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Lessons from the Financial Crisis: New Rules for Central Banks and Credit Rating Agencies?

The US mortgage crisis, which has spiralled into what is now seen as the most serious global financial upheaval since the 1930s, has provoked criticism of the Federal Reserve for its failure to recognise, and act on, the real estate bubble. Credit rating agencies, too, have come under heavy fire for having actively contributed to the present crisis. Should central banks pay special attention to, and try to influence, the development of asset prices? Is statutory regulation of rating agencies required? If so, what form should it take? Is the European Commission's recently issued draft up to its purpose?

Paul De Grauwe*

Should Central Banks Target Stock Prices?

The question of whether central banks should react to stock price developments has been hotly debated. This discussion has intensified since the eruption of the credit crisis. According to some analysts, including myself, the failure of the US Federal Reserve under Greenspan to react to the bubbles in the stock and housing markets helps to explain the financial excesses and the subsequent crisis. As Greenspan famously remarked, the central bank should not “interfere with the pollinating bees of Wall Street” and he strongly believed in the capacity of the financial market to regulate itself without government interference.

There are two schools of thought on the issue of whether the central bank should try to influence asset prices. The first one, which is well represented by the present and former Chairmen of the US Federal Reserve, argues that central banks should not use the interest rate to influence asset prices. The proponents of this view advance several arguments. The first argument is that it is difficult to identify bubbles *ex ante*. An extreme version of this view denies the existence of bubbles altogether. In this view financial markets are efficient and thus asset prices always reflect the best available information. Since central banks do not possess better information than markets, it makes no sense for them to try to influence stock prices. The second argument is that even if a bubble can be identified *ex ante*, using the interest rate is ineffective to burst a bubble. All the central bank can do is to limit

the damage once the bubble bursts. This school of thought also stresses that by keeping the rate of inflation low, the central bank contributes to creating an environment of sustainable growth in which bubbles are less likely to emerge.

The second school of thought takes the view that asset prices are often subject to bubbles and crashes. These can have strong pro-cyclical effects and can also affect the stability of financial markets. Since central banks are responsible for financial stability they should monitor asset prices and try to prevent the emergence of bubbles (that invariably lead to crashes). In this view the use of the interest rate is seen as effective in preventing bubbles from emerging. It should be noted that few economists from this school will argue that the central bank should target a particular value of the asset price (in the same way as it targets an inflation rate). Instead proponents of the second school of thought argue that a strategy of “leaning against the wind” may be useful to reduce too strong movements in asset prices.

How to analyse this issue? Economists usually employ some macroeconomic model and then ask the model to answer the question. In this case we want the model to answer the question of whether a central bank can improve macroeconomic stability by reacting to asset price movements. The next question then is which model to use. For the last two decades macroeconomics has been dominated by the rational expectations paradigm. The present-day macroeconomic models, the so-called Dynamic Stochastic

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General Equilibrium models (DSGE models), all incorporate this paradigm. This is a world of rational agents who are superbly informed. They understand the world in all its complexities. Since they all understand the same "Truth", it is sufficient to model just one agent, the representative agent. This agent observes a shock and immediately understands its implications, allowing him to compute the optimal price, consumption and production from today into eternity. New-Keynesian versions of this model, in particular the DSGE models, incorporate stickiness of wages and prices, but remain firmly embedded in the rational expectations paradigm.

In this DSGE world there is no room for bubbles and crashes. Markets are always efficient, so that asset prices reflect underlying fundamentals. Thus central banks cannot improve welfare by guiding asset prices to other values than those produced by efficient markets. Since most central banks these days use some form of DSGE model for policy evaluation it will not come as a surprise that these central bankers are reluctant to use the interest rate to influence stock prices. Incidentally, most central bankers and in particular the ECB apply the same reasoning to the exchange rate. Like the stock prices they consider the exchange rate to reflect economic fundamentals. No surprise that they are reluctant to intervene in the foreign exchange market. You cannot fight economic fundamentals, they say.

But are the DSGE models the appropriate instruments to study the issue of whether central banks should try to prick asset bubbles? I argue that they are not. For two reasons. First, the scientific evidence from other sciences (psychology, brain sciences) casts doubts on the plausibility of the rational expectations assumption which requires agents to understand the full complexity of the world in which they live. It is no exaggeration to say that there is now strong evidence that individual agents suffer from deep cognitive problems, limiting their capacity to understand and to process the complexity of the information they receive. Many anomalies that challenge the rational expectations assumption have been discovered. I shall only mention "anchoring" effects here, whereby agents who do not fully understand the world in which they live are highly selective in the way they use information and concentrate on the information they understand or the information that is fresh in their minds. This anchoring effect explains why agents often extrapolate recent movements in prices.

Second, models that deny the existence of bubbles and crashes are particularly unsuitable for analysing

the question of whether a central bank should act to prevent bubbles in asset prices from emerging. We need other models.

In my modelling approach I take the view that agents face cognitive problems in understanding and processing information. As a result, they use simple rules ("heuristics") to guide their behaviour. They do this not because they are irrational, but rather because the complexity of the world is overwhelming. In a way it can be said that using heuristics is a rational response by agents who are aware of their limited capacity to understand the world. These heuristics also contain a bias. I assume that some agents are optimistic in their forecasting rules and others are pessimistic. This leads to a behavioural macroeconomic model in which waves of optimism and pessimism (Keynes' "animal spirits") arise spontaneously. (For a detailed description of the model see my CEPS Working Document No. 304). Note that although this model assumes that agents have biased beliefs, on average the forecasts are right. Thus in the long run we impose a constraint that asset prices reflect fundamentals. In the medium and short run, however, there can be large deviations from this constraint.

These endogenously generated cycles in output and stock prices are made possible by a self-fulfilling mechanism that can be described as follows. A series of random shocks creates the possibility that optimistic forecasting rules deliver a higher payoff, i.e. a lower mean squared forecast error (MSFE). This attracts agents that were using pessimistic forecasting rules. The "contagion-effect" leads to an increasing use of the optimistic beliefs to forecast the output, which in turn stimulates aggregate demand and leads to a bull stock market. Optimism is therefore self-fulfilling. A boom is created. Put differently, the contagion effect leads to a correlation of beliefs, in this case optimistic ones, that drive the market prices in one direction. At some point, however, negative stochastic shocks make a dent in the MSFE of the optimistic beliefs. The pessimistic beliefs become attractive and therefore fashionable again. The stock market and the economy turn around.

It is in this framework that I analyse the question of whether central banks can improve macroeconomic stability (i.e. lower variability of output and inflation) by using the interest rate aimed at reducing stock price volatility. I assume that stock prices affect both demand and supply. When stock prices increase, net equity of firms goes up. As a result, banks that face an asymmetric information problem about the capacity of the firms to repay their debt interpret this increase in

net equity as improving this capacity and are willing to grant better credit conditions to firms. This has a positive effect on aggregate demand. (This is the Bernanke-Gertler credit multiplier model.) The improved credit conditions also lower marginal costs and thus affect aggregate supply positively. Stock price declines have the opposite effect.

I then ask the model the question as to whether a central bank that “leans against the wind” in the stock market, i.e. that uses the interest rate to reduce the volatility of stock prices, improves macroeconomic stability. And the answer is: yes, central banks can influence stock prices, and by following “leaning against the wind” strategies in the stock market they can improve the tradeoff between output and inflation, i.e. they can reduce the volatility of both output and inflation.

So far, this is not really surprising. After all this is a model that produces waves of optimism and pessimism in the macroeconomy and leads to booms and busts in the stock market. By manipulating the interest rate the central bank changes these “animal spirits”. Put differently, by manipulating the interest rate, i.e. by increasing it when a bubble develops, the wave of optimism is reduced in intensity, and by reducing it during a crash, the wave of pessimism is similarly reduced. Such intervention also has the effect of reducing the correlation in beliefs which lies at the heart of the waves of optimism and pessimism.

The more surprising part of the result is that it only holds in an environment of credible inflation targeting. If the inflation target has a high degree of credibility the model tells us that these “leaning against the wind” strategies significantly improve macroeconomic stability (output and inflation stability). However, these policies aiming at reducing the volatility of asset prices by manipulating the interest rates do not improve macroeconomic stability when inflation targeting has no credibility. The reason is that in the absence of a credible inflation target, agents interpret a decline in the interest rate as signalling future inflation. As a result, inflation actually increase forcing the central bank to raise the interest rate. This produces a stop-go policy that destabilises output, inflation and stock prices.

In this sense there is a grain of truth in the first school of thought discussed earlier. A credible inflation targeting is a powerful tool to stabilise the economy. Where this school of thought has it wrong is when it confuses necessary and sufficient conditions. Inflation targeting is necessary for macroeconomic stability, but it is not

sufficient. By leaning against the waves of excessive optimism and pessimism that characterise asset price movements, the central bank contributes to reducing the scope for bubbles and crashes and in so doing helps to stabilise the economy, and in particular the financial markets.

Our results also imply that the “leaning against the wind” strategy should be used symmetrically, i.e. when stock prices increase the central bank raises the interest rate and when they decline it lowers the interest rate. One irony in the position taken by Bernanke and by other proponents of the stand-off approach is that their refusal to intervene while a bubble goes on only increases the need to do so when the crash sets in. This is dramatically illustrated by recent events. The downward pressure in the stock markets during September 2008 triggered massive interventions by the Federal Reserve and other central banks. All the arguments that it is impossible to recognise bubbles, and thus also crashes, were set aside, and rightly so. There can be no doubt that had the Federal Reserve done something to mitigate the bubbles in asset markets during the previous years, it would have had to intervene less during the crash.

Our results suggest that the dominant doctrine about the responsibilities of the central bank should be adjusted. This doctrine says that central banks should follow a lexicographic ordering in their objectives, i.e. price stability is the primary responsibility; all other objectives should be set aside if pursuing them puts price stability at risk. This doctrine implies that if there is both a risk of inflation and a risk of financial meltdown, the central bank should first fight inflation before it uses its monetary policy tool (the interest rate) to fight the meltdown.

The inflation targeting doctrine has a corollary. This is that by achieving price stability a central bank contributes maximally towards achieving economic and financial stability. This view led the central banks to disregard the bubbles in the asset markets in the past. The low inflation rate observed in those days convinced central banks that there was no problem, and that by keeping inflation on track everything else would also be on track.

It is becoming increasingly clear that this minimalist doctrine of the responsibilities of the central bank constitutes part of the cause of the financial crisis. In the name of price stability, central banks have simply neglected their responsibility to maintain financial stability. And the latter is at least as important as maintaining price stability.

Thomas Mayer*

Monetary Policy Strategy: The Case for Financial Analysis

Should central banks pay special attention to asset prices in the conduct of monetary policy? The answer given by most economists and central bankers to this question has been “no”: central banks’ mandate to secure price stability refers to consumer prices. Asset prices should be considered only to the extent that they have an influence on consumer price stability. Moreover, it is next to impossible to identify bubbles before they burst, and there is little a central bank can do to prevent an asset price bubble developing, even if it could identify it. However, a minority of economists and central bankers have given the opposite answer: assets provide income streams to fund consumption in the future. When asset prices rise above fundamentally justified levels the power of money to buy income streams for future consumption declines. Monetary policy is charged with maintaining the purchasing power of money. This should apply not only to current but also to future income and consumption. Moreover, asset price cycles can have a destabilising influence on the economy, quite apart from consumer price cycles. Hence, a central bank ought to pay special attention to asset prices in its pursuit of economic stability.

In the following we take a closer look at these views. We find the agnostic view on the treatment of asset prices in central banks’ monetary policy strategies unconvincing. At the same time, the solutions proposed by the advocates of a more pro-active approach seem too narrowly focused to address the issue. In our view, a more promising approach to include asset prices into the monetary policy strategy of a central bank is to develop the “monetary analysis” within the ECB’s two pillar strategy (or the “second perspective” in the Bank of Japan’s strategy) into an analysis of investors’ risk attitudes. We call this second pillar in the monetary policy strategy “financial analysis”.

Do Not Respond to Asset Prices

In two influential papers, Bernanke and Gertler used calibrated macro models to simulate the effects of an inflation targeting monetary policy in the face of volatile asset prices.¹ In the stochastic model (of the 2001 paper), agents are assumed to know the statistical process that drives bubbles, though they do not know in advance their ultimate magnitude or duration. The

authors find “that an aggressive inflation targeting rule stabilizes output and inflation when asset prices are volatile, whether the volatility is due to bubbles or to technological shocks; and that, given an aggressive response to inflation, there is no significant additional benefit to responding to asset prices”.²

This advice is consistent with the policies followed by the US Federal Reserve during the chairmanships of both Greenspan and Bernanke. However, the real-world test of the model prescriptions has revealed two significant flaws of the approach: first, a truly hands-off treatment of asset price bubbles cannot be sustained; and, second, strict inflation targeting may itself induce asset price bubbles. Let us consider these flaws in more detail.

Following his famous musings about the presence of “irrational exuberance” in equity markets in a speech in 1996, then US Federal Reserve Chairman Greenspan seems to have concluded that there was little he could do about it. There was no sign that the Fed had any intention to lean against the surge in the US stock market during the years following the speech to the burst of the stock price bubble in 2000. However, the attitude to asset prices changed completely after the stock price bubble had burst. The risk which this was perceived to create for financial stability – and hence for the economy to fall into deflation – induced the Fed to cut interest rates to extremely low levels and to keep them there probably for longer than justified purely on the basis of the outlook for consumer price inflation. This episode, together with several earlier ones in which the Fed behaved similarly (e.g. the 1987 stock market crash, the 1989-90 junk bond crash and the 1998 LTCM crisis) has induced many market participants to believe in the “Greenspan put” (i.e. a Fed policy that limits the downside for investors in the presence of asset price bubbles). Thus, a policy *a priori* committed to take an agnostic view on asset prices in effect has tended to react to asset price cycles in an

¹ Ben S. Bernanke, Mark Gertler: Monetary Policy and Asset Volatility, in: Federal Reserve Bank of Kansas City, Economic Review, Fourth Quarter 1999, Vol. 84, No. 4, pp. 17-52; Ben S. Bernanke, Mark Gertler: Should Central Banks Respond to Movements in Asset Prices?, in: American Economic Review Papers and Proceedings, Vol. 91, No. 2, May 2001, pp. 253-257.

² Ben S. Bernanke, Mark Gertler: Should Central Banks Respond to Movements in Asset Prices?, op. cit.

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asymmetric way: it has tolerated the inflation of asset price bubbles but countered their deflation.

To be fair, the Fed's policy mandate includes an obligation to support employment, and its policy actions in the wake of asset market downturns can be defended on that ground. However, as Hyman Minsky put it already at the start of the Greenspan era: "Because the Federal Reserve has the responsibility, so to speak, to pick up the pieces when things go wrong, it must be concerned with and guide the growth and evolution of financial practices in periods of tranquility as well as when circumstance forces it to intervene."³

Moreover, strict inflation targeting may itself induce asset price bubbles, when the central bank defends a positive inflation target in the presence of favourable terms-of-trade and productivity shocks. Without central bank intervention a significant increase in the terms-of-trade and/or productivity is likely to push inflation lower and may even lead to an outright decline in prices. An inflation targeting central bank might then lower the risk free rate so as to militate against a fall of inflation below target. A decline in the risk free rate will in turn lower the rate used for discounting future cash flow and hence induce a rise in asset prices. An asset price bubble may emerge when the initial rise in asset prices is perpetuated through bandwagon effects and the decline in the risk free rate induces investors to buy more risky assets in order to avoid a fall of actual investment returns below existing target returns. Risk seeking behaviour of investors could indeed be seen in the wake of the Fed's cut of its policy rate to record lows in 2003 in response to deflation fears.

Lean Against the Wind

In a response to the view of Bernanke and Gertler – and the position of the US Federal Reserve on this matter – Cecchetti et al. have argued that (i) asset price cycles have the potential to create significant economic instability; (ii) conventional inflation targeting does not adequately take account of damaging asset price cycles (and asset price inflation); and (iii) it is no more difficult to estimate and forecast output gaps than to identify and assess asset price misalignments.⁴ Hence, they advocate a monetary policy

leaning against extreme asset price developments ("leaning against the wind").⁵

Clearly, the last point is crucial to their argument (as points (i) and (ii) become mute when (iii) does not hold). To prove their point, Cecchetti et al. analysed stock market developments towards the end of the 1990s and concluded "that commonly accepted valuation formulas of common stocks, together with consensus estimates of the ingredients of that formula, lead to the conclusion that stocks are currently overvalued in the United States".⁶ Other economists, notably Robert Shiller, came to similar conclusions ahead of the peak of the S&P500 US stock price index in July 2000. By comparison, the EU Commission, for instance, in March 2000 initially predicted an output gap for the euro area for the year 2000 to the amount of about -1¼% of GDP. Ex post calculations a few years later then put the gap at +1¼%.⁷ Thus, identifying output gaps real time is at least as difficult as identifying asset price bubbles.

A policy of "leaning against the wind" should not be misunderstood as a call for targeting asset prices or pricking asset price bubbles. Answering the critique of Bernanke and Gertler (2001) of their 2000 paper, Cecchetti et al. emphasised "that it is important not to react mechanically to all asset price changes regardless of their source. We certainly do not want to quarrel with this view, which is why our original argumentation emphasized the need to identify asset price changes that can be justified by underlying fundamentals and those that can not. This of course requires a certain amount of judgment on the part of policymakers, but that is par for the course."⁸

While Cecchetti et al. make a rather convincing case for considering asset prices in the conduct of monetary policy their work does not offer a similarly convincing operational solution to the question of how this should be done. In their 2000 paper they show how deviations of the equity risk premium from long-run averages could be included in a Taylor Rule framework to adjust the policy rate in response to unusual developments in

³ Cf. Hyman P. Minsky: *Stabilizing an Unstable Economy*, McGraw-Hill 2008, edited reprint of the 1986 edition, p. 45.

⁴ Stephen G. Cecchetti, Hans Genberg, John Lipsky, Sushil Wadhvani: *Asset Prices and Central Bank Policy*, report prepared for the conference "Central Banks and Asset Prices" organised by the International Centre for Monetary and Banking Studies in Geneva on 5 May 2000; Stephen G. Cecchetti, Hans Genberg, Sushil Wadhvani: *Asset Prices in a Flexible Inflation Targeting Framework*, paper prepared for the conference on "Asset Price Bubbles: Implications for Monetary, Regulatory, and International Policies", organised jointly by the Federal Reserve Bank of Chicago and the World Bank, Chicago, 22-24 April 2002.

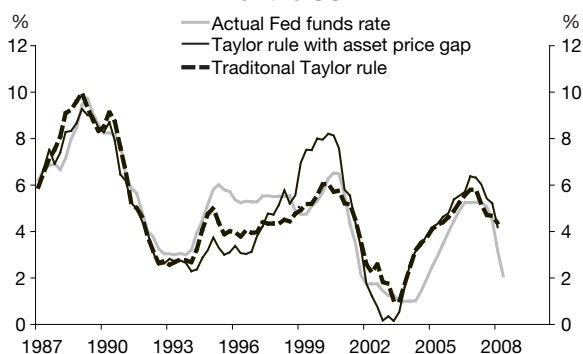
⁵ This view was discussed with some sympathy in an article in the ECB's April 2005 Monthly Bulletin: *Asset Price Bubbles and Monetary Policy*. The authors found that the ECB's monetary analysis allowed the bank to take account of excessive asset price developments to the extent that they are associated with the creation of "excess liquidity" or "excess credit".

⁶ Stephen G. Cecchetti, Hans Genberg, John Lipsky, Sushil Wadhvani, 2000, op. cit.

⁷ Cf. "6th Annual Report of the CEPS Macroeconomic Policy Group", CEPS, Brussels, July 2004, p. 40.

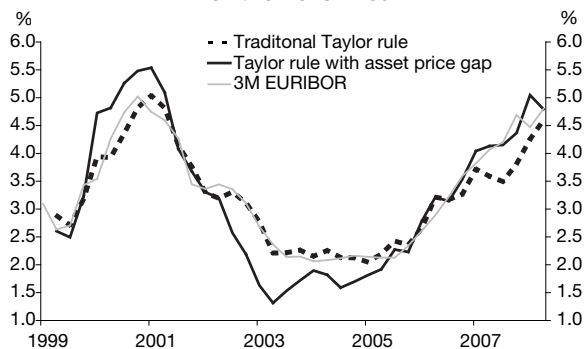
⁸ Stephen G. Cecchetti, Hans Genberg, John Lipsky, Sushil Wadhvani, 2002, op. cit.

Figure 1
Conventional and Modified Taylor Rates
for the USA



Source: DB Global Markets Research.

Figure 2
Conventional and Modified Taylor Rates
for the Euro Area



Source: DB Global Markets Research.

this variable.⁹ In our view, however, there are two problems associated with this approach. First, it focuses on just one asset market, the equity market. But dangerous price bubbles can occur in any asset market. Second, given the normal fluctuation of any valuation measure, it may take considerable time and significant movements in such measures before a price bubble is detected. By then, it may be impossible to prevent economic damage associated with the bubble.

To illustrate these problems we calculated theoretical Fed Funds and Euribor 3-month rates using a traditional Taylor Rule and an alternative rule, where we replaced the gap between actual and target inflation by the average of this gap and the gap between asset prices and their long-term trend. Our asset price variable is the weighted average of equity and house prices, with the weights taken from household balance sheet data. For the USA, we adjusted the constant and the inflation gap coefficient in the Taylor formula such that the average of modified Taylor rates was equal to the average of the original rate and rates did not fall below zero during the observation period. No adjustment was needed for the coefficients in the euro area equation. Figures 1 and 2 show the results.

The modified Taylor rule suggests that monetary policy should have been more restrictive in both the USA and (less so) the euro area in the run-up to the 2000 stock market bubble. However, calculations for the USA, where we have a longer history, suggest that policy rates should have been lower in earlier years. This suggests that orientation towards deviations of asset prices from the trend may well trigger an ap-

propriate “leaning against the wind”, but this could come at a rather late stage of an asset price bubble. The modified Taylor rates confirm the aggressive easing for US monetary policy in the wake of the burst of the stock price bubble in 2000, but they indicate that rates should have been increased again earlier and faster. In the euro area, the modified Taylor rule suggests that rates should have been cut more aggressively in the wake of the dot.com bubble, but that the subsequent increase was appropriate. Taken together the modified Taylor rules tend to broadly support the ECB’s policy during the expansion phase of the asset price cycles we have seen since the 1990s, and the Fed’s policy during the contraction phase. Thus, neither of the two central banks seems to take account of asset price bubbles in a strictly symmetric way (ignoring them entirely or responding symmetrically during the inflation and deflation phase), but the asymmetries in their behaviour seem to be almost opposed to each other.

Nip Bubbles in the Bud

No serious economist would of course advocate that central banks adjust policy in response to current consumer price inflation rates. Given the lags involved, the current inflation rate is the result of past policy decisions and present policy needs to be set with a view to influencing future inflation. Yet, most commentators advising central banks to keep an eye on asset prices seem to have current rather than future asset prices as a variable in the central bank’s reaction function in mind. However, as we have argued above, it may be too late for monetary policy to have a stabilising influence on asset markets when it acts only after a bubble has been identified. As in the case of consumer price inflation, a central bank willing to “lean against the wind” in asset markets needs to form a view on how

⁹ In a more recent paper de Grauwe refined this analysis by using a behavioural macro-model to simulate various degrees of monetary policy response to volatile stock price movements (cf. Paul de Grauwe’s contribution in this Forum).

asset price bubbles develop and react to early warning indicators of emerging asset price bubbles.

As is the case with explaining consumer price inflation, there is no universally accepted model of how asset price bubbles develop. Some academic economists see asset price bubbles driven by rational factors and a few even make the case that asset price bubbles may be welfare enhancing.¹⁰ However, most practitioners in financial markets tend to agree that positive or negative asset price bubbles¹¹ are generally associated with large cyclical swings in the willingness of investors to bear risk (which is reflected in the saying that “markets are driven by fear and greed”). The economic foundations of this view can be found in both post-Keynesian models of economic and financial instability and in behavioural finance.¹² If a central bank accepted this view as a reasonable mainstream description of how asset price bubbles develop it would lean against excessive swings in investors’ attitudes towards risk (their “risk appetite” in the following), most importantly (but not necessarily exclusively) by tilting the “risk free” (i.e. central bank) rate in the opposite direction of investors’ risk appetite. In doing so, the central bank would have a better chance of exerting a stabilising influence on asset markets at an earlier stage than if it reacted only to glaring deviations of asset prices from fundamentally justified values. A “leaning against excessive variations in risk appetite” through interest rate policy would of course have to be supplemented by a regulatory framework and supervisory system that sets and enforces sensible restrictions to risk taking by investors according to their ability to bear risks (without of course stifling productive entrepreneurial and investment risk taking). However, given the scope of the present paper, we have to leave a discussion of this very important issue to another occasion.¹³

How to “Tilt” in Practice

Given the difficulties in assessing excessive swings of risk appetite in asset markets any mechanical reaction of monetary policy to developments in these markets must be avoided. Hence, a targeting approach where the central bank is to react to deviations of ac-

tual from forecast values of certain variables seems inappropriate. More promising is a flexible strategy in which the reaction of the central bank to prospective inflation developments is adjusted in view of developments of risk attitudes in asset markets. The ECB’s two-pillar or the Bank of Japan’s two-perspective strategy would seem to offer a framework for considering asset market developments in a non-mechanical way together with inflation prospects.

The ECB describes its “monetary analysis” – the complement to its more traditional “economic analysis” – as consisting “of a detailed analysis of monetary and credit developments with a view to assessing their implications for future inflation and economic growth.”¹⁴ Thus, “monetary analysis” is supposed to round off the results of “economic analysis” on the outlook of consumer price inflation. Occasionally, economists have pointed to the potential of monetary analysis to bring asset markets into the scope of the ECB’s monetary policy.¹⁵ However, apart from a few references to the connection between credit and asset price developments, the latter have in general played no role in the ECB’s monetary analysis. As it stands, the “monetary analysis” of the ECB seems too narrowly focused on shedding light on the outlook for consumer price inflation to bring asset market developments into the ECB’s design of monetary policy. Perhaps because of this narrow focus and possible redundancies in a monetary analysis in addition to the economic analysis, critics of the ECB’s two-pillar strategy have repeatedly advocated scrapping the monetary pillar and analysing monetary developments within a traditional inflation targeting framework (represented in the ECB’s strategy by the “economic pillar”).¹⁶

While the ECB’s monetary analysis seems too narrowly focused to bring asset market developments under the radar screen of the central bank, the Bank of Japan’s “second perspective” in its two-perspective strategy may suffer from the opposite problem of being too wide. According to the Bank of Japan, the second perspective “... involves examining, over a longer horizon, the various risks that are most relevant to conducting monetary policy aimed at realising sustainable growth under price stability”.¹⁷ Asset market developments could pose a risk to growth and price stability and hence may appear through the second perspec-

¹⁰ Cf., for instance, Jaume Ventura: *Economic Growth with Bubbles*, CREI and Universidad Pompeu Fabra, November 2003.

¹¹ A “negative” asset price bubble can occur when asset prices seriously undershoot fundamentally justified values.

¹² Cf., e.g., Hyman P. Minsky: *Stabilizing an Unstable Economy*, MacGraw Hill 2008, or Robert Shiller: *Irrational Exuberance*, Princeton University Press 2005.

¹³ Suffice to say here that closer attention to risk transfer and management practices by regulators during the US housing boom would have significantly helped to avoid the sub-prime lending debacle.

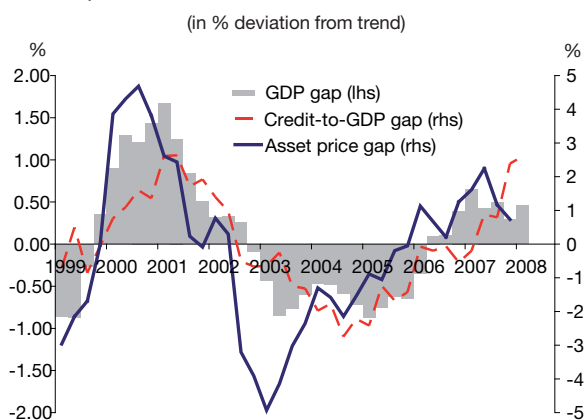
¹⁴ See ECB website.

¹⁵ See, for instance, the article in the ECB’s April 2005 Monthly Bulletin cited above.

¹⁶ See, for instance, “Revisiting the ECB’s Monetary Analysis” in the IMF’s country report 08/263, August 2008.

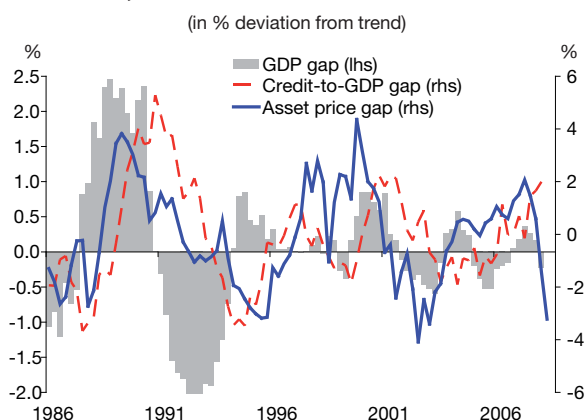
¹⁷ See BoJ website.

Figure 3
GDP, Credit and Asset Prices in the Euro Area



Sources: Haver, DB Global Markets Research.

Figure 4
GDP, Credit and Asset Prices in the UK



Sources: Haver, DB Global Markets Research.

tive on the Bank of Japan's policy radar screen. However, they are just one potential risk among a wide range of conceivable risks to be considered under the Bank of Japan's second perspective, and they may well slip through a net cast so wide.

Towards a Modified Second Pillar

Although the ECB's and the Bank of Japan's two-part monetary policy strategies may at present not be optimal for allowing monetary policy to take account of asset market developments, they offer a flexible framework that could be developed to achieve this purpose. The ECB's monetary analysis, for instance, could be extended to include a comprehensive analysis of risk attitudes among professional and private investors. In addition to credit and monetary aggregates, other variables shedding light on risk attitudes among investors could be monitored and analysed. These variables could include:

- applied credit standards and credit quality
- bond (term), credit, and equity risk premia
- various asset valuation indicators in equity and real estate markets
- various measures of "risk appetite" (more on this below).

Credit variables alone – which are already monitored in the ECB's monetary analysis – in our view do not provide sufficiently clear information on asset price developments (nor, for that matter, on the economic cycle). This point is illustrated in Figures 3-5, which plot deviations of real GDP from trend (a proxy for the output gap) together with deviations of asset prices from trend (as defined for Figures 1-2 above) and deviations of the ratio of credit to GDP from trend.

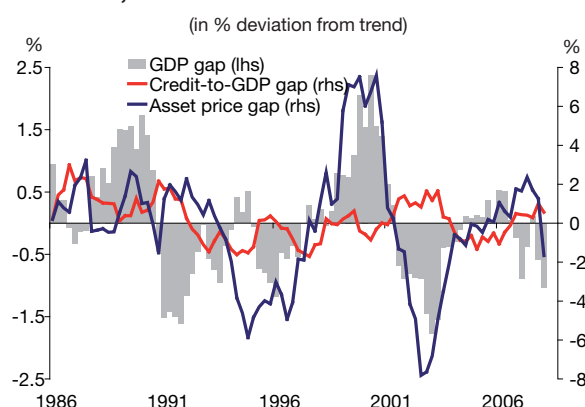
For the euro area, UK and the USA, deviations of asset prices from trend are clearly correlated with (and in some cases precede) deviations of GDP from trend. Against this, deviations of credit from trend tend to lag the economic and asset price cycles (in the case of the euro area and the UK) or are poorly correlated with these cycles (in the case of the USA).

Ideally, measures of variations of investors' attitudes towards risk (or their "risk appetite") should reflect changes in investors' subjective risk attitude relative to an objective measure of risk. An increase in risk appetite would occur when investors are willing to bear more risk, even though risk has not changed when measured objectively. Such behaviour could be observed frequently in financial markets during the first few years of this decade, when investors defended past return expectations by moving into riskier assets as risk free rates declined on the back of very low central bank interest rates. However, while obvious to almost every financial market practitioner, such behaviour is difficult to measure.¹⁸ Hence, in the following we have used unexpected volatility of prices in several financial markets as a proxy for investors' risk appetite. A rise in volatility is expected to induce a decline in risk appetite and vice versa.¹⁹ The measure, which is compiled regularly by the foreign exchange strategists of Deutsche Bank, gives the average standardised volatility (in terms of number of standard

¹⁸ For an attempt to do this nonetheless see Prasanna Gai and Nicholas Vause: Measuring Investors' Risk Appetite, in: International Journal of Central Banking, March 2006.

¹⁹ The idea that periods of low financial volatility induce more risky behaviour by investors eventually resulting in financial excesses and instability was developed comprehensively by Hyman Minsky, op. cit. According to Minsky, economic policy needs to counter and limit excessive changes in risk attitudes of investors to stabilise an inherently unstable economy.

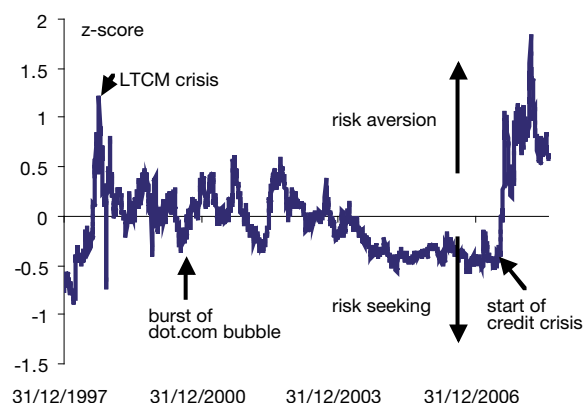
Figure 5
GDP, Credit and Asset Prices in the USA



Note: All gaps are in deviations from their respective H-P trend.

Sources: Haver, DB Global Markets Research.

Figure 6
Deutsche Bank Market Risk Monitor



Sources: Deutsche Bank Global Markets Research, Bloomberg.

deviations from the mean, or z-score) for a five-day window in money, rates, credit, emerging market credit and foreign exchange markets relative to the sample means. We would expect periods of low volatility to induce a rise in risk appetite, and vice versa. Figure 6 shows the daily readings of this measure since the end of 1997.

The chart shows high unexpected volatility – and hence low risk appetite – at the time of the LTCM crisis in the autumn of 1998. Risk appetite (as we measure it here) gradually improved in the following years to reach a local peak towards the middle of 2000, the time of the burst of the equity bubble. It fell – and fluctuated – until the fourth quarter of 2002, and recovered during the following years. Risk appetite reached a local high during the first half of 2007, and then collapsed with the beginning of the financial crisis. Greater attention to these changes in volatility and the associated risk appetite of investors – and other indicators from asset and financial markets – could have somewhat altered the course of monetary policy at least during the run-up of the housing and credit bubble. All things considered, central banks would perhaps not have cut rates to the lows attained in 2003, or they might have raised them faster thereafter. However, our measure of risk appetite can only serve illustrative purposes. More research into the risk taking behaviour of investors and measures of risk appetite is needed before monetary policy can respond to excessive and destabilising variations in risk appetite.

Conclusion

In this paper we argued that central banks ought to take account of asset prices when designing monetary policy to avoid de-stabilising boom-bust cycles in as-

set markets (with damaging knock-on effects on the real economy). However, given the complexity of the issue, any mechanical reaction to excessive asset price swings would be inappropriate. Instead, central banks should take a careful look at changes in investors' attitudes towards risk taking with a view to countering "irrational exuberance" and "irrational depression" in markets for financial and real assets. More so than the analysis of money and credit aggregates, an analysis of risk taking warrants separate consideration in a central bank's monetary strategy. With the appropriate adjustment, we found the two-pillar / perspectives framework of the ECB and the Bank of Japan suited to allow an analysis of risk taking behaviour to enter the monetary policy decisions of the central bank.

Ironically, central banks in recent years have significantly raised their attention to the issue of risk taking by preparing comprehensive financial stability reports. However, they rarely make the connection between this analysis and monetary policy. Thus, in its Financial Stability Report from June 2008 the ECB, for instance, wrote: "... inefficiencies in the allocation of capital or shortcomings in the pricing and management of risk can, if they lay the foundations for vulnerabilities, compromise future financial system stability and therefore economic stability" (p. 9) and concluded that "... the risks to euro area financial system stability on balance had increased compared to the situation six months before ..." (p. 19). In the same month, however, the Governing Council of the ECB pre-announced a rate hike for July, which after its execution was explained as follows: "... a cross-check of the outcome of the economic analysis with that of the monetary analysis clearly confirms the assessment of increasing upside risks to price stability over the medium term, in a con-

text of very vigorous money and credit growth and the absence thus far of significant constraints on bank loan supply. At the same time, the economic fundamentals of the euro area are sound, and incoming macroeconomic data continue to point to moderate ongoing real GDP growth when the high volatility of growth rates in the first half of this year is taken properly into account" (see statement by the ECB President at the July 2008 press conference). The rising risks to euro area finan-

cial stability and its associated risk for economic stability apparently hardly played a role in the July 2008 monetary policy decision. Appropriate attention to changes in risk attitudes would have induced a tighter monetary policy stance in the run-up to the present financial crisis and an easier policy since the burst of the bubble. Offsetting a previously too easy stance with a too tight stance now does not set the course of monetary policy right.

Karel Lannoo*

Rating Agents: Scapegoat or Free-riders?

After the USA, the EU also now intends to subject credit rating agencies to Europe-wide regulation. Notwithstanding his strong stated beliefs in market solutions and self-regulation, European Commissioner McCreevy issued a draft directive for consultation in July 2008, which proposes very detailed and prescriptive regulation of the activities of rating agencies. Although policymakers had no choice than to take the stick from behind the door, the draft raises fundamental questions about the form of regulation, the impact on the industry and the markets. Alternatives should therefore be considered.

Rating agents rapidly emerged as one of the first villains, but also as victims of the financial crisis. Early after the outbreak of the subprime crisis in August 2007, it emerged that credit rating agencies (CRAs) had actively contributed to the real estate bubble by over-rating senior tranches in special purpose vehicles. Moreover, it also appeared that the CRAs faced serious conflict-of-interest problems because they not only rated the products but also advised how to structure them. Doubts had already emerged on the role of CRAs after the South-East Asian crisis in 1998 and successively in the dot-com bubble so that policymakers could no longer stand aside. The general feeling is now that statutory regulation is required. Not only did the European Commission come to that conclusion, but the Financial Stability Forum (FSF) in its report on the market turmoil (April 2008) and the European Parliament in two own initiative reports (Rasmussen and van der Burg, September 2008) also explicitly recommended further regulation.

Rating agencies are special entities, however, and there are only a few that count. The two largest ones, S&P and Moody's are said to control 80% of the global market, in which there is limited competition. Their ratings play a quasi-formal role in financial markets, and are used by many players to determine their portfolio allocation. A downgrade by a rating agency immediately has dramatic consequences for a firm, or even a country. Lehman's fate, for example, was sealed when its credit rating was cut to junk status on Friday 12 September. Ratings are also used by supervisors to determine the risk weight of assets to calculate a bank's regulatory capital requirement, especially under the Basel II rules.

The underlying problem is quite simple: policymakers and market participants need a reliable indication of the creditworthiness of borrowers (and the quality of certain assets). It would be impossible for every investor to make on his own in-depth investigation of the creditworthiness of every potential borrower or any investment vehicle. Rating agencies provide this information and thus provide huge savings in transaction costs. However, not many rating agencies can exist, as transaction savings would disappear if there were too many. In addition, if dozens of rating agencies were active, market participants and policymakers might find many ratings for each borrower and this would also make it difficult for borrowers to provide a clear signal to the market concerning their creditworthiness. Credit rating agencies thus essentially provide a public good. It is thus unavoidable that the sector is not fully competitive.

Policymakers have been aware for some time of the problems posed by the special position of rating agen-

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cies. Until a few months ago, it was assumed that the problem could be solved by the Code of Conduct developed by the International Organisation of Securities Commissions (IOSCO). However, the worsening of the financial turmoil in the first half of 2008 left European policymakers little room for manoeuvre, and in June Commissioner McCreevy formally called for statutory legislation of CRAs. In a speech at CEPS on 3 July, McCreevy said, "The IOSCO Code of Conduct to which the rating agencies signed up has not produced its desired effects. I am not persuaded that the appropriate response lies in strengthening the voluntary framework established by the IOSCO code. International convergence is desirable, but on many issues, Europe must take the lead." The USA has already acted in this sense as rating agents need to have a formal licence from the Securities and Exchange Commission (SEC).

The European Commission draft proposes that rating agents should be given a formal authorisation within the EU, based upon the single market's home country principle. On the basis of an authorisation in one member state, rating agents would be allowed to offer their services throughout the EU, or to establish branches in other EU member states. The draft recommends minimum governance and tight operational requirements, the identification and disclosure of conflicts of interest, rules for Chinese walls between analysts and sales people, and for the related compensation policies.

The European Commission proposal raises fundamental questions, however:

- Confronted with a globally concentrated industry, can the EU act alone?
- Considering the fragmentation of the EU market, how will the regulation be applied?
- Is functional regulation, as proposed by the European Commission, appropriate, or is more objective-based regulation needed?
- What side-effects may statutory regulation of CRAs cause?

Although the SEC also requires rating agencies to be registered, the EU draft proposal goes much further. In effect, the EU is taking the lead in detailed regulation of the sector, on the basis of "manifest failure of self-regulatory efforts", i.e. the IOSCO Code. How the EU regulation will work at international level is not discussed. In the light of the global nature of the industry and the international base of its users, CRAs may choose to terminate their activities in the EU, or to

reduce their presence, whereas European banks and listed firms would continue to call upon their services. In that case the EU rule would have only a limited effect.

On the enforcement of rules within the EU, the Commission proposal exceeds what is possible in the current institutional setting. The Commission proposes a key role for the CESR (Committee of European Securities Regulators) in the authorisation procedure, or the creation of a new Community Agency. In the former case, the Commission is asking a mere advisory Committee to decide on the designation of a home member state supervisory authority. This should ensure that the rating agent has its formal authorisation in the state in which it has its most important activities. In addition, it is proposed that the CESR should have a coordination role in ensuring proper supervision across the EU. The McCreevy proposal stretches the mandate of the CESR and risks that member states may simply ignore its decisions. On the other hand, creating a Community Agency for the supervision of CRAs seems excessive. This could be better addressed in the context of a broader re-design of the EU institutional setting of financial supervision in response to the financial crisis.

CRAs could be better regulated under the same umbrella as investment firms or analysts. Objective-based regulation, which sets principles to which such firms should adhere, would more easily allow newcomers into the sector, which could be spin-offs from broker-dealers, for example. Such regulation already exists at EU level in the Markets in Financial Instruments Directive (MiFID), which regulates broker-dealers, investment advisors and exchanges. It contains detailed rules on governance and operational requirements, and on the disclosure of conflicts of interest, which could, *ceteris paribus*, be applied to rating agents as well.

Functional regulation for a sector which is as specific as rating agents could lead to undesirable side-effects. It has been argued that it further strengthens the quasi-statutory role of these bodies, which may reduce their alertness. It reinforces the barriers to entry, whereas the opposite should be done. And it could give rise to more litigation. CRAs already face the problem that their ratings have a quasi-formal character. A licence would only further strengthen this, eventually leading to more litigation.

Statutory regulation of the sector can be supported, but its design should be carefully reflected upon. It should be internationally coordinated as much as possible, lighter in touch than what is being discussed at the moment, and more objective-based.