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On the US Post-'New Economy' Bubble: Should Asset Prices be Controlled?

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INTRODUCTION[1]

On 26 November 2001 the National Bureau of Economic Research declared that the US economy's recession had begun in March 2001. The expansion had lasted for ten years and it was one of the longest ever recorded by any industrialised country. In the fourth quarter of 1999 the US growth rate reached 7%, the highest in the 1990s. Unemployment fell to a 30-year low (3.9% by April 2000), the rate of inflation was low (averaged 2.5% throughout the whole of 1990s), faster growth in productivity was recorded, and faster growth in real wages. All these factors helped to reduce poverty and stabilise wage inequality (Temple, 2002).

More recent data (see Council of Economic Advisors, 2004, Table A33), though, reveal that this is true only for the years 1998-2001. The stock market also produced massive gains, so that by the late 1990s the price/earnings ratios reached record levels in the whole of the twentieth century. Every year between 1995 and 1999 the US stock exchange Standard and Poor's Composite Index (S&P 500) produced an annualised total return (including dividends) over 20%. By the end of that period, the performance of the stock market was concentrated in the stocks of large companies and of growth companies (those that had been delivering strong growth in earnings per share and were expected to continue to do so), especially so in the areas of Technology, Media and Telecommunications (TMT). The Nasdaq Composite Index, which was a heavy representative in technology shares, reached the level of 2,000 for the first time during 1998 and peaked to 5,048 on 10 March, 2000.

The years 1998-2000 experienced internet euphoria. Indeed, by 1998 the internet share bubble had become a mania (Lee, 2004, p. 11; see, also, Schiller, 2000, who identifies the internet phenomenon as the main factor of the US stock market mania). The success of the US was the envy of the rest of the world. Politicians around the world were urging their governments and people to follow the US example. But in less than two years after the peak of the business cycle had been reached in 1999, the US economy went into recession and dragged the rest of the world into it. The collapse of the stock market beginning March 2000 caused the optimism that had surrounded the 'new economy' to be followed by pessimism.

The mania to which we have just referred was not confined to the US only. It had spread around the world. By the end of the mania, it was actually more extreme outside the US, and some of the valuations achieved by companies

[1] This chapter is based on the authors' book; see Arestis and Karakitsos (2004, chapter 2).

in the stock market were even more far reaching (Lee, 2004). An interesting characteristic of the 1990s financial bubble is that it incorporated not merely the US stock market, but also the global stock market and later on the bond markets. Its impact on wealth (in the form of financial market capitalization) probably represented the greatest financial mania in monetary history. Its international dimension was far reaching. It was a truly 'global bubble', in as much as it affected all financial markets of the world. The reaction of the monetary authorities to the burst of the bubble, in the US in particular and to a lesser extent in the rest of the world, was unparalleled in world monetary history in that they reacted aggressively and pre-emptively, slashing interest rates to historically low levels.[2]

The purpose of this paper is to investigate the causes of the burst of that bubble and its consequences. It is also to examine whether targeting asset prices might avoid bubbles.

THE 'NEW ECONOMY'

The developments we have briefly summarised above, produced what one might label as the 'new economy' with its own rules, different from what had been conventionally known. In this 'new paradigm' opportunities for growth, particularly in the TMT industry were thought to be limitless. This 'new economy' was based on the premise that its composition comprised services, essentially information which became more important than physical commodities such as steel and copper. Tevlin and Whelan (2002) report that growth in real equipment investment over the period 1992-1998 averaged 11.2% a year, due essentially to soaring investment in computers. Indeed, Oliner and Sichel (2000) and Stiroh (2002), amongst others, refer to the business investment in computers and related equipment. The former note that it rose more than fourfold between 1995 and 1999, while the latter suggests that US firms invested more than $2.4 trillion in information technology related assets.

A further important characteristic was that of increasing returns to scale, given that in the knowledge- and information-based economy the cost of producing more units of a given output is very small after the initial investment is undertaken. But above all it was the unexpected acceleration of productivity growth in the mid-1990s that can be construed as the most important characteristic of the 'new economy' (see, also, Temple, 2002). Using growth accounting, the contribution of Information and Communication (ICT) capital (it includes computer hardware, software and

[2] For example, the US Federal Reserve System reduced its 'funds' interest rate no less than thirteen times between early 2001 and at the time of writing (March 2004). This rate now stands at 1%, a record low level. This is not confined to the US only. In the Economic and Monetary Union (EMU), the European Central Bank (ECB), although rather slow in reducing its 'repo' interest rate, is now holding this rate at 2%. These are only two, but representative examples, of what the situation has been worldwide.

telecommunications equipment) to productivity growth can be assessed. Temple (2002) provides a summary of studies that have undertaken this exercise. The overall conclusion of this study is that a substantial increase in the contribution of ICT investment to aggregate growth took place, and that "the production and adoption of ICT can account for most of the acceleration in labour productivity growth between the first and second halves of the 1990s" (p. 248).

Low inflation and falling unemployment are two further characteristics of considerable significance over the period. This, however, appears to be an interesting puzzle about the 'new economy'. How can low and stable inflation be associated with unemployment rates that would normally make rising inflation inevitable? By the beginning of 2000 inflation was at 3.3% and unemployment at 4%. The latter was, in fact, below the 'consensus' estimate of the Non Accelerating Inflation Rate of Unemployment (NAIRU) by about 2 percentage points. Inflation should have been accelerating and monetary policy should have been aggressively tightening. By contrast, the Federal Reserve System (Fed) held interest rates steady. US monetary policy authorities resorted to the 1990s productivity growth to justify a 'loose' rather than a 'tight' policy. Greenspan (2004a) is very explicit on the matter: "As a consequence of the improving trend in structural productivity growth that was apparent from 1995 forward, we at the Fed were able to be much more accommodative to the rise in economic growth than our past experiences would have deemed prudent. We were motivated, in part, by the view that the evident structural economic changes rendered suspect, at best, the prevailing notion in the early 1990s of an elevated and reasonably stable NAIRU. Those views were reinforced as inflation continued to fall in the context of a declining unemployment rate that by 2000 had dipped below 4 per cent in the United States for the first time in three decades" (p. 3). However important that recognition was for the policy stance of the Fed, productivity growth in itself cannot explain the behaviour of inflation and unemployment at the time. A challenge for the adherents of NAIRU thereby emerged, as Greenspan (2004a) makes clear in the quote just cited. A number of explanations were inevitably put forward. Favourable supply shocks, a decline in the NAIRU, unexpected productivity growth, or a combination of all these factors have been proposed (see, for example, Temple, 2002, for a brief summary, p. 251).

The 'globalized' world economy was another important dimension of the 'new economy'. National economies became interdependent with companies being able to sell into a competitive world economy. In such an economy, the growth potential could be said to be limitless and the 'perfect' nature of competition should not allow inflation to materialise given that 'pricing power' weakened substantially. With inflation being conquered, the possibility of recessions disappeared because no longer would inflation tend to get out of control once economic growth was sustained for some time. The rise in productivity that the TMT supposedly made possible, should have resulted in profit share rising. This, however, could not possibly have

materialised in view of the substantially weakened 'price power'. If anything it was higher labour productivity that emerged, which increased real wages rather than the profit share.

In terms of the policy contribution to the 'new economy', Greenspan (2000) distinguishes between the effects of monetary and fiscal policy. In terms of monetary policy he suggests that although it "did not produce the intellectual insights behind the technological advances that have been responsible for the recent phenomenal reshaping of our economic landscape", it has, nonetheless, "been instrumental … in establishing a stable financial and economic environment with low inflation that is conducive to the investments that have exploited these innovative technologies" (p. 3). Fiscal policy also played a crucial role: "The emergence of surpluses in the unified budget and of the associated increase in government saving over the past few years has been exceptionally important to the balance of the expansion, because the surpluses have been absorbing a portion of the potential excess of demand over sustainable supply associated partly with the wealth effect.[3] Moreover, because the surpluses are augmenting the pool of domestic saving, they have held interest rates below the levels that otherwise would have been needed to achieve financial and economic balance during this period of exceptional economic growth. They have, in effect, helped to finance and sustain the productive private investment that has been key to capturing the benefits of the newer technologies that, in turn, have boosted the long-term growth potential of the U.S. economy" (p. 3). It is implicit in Greenspan's argument that if the surpluses had not reduced demand, the Fed might have raised interest rates to cool the economy down. Indeed, and more recently, Greenspan (2004a) claimed victory in the Fed's battle to limit the damage from the burst of the stock market bubble. The claim focuses on the observation that "There appears to be enough evidence, at least tentatively, to conclude that our strategy of addressing the bubble's consequences rather than the bubble itself has been successful. Despite the stock market plunge, terrorist attacks, corporate scandals, and wars in Afghanistan and Iraq, we experienced an exceptionally mild recession – even milder than that of a decade earlier ….. much of the ability of the U.S. economy to absorb these consequences of shocks resulted from notably improved structural flexibility. But highly aggressive monetary policy ease was doubtless also a significant contributor to stability" (p. 4).

There are strong doubts, however, about the 'new economy' paradigm. Critics claim that there has been no big increase in trend economic growth; this has certainly not been the case globally and perhaps not even in the US.

[3] Greespan (2000) defines wealth effects as follows: "Historical evidence suggests that perhaps three to four cents out of every additional dollar of stock market wealth eventually is reflected in increased consumer purchases. The sharp rise in the amount of consumer outlays relative to disposable incomes in recent years, and the corresponding fall in the saving rate, has been consistent with this so-called wealth effect on household purchases. Moreover, higher stock prices, by lowering the cost of equity capital, have helped to support the boom in capital spending" (p. 2).

What actually happened was that the financial asset mania suppressed inflation in the US, thereby enabling the business cycle expansion, and the accompanying cyclical upswing in productivity, to be sustained for a longer time period, making what in effect was a cyclical phenomenon look like a secular shift (Lee, 2004). Gordon (2000) expresses similar doubts in his observation that the productivity gains of the 1990s may be temporary. Furthermore, there is no guarantee that inflation will remain low either. Given that there was no productivity acceleration outside the manufacturing sector (although non-manufacturing sector companies were often intensive users of ICT), a great deal of doubt is, in fact, cast on the 'new economy' model. A further blow to the 'new economy' model was the stock market mania, which actually received a great deal of media attention. By 2002, however, the stock market fell substantially so that the 'new economy' optimism disappeared. Indeed, the supporters of the 'new economy' model have been proved wrong!

While it is true that there is some support for the argument that there was no productivity miracle and no increase in potential output growth in the 1990s, in reality the truth may be somewhere in between. TMT produced some productivity gains, especially in the non-manufacturing sector (mainly services), and probably raised potential output growth from 2.2% in the 1980s business cycle to 3-3.5% in the 1990s cycle. With hindsight potential output growth was 3.1% measured from peak to peak of the cycle (i.e. between 1989 and 2000). The advocates of the new economy paradigm have argued that improved productivity raised potential output growth to 4 or even 6% (see, for example, Arestis and Karakitsos, 2004).

In fact, equity prices fell continuously between March 2000 and the beginning of 2003. That bear market resembles the mid-seventies plunge in equity prices in magnitude. But it differs in terms of the causes, and consequently with respect to the factors that should be monitored to test its progress. In the 1970s, soaring inflation was the reason for the bear market due to the surge in the price of oil. It eroded households' real disposable income and corporate profits. That was a supply-led business cycle. Now, the bear market is caused by asset and debt deflation triggered by the burst of the 'new economy' bubble.

The 2001 recession was very mild, as it was caused by the inventory correction associated with the burst of the 'new economy' bubble. Although with current economic fundamentals based on quarterly data up to the fourth quarter of 2003 the Standard and Poor (S&P) index may be fairly valued (see Arestis and Karakitsos, 2004, Chapter 10, Table 2), the fair value may fall if the economy moves into a situation, which triggers a property market crash. This may very well happen if interest rates rise. Then poor prospects in the corporate sector may materialize that might affect the real disposable income of the personal sector. The forces that may drive the economy to that situation are related to imbalances in the corporate and personal sectors that they might start infecting the balance sheet of the commercial banks. The

final stage of this process involves a spiral between banks and non-bank private sector (personal and corporate). Banks cut lending to the non-bank private sector (credit crunch) that worsens the economic health of the latter, which is reflected subsequently as a further deterioration of the balance sheet of the banks. As the income of the personal sector falls, households find it increasingly difficult to service their debt. House repossessions soar as the recession deepens. Similarly, companies cannot service their debt as profits plunge. Banks respond to this adverse development by cutting on new lending (credit crunch) and the liquidity that the central bank injects into the economy fails to reach the ultimate borrowers (what Keynes, 1936, called the liquidity trap).

THE BUBBLE AND ITS AFTERMATH

In the course of 1999 fears of a recession following the SE Asian and the Russian crisis in 1997-98 were quickly dispelled and the US economy grew stronger than in the whole of the 1990s. The corporate sector was in a spending spree on IT, in the hope of huge productivity gains that would allow profits to grow even stronger. The personal sector was in an even stronger spending spree, buying houses, cars and other durable goods, as well as services. The Fed started tightening monetary policy in the middle of 1999 for fear that this huge growth might rekindle inflation. But the Fed move was mainly pre-emptive, as inflation remained tamed, and a soft landing in 2001 had been predicted, meaning a cooling down of the economy to more sustainable rates of growth that would prolong the business cycle and allow prosperity to continue without the threat of inflation. But the economy refused to slow down and the Fed continued to tighten with the Fed Funds rate rising from 4.75% to 6.5%. However, once the economy started responding to the high level of interest rates it decelerated sharply and the pace gathered steam. In the first quarter of 2001 the economy fell into recession. Not only did interest rates, but also the price of oil, contribute to the recession. The price of oil soared from less than $10 per barrel at the end of 1998 to more than $35 in August 2000. The rise in oil price eroded both the income of households and the profits of the corporate sector and accelerated the downswing.

The first signs of strain appeared in manufacturing with a build up of inventories of unsold goods, in particular durables. The manufacturing sector responded in the second half of 2000 by cutting production, shedding labour and slashing investment expenditure. Services continued to be buoyant and consumer spending remained resilient giving rise to hopes that the soft landing was on target. However, in spite of the huge efforts of the corporate sector to reduce their unwanted stocks, the inventories-to-sales ratio continued to rise as sales fell faster than inventories. In the first quarter of 2001 the weakness in manufacturing, instead of having been contained, it spread to other sectors of the economy and the NBER officially declared in November the beginning of the recession in March 2001. What is puzzling in this story is that the economy fell into recession because of excess

inventories. This had not been the cause of a recession in the fifty years previously. But the overhang of inventories was only the symptom of the recession, not the cause. The true cause was the burst of the Nasdaq (technology) bubble in March 2000. The technology miracle that promised so many hopes and gave so much prosperity between 1994 and 2000, simply collapsed. The budget surplus of the period 1997-2001 may have caused relevant problems, of course. To the extent that it reduced non-government savings, it must have caused severe problems to the credit structure of the system, thereby promoting the bursting of the bubble.

The problem with the Nasdaq bubble was the ever increasing gap between what is technologically feasible that captures the imagination of the stock market, and the harsh reality of the slow adjustment of change in consumer habits. IT companies invested and created the capacity as if all people were to shop from the internet, talk on mobiles with all people around the world all day long and do things that people could not even dream about in less than a decade ago. All of a sudden everything that one could imagine was technologically feasible and companies offered it as if everyone was ready to change their way of lives. Before one generation of telecom was utilised, another was ready to take its place. This does not mean, of course, that the technology would never be used. With time, the economy, the consumer and the society's habits would adapt and the technology would be fully utilised. The dream of the new society where technology would play centre role would become a reality, but it will take a long time. The daydreamers thought that all this change would take place overnight. Dot companies mushroomed and their stock market value soared. Investors adopted the dream and priced such companies as if the dream had become a reality. Unfortunately, most dot companies were making losses, but they held the promise of making profits in the future. For as long as the corporate spending growth on equipment and software carried on increasing, the promise of future profitability of internet companies was kept alive. But in March 2000 (after the 2000 computer debug was over) the corporate sector cut drastically its expenditure on equipment and software and with it was lost the dream that the dot companies would ever become profitable. The Nasdaq bubble had been pricked! The harsh reality is that every bubble is the same. The bubble is always created by an event that changes permanently future profitability. Every discovery that changed permanently future profitability resulted in a bubble. The bubble was always fuelled by credit that allowed the finance of the dream. But in every case the bubble burst because the discovery is not made in a vacuum. For the discovery to be fully exploited the overall economy needs time to adapt and the society's habits need time to change. From this point of view the technology bubble is not different from the railway or canal bubble.

The effects of the burst of a bubble are also qualitatively the same. As asset prices (stock prices, property and land prices) fall the corporate and/or the personal sector are left with huge debts that must be serviced and ultimately repaid. These debts are accumulated when optimism is running high and

asset prices are soaring, as in the Nasdaq case, and reflect the perception of the permanent improvement in corporate profitability. Companies are not worried in accumulating debt and banks and investors are not worried in granting the loans or investing in the companies when the corporate expenditure is thought profitable. But because it takes time for the economy and the society habits to adapt to the new environment the expenditure is never profitable in the short run; and if the government budget is in surplus it deteriorates the whole process. The tragic economic consequences of the burst of a bubble are always positively related to the debt level that was accumulated in the rosy years of the expansion. The picture was very different in 1987 when the fiscal deficit helped to prevent similar consequences. The 1987 crash was different in that there was sufficient spending to keep the real economy afloat; indeed, there was enough financial equity to support the credit structure.

There have been three episodes of an asset and debt deflation caused recession in the nineteenth and twentieth centuries.[4] The Great Depression of 1876-90 (associated with the railway bubble), the Depression of 1929-40 (associated with the electricity and automobile bubble) and the deflation of Japan that started in 1989 and has not yet finished (associated with electronics). The current asset and debt deflation is associated with the telecommunications and internet bubble. In all these cases the process of eliminating the serious imbalances associated with the burst of the bubble took a long time, over a decade. As the recent experience of Japan shows, in a secular bear market there are sharp, but short-lived, rallies that give rise to false hopes of an end of the bear market. In an asset and debt deflation environment the non-bank private sector retrenches, as its huge debt, acquired in the rosy years of rising asset prices, is inconsistent with falling asset prices. The process of reducing debt through saving and curtailing spending is long causing a secular bear equity market. This is exactly what happened in the US recently.

The pre-bubble stock market mania produced a huge increase in investment, and a sharp decline in private savings (helped by the government surplus). Historically, the personal and non-financial business sectors in the US (the bulk of the private sector) had not run a deficit until the 1990s (US governments, not all of them, had run deficits; see Arestis, Cipollini and Fattouh, 2004); subsequently their financial balance plunged into huge deficit. By 2001, the financial balance of the corporate sector had reached its lowest level over the entire previous fifty years. Thereafter, the corporate sector financial balance turned into a surplus, as a result of corporate restructuring. (see Arestis and Karakitsos, 2004, Figure 1). One important implication of this imbalance was the creation of an enormous build-up of

[4] There were many recessions caused by asset and debt deflation throughout the seventeen and eighteen centuries. Most important of which were the tulip-mania in the middle of the seventeenth century, and the Mississippi, and South Seas bubble of the early eighteenth century (see, for example, Garber, 2000).

debt within the economy. By 2003, total private debt reached a level equivalent to one-and-a-half times GDP, compared to roughly equal to GDP in the early 1980s (see *Flow of Funds Accounts of the United States*, Federal Reserve System, October, 2003). Another significant imbalance is the US current account deficit, which has recently reached over 5 per cent of GDP on an annual basis (and by now it is showing little sign of improvement). This has been financed by the huge inflow of capital from overseas, emanating from the desire to save in dollar denominated assets by non-US residents – which resulted in a flood of cheap imports. A staggering $47bn inflow is needed per month to finance this deficit (although one might suggest that this is how much the overseas sector has to export to meet its savings desire). The relevant monthly average figure for the first eight months in 2003 was $59bn, actually up from $47.9bn in 2002. But it slumped in September and October, 2003, to $4.3bn and $27.8bn, respectively, thereby falling significantly below the threshold of $47bn. However, the November and December 2003 figures jumped to $87.5bn and $75.7bn, respectively (data from the monthly report of the US Treasury, as reported in *Financial Times*, 18 February, 2004). The US bond market behaviour is relevant to our discussion. The US, and other government, bond markets suffered in 1999 as the internet boom entered its most frenzied phase and the Fed began to raise interest rates. When the equity bubble burst took place, bonds appreciated as investors switched out of equities into bonds. So much so that the argument has been put forward that a complete collapse of the equity market is unlikely so long as the bond market performs strongly (Warburton, 1999). This is possible when central banks keep interest rates low, so that large investors and hedge funds can borrow short term to fund positions in long-term debt.

It may be fruitful to look at the standard income identity as a way of summarising the argument so far:

$$(S - I) + (T - G) = (X - Q)$$

where S is savings, I is investment, T is taxes, G is government expenditure, X is exports, and Q is imports. It suggests that the surplus of the private sector, that is the personal sector and the corporate sector combined, (S – I), plus the surplus of the government sector (T – G), should always be equal to the foreign sector surplus (X – Q). The equity bear market was accompanied by a sharp fall in investment, so that the corporate sector's deficit was thereby corrected to a significant degree, although it is doubtful whether this correction is yet sufficient. The personal sector deficit has also improved slightly, but it remains a long way from its historic large surpluses. So (S – I) is still in deficit. The government sector (T – G) has turned from surplus to a deeper, so that (X – Q) has also moved into deficit; this, of course, shows the deficiency of savings for the economy as a whole.[5]

[5] It should be noted that the statement in the text about the savings deficiency, is only correct by the specific definition of national savings, namely equal to the trade

In principle, five possible solutions to the problem suggest themselves: (i) a decline in the stock market of sufficient magnitude; (ii) a severe recession in the economy; (iii) a major fall in the dollar exchange rate (in excess of 30 per cent); (iv) a proactively large government deficit; and (v) a combination of the four factors to which we have just alluded. The first two along with the fourth is the result of insufficient aggregate demand due to a small government deficit that fails to accommodate the savings desires of the domestic and foreign sectors. The third possibility happens when the foreign sector tries to spend rather than save its dollar holdings, which would also tend to increase US aggregate demand.

The inevitable conclusion is then that the US financial bubble exacerbated imbalances in the economy: namely, excessive debt, deficient savings and a growing external imbalance. The financial bubble encourages stronger domestic demand, but it does not encourage necessarily stronger overseas demand. In the ballooning of the bubble the currency may be strengthened by capital inflow attracted by the bubble-boosted returns on domestic assets, but the deterioration in the balance-of-payments trade and current accounts is not sustainable indefinitely, unless, of course, the foreign sector wishes to accumulate US dollar denominated assets indefinitely. Ultimately, though, it is conceivable that the foreign sector may not wish to carry on accumulating US dollar denominated assets. Indeed, "given the already-substantial accumulation of dollar-denominated debt, foreign investors, both private and official, may become less willing to absorb ever-growing claims on U.S. residents" (Greenspan, 2004b, p. 6). In a general sense, the currency would then fall. Just as the financial bubble was the cause of the (real) dollar exchange rate appreciation, due to investment being higher relative to savings which drew capital into the US, its bursting should be expected to lead to (real) dollar depreciation. But still, there is the question of why the dollar has not depreciated even more than hitherto, as the bubble has been unwinding.[6] Three reasons suggest themselves:

- the global nature of the asset bubble and foreign central bank reaction to its unwinding. The asset bubble was, of course, global in nature. Central banks outside the US also accommodated the financial bubble. However, in the US the monetary authority response was a great deal more aggressive than elsewhere. In the short run, this supports the dollar because of the impression

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gap. This measure of savings has no operational function apart from restating the trade gap. This is how it is meant to be used here.

[6] Interestingly enough, the dollar reached a three-year low with respect to the euro (0.779), and an 11-year low with respect to pound sterling (0.53), after the chairman of the Fed delivered his semi-annual report on monetary policy to the Congress on 11/12 of February, 2004. He made the comment that a gradual weakening of the dollar would help narrow the US external deficit, and would have no adverse effect on US capital markets. The market interpreted that somehow unusual remark on currencies by the Fed chairman, as a clear sign of the Fed's tacit acceptance of the dollar's slide.

that the European economies are faring no better than the US. In the long run it means that the 'day of reckoning' is merely postponed:

- foreign government and central bank support of the dollar. The bank of Japan has been intervening in the foreign exchange market in an attempt to prevent the yen from appreciating; the other Asian central banks have been accumulating foreign reserves, mostly dollars (the Chinese central bank in particular) and US Treasuries in an attempt to manage their exchange rates against the dollar.

- the exceptionally aggressive easing in US fiscal policy. The federal budget turned from a surplus equivalent to 2.3% of GDP in 2000(1Q), when we had the stock market peak, to a deficit of 4.2% of the GDP by 2003(2Q), a massive swing of 6.5% of GDP. Higher government deficit has been adding to private savings, domestic and overseas; but still government deficit is not enough to meet savings desires. It would appear that the US desired saving rate is short relative to desired investment, and this may be a factor that mitigates the fall in the dollar exchange rate.

Still, the question remains, though, whether the causes and consequences of the US Post-'New Economy' bubble suggest that asset prices should be controlled as a means of containing financial imbalances. It is to this question we turn our attention next.

SHOULD ASSET PRICES BE CONTROLLED?

In this section we examine the possibility of targeting net wealth as a means of avoiding booms and busts of bubbles. This is particularly pertinent in view of the argument that can be advanced (see, for example, Arestis and Karakitsos, 2004, chapter 6) that the bubble is still there, with the vestiges of the mania remaining in the stock market, while the force of the bubble has moved to the government bond market, and to the property market in particular.

ASSET PRICE INFLATION AND BUBBLES

The standard argument in terms of asset price control is that asset price inflation (the percentage yearly change in equity prices, house prices or land prices) is out of the realm of central banks, as it reflects market forces and any control is widely regarded as infringing with the principles of the free market economy, or, indeed, it is the result of 'irrational exuberance'. Bernanke and Getler (2000) argue that trying to stabilise asset prices is problematic, essentially because it is uncertain whether a given change in asset values results from fundamental or non-fundamental factors or both. In this thesis, proactive monetary policy would require the authorities to outperform market participants. Inflation targeting in this view is what is important, where policy should not respond to changes in asset prices. Clews (2002) argues along similar lines, and concludes that asset price movements

"rarely give simple unequivocal messages for policy on their own" so that they are "unlikely to be suitable as intermediate targets for a policy whose main aim is to control inflation" (p. 185). Greenspan (2002a, 2002b) argues that the size of the change in the rate of interest to prick a bubble may be substantial and harmful to the real economy.[7]

Yet the experience of many countries, including of course the US during the period under investigation, shows that successful control of CPI-inflation does not guarantee low asset price inflation. When asset price inflation gets out of control bubbles are built and while they grow they generate a lot of euphoria. But bubbles ultimately burst with devastating consequences not only for the investors in the stock markets, but also for the economy as a whole. The experience of the last twenty years shows that the adverse consequences of the burst of a bubble hit not only weak economies, but also strong economies such as the US and Japan. Goodhart's (2001) suggestion, based on Alchian and Klein (1973), that central banks should consider housing prices and, to a lesser extent, stock market prices in their policy decisions, is very pertinent.

Targeting is possible through interest rates, exactly as in the case of CPI-inflation, by monitoring and targeting the implications of asset prices on the spending patterns of consumers and companies. The variable that lends itself as a primary candidate for monitoring and control of asset price inflation is the net wealth of the private sector. Net wealth is defined as the assets less the liabilities of the personal sector. Assets include both financial and tangible. Financial assets include deposits, bonds and equities. Tangible assets include real estate and consumer durable goods. The liabilities of the personal sector include all forms of debt, mortgage, as well as, consumer credit for all other purposes. Although in the short run the ratio of net wealth to disposable income can fluctuate widely, in the long run it is trendless, as it shows the number of years it takes for households to buy a house and build financial wealth that would finance consumption for the rest of their lives and to leave bequests to their heirs. This ratio can neither be on an upward nor downward trend in the long run, as it would imply intergenerational changes in savings habits. Net wealth as percent of disposable income is mean reverting[8]. It is this mean reverting property of net wealth that allows the detection (or monitoring) of bubbles.

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[7] An interesting proposal is contained in the study by Bordo and Jeanne (2002). Using a stylised model they examine the possibility of pre-emptive monetary policy to conclude that "optimal policy depends on the economic conditions in a complex, non-linear way and cannot be summarized by a simple policy rule of the type considered in the inflation-targeting literature" (p. 1).

[8] Net wealth reverts back to its mean, albeit at long intervals of 5-10 years. This is a direct consequence of the fact that net wealth as percent of disposable income is a stationary variable, i.e. its mean and standard deviation are not time varying. Technically, it is integrated of order zero. The stationarity property follows from the fact that the constituent components of net wealth, namely assets and liabilities, are each one a non-stationary variable integrated of order one. Hence their difference

The reason that net wealth is such an ideal variable to monitor (and, perhaps, control) bubbles is that it is at the heart of the transmission mechanism of asset prices and debt to consumption. This is the underlying rationale. In the very long run consumption and real disposable income are growing at the same rate so that the ratio of consumption to income (the *average propensity to consume*) is equal to unity. But in the short run consumption can deviate substantially from income. In the Permanent Income - Life Cycle Hypothesis consumers save in good years and tap on these savings in bad years. Hence, the savings ratio (savings as percent of disposable income) moves pro-cyclically, it rises in booms and falls in recessions. The validity of this relationship has been questioned (see, e.g. Frowen and Karakitsos, 1996). The argument is that in a leveraged economy the savings ratio moves counter-cyclically (i.e. it falls in a boom and rises in a recession). In boom years asset prices rise faster than usual as consumers borrow against these assets to invest even more (leveraging). Faster than usual rising asset prices make people feel rich inducing them to relax on their effort to save as they believe that they are in a better position to meet their desired levels of savings (e.g. provide for pension, leave to their heirs). Hence, the savings ratio falls in a boom. In a recession asset prices fall and people are left with an overhang of debt. In order to repay their debt people cut on consumption out of current income and intensify on their effort to save in order to rebuild their wealth. Hence, the savings ratio increases in a recession. The counter-cyclical behaviour of the savings ratio, which is a characteristic of leveraged economies, aggravates the adverse consequences on the economy of the boom and bust of bubbles. In the short run, therefore, consumption depends on real disposable income and the savings ratio. The long run forces that determine the savings ratio are net wealth and uncertainty about job security and income growth prospects (Arestis and Karakitsos, 2004, chapter 7). For these reasons, a rise in net wealth lowers the savings ratio and vice versa. An increase in uncertainty about job security and income growth prospects makes people more cautious inducing them to refrain from spending out of current income, thereby raising the savings ratio.

During the bubble years in the second half of the 1990s net wealth rose to unprecedented levels and the savings ratio reached rock bottom at the peak of the bubble (Arestis and Karakitsos, 2004, provide the relevant details). As equity prices declined steadily for three years after the burst of the bubble net wealth fell, a whisker from its long-term average of 482% in September 2002, while the savings ratio increased to 4.3% in November 2002. This rise in the savings ratio reflects increased cautiousness on the part of consumers in the face of falling asset prices with undiminished debt. Changes in personal sector wealth since the burst of the equity bubble indicate that net wealth peaked in March 2000 at $43.5 trillion or 625 percent of disposable

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(assets less liabilities) is stationary, i.e. integrated of order zero. The mean reverting property of net wealth implies that bubbles, and in general imbalances, can be identified and their consequences can be quantified.

income and bottomed at $38.4 trillion or 488 percent of disposable income in September 2002, as equity prices plunged. The loss in net wealth between the peak and the trough of the equity bubble is $5.1 trillion or 137 percent of disposable income. The equity market rally since the end of the Iraq war has moderated these losses to $2.2 trillion or 115 percent of disposable income by the end of the second quarter of 2003 (the latest quarter for which data is available; see Arestis and Karakitsos, 2004, chapter 6, especially Table 1).

These shifts in net wealth obscure the risk of replacing the equity with the property bubble. By the end of the second quarter of 2003 the losses in total assets (defined as tangible and financial) between the peak and the trough of the bubble had been completely offset (Arestis and Karakitsos, 2004, chapter 6, Table 2). However, this is entirely due to the gains in tangible assets (mainly property), which exactly offset the losses in financial assets. Households, though, have continued to borrow heavily in the last three years of the order of $2.3 trillion or 14 percent of disposable income. This accounts for the deterioration in net wealth. The rate of debt accumulation in the last three years is unprecedented. There is no other three-year period, since records began in 1952, in which debt increased at such frenetic pace. The second highest rate is 10.2% of disposable income that occurred between April and September 1987, after the peak of the property market in April 1987. The rate of debt accumulation fell rapidly after the equity market crash in October 1987. Furthermore, the boom in the residential property market has resulted in capital gains of the order of $3.4 trillion for households between the peak of the equity bubble and the second quarter of 2003. However, households continuously borrow against their property to finance consumer expenditure. Accordingly, the percentage of owner's equity in household real estate keeps falling. Between the peak of the equity bubble and the second quarter of 2003 the owner's equity in household real estate has fallen from 56.9% of disposable income to 54.3%. This represents $433 billion home equity extraction (i.e. realised capital gains), which accounts for 40% of the consumer expenditure in this period. The fiscal support to the personal sector in the form of tax cuts and other benefits account for an additional $170 billion during this period. Hence, taken together, the fiscal support and the home equity extraction account for 60% of consumer expenditure in the last three years. This explains why the consumer remained resilient throughout the recent downturn. This poses the question of what would happen if property prices were to fall. Would consumers respond by saving more and cutting down on expenditure? In this case the fall in the savings ratio is temporary and will last until the US November 2004 presidential election. It will rise in 2005 and beyond if property prices were to collapse (see Arestis and Karakitsos, 2004, for further details).

MONETARY POLICY AND TARGETING OF NET WEALTH

For the US economy the average net wealth is around five times annual disposable income. Hence, the Fed can have a target of net wealth of five

annual disposable incomes, to the extent that it has an implicit target of 2-3% for CPI-inflation. Monetary policy should be tightened as the ratio of net wealth to disposable income raises much above this threshold and vice-versa. An admissible range for net wealth may be 400 – 550% of disposable income. This would allow asset price booms, but it would prevent them from becoming bubbles that will ultimately burst with huge adverse consequences for the economy as a whole. Tightening of monetary policy would certainly prick the bubble, as it did in the case of Japan. Only in that case the Bank of Japan raised interest rates to combat CPI-inflation. Had it done so much earlier, if it had an explicit target on net wealth, would have prevented the ballooning of the bubble and it would have minimised the consequences of the asset and debt deflation that followed the burst of the bubble. By allowing bubbles to balloon a few people would certainly become much richer, but at the expense of the majority of people becoming poorer. Bubbles are the means through which income is redistributed within the society. Such redistribution is skewed towards the very rich. Hence, bubbles have the unpleasant effect of causing income inequality.

Tightening of monetary policy through interest rates would certainly lower asset prices – equities as well as property – through a number of channels. First, and foremost, an interest rate rise changes market expectations of future corporate profitability. When a central bank avoids stop-go policies (i.e. random swings) and, instead, changes monetary policy in a systematic and persistent way, then it affects market expectations. Investors interpret a rise in interest rates as a step in a series of hikes that would last for a long period of time. Markets, therefore, interpret tightening of monetary policy as a signal of lower growth in the future that will reduce corporate profits. Because markets act as a discounting mechanism of future events they precipitate the fall in equity prices, long before actual profits are affected, thereby helping the task of the central bank.

Second, tightening of monetary policy induces investors to rebalance their portfolios. The expected return on equities falls, while the expected return of the close substitutes rises. A rise in the short- term interest rate by the central bank raises the return on deposits and discourages investors from investing in the equity market. It induces a portfolio rebalancing out of equities into cash. Long- term interest rates also rise as a result of monetary tightening, but by less than short term ones. Hence, the yield curve flattens or becomes inverted, as a result of monetary tightening. Higher long- term interest rates induce another portfolio rebalancing, this time out of equities into bonds. High or rising interest rates will also prick bubbles in property. Evidence from the K-Model suggests that the long-term interest rate is the single most important variable in the US housing market with a multiplier of two in the first and second years (see chapter 6 below). This means that one percentage point hike in the long-term interest rate lowers house prices by more than 2%, both one and two years later.

Asset price inflation always takes place when the economy is overheated – i.e. when it grows faster than its potential. It is unthinkable that the economy would be in recession or recovery and asset price inflation would be high. Simply equity prices would be low because corporate profits would be poor. Overheating of the economy may not actually lead to higher CPI-inflation, but to higher asset price inflation. As in the case of the US in the second half of the 1990s or of Japan in the 1980s, the lack of acceleration in CPI-inflation when the economy is overheated leads to the erroneous conclusion that productivity must have risen and this allows the economy to grow at a faster rate without increasing inflation. In other words, it leads to the conclusion that the rate of growth of potential output must have risen. People in the US in the second half of the 1990s frequently spoke of a productivity miracle that raised potential output growth substantially (see, for example, Greenspan, 2004a). In fact, there was no productivity miracle. In the US there was some productivity improvement in the 1990s, as a result of the widespread use of computers in services. But potential output growth was only raised between 3.00% – 3.50%, hardly substantial.

Since asset inflation is associated with steady or gently rising CPI inflation when the economy is overheated, there is no real conflict between the two targets. The central bank can pursue simultaneously the targets of asset inflation and CPI-inflation, if it so chooses.[9] If asset inflation were lowered before it becomes a bubble, the economy would have a 'soft landing'. As in the case of the US in 1994, the tightening of monetary policy was regarded as a means of prolonging the business cycle by killing the overheating before CPI-inflation managed to get out of control. Similarly, tightening of monetary policy to kill asset inflation would prolong the business cycle and the economy would enjoy a 'soft landing'. The overall conclusion is that asset inflation targeting is both desirable and feasible and in no way conflicts with the traditional role of the central bank in targeting CPI-inflation. Net wealth as percent of disposable income is the ideal variable for targeting asset price inflation, as it directly affects demand in the economy.

SUMMARY AND CONCLUSIONS

Many countries suffered in the last ten years or so from the boom and bust of bubbles and, in some of them, popular demands for action by the authorities have not abated. In this chapter we have dealt with the US experience. We have examined the 2000 US bubble, the related issue of the 'new economy' paradigm, the aftermath of the bubble, concentrating on its consequences, before dealing with the issue of how we might tackle it. We have suggested that asset price inflation targeting may be both desirable and feasible and in no way conflicts with other policy objectives of the central bank, as for example in the case of inflation targeting.

[9] This does not mean that we support inflation targeting, which has its own problems and peculiarities, as argued in Arestis and Sawyer (2003).

The process of asset price inflation targeting involves monitoring and targeting the implications of asset prices on the spending patterns of consumers and companies, rather than asset prices themselves. It would simply be unacceptable for a central bank to have a target for one of the main stock market indices. The variable that lends itself as a primary candidate for monitoring and control of asset price inflation is the net wealth of the personal sector as percent of disposable income, as it is at the heart of the transmission mechanism from asset prices and debt to consumption. This variable is trendless (i.e. it is stationary) and reverts back to its mean, which is five times annual disposable income for the US. Monetary policy can be tightened when the ratio of net wealth to disposable income rises above a particular threshold, say 550% for the US.

Critics of asset price inflation targeting claim that monetary tightening kills good growth that generates prosperity. Such arguments are based on the premise that the lack of CPI-inflation when the economy is overheated is evidence of productivity improvement that has raised the growth of potential output. But this is an erroneous conclusion. Simply, the overheating is channelled to asset price inflation rather than CPI-inflation. Clearly, the Fed never contemplated a rate hike to control the bubble, although its chairman tried to influence it with his by now familiar remarks about 'irrational exuberance'. In fact, and more recently, the chairman of the Fed argued that there is tentative evidence to suggest that dealing with the consequences of the bubble is preferable to dealing with the bubble itself (Greenspan, 2004a, 2004b). The case for asset price inflation targeting would become weak if the economy were to remain firmly on a sustained path to recovery. However, as this book would show, in spite of the robust growth of the last nine months or so in 2003, there are still substantial risks to the economy, emanating from the fact that the imbalances that were created by the boom and bust of the bubble have not been corrected. If the economy were to stumble, and these imbalances were reawaken driving the economy down once again, then the case for asset price inflation targeting would become more pertinent.

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