries can resist depreciation through foreign currency intervention only to the extent their foreign currency reserves (or capacity to borrow) allow. There is no such limit to resisting appreciation. The domestic central bank can create as much domestic currency as it wishes, to purchase foreign currency, provided that it is prepared to live with the side effects of such policies.

4.2 Arguments for the status quo

While there might indeed be a prima facie case for re-evaluating the current monetary policy framework, a compelling argument for retaining the status quo, after such a re-evaluation, has already been referred to. It has delivered the goods in terms of "the Great Moderation". That is, output fluctuations have been much attenuated in recent decades, and both the level and the volatility of inflation have been remarkably reduced. In effect, central bankers learned from experience the harm that inflation could do and resolved to reduce it. They have been very successful, and we are now reaping the rewards in terms of much better macroeconomic performance. In particular, with inflation low and stable, there has been no need for periodic episodes of sharp tightening of monetary policy with the associated risk of inadvertent recession.

As for the evidence of increasing disturbances in the financial sector, those wishing to maintain the current framework would argue that these are due in large part to learning problems in an increasingly deregulated sector, and also to deficiencies (in certain countries) of the infrastructure supporting the financial system. The central point is that, in both cases, these problems should prove temporary. A corollary of this view is that liberalised financial systems are not inherently procyclical and are certainly not prone to recurring crises. On the contrary, more complete financial markets will prove in the end to be both efficient and highly resistant to shocks. Not only do they allow the transfer of risk to those most capable of bearing it, but they also facilitate intertemporal income smoothing, which allows demand to be maintained even under stress. Indeed, when one considers the number of serious shocks to which the global economy and financial system have been subjected in recent years, that inherent resilience is already increasingly apparent.

Finally, it would have to be noted that the current monetary framework has allowed monetary policy to play an appropriately countercyclical role whenever events seemed to threaten the prospects for sustained global growth. On the one hand, higher policy rates were used in late 1980s, in 1994 and also near the end of 1990s to respond to perceptions of rising inflationary pressures. On the other hand, policy rates worldwide were lowered sharply after the stock market crash of 1987. Rates were also lowered aggressively at the end of the 1990s, in the face of the collapse of property prices in many countries and the perceived weaknesses of many banking systems. In 1997, in response to the possible future implications of the Asian crisis, rates were left on hold even though traditional measures of inflationary pressures were signalling the need to tighten. The collapse of LTCM, and the associated Russian crisis, which also threatened Brazil, led to an overt easing of policy, as did the subsequent decline in global equity prices. Indeed, this latter event eventually led to nominal policy rates of only 2 per cent in continental Europe, 1 per cent in the United States and, of course, the maintenance of the policy rate at zero in Japan, supplemented by "quantitative easing".

Given how successful the combination of these policies proved to be in stabilising output growth, the case for a change in the framework for conducting monetary policy would not seem obvious. Yet, going beyond what might seem obvious, other considerations must also be taken into account.

4.3 Arguments for change

For analytical purposes, four separate problems are identified below, although, in practice, they interact to put the economy on an unwelcome dynamic path. First, with a monetary policy focused solely on price stability, the endemic procyclical characteristics of the financial system will meet with resistance during the upswing only to the extent they trigger inflationary pressures. Second, responding to the subsequent downturn through asymmetrically easier monetary policies, unless reversed promptly, can set the stage for a new set of imbalances. Third, if positive supply side shocks are also accentuated by easier credit conditions, then policy might actually enhance those procyclical tendencies in the financial system. Fourth, the pursuit of similar policies in successive financial cycles might, for an extended time, maintain output growth and price stability, but could also compound the underlying exposures. The case for change to the current system having been made, Section 5 asks what an altered system might look like.

Limited monetary resistance as confidence mounts

The historical capacity of the financial system to generate credit and asset price excesses along with spending misalignments has been documented in Section 3.2. This evidence must, however, be set against the contention that such problems are only transitional rather than endemic. In fact, problems of this nature have been observed for centuries under all kinds of monetary regimes. Most importantly, they were commonplace in systems that were not subject to changing regulation or to advancing financial technology. This is not, of course, to deny that such considerations can materially worsen a natural tendency towards "irrational exuberance" (see Andersen and White, 1996). In sum, there is an endemic problem of occasional "booms", followed by costly "busts", which seems unlikely to go away.

Nevertheless, to date there has been a marked unwillingness to tighten monetary policy in response, except to the degree seemingly warranted by the estimated direct effects on overt inflation. As noted above, the arguments commonly used are that "bubbles" in asset prices are hard to identify, and that "pricking the bubble" would demand interest rates so high as to damage other, unaffected parts of the economy. Yet a convincing counterargument is that the indicators considered by policymakers should extend well beyond asset prices. Rather, it is the combination of rapid credit growth, rising asset prices and unusual (unsustainable) patterns in the composition of aggregate demand that should elicit a monetary response. The former two series point to the probability of a subsequent problem or crisis, while the latter two give some idea of the prospective associated costs should the problem materialise.[22] For example, an abnormally low rate of household saving (say due to intertemporal optimising facilitated by modern financial markets) implies the need for future retrenchment, which

[22] Behind this interpretation is the concept of expected loss, which is the product of the probability of an event and the loss given such an event.

could materially slow spending. Similarly, an abnormally high rate of corporate investment could imply unprofitable outcomes, with subsequent negative effects on the demand for both capital and labour.

A tightening of monetary policy in the face of a combination of these indicators would, at the least, moderate the intensity of the upturn and, in turn, the subsequent damage. Moreover, the recognition that the monetary authority was likely to react in this way might also lead to changed behaviour on the part of economic agents. This could reduce the degree of inherent procyclicality in the system. While this might seem far-fetched, such a response would be very similar to that which followed the decision of central banks to pursue the objective of price stability. Expectations of inflation became much better anchored as a consequence, and the need for sharp policy responses much attenuated.

Asymmetric easing in the downturn

Reliance on aggressive monetary easing to reduce the costs of the "bust" phase also has a number of drawbacks. The first is that it might not work. Both Keynes and Hayek were aware of the limitations of monetary easing in the face of headwinds associated with the earlier period of misplaced confidence. Keynes' reflections on the "liquidity trap", and the difficulties of "pushing on a string", are well known. Hayek put his emphasis on what he saw as a paradox. If the underlying problem was a misallocation of real resources, due to the "excessive" creation of money and credit, it hardly seemed obvious that the preferred solution was still more credit and, potentially, still more imbalances. It is worth reflecting in this regard on the recent history of both Japan and the United States. In the former case, unprecedented monetary easing did not suffice to reverse a fifteen-year long slowdown in growth. In the United States, a similarly unprecedented easing of monetary (and fiscal) policy after 2001 succeeded in restoring growth, but the pace of economic recovery was still the slowest recorded in the post-war period.[23]

The second potential drawback of aggressive monetary easing has to do with the effects on the composition and ownership of the capital stock. After a period of excessive investment, unprofitable capital should be shut down to allow a reasonable rate of return to competitors. However, as the Japanese experience clearly indicates, so-called "zombie" companies can more easily receive evergreen finance from related banks, given low nominal interest rates, which can significantly impede this needed process. The end result might be that the time required for balance sheet adjustment (in particular, debt reduction) would be extended accordingly. Moreover, the opportunity provided for companies to borrow cheaply elsewhere, and amass large cash reserves, also implies a capacity to avoid bankruptcy even though the underlying fundamentals might point strongly in that direction. Further, cheap financing facilitates mergers and acquisitions, even though the historical record implies that these are more likely to reduce value than to create it. Finally, sharply lower interest rates imply a transfer from creditors to debtors which could result, over time, in a reduction in saving propensities and in the prospects for longer-term growth. In sum, if low interest rates are maintained for an extended period, they may or may not have the desired effect on aggregate demand, but they clearly have negative longer-term effects with respect to aggregate supply.

The third potential drawback has to do with potential distortions in financial markets. First, the Japanese experience over the last five years shows how, given an extended period of very low interest rates, the interbank market can collapse, leaving the central bank exposed as the market-maker of last resort. Second, as seen more broadly in Asia in recent years, the ample availability of low cost credit from dominant banks impedes the development of other forms of market financing. Over time, with financial markets seriously incomplete, this can reduce both financial efficiency and stability. Third, and pertaining more to well developed financial markets, lower interest rates can enhance the "search for yield". This will particularly be the case for financial institutions (like insurance companies and defined benefit pension funds) that must hit predetermined hurdle rates. This both induces investors to purchase increasingly risky assets, and to use increased leverage to raise rates

[23] This experience of the influence of "headwinds", arising from the earlier period of exuberance in the United States in the late 1990s, could also lead to a re-evaluation of the causes of the Great Depression in the 1930s. Perhaps, after all, it was not a simple case of policy misjudgement by the Fed, but the inevitable outcome of the earlier imbalances. See Eichengreen and Mitchener (2003). The South East Asian crisis in the late 1990s provides another example of the limitations of easier monetary policies. Lower interest rates to stimulate the economy threatened to undermine the exchange rate and, in turn, led to higher long rates. Moreover, given the currency mismatch problem faced by many countries, currency depreciation was actually contractionary rather than expansionary.

of return on equity. Such behaviour becomes manifest in reductions in risk premia on lower-rated paper and sovereigns, and on the increased availability of low cost finance to support venture capital investments and to purchase asset-backed securities. On the one hand, this encourages aggregate spending and investment as desired. On the other hand, should certain sectors of the economy be particularly favourably affected (consider TMT in the late 1990s and housing markets more recently), this could then set the scene for another burst of credit-fuelled misallocations further down the line.

A final drawback of the use of aggressively easy monetary policies in the aftermath of a boom is the eventual need to devise an "exit" policy. On the one hand, this will be made more difficult to the degree the shortcomings just noted are in evidence. If valuations in asset markets look stretched, and if debt levels remain high, higher policy rates could have larger, and potentially more non-linear, effects than might otherwise be expected. Concerns of this nature presumably lay behind the "measured tightening" carried out by the US Federal Reserve beginning in June 2004. On the other hand, the Japanese reliance on "quantitative easing", in addition to very low interest rates, highlights a further complication as monetary authorities begin to tighten. Economic agents more generally will be aware of the extent to which banks have reserves well in excess of normal requirements, and could become increasingly concerned about their inflationary potential. This implies a delicate balancing act for the monetary authorities, in which tightening must be slow enough to avoid destabilising financial markets, but fast enough not to destabilise inflationary expectations.

Positive supply side shocks

One implication of positive supply side shocks is that they call into question whether monetary policy should continue (in such circumstances) to pursue the near-term target of a low positive inflation rate. As discussed above, a "benign" deflation arising from positive supply side shocks has different implications for the economy than a deflation with its roots in demand side deficiencies. Analogous to the conventional wisdom that the first-round effect of negative price shocks should not elicit a monetary response, the same could be said for positive supply shocks. Moreover, recognising in the context of ongoing globalisation that these negative price shocks could go on for years, the effect on measured inflation might extend over a longer period than just a year or so. In the limit, this might even suggest that the target level itself should be adjusted downwards.[24] Note, in this regard, the sharp contrast with the suggestion normally made by those who voice concerns about deflation. Presumably reflecting the assumption of a possible "ugly" deflation, their recommendation has more commonly been that the target level for inflation should be raised to lower the likelihood that deflation might emerge inadvertently.

Failure to adjust the target downward (whether explicitly or implicitly) in the face of positive supply shocks would result in lower policy rates than would otherwise be the case. This would bring with it the risk of aggravating the concerns about the effects of low interest rates noted just above. Paradoxically, taking out insurance against a benign deflation might over an extended period increase the probability of the process eventually culminating in a "bad" or even "ugly" one. This likelihood would increase with the length of the period affected by positive supply shocks, and also with the number of successive times that policy leaned asymmetrically against the aftermath of the bursting of a bubble.

Cumulative effects given the conventional framework

Perhaps the strongest argument made above for maintaining the currently conventional way of conducting monetary policy is that it has been remarkably effective in many countries in producing sustained real growth along with low inflation. In the United States, for example, the expansion which started at the beginning of the 1980s was interrupted only briefly at the beginning of the 1990s, and then still more briefly around the turn of the century. Given the successive financial shocks to which the global economy has been subjected, there can be little doubt that the adroit use of monetary policy contributed materially to this outcome. The commensurate growth in the "credibility" of central bankers also helped materially in anchoring inflationary expectations. However, it should also be noted that

[24] In fact, there was an ongoing debate prior to World War II as to how best to ensure that increases in the marginal productivity of labour led to higher real wages. One view was that nominal wages should rise, while prices stayed constant. Others, however, argued that wages should stay constant while prices should fall at the same rate as productivity was growing. See Selgin (1997).

positive supply shocks also played a role in keeping down inflation. This helped avoid the normal post-war pattern in which monetary policy had to lean against rising inflation, often with the result that a recession followed. Moreover, with prices subdued, monetary policy could be used to good effect to resist successive threats to growth arising from financial disturbances.

This success admitted, whether growth will prove sustainable remains an open question. One possibility is that the cumulative monetary stimulation seen to date will eventually culminate in overt inflation. Recent sharp increases in energy and commodity prices could provide a foretaste of such an outcome. With the short-run Phillips curve now seemingly flatter than before, reversing any shift upwards in inflationary expectations might be costly and necessitate a more significant tightening of monetary policy than is currently expected.

Another effect of this cumulative stimulation has been an upward trend in household debt ratios in the United States and in many other countries, accompanied by a trend downward in national savings rates, both to new historical records most recently. In China, in contrast, domestic investment has been drifting up and now stands at a record high proportion of GDP. Moreover, in global asset markets, many risk premia have also descended to record lows even as house prices have risen to record highs. Global current account imbalances are also at unprecedented levels, with those countries having the largest external deficits generally exhibiting the largest internal imbalances as well. Should any or all of these series revert to their historical means, the sustainability of future global growth would also be open to question, perhaps leading to a deflationary rather than an inflationary outturn. To combine the two possibilities, the worst case scenario would be inflationary pressures, leading to a sharp tightening of policy, which in turn could precipitate a process of mean reversion in a number of markets simultaneously.

A further problem arising from the conventional approach is that, as imbalances accumulate over time, the capacity of monetary policy to deal with them could also become progressively reduced. A combination of raising rates less in the booms than they are lowered in successive busts could eventually drive policy rates close to zero. Once at the zero lower bound, the Japanese experience indicates that the power of monetary policy to stimulate the economy is much reduced. Should the economy then turn down, with inflation initially at a very low level, the possibility then arises that a more disruptive form of deflation might emerge. Were that to happen, it has been suggested that an even more "unconventional" monetary policy stance than that applied in Japan would be called for, with all its associated uncertainties.[25] That this was the end point to which the conventional way of conducting policy almost led us would, in itself, seem a powerful argument for further refining the basic framework.

5. What might an adapted policy framework look like?

The greater emphasis put by central banks in recent decades on achieving price stability has already implied a significant lengthening of the policy horizon. Whereas policies of "fine-tuning" had previously focused on the immediate effects of monetary policy on output and employment, attention then shifted to the subsequent effects on inflation over the following one or two years. In light of the arguments presented in this paper, this fundamental shift in orientation to longer-term effects would not be called into question. Indeed, they lead to the conclusion that the policy horizon should be longer still, sufficient to see the full effects on prices of financial imbalances accumulated over many years.

Perhaps the greatest change required in a new framework would be to ensure that it rested firmly on minimising rather than maximising principles. Recognising the costs of cumulating financial imbalances, constraints would have to be put on policies designed solely to deal with today's problems, given that they risked creating significantly larger problems in the future. Clearly it would not be easy to convince those affected by higher interest rates that tightening was required, not to resist inflation over the traditional horizon, but to avoid an undesirable disinflation over a still longer period.

[25] See Bernanke (2002).

Given this likelihood, it would be all the more important to have an institutional framework to encourage an appropriate policy response to the growth of perceived imbalances.[26]

Ensuring such a response would require both the robust identification of serious imbalances and the provision of institutional incentives to encourage monetary policymakers to respond. Neither of these would be easily provided. Concerning the first, research work currently underway on financial stability indicators needs to be extended. Moreover, it needs to be more widely appreciated that potential damage to the proper functioning of the financial system need not be the only source of concern. Overextended corporate and household balance sheets can also be the source of significant "headwinds", reducing economic growth to levels well below potential. Concerning the second, providing incentives to policymakers, they should express publicly their intention to respond to emerging financial imbalances even if, occasionally, this leads to an undershooting of near-term inflation targets. Indeed, there could be merit in understandings which shifted the "burden of proof" so that policymakers had to explain publicly why they chose not to respond to what others might see as a dangerous build-up of such imbalances. To gain government and broad public support for such an altered approach, an educational effort would clearly be required to convince people of the merits of the arguments for change set out above.

Following on these arguments, an altered framework for conducting monetary policy would demonstrate more symmetry over the credit cycle. There would be greater resistance to upswings. This, in turn, would obviate the need for asymmetric easing in the subsequent downturn and the problems arising from holding policy rates at very low levels for sustained periods. One important effect of more symmetric policies is that they would also act to prevent financial imbalances from cumulating over time. This, in turn, would free the authorities' hands to respond appropriately to the upward phase of any given credit cycle, since there would be less fear of precipitating a crisis. In this way, a virtuous rather than a vicious circle might be more firmly established.

Turning broad statements of principle into practice constitutes another challenge with many facets. It is easy to identify impediments to change, but not so easy to see how they might be removed. This said, there are a number of suggestions that have already been made as to how policymakers might move forward.[27] Whether such actions will be taken will depend very much on the depth of the conviction that there is a problem that needs fixing. One hopes that it will not require a disorderly unwinding of current excesses to prove convincingly that we have indeed been on a dangerous path.

---

[26] See White (2005a). This too has a pre-war flavour. Lucas (1977), notes that "The effort to 'explain business cycles' had been directed at identifying institutional sources of instability, with the hope that, once understood, these sources could be removed or their influence mitigated by appropriate institutional changes... The abandonment of the effort to explain business cycles accompanied a belief that policy could effect immediate, or very short-term, movement of the economy from an undesirable current state, **however arrived at**, to a better state.", p 8.

[27] For a more focused and detailed consideration of these very practical issues, see Borio (2003) and White (2004b).

References

Andersen, P and W R White (1996): "The Macroeconomic Effects of Financial Sector Reforms: An Overview of Industrial Countries", *OECD Proceedings: Macroeconomic Policies and Structural reform*, pp 59-104.

Bank for International Settlements (1999): *69th Annual Report*, Basel, June.

——— (2003): *73rd Annual Report*, Basel, June.

Bernanke, B S (1983): "Non-monetary effects of the financial crisis in the propagation of the Great Depression", *NBER Working Papers*, no 1054.

——— (2002): *Deflation: making sure "it" doesn't happen here*, remarks before the National Economists Club, Washington DC, 21 November.

Blinder, A (1988): "The fall and the rise of Keynesian economics", *Economic Record*, Vol 64 No 189, December, pp 278-294.

——— (1999): *Central banking in theory and practice*, The MIT Press, Cambridge, Massachusetts.

Bordo, M D and B Eichengreen (2000): "Is the crisis problem growing more severe?", paper presented at the Sveriges Riksbank conference on Asset prices and monetary policy, Stockholm, June.

Bordo, M D and A Filardo (2005): "*Deflation in a historical perspective*", paper presented in the BIS conference on "Understanding Low Inflation and Deflatio"*, BIS Working Papers No 186*, November.

Borio, C E V (2003): "Towards a macroprudential framework for financial supervision and regulation?", *BIS Working Papers No 128*, February.

Borio, C E V and A Filardo (2004): "Looking back at the international deflation record", *North American Journal of Economics and Finance*, 15, pp 287-311. Also available in an expanded version as "Back to the future? Assessing the deflation record", *BIS Working Papers No 152*, March.

Borio, C E V, C Furfine and P Lowe (2001): Procyclicality of the financial system and financial stability: issues and policy options, *BIS Papers No 1*, March, pp 1-57.

Borio, C E V, W White (2004): "Whither monetary and financial stability? the implications of evolving policy regimes", *BIS Working Papers No 147*, February.

Cochran, J P and F R Glahe (1999): *The Hayek-Keynes debate: Lessons for current business cycle research*, Lewiston, NY: Edwin Mellon Press.

Dhyne, E, L Alvarez, H Le Bihan, G Veronese, D Dias, J Hoffmann, N Jonker, P Lünnemann, F Rumler and J Vilmunen (2005): "Price setting in the euro area: some stylized facts from individual consumer price data", *ECB Working Paper No 524*.

Eichengreen, B and K Mitchener (2003): "The Great Depression as a credit boom gone wrong", paper presented at BIS Conference on "Monetary stability, financial stability and the business cycle", *BIS Working Papers No 137*, September.

Friedman, M (1968): "The role of monetary policy", *American Economic Review*, Vol 58, March, pp 1-17.

Galati, G and Melick (2005): "The evolving inflation process: an overview", background note to the Autumn 2005 Central Bank Economists' Meeting, *BIS Papers*, forthcoming.

Hayek, F A (1975): "Full employment at any price?", The Institute of Economic Affairs (IEA), *Occasional Paper 45*, London, August.

Hicks, J (1967): *Critical essays in monetary theory*, ed John Hicks, Claredon Press, Oxford.

Laidler, D (1999): *Fabricating the Keynesian revolution: studies of the inter-war literature on money, the cycle, and unemployment*, Cambridge University Press.

Laidler, D (2003): "The price level, relative prices, and economic stability: aspects of the interwar debate", *BIS Working Papers No 136*, Basel, September.

Leijonhufvud, A (1968): *On Keynesian economics and the economics of Keynes*, Oxford University Press, London.

Lucas, R E (1977): “Stabilization of the domestic and international economy” in Carnegie-Rochester Conference Series on Public Policy.

Phelps, E (1968): “Money, wage dynamics and unemployment equilibrium”, *Journal of Political Economy, 76 (4)*, Part 2, pp 678-711.

Romer, C and D Romer (2002): “The evolution of economic understanding and postwar stabilization policy” in Proceedings of a *Conference on Rethinking Stabilization Policy*, Federal Reserve Bank of Kansas City, August 29-31.

Selgin, G (1997): “Less than zero. The case for a falling price in a growing economy”, *IEA Hobart Papers 132*, Institute of Economic Affairs, London.

Summers, L (1991): “The scientific illusion in empirical macroeconomics”, *Scandinavian Journal of Economics*, 93 (2), pp 129-48.

White, W R (2002): “Changing views on how best to conduct monetary policy”, *BIS Speeches*, 18 October.

——— (2004a): “Are changes in financial structure extending safety nets?”, *BIS Working Papers No 145*, Basel, January.

——— (2004b): “Making macroprudential concerns operational”, in *Proceedings of the symposium on financial stability policy – challenges in the Asian era*, De Nederlandsche Bank, Amsterdam, 25-26 October, pp 47-62.

——— (2005a): “Procyclicality in the financial system: do we need a new macrofinancial stabilization framework?”, *Kiel Economic Policy Papers*, 2, September.

——— (2005b): “Changes in productivity and competitiveness: Impact on the international allocation of capital and global imbalances”, presentation given at the *Banque de France Symposium, Paris, 4 November*, forthcoming.