Introductory Statement at the ECB Workshop on

"Asset Prices and Monetary Policy"
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Dear colleagues,

Let me welcome you to the ECB Workshop on Asset Prices and Monetary Policy. The subject of this workshop is both a booming area in academic research and of utmost policy relevance for central bankers. Thus it is no coincidence that several of the main contributors on this subject have both an academic and a central banking background and we are very pleased to host some of the major contributors to this literature here at the European Central Bank.

As I will argue in a second, we have in the last years learned a lot about the effects of asset price cycles on the economy and on the optimal policy reactions associated with such cycles. But many open questions remain. Most of them relate to the consequences of recent research results for actual monetary policy strategy and implementation. That is also why I think that fostering the dialogue between academic and central bank economists on this issue is the most promising road to follow. While glancing through the high-quality papers submitted to this workshop, I feel confident that it will help us to answer some of these open questions in the future.

In organising this workshop we attempted to cover a wide range of experiences with financial crises and asset price boom and bust episodes of all kinds, in order to draw robust lessons for monetary policy. This is why we are particularly

pleased to welcome central bankers and academics from four different continents. Charles Kindleberger in his famous book "Manias, Panics and Crashes"[1] discusses the possibility that some nations are more prone to trigger speculative bubbles than others due to their different temperaments. If this were true, perhaps we should have concentrated on experiences from a few selected countries. For example, Kindleberger cites sources mentioning that the Brabanters had a strong gambling temperament in the sixteenth century, which migrated with them to the Dutch Republic and in the 17th century culminated in the famous tulip bubble. I never thought nationality to be a variable to be seriously considered (and neither does Kindleberger), until I read the Financial Times last Friday.[2] The article was titled "Tulipmania 2: Bloom to Bust" and reported about highly speculative investments in the Netherlands where investors seemingly ploughed 85 million Euro into an investment fund promising a return of 30% based on cultivating new varieties of tulips. Unnecessary to mention that the fund is reported to be in trouble. It appears that gambling or love for tulip blooms or both could actually be hereditary. Please let me know in case some of you find that adding a genetic variable to your analysis solves remaining puzzles.

On a more serious note, let me now turn to a brief and selective exposition of topics relevant to this workshop, in which I think recent research has contributed a lot to our understanding of the role monetary policy should play. I will also try to substantiate my initial claim that the lessons a policy maker should draw are perhaps not surprisingly still uncomfortably ambiguous.

One of the most debated issues in this field has been the question whether there exists a rationale for a price stability oriented central bank to react to asset prices

[1] Ch. P. Kindleberger (1978): „Manias, Panics and Crashes: A History of Financial Crises", John Wiley: New York, Chapter 3.
[2] Bickerton, Ian: „Tulipmania II: Bloom to Bust", Financial Times, December 5, 2003.

over and above the asset price's usefulness to predict inflation. Typically this debate in the literature is cast in an inflation targeting framework, in which the inflation forecast is a rather short term, fixed horizon forecast.

For quite some time the traditional central banker's answer to the question was a clear "no". Asset prices are endogenous variables reacting to all kinds of shocks and monetary policy should react to these shocks and not to asset prices themselves. Asset prices would only have a role in so far as they would help predict inflation and output over the relevant forecast horizon of typically 1 or 2 years. Directly reacting to asset prices entails a long list of pitfalls, which I do not want to repeat here. Let me just mention that the list ranges from creating excessive interest rate volatility to problems of equilibrium indeterminacy.

Furthermore it has been argued most prominently by Anna Schwartz that price stability will be good for financial stability in general and asset price stability in particular. Price stability helps reducing misperceptions about future return possibilities and reduces the problem of asymmetric information between lenders and borrowers. I believe only few economists would disagree with this general notion and most would agree that price stability and financial stability tend to mutually reinforce each other in the long run.

However, recent research describes circumstances, in which the theoretically optimal monetary policy decision allows for a deviation of inflation from its objective value in the short-run in order to maximise welfare and maintain price stability in the medium to long-run.

The theoretical framework to derive such results can be classified in different categories. The first one is the new generation of micro-founded dynamic general equilibrium models. The second category encompasses typically more

ad-hoc models introducing non-linear effects of asset price boom-bust episodes. Let me briefly consider each of these approaches in turn.

If some financial frictions in general equilibrium models - including nominal rigidities and imperfect competition - allow asset prices to affect investment, a typical result is that a trade-off between asset price and consumer price stability can be derived. For example, a positive non-fundamental equity price shock or a positive shock to the net worth of firms (reducing a firm's borrowing premium) will lead to a situation where the optimal central bank policy is to raise interest rates in order to contain fundamentally unjustified (over-) investment. But higher interest rates will simultaneously lead to lower consumption and an undershooting of the inflation objective on the optimal adjustment path. These trade-offs qualitatively resemble a traditional cost-push shock dilemma in the simple New-Keynesian framework, where the central bank trades off inflation against output variability. Introducing an explicit trade-off between different distortions in these models has significantly increased our understanding of the possible effects of various types of shocks. This is even more valuable as these frameworks have the nice feature of being more or less immune to the Lucas critique.

But despite this progress in analysing such trade-offs, the task of a policy maker has not become much easier. Several simulation exercises with these kinds of (linearised) models have shown that a simple traditional - Taylor type - monetary policy reaction function with a strong weight on inflation, *but* which does not explicitly react to asset prices, can perform as well as the highly complex commitment solution, where asset prices are explicitly considered. Furthermore, a simple Taylor rule has also been reported to perform better than an asset price augmented Taylor rule (although the robustness of the latter result is still contested). Thus more research seems necessary to demonstrate the

benefit of a more activist, asset price oriented monetary policy and how large this benefit is likely to be. This is important as the hazards of a more activist policy are very well known.

Furthermore, real life problems of identifying the underlying source of an asset price shock and the difficulty of committing a central bank to a more complex policy rule could further undermine the scope for actually implementing the lessons from this branch of the literature.

Another reason for caution is that the transmission mechanism from asset prices to the real economy tends to be much more complicated and difficult to predict than typically assumed in these models. Let me just mention that even if the trade-off between over-investment and inflation is theoretically sound, one can still have doubts whether the central bank should really be the institution to deal with both distortions simultaneously. An efficient allocation of instruments to goals in the interest of accountability might suggest a role for other policy institutions than central banks. Finally, I also welcome very much the contributions dealing explicitly with uncertainty in these frameworks. My notion is that this could further shift arguments towards sticking to a “conservative” central banker.

Let me now turn to the second category of approaches deriving optimal deviations from the inflation objective in the short run. These approaches introduce non-linear risks to asset price boom and bust cycles, in the sense that the detrimental effects on the real economy in case of a bust are significantly larger than the positive effects as long as the boom continues. This allows deriving a kind of optimal insurance policy result. The optimal policy for a price stability oriented central bank is intuitively to lean against the growing asset price bubble by raising interest rates pre-emptively in order to contain the

bubble and so reduce the costs when it bursts. This again possibly generates inflation rates below the objective in the short run. Reducing the variance of inflation in these models is the best policy to maintain price stability over the medium to long run.

Recent results of this kind, though, show how complex the recommended, optimal policy response turns out to be. Whether it is indeed optimal to lean against a building asset price bubble depends in a non-linear way on a number of parameters, like the degree of investor optimism, the question whether real imbalances are triggered by the bubble and the interest sensitivity of demand. Bordo and Jeanne (2002), for example, show that if the degree of (irrational) investors' optimism is too high, the necessary interest rate hike to have any effect on the bubble would be too detrimental for the rest of the economy and should thus better be avoided.[3] And this is only one example. Thus despite the fact that situations of short-term conflict have been constructed convincingly, no simple policy recommendation of how - or whether - to react to a rising asset price bubble emerges at this stage. Further clarifications of the exact conditions for a pro-active leaning against the wind policy are required and indeed this issue is further discussed in this workshop. Steve Cecchetti's paper adds an interesting twist to this discussion by suggesting the possibility that the Federal Reserve was not – as often claimed –opposed to leaning against the new economy bubble of the late 90s.[4] In Cecchetti's interpretation the Federal Reserve thought it did all that was possible without threatening the real economy too much.

There is still a further branch of the literature on optimal central bank policy with regard to asset price cycles, which I would like to stress as being both interesting and policy relevant. This branch deals with the incentive effects

[3] Bordo, M. and O. Jeanne (2002). Boom-Busts in Asset Prices, Economic Instability, and Monetary Policy. NBER Working Paper 8966. National Bureau of Economic Research, Cambridge, Mass.

[4] Cecchetti, S. (2003). What the FOMC Says and Does When the Stock Market Booms. Presented at the ECB Workshop on Asset Prices and Monetary Policy, 11-12 December 2003.

triggered by expected central bank policy after a possible asset price bust. It thus focuses on the crash management policy of a central bank. The link to private sector incentives is a typical example of a moral hazard problem affecting risk-taking behaviour. It has been shown that asymmetric reaction functions of the central bank – increasing liquidity after the bust, but not withdrawing it during the boom – can be responsible for creating asset price bubbles in the first place. Surprisingly few researchers deal with this important issue; Charles Bean is a noteworthy exception.[5] Also in this field the direct policy conclusions are ambiguous. It has been argued that a restrictive liquidity management allowing for some financial instability - possibly correlated with higher inflation variability in the short run - will contain moral hazard problems and thus best contribute to price stability in the long run. It has also been argued that to reduce over-investment and thus the necessity of large post-boom liquidity injections, the central bank should give more weight to the inflation objective in its loss function. By showing how conservative it is, the central bank manages to reduce private sector over-investment during the boom. However, more work is clearly needed to fully explore the implications of moral hazard with regard to the recent developments in the literature.

An issue, which I also consider worthy of further clarification is whether the large uncertainty associated with any attempt to derive the fundamental value of a financial asset is a serious argument against a more pre-emptive monetary policy. So far this has always been a major argument to discredit any role of central banks with regard to asset price bubbles. But recently some doubts have emerged whether this scepticism is really valid. First of all, some studies have shown that being faced with a signal extraction problem of not knowing the underlying shock driving the asset price might reduce the weight put on asset prices in the central bank's reaction function. But this will not necessarily

[5] Bean, C. (2003). Asset Prices, Financial Imbalances and Monetary Policy: Are Inflation Targets Enough?. BIS Working Paper 140. Basle: BIS.

overturn the general trust and direction of the intervention. Second, some very simple indicators of bubbles – based for example on P/E ratios or recursive detrending methods – exist. And they are applicable in real time – not only ex-post. Third, other concepts on which we base monetary policy, like the output gap, are also difficult to measure. We just try to cope with the problems instead of ignoring the variable, although admittedly the degree of uncertainty is likely to be higher for estimating asset price misalignments. Fourth, it has been shown that in some cases the important variable to trigger a central bank reaction should not be the degree of over- or undervaluation, but the probability of a sudden price reversal. The latter is also difficult to estimate but at times a sufficiently sophisticated risk analysis could deliver valuable input for policy decisions. And last but not least, our own experience with the recent undervaluation of the euro (I assume some people still remember?) and the experience with the new economy share price bubbles suggest to me that cases of significant misalignments can be detected by central banks with a sufficient degree of certainty. This does of course not imply that the equilibrium valuation itself or the timing of the price correction can be predicted at all. But the latter is not necessary in order to justify a policy of leaning against the wind, if, and that is still a big if, such a policy would be desirable.

To summarise my current tentative view, I think it is fair to say that the possible short-term conflict between achieving the inflation objective and financial stability, which I briefly discussed before, vanishes as long as the definition of price stability covers a sufficiently long horizon. The issue of whether asset prices deserve attention beyond their effects for the inflation forecast then disappears. A sufficiently forward looking central bank, - an attribute, which to nobody's surprise I would associate with a central bank attempting to maintain price stability over the medium term - will naturally conduct a comprehensive analysis of all potential consequences of asset price boom and bust cycles. This

might require a longer horizon than usually applied to a regular one or two year horizon inflation forecast. Nevertheless, the fact that the conflict between price stability and financial stability disappears when using an appropriate horizon in the definition of price stability does not reduce much the challenges for policy making discussed before.

A lot of questions remain to be addressed. What is the transmission mechanism of asset prices to the real economy and their information content for future inflation and output? How large are the risks for extreme outcomes following significant asset price corrections? What are the channels for possible systemic contagion effects of asset price busts? What is the role of banks in the asset price transmission mechanism? How do money and credit behave over an asset price cycle? Against this background how should central banks act and communicate with regard to asset price developments? With regard to these questions I foresee some intense debates in these two days.

I grant that nobody has yet found a definite answer to how central banks should best deal with asset prices. This issue will not go away but will become even more important over time as our societies continue to accumulate wealth. It is my conviction that central banks cannot escape easily from this challenge and this workshop shows that academics and central bankers are increasingly prepared to think hard about it.