

### **Recent Experiences of Asset Price Bubbles (Comments by Ignazio Visco)**

The papers before us examine a number of asset price bubbles, or in some cases booms, following Kindleberger's well-known distinction. Particularly interesting is the breadth of the experiences described here, involving various assets (equities, real estate, land, currencies) in rather different countries (from advanced OECD countries to emerging economies to LDCs). As a result, I shall concentrate my discussion on some possible common themes between these varied experiences. More specifically, I shall concentrate on the identification of bubbles and the role of policy in bubble episodes.

#### **On the identification of a bubble**

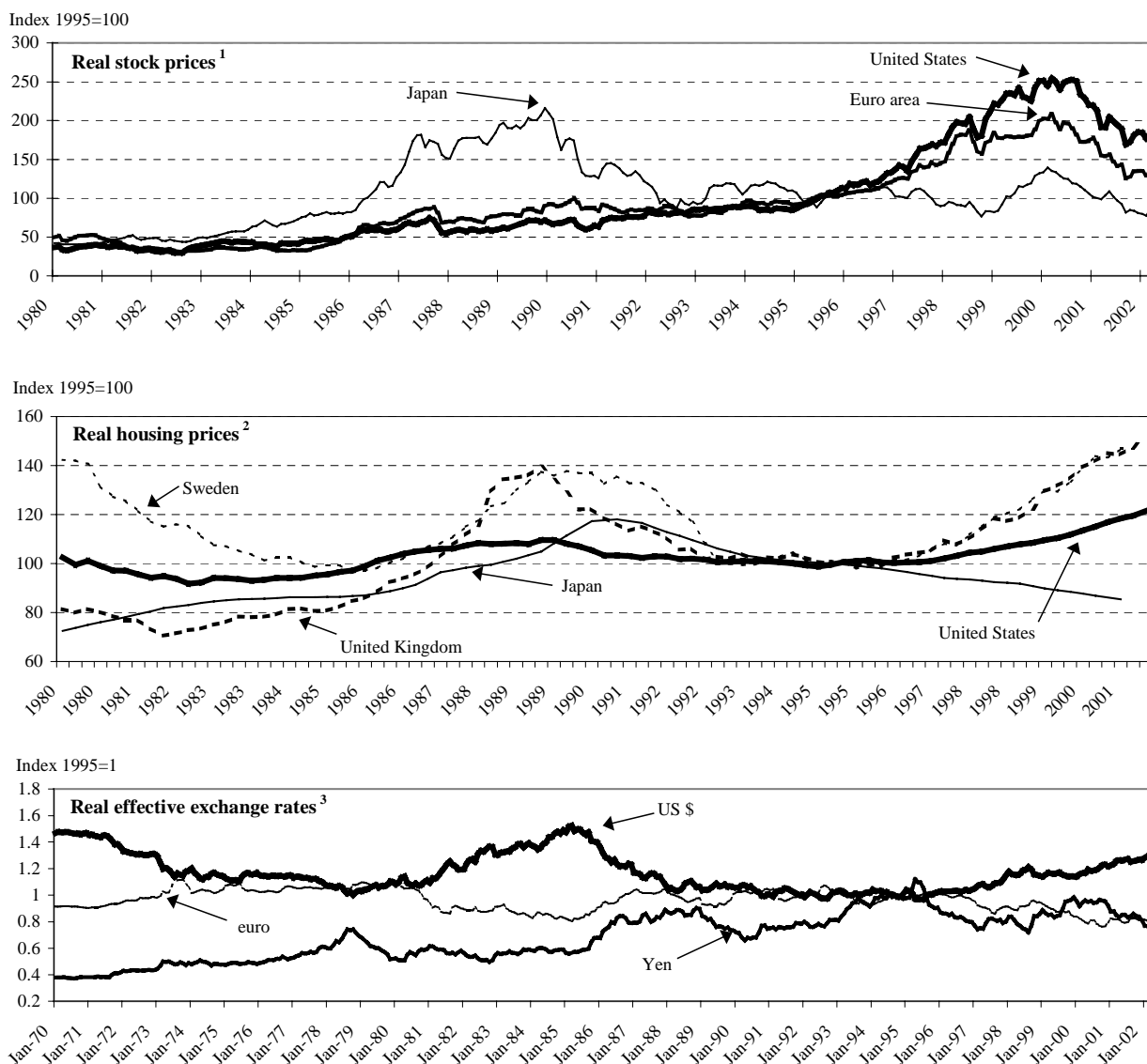
In order to identify a bubble, we first need to define what constitutes one. A well known definition is the one proposed by Kindleberger (1987): a bubble is "a sharp rise in price of an asset or a range of assets in a continuous process, with the initial rise generating expectations of further rises and attracting new buyers – generally speculators, interested in profits from trading in the asset rather than its use or earning capacity". This definition implies that, in a bubble, the price of the asset deviates from its "fundamental value", and that a reversal of expectations and a sharp decline in prices (a crash) would usually occur.

Most authors have here concentrated on this misalignment from fundamentals (the "euphoria" of Okina and Shiratsuka). However, bubbles may be rational to the extent that changes in asset prices may be self-fulfilling, or, to put it differently, "sunspots" may be continuously incorporated in market expectations. In such cases one might argue, perhaps, not only that a bubble is indeed very difficult to identify but also that there is little that traditional policy can do to prevent a bubble. The issue then becomes a different one: how to organise institutions and market conditions (the rules of the game) so that possible sharp movements in asset prices would cause as little damage as possible to the economy.

If a bubble reflects growing misalignments from fundamental values, the difficulty in identifying it coincides with that of ascertaining "permanent" changes (or lack thereof) in the fundamental determinants. Even if there might at times be some definite views on the possibility of such changes, it generally takes time before these views find empirical confirmation. On the other hand, as Mishkin and White observe, identifying a stock market crash is easy: "When you see it, you know it". This explains perhaps why there is more consensus on a role for policy in the aftermath of a crash. Indeed, it is more difficult to "see" and "recognise" a bubble than a crash, even *ex post*.

With that in mind, I find it interesting that most papers "assume" that particular episodes were bubbles. The only exception is the paper by Herrera and Perry, who actually look at the evolution of fundamentals and test (*ex post*) for the existence of a stable relationship between this evolution and changes in asset prices. I believe this is a promising route, even if not always a conclusive one. It is definitely worth looking at the fundamentals. Unfortunately, however, bubbles are identified from the fact that a crash has occurred, even if not all crashes are the result of the burst of a bubble. In that context, it is clear that simple data observation is insufficient to spot a bubble. It is, however a necessary starting point. I thus invite you to a visual exercise, a look at three types of assets (Figure 1).

Figure 1. Real asset prices



1. Based on total market prices, deflated with CPI.

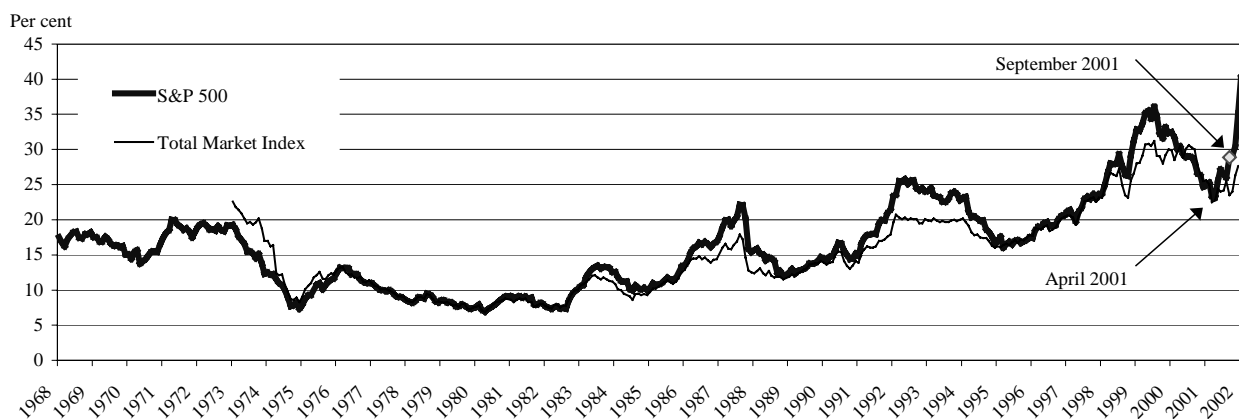
2. Deflated with CPI

3. CPI-based calculation.

Source: BIS, Datastream and OECD.

If not bubbles, the prices of some of these assets certainly look like having sharply deviated at times from some sort of historical averages. An important question to ask is whether these deviations are justified by observed changes in fundamentals. Going one step further, one could then consider the evolution of more complex entities, such as price-earnings ratios (Figure 2). We may then observe, for instance, that many, but not all, the crashes identified by Mishkin and White are also visible here, and perhaps some other episodes (such as the sharp pick-up most recently observed) should be also considered.

Figure 2. Price earnings ratios for broad stock indices in the United States



Source: Datastream.

Indeed, price-earnings ratios are often used to assess deviations from fundamentals. Changes in (expected) earnings can justify price movements, and P/E's are affected by changes in discount factors, opportunity costs and risk premiums. Practitioners and policy makers devote much time to the discussion of these issues, including at the OECD. Indeed at the OECD we have had long discussions, using calculations based on the discounted dividend model or Gordon formulae; this is similar, indeed, to the more sophisticated econometric analysis and tests conducted by Shiller, Campbell and others, including Herrera and Perry in their paper.<sup>1</sup> On the basis of these calculations, already in early 1998, the OECD had warned of the risk of substantial deviation of US equity prices from some historical norms, and the implicit anticipated return to those norms (see, for a published analysis, OECD, 1998.) This analysis was repeated in 1999 and 2000, in the context of discussions within the OECD Economic Policy Committee and Working Party 3, where we reflected on the reasons for possible permanent deviations from historical norms (see, for example, OECD, 2000, p. 29).

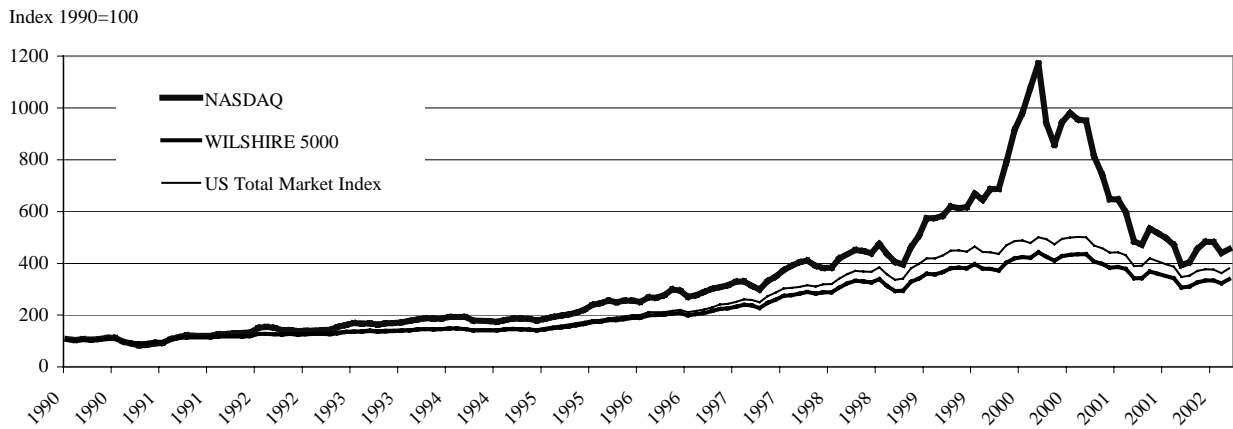
Even acknowledging that something new might have occurred in the US and in some other economy, the high tech stocks synthesised in the NASDAQ index undoubtedly looked substantially overvalued. This was also evident at visual inspection (Figure 3). The conclusion was that, unless we were prepared to accept that the risk premium had fallen permanently and drastically below the historical average or that the growth in earnings would turn out to be much higher than the (already substantially upwardly revised) potential rate of growth of the US economy, stocks were indeed at a risk of a substantial correction. Neither of those assumptions was widely shared, and the main question was then when, not if, the correction would take place. This leads to a further question: are stocks still overvalued? The adjustment in overall stock prices has been substantial since mid-2000, but doubts still remain as to whether it has been completed, especially relative to actual and prospective earnings.<sup>2</sup> In sum, a bubble might be difficult to identify, but an informed discussion (one that relates to fundamental values) can and certainly should take place *ex ante*. And perhaps some consensus might emerge (even *ex ante*). I would

<sup>1</sup> See, for the discounted dividend model and derivations, Gordon (1962). On econometric tests of stock market bubbles, I refer to the discussion in the paper by Herrera and Perry.

<sup>2</sup> Indeed at 1.5% the implicit risk premium in the first quarter of 2002 (given a return to equity holders of 2.4%, inclusive of the yield from net repurchases, a potential growth rate of 3.1% and a real rate of interest of 4%) is half the 1986-1993 average and two thirds the 1994-2001 average.

venture to suggest, for instance, that this might have been the case for Japan stock and land prices in the 1980s, the NASDAQ in the late 1990s, and might be the case for real estate prices in London at present.

Figure 3. Stock prices in the United States



Source: Datastream.

### On the role of policy

This brings us to the discussion of the role of policy. One can derive from the papers before us a number of ideas worth sharing:

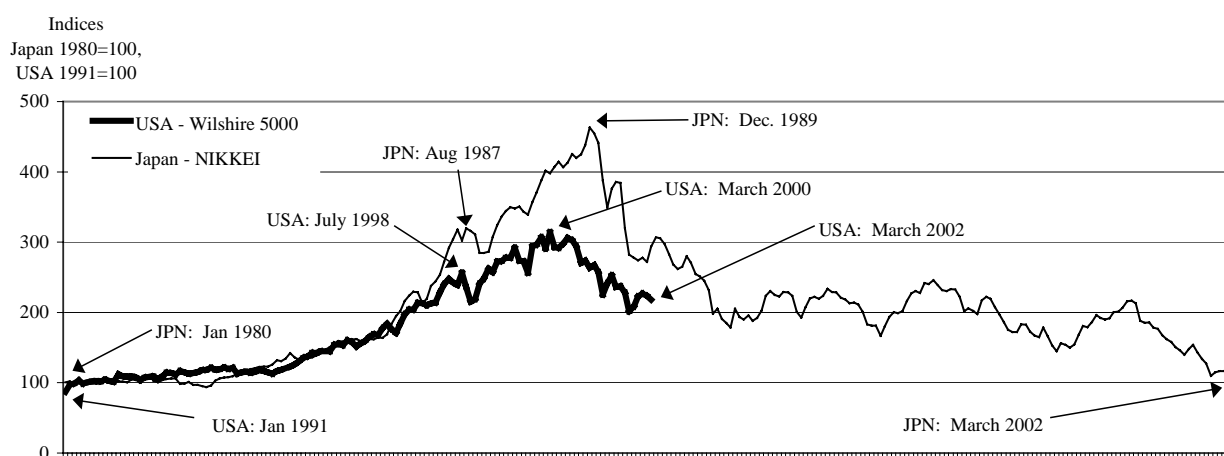
*It may be justified to intervene to counter systemic problems linked to financial instability induced by sharp corrections of asset price bubbles.* This is the role (often as “lender of last resort”) performed by the Federal Reserve Bank of New York in 1929, but not followed by the Fed in subsequent years. As observed by Mishkin and White, however, this role is not confined to risks related to bubble-bursting, as attested by the examples of Penn Central in 1970 and LTCM in 1998.

*To reduce the consequences and the number of crashes, effective regulatory frameworks and good financial structures, including healthy balance sheets, are fundamental.* This was not the case, as exemplified in the papers by Collins and Sehadji and by Herrera and Perry, in East Asia or in most of Latin America in past crises. It was not the case either in Nordic countries in the 1980s. The only problem with this uncontroversial prescription is that it is not that easy to implement. In order for efficient prudential oversight to exist, one needs internal/external surveillance, effective transparency and disclosure rules and good corporate governance, among other things. In sum, one needs resilient institutions.

*A bubble is dangerous to prick, since there is a risk of creating further financial instability.* Indeed, being in Chicago, how can we deny that markets know better than governments? Still, one should not ignore that different perspectives may exist, as market participants may have more limited horizons and discount factors may differ. So there may be a role for governments, after all, in co-ordinating expectations when these are heterogeneous or when market failures occur (after all, not only governments fail). In that context, I agree with the consideration that there are circumstances when some action to prevent the worst consequences of a bubble should not be *a priori* excluded. This may be justified in order to avoid relatively rare, but possibly very damaging, consequences. Financial instability can negatively impact on overall objectives, such as price stability and the proper allocation of economic resources. If we act in the aftermath of a crash, we may make this aftermath less sharp. The question concerning government intervention is then: when, how and with which policy instruments? But this, fortunately, will be discussed in other sessions.

At this stage, I would just observe that a verdict on proposals such as those advanced by Blanchard (2000) and Cecchetti *et al.* (2000) and more generally on Taylor “augmented” policy rules (for example allowing for extreme deviations of P/Es from historical or other norms) is still open. The role of asset price movements in monetary policy making is not obvious, as their deviations from possible “equilibrium” levels are generally not as cyclical as, say, those of output gaps. But at times bubbles and their bursting may end up in substantial fluctuations with obvious effects on prices and output, the variables that should be targeted. Careful consideration of asset price developments is therefore relevant, even if we still need to understand more on the way they impact on the economy. So, perhaps, Mishkin and White conclude a bit unfairly on the Cecchetti *et al.* CEPR-ICMB report, which is probably more cautious and less naïve than they suggest. In that regard, a comparison between Japan in the 1980s and the US in the 1990s is interesting (Figure 4).

Figure 4. Real stock prices - superimposed



Source: Datastream.

Graphically the cases seem similar, but underlying conditions are different. On fundamentals, although there was a long discussion at the time of a possible permanent change in Japan’s productivity growth, in reality it did not happen. In the US, the rise in tech stocks may have been exaggerated, but some “new economy” is still quite visible in productivity results. Indeed the productivity gains have passed the recession test, or so it seems. But even more interesting are differences in monetary policy. Japan’s monetary policy was perhaps behind the curve and the crash was followed by stagnation – the causes are well described by Onika and Shiratsuka. Perhaps something could have been done, even if made difficult by exchange rate constraints and lack of effective central bank independence. Instead, rates in Japan were kept too low for too long during much of the bubble, and then were raised and kept high exactly when the bubble burst.

In the US, after the LTCM episode in 1998, the Fed lowered rates from 5.50 to 4.75 per cent, while claiming that it was not looking at the stock market. One could not say however that monetary policy was “easy” even in 1998. Furthermore, rates were raised subsequently, while the bubble continued to inflate. One may ask why. Forward-looking anti-inflation behaviour? Many would have preferred, looking at the stock market and possible consequences of a sharp adjustment, for this tightening to have taken place even earlier. In any case, the federal funds rate reached 6.50 per cent in spring 2000. While not targeting the stock market, the demand effects and possible inflationary consequences of what many considered to be at the time excessive equity price levels, even in the presence of a “new economy” rise in productivity

growth, might have played a role. And the bursting of the tech stocks bubble has been accompanied by a substantial easing of monetary conditions.

What can we conclude from this? On one side, with the correction in the stock market, the real economy has also slowed down considerably. But the downturn has been very limited and shallow, and the acceleration in productivity seems to be real. The mildness of the adjustment might then be related to the good health of balance sheets, as Mishkin and White seem to claim. Perhaps the verdict is still open, however. Indeed, as shown in Figure 2, the stock market correction might not yet have run its full course. Corporate and especially household indebtedness are also far from negligible. In any case, the issue at hand is whether and how the Fed reacted to the NASDAQ bubble. Of course, asset prices were not directly targeted. But central banks look at everything and, when all is said and done, the notion that central banking is as much art as science is ever more true.

## References

Blanchard, O.J. (2000), "Bubbles, Liquidity Traps, and Monetary Policy. Comments on Jinushi et al. and on Bernanke", in *Japan's Financial Crisis and its Parallels to the U.S. Experience*, Institute for International Economics, Washington D.C.

Cecchetti, S., H. Genberg, J. Lipsky and S. Whadwani (2000), *Asset Prices and Central Bank Policy*, Geneva Report on the World Economy 2, CEPR and ICMB.

Gordon M. (1962), *Investment, Financing and Valuation of the Corporation*, Irwin, Homewood. Ill.

Kindleberger, C.P. (1987), "Bubbles", in *The New Palgrave. A Dictionary of Economics*, edited by J. Eatwell, M. Milgate and P. Newman, MacMillan, London.

OECD (1998), "Recent Equity Market Developments and Implications", Chapter V in *OECD Economic Outlook*, No. 64, December, Paris.

OECD (2000), *OECD Economic Outlook*, No. 68, December, Paris.