THE FUTURE OF FINANCE

And the theory that underpins it

6 Can we identify bubbles and stabilise the system?

Adair Turner
Andrew Haldane
Paul Woolley
Sushil Wadhwani
Charles Goodhart
Andrew Smithers
Andrew Large
John Kay
Martin Wolf
Peter Boone
Simon Johnson
Richard Layard

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

CENTRE *for* ECONOMIC PERFORMANCE

The Paul Woolley Centre for the Study of
Capital Market Dysfunctionality

futureoffinance.org.uk

Adair Turner and others (2010), *The Future of Finance: The LSE Report,*
London School of Economics and Political Science.

Cover Design: LSE Design Unit

For further information, contact Harriet Ogborn
Email: H.Ogborn@lse.ac.uk
Tel: 020 7955 7048

Chapter 6
Can we identify bubbles and stabilise the system?

Andrew Smithers

In addition to low inflation, central banks must aim to avoid major recessions. They must therefore seek to moderate bubbles, because asset prices are an important transmission mechanism whereby changes in interest rates affect demand in the real economy. Interest rate changes move the prices of assets away from fair value, but their impact is ephemeral. If bubbles are allowed to form, they will break and asset prices will continue to fall even if interest rates decline sharply. Central banks are then unable to stimulate demand. The severe recessions which result, require, as we have recently seen, large fiscal stimuli. The recessions are damaging and the deficits reduce our ability to cope with future crises. At present there is no adequate institutional structure for monitoring the asset bubbles and financial excesses and for taking action to moderate them. The government's proposed creation of such a structure is thus essential and welcome.

The Great Moderation – The Light that Failed

We must avoid recurrent crises. To do this we must focus on asset prices as well as on the prices of goods and services. In the years leading up to the recent financial crisis, the mandates and attention of central bankers have largely concentrated on policies designed to achieve low and stable inflation. Two important assumptions widely embraced then are seldom held today. The first was that macroeconomic and financial stability were expected to follow simply from the actions of central banks in maintaining low and stable consumer price inflation through changes in short-term interest rates. The second assumption was that demand weakness resulting from a collapse in asset prices could be readily offset by easing monetary policy. Asset prices were, therefore, not thought to be a matter of concern to central bankers[1] and this complacent view was probably encouraged by the thought that both asset prices and economic stability were being seen as "someone else's problem (SEP)"[2].

Given this background it is not surprising that it has been the usual practice that neither central banks, nor any other body, have had specific responsibility for systemic

[1] As an example of the view widely held at the time that central bankers should focus solely on the narrow aim of targeting inflation, see B. Bernanke & M. Gertler (1999) *Monetary Policy and Asset Price Volatility* published in the Federal Reserve Bank of Kansas City Economic Review 4th Quarter pp 17-51.

[2] In *The Hitchhiker's Guide to the Galaxy* by Douglas Adams the presence of a large spaceship occupying Lord's cricket ground during a test match was not observed by the spectators because it was surrounded by a strong SEP field.

stability.[3] The attitudes and beliefs that lay behind this lacuna included an economic theory (the Efficient Market Hypothesis), which attributed an efficiency to financial markets far in excess of that assumed for the real economy; a confusion between possible systemic risks in finance with the individual ones, which were the concern of microprudential bodies such as the FDIC, OCC and SEC in the US and the FSAs in Japan and the UK, and the usual human instinct to avoid raising difficult issues over dormant problems.

Before our recent troubles, both the view that central banks should not be concerned with asset prices and the economic theories that backed it was probably the majority view among economists, as Stephen Wright and I acknowledged when proposing the opposite.[4] Seven years later, however, it seemed reasonable to write that it was then quite hard to find economists who disagreed with the view that central banks needed to be concerned with asset prices, though I attributed the change of heart to events rather than advocacy.[5]

The Consequences of Disillusion

We are now moving into the next stage of the debate. Macroeconomic stability has become a major concern and it is generally accepted that it will not be ensured simply by maintaining low and stable inflation. If central banks, or another policy body, are to "Lean rather than clean"[6] the existing policy framework must be changed with new and clear mandates given to those responsible. Even if the terms of reference for central banks already include duties beyond attempts to target consumer prices, they will lack legitimacy without new specific legislation to refine their tasks and possibly to add new policy weapons to their armoury. In addition to the need for enlarged responsibilities for central banks, it is necessary to consider whether other steps need to be taken which would reduce the threat to the real economy and to tax-payers which are currently posed by financial turmoil.

We now see signs of an emerging consensus, which holds that:

(i) Consumer price stability is not enough to achieve macroeconomic or financial stability,

---

[3] For example, the Bank of England Act (1998) did not include macroeconomic or financial stability among the central bank's concerns.

[4] *Stock Markets and Central Bankers – The Economic Consequences of Alan Greenspan* by Andrew Smithers and Stephen Wright published in World Economics (2002) 3(1) 101-124.

[5] *Wall Street Revalued – Imperfect Markets and Inept Central Bankers* by Andrew Smithers published by John Wiley & Sons (2009).

[6] *Should Monetary Policy "Lean or Clean?"* by William R. White published by the Federal Reserve Bank of Dallas Globalization and Monetary Policy Institute Working Paper No. 34 (August 2009).

(ii) but remains of vital importance for their achievement.

(iii) Additional steps are therefore needed to mitigate the risks of major recessions.

(iv) These often follow from asset bubbles and financial crashes.

(v) A new policy framework is needed to resolve these issues.

Underlying this marked change in the consensus has been a change in its intellectual backing, away from theory to a more pragmatic foundation. Because of real and perceived weaknesses, economics is held in less respect than formerly. In part this arises from a paradigm shift. The Efficient Market Hypothesis has had a dominant influence, particularly in financial economics. While it has never been universally embraced and its critics are now in the ascendant, no generally accepted alternative has yet been put in its place. We are therefore in the middle of a paradigm shift, with a consequent lack of an agreed theoretical framework for much of the discussion.

The pragmatic issues are, nonetheless, reasonably clear. Drawing on our recent experience and from previous major financial crises, it is vital that steps are taken to mitigate the incidence and severity of future crises.

(i) We should seek to reduce the risks of major recessions, such as that from which we are currently recovering.

(ii) We should seek to reduce the risks of prolonged sub-optimal growth, which has been the legacy of Japan's 1990 bubble.

(iii) We should seek to reduce the costs of financial crises to future tax- payers, such as those that have been imposed by the dramatic rise in national debt/GDP and fiscal deficits since 2000, or in Japan since 1990. These have placed a far greater burden on future tax-payers than the costs involved with bailing out bankrupt institutions.

The fundamental aim boils down to the standard economic objective of improving welfare. It does not necessarily imply faster growth. Welfare should rise through the reduction in the volatility of output, with its associated uncertainty. This will be achieved if the long-term growth in output is maintained with less volatility. On a priori grounds the reduction in uncertainty, with the lower required returns on capital that should follow, suggests that lower volatility is more likely to contribute to growth than impede it. Furthermore, a more detailed and less aggregated view of economic welfare, which involved such issues as the pain involved in long-term unemployment, would also add weight to the benefits to be derived from lower economic volatility. Avoiding large swings in output is therefore a sensible objective. Long periods of uninterrupted growth may well increase the risks of major recessions, so it should be recognised that avoiding them probably has the minor cost of requiring more frequent small recessions.

There are a wide variety of measures which could contribute to avoiding or at least mitigating major crises. Several of these are the subject of other chapters, such as encouraging safer and smaller financial institutions, perhaps through higher equity ratios escalating with size; others which are potentially important but outside the scope of our discussion include tax[7] and legal reforms. This chapter concentrates on using macroeconomic policy to dampen asset and credit bubbles.

The Blame Game

Suggesting that macroeconomic policy can be used to moderate future crises implies that poor policy has made a significant contribution to past ones and immediately raises the question of "who is to blame?" Those in the dock include commercial bankers, regulators and central bankers. My conclusion is that, while central bankers have made serious policy errors, their blame for these is mitigated by the lack of an appropriate structure for managing policy.

I also consider that far too much attention has been placed on ways to improve behaviour. While it is undesirable that bankers should have an incentive to behave in ways which are detrimental for the economy, it should be recognised that bankers have at least one quality in common with burglars, which is that they both make money by taking risks, not all of which contribute to social welfare. Sudden sharp rises in the incidence of risk taking cannot sensibly be ascribed to sudden declines in the moral standards of either group, though of late this appears to have been a popular pastime with regard to bankers. Technical advances, such as new safe blowing equipment for burglars and new ways of avoiding regulations for bankers, are possible contributors to increased costs for the economy, but increased opportunities will invariably lead to greater activity. In my view, excess liquidity represents for bankers the not-to-be-resisted temptation that open doors and windows provide for burglars.

When seeking to avoid future crises, it is important to consider the recurring problems of major recessions and financial crises. While these have many similarities, they are not identical. Concentrating solely on the latest crisis draws excessive attention to such particular issues as international imbalances and financial innovation, which may have amplified the current problems, but which cannot explain earlier ones.[8] There may be more than one cause of crises and more than one danger signal.

[7] Leverage increases the risk of crises and in every major economy the corporation tax system encourages leverage by effectively subsidising the cost of debt compared with equity finance.

[8] It would be foolish not to ban smoking in petrol station forecourts on the grounds that this has not been the cause of the most recent disaster. We are not seeking to prevent the last crisis, but the next one.

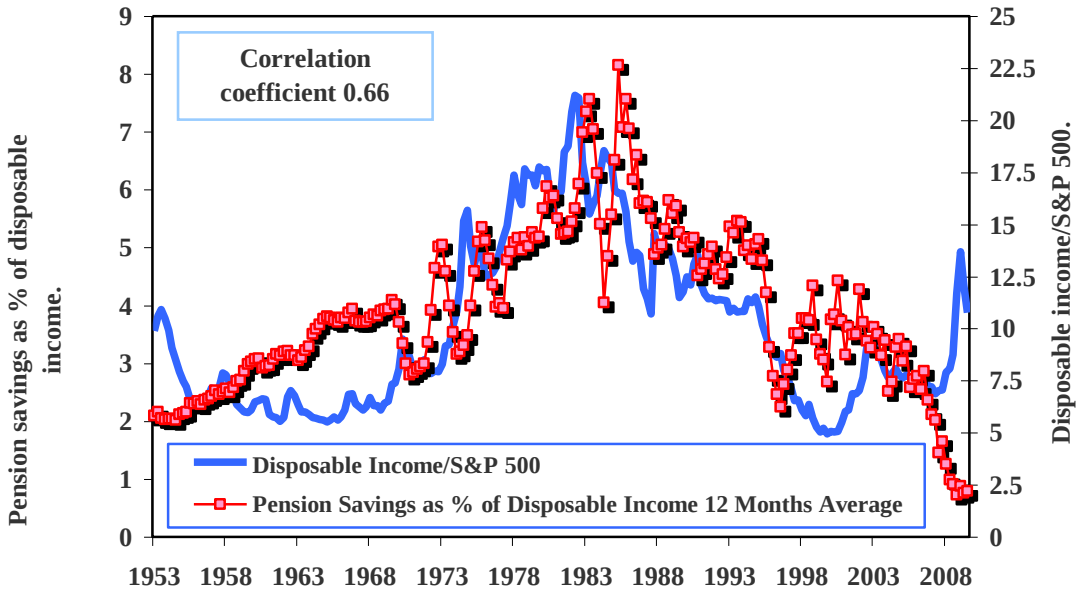
Asset Prices

Historically, asset prices have warned of rises in systemic risk. They affect the real economy and are also an important part of the transmission process, whereby central banks influence demand. They are therefore important as signals and, when they fall sharply, they hinder the ability of central banks to support the economy. A close watch on assets' prices is thus a necessary part of any credible policy for reducing systemic risk. Three sets of prices in particular need to be monitored closely - share prices, house and land prices, and those which measure fluctuations in risk aversion by holders of debt assets.

Why the Stock Market Matters

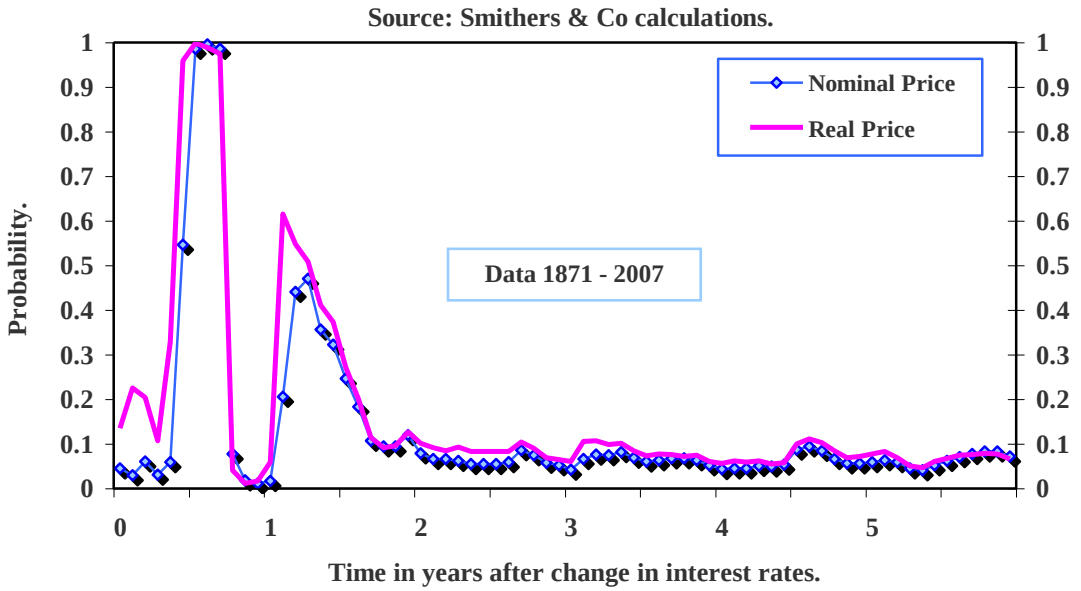
Changes in the level of share prices affect demand in the real economy. Rises reduce the cost of equity capital and are therefore likely to encourage investment, though this impact may be hard to distinguish from the psychological effect on business confidence. By raising the value of past savings, the need for additional savings for retirement at least appears to diminish. "Why bother to save if the stock market does it for you?" As illustrated in Chart 1, this relationship is readily demonstrated for the US. Pension savings have contributed on average around 50% of the total savings of the household sector and have risen when the stock market has fallen and then fallen again when it has risen.

Chart 1. US: Pension Savings & the Stock Market.



Sources: NIPA Table 2.1, Z1 Table F.100 & S&P 500

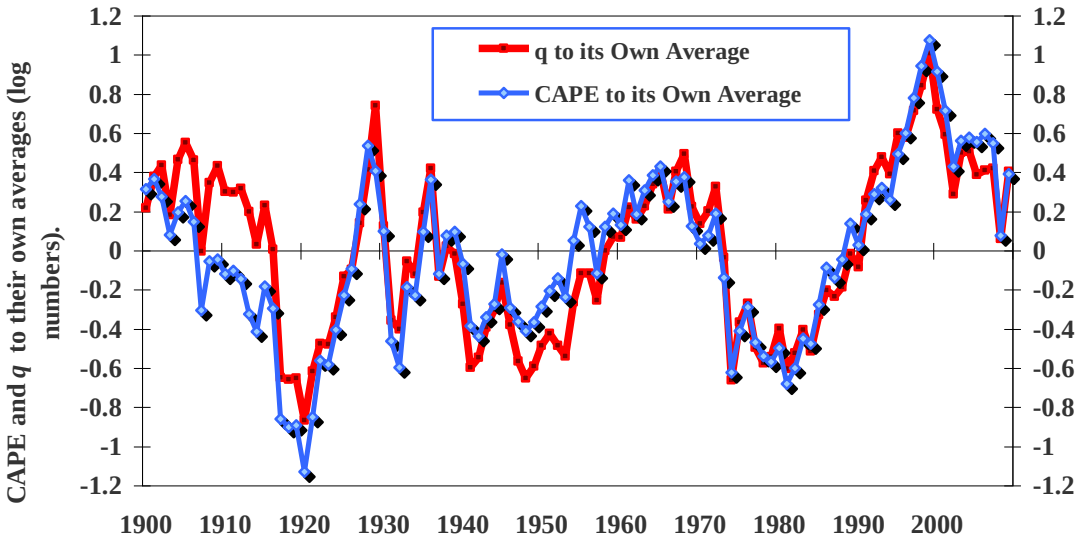
Chart 2. US: Probability that Interest Rate Changes Affect Share Price Changes.



It has been shown that stock prices respond in an ephemeral way to changes in interest rates, but that there is no long-term relationship between interest rates and share prices.[9] I show that equity prices are mean reverting around fair value and the more they exceed it, the greater is the risk that they will fall whether or not interest rates are also declining. Collapsing equity asset bubbles thus disrupt the transmission mechanism, whereby central banks affect the real economy

[9] See Appendix 3 by James Mitchell in *Wall Street Revalued* Footnote 5 op. cit.

Chart 3. US Stock Market Value.
(Cyclically Adjusted PE and *q* .)

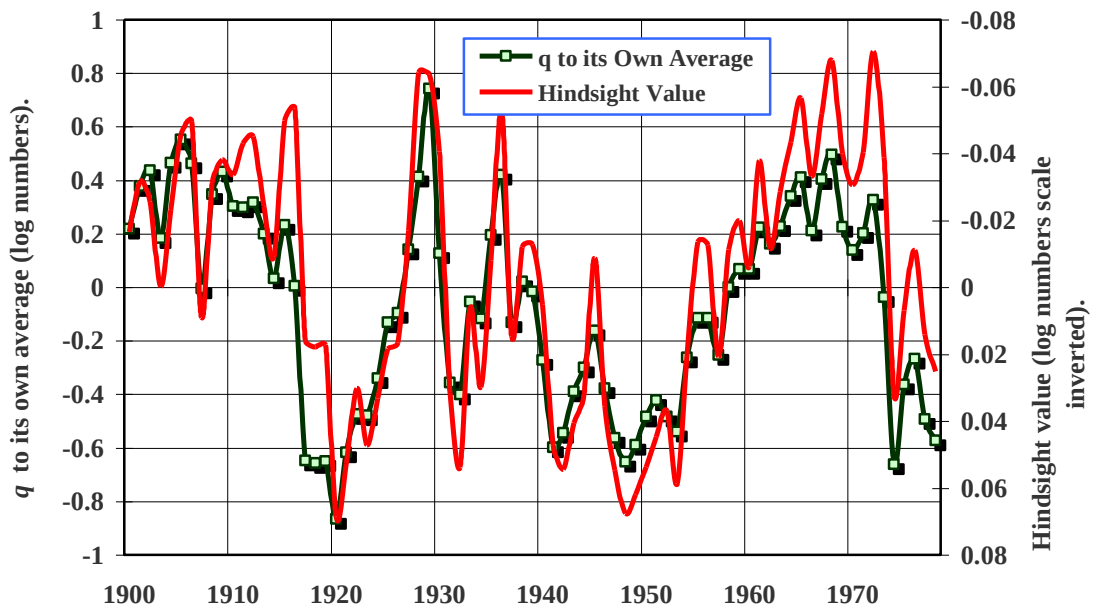


Sources: Shiller, Wright and Fed Z1 Table B.102.

The value of the stock market can be measured either by *q* (market value/net worth of non-financials adjusted for inflation), or by the cyclically adjusted PE ("CAPE"). These metrics are testable and agree. Chart 3 illustrates both the agreement and the ability to satisfy one test – that of mean reverting. Chart 4 illustrates their ability to satisfy another test, which is that they are able to forecast, albeit weekly, future returns. When we have enough data, such as the next 30 years of returns, we can rank years in the past by the average returns they gave to investors over the next one to thirty years. Years which gave good returns were clearly those in which the market was relatively cheap and vice versa. We can then compare these "hindsight values" with the value measured by *q* and CAPE. Chart 4 shows how well these hindsight values, derived from subsequent returns, fit with past values derived from *q* (similar though slightly less good results are shown if CAPE is used).[10]

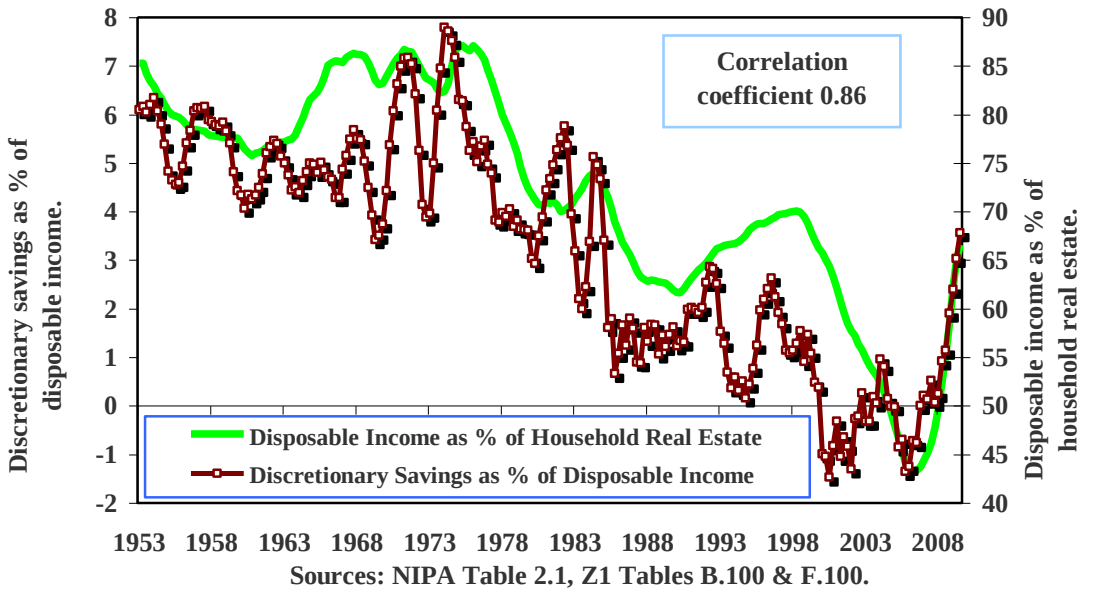
[10] For a fuller account of these metrics of stock market value and the tests for their validity see *Wall Street Revalued*.

Chart 4. Testing: US *q* Compared with Hindsight Value.



Sources: Wright, Fed Z1 Table B.102 & Shiller.

Chart 5. US: Household "Discretionary" Savings and Value of Real Estate.



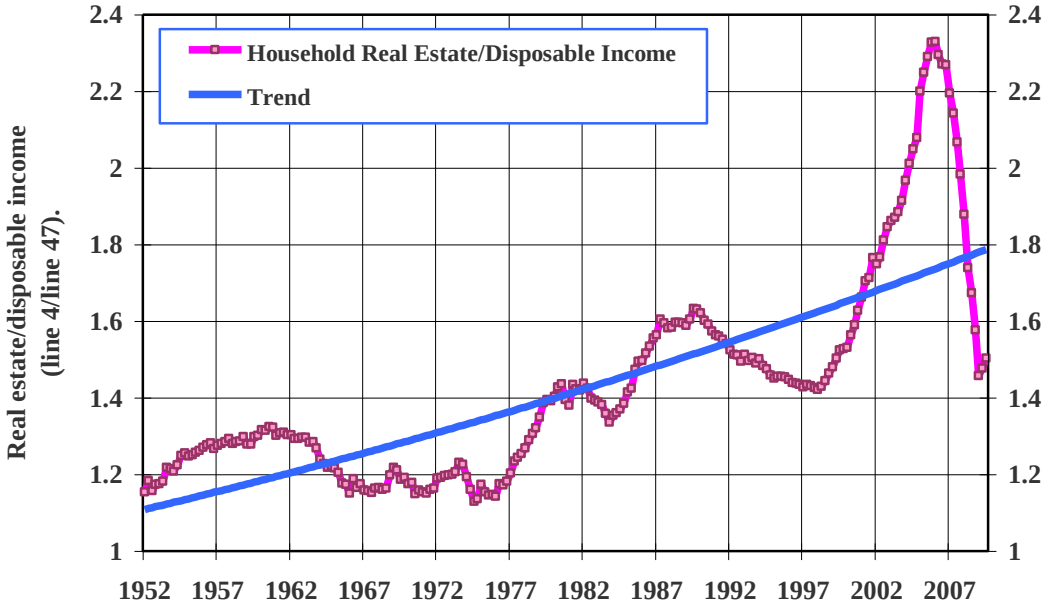
Sources: NIPA Table 2.1, Z1 Tables B.100 & F.100.

House Prices

There is a close parallel between the influence of house prices on the economy with that shown by equities. Movements in house prices have a very similar impact on savings as movements in share prices, as we illustrate in Chart 5. House prices also appear to rotate around an equilibrium level and their over or undervaluation can be ascertained by reference to real incomes,[11] as illustrated in Charts 6 and 7.

It also seems likely that short-term interest rates seem to have an ephemeral impact on house prices.[12]

Chart 6. US: Housing Affordability.

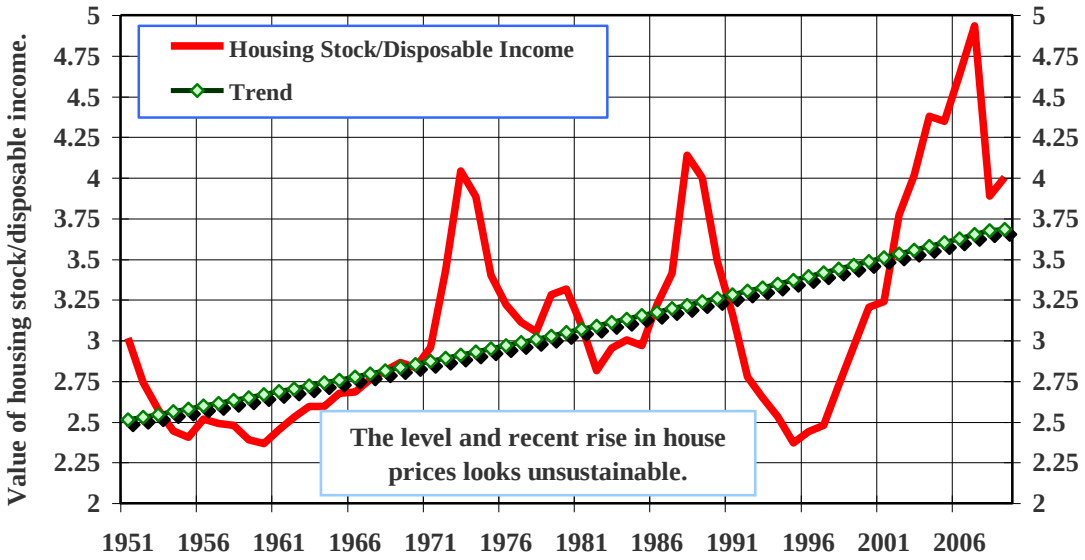


Source: Z1 Table B.100.

[11] See *A Spatio-Temporal Model Of House Prices In The US*, by Sean Holly, M. Hashem Pesaran and Takashi Yamagata (2008), forthcoming in *Journal of Econometrics*, "This allows us to find a cointegrating relationship between real house prices and real per capita incomes."

[12] This seems to have been accepted, albeit with some reluctance, by Dr Bernanke in his 3rd Jan 2010 AEA speech.

Chart 7. UK: Housing Affordability.



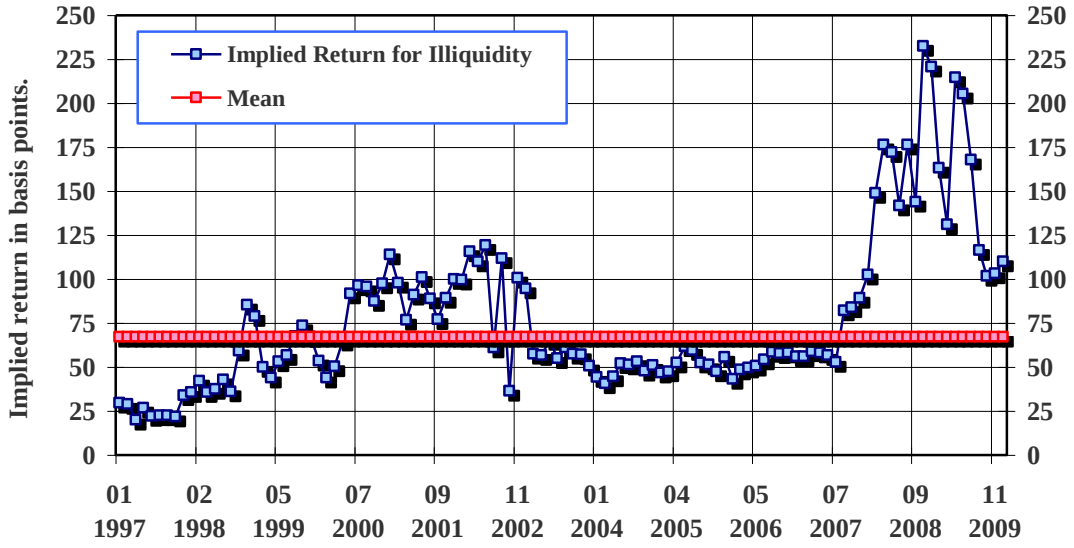
Sources: Housing stock from the Office of the Deputy Prime Minister to 1987 linked to ONS CGLK and updated for House Prices for Q1 2009. Disposable Income ONS QWND.

Fluctuations in Risk Aversion by Holders of Debt Assets

The value of debt assets responds to three variables, which are the level of risk-free interest rates of different durations, the default risk and the variable return that investors require from sacrificing liquidity. (The relative liquidity of an asset depends on the extent to which its price changes under the impact of transactions. The price of a highly liquid asset will change much less when say £1,000,000 is sold, than a less liquid asset.) It is possible to measure the "compensation for illiquidity" by measuring differences in the return to debt assets of differing liquidity but otherwise similar characteristics, such as default risk and duration. One approach to this[13] shows that the compensation for illiquidity has varied in a similar, but not identical, way to concerns about default and often by as much as those concerns. I illustrate in Chart 8 the compensation for illiquidity calculated by this approach for US investment grade bonds. Over the admittedly limited time for which we have the data, the Chart shows that the compensation for illiquidity was well below average in 1997 and 1998 and again from 2004 to 2007.

[13] *Decomposing corporate bond spreads* by Lewis Webber & Rohan Churm, Bank of England Quarterly Bulletin 2007 Q4 533-541.

Chart 8. US: Risk Aversion Implied from Investment Grade Bonds.



Source: Bank of England updated.

A low return from the loss of liquidity is a clear sign that risk aversion is unusually low. In these circumstances banks are particularly vulnerable. When risk aversion rises, the value of debt of any given duration will fall and, as liquidity falls with duration, a rising level of risk aversion will cause both major types of assets held by banks, loans and securities, to fall in value.

When risk aversion falls to a low level, it is an obvious sign of danger, but the degree to which this poses a major risk to the economy depends not only on the level to which risk aversion has fallen, but the degree to which policy adjustments can readily counteract the damage. Policy moves to offset the negative impact on the economy of changes in risk aversion can be either fiscal or monetary. But monetary changes alone may not be sufficient and this will be particularly likely if asset prices fall, as will often be the case, and may be the trigger which sets off the sudden change in the perceived risks of default.

Conclusions

Economic policy aimed at maintaining low and stable inflation is a necessary but not sufficient condition for achieving economic stability. Low consumer price inflation is compatible with asset bubbles. These pose major risks to the economy and, together with other signs of excessive monetary ease, must be avoided. At present there is no adequate institutional structure for monitoring these risks and taking, or at least recommending, action to forestall them. It is essential if we are to try to prevent similar problems to those we have just experienced from recurring.

References

Bernanke, B. & M. Gertler (1999) *Monetary Policy and Asset Price Volatility* published in the Federal Reserve Bank of Kansas City Economic Review 4th Quarter pp 17-51.

Holly, S., M. Hashem Pesaran and T. Yamagata (2008), "A Spatio-Temporal Model Of House Prices In The US", forthcoming in *Journal of Econometrics*

Smithers, A. and S. Wright, (2002) *"Stock Markets and Central Bankers – The Economic Consequences of Alan Greenspan"*, *World Economics*, 3(1) 101-124.

Smithers, A. (2009) *Wall Street Revalued – Imperfect Markets and Inept Central Bankers*, John Wiley & Sons.

White, W.R. (2009), "Should Monetary Policy "Lean or Clean?" by published by the Federal Reserve Bank of Dallas Globalization and Monetary Policy Institute Working Paper No. 34 (August).

Webber, L. & R. Churm (2007), "Decomposing corporate bond spreads", Bank of England Quarterly Bulletin, Q4 533-541.

futureoffinance.org.uk