Share prices, house prices and monetary policy

A. Bruggeman
M. Hradisky
V. Périlleux

Introduction

The recent developments in share prices and house prices re-ignited a debate on the place of asset prices in the conduct of monetary policy. Although the central banks do not set any target for these prices, they are not totally indifferent to their fluctuations, since they present risks to financial stability and to the stability of the general price level. The degree to which these movements should be taken into account is still under debate.

The first part of this article sets out the points under discussion, exploring the links between asset prices, macroeconomic developments and monetary policy. In particular, it highlights the possibility of steep increases in asset prices in an environment where the general level of consumer prices is stable, the risk of sudden corrections, and the difficulties facing monetary policymakers in defining an appropriate response.

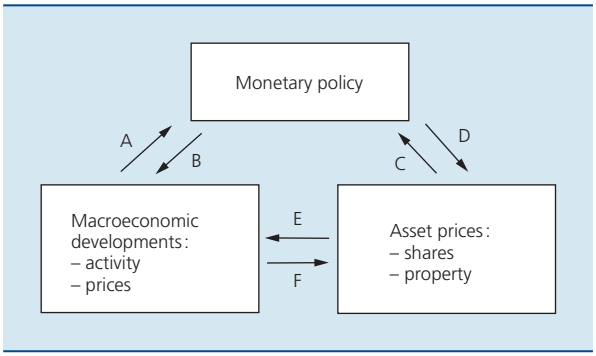
One of these difficulties lies in identifying an excessive increase in asset prices, or a speculative "bubble". It is illustrated in the second and third parts which assess the recent developments in share prices and property prices respectively. Are these developments likely to worry the monetary authorities, especially in the euro area? Where shares are concerned, the analysis will also consider the United States, in view of the strong correlation between stock market indices on either side of the Atlantic, the fact that euro area residents probably hold a fairly substantial proportion of their assets in the form of American shares, and the advantage that longer series are available for the United States. In the case of property, the analysis will confine itself to house prices in the euro area and will pay particular attention to a few countries recording pronounced movements, and to Belgium.

In conclusion, the last part will explain how the monetary policy strategy of the Eurosystem takes account of asset price developments.

1. Asset prices, macroeconomic developments and monetary policy

The main goal of the monetary policy of the Eurosystem – and of most central banks at present – is to maintain price stability. That means the stability of the general level of prices of goods and services – measured by the HICP in the euro area – disregarding asset prices. If monetary policy stimulates activity at the expense of price stability, that stimulation is short-lived and is actually counter-productive in the medium term. Nonetheless, monetary policy contributes towards the stabilisation of growth, since it responds to the economic outlook insofar as the business cycle influences the setting of wages and prices. The monetary policymakers therefore respond to the various shocks affecting the economy (arrow A in the diagram) and their decisions influence activity and prices, after long and variable lags, via various channels (arrow B). A widely debated question in recent years has been to what extent a specific reaction to asset price movements is desirable or necessary (arrow C). The answer to this complex question depends on several other questions:

DIAGRAM : ASSET PRICES, MACROECONOMIC DEVELOPMENTS AND MONETARY POLICY



– Do asset prices reflect macroeconomic developments (arrow F), in which case they can at the very least serve as informative variables?
– Is it possible that asset prices are subject to their own dynamics, or even financial "bubbles"?
– To what extent do the monetary authorities have control over movements in asset prices – and therefore carry responsibility for them (arrow D)?
– Finally, what is the effect of asset price fluctuations on macroeconomic developments (arrow E)?

The first three questions concern the determinants of asset price fluctuations, whereas the fourth concerns their implications. After exploring these causes and effects we shall be able to address the question of the appropriate response by monetary policy.

1.1 Causes of asset price fluctuations

Since the specific characteristic of assets is their durability, their prices correspond to the discounted value of income or service flows expected in the future, and therefore depend on the subjective expectations of the economic agents. The subjective element, inseparable from any assessment of future prospects, may be based on an examination of the long-term fundamental determinants, but it may also leave scope for excess optimism or pessimism and overheating, known as "bubbles" because of the way prices are first inflated before "bursting". These excessive movements are sustained by market players whose price expectations are extrapolative, and who hope to make a speedy profit. However, it is extremely difficult, especially in real time, to distinguish between the development of a bubble and a "justified" price rise.

Thus, in the case of **shares**, the factors determining prices are the expected movement in dividends, the return obtained on a risk-free asset, and the assessment of the risk entailed in holding shares, according to the Gordon and Shapiro (1956) formula:

$$P_0 = \sum_{t=1}^{\infty} \frac{D_t^e}{(1 + r + \sigma)^t} \quad (1)$$

where: P_0 is the current share price; D_t^e corresponds to the dividend expected for time t; r equals the nominal return on a risk-free asset, which is assumed to be constant; σ is the risk premium, which is assumed to be constant.

Assuming that the expected dividend growth rate g is constant, this gives us:

$$P_0 = \sum_{t=1}^{\infty} \frac{D_0(1 + g)^t}{(1 + r + \sigma)^t} = \frac{D_0(1 + g)}{r + \sigma - g} \quad (2)$$

in which D_0 represents the last dividend paid.

However, the expected dividend growth rate g and the risk premium σ are subjective elements and cannot be observed directly. The rate of return on "risk-free" assets r can be observed on the government bond market, although excess optimism or pessimism may also occur here, leading to some volatility in r.

Clearly, share prices are influenced by the economic outlook, which they may also help to shape, as we shall see. They therefore contain useful information in that respect, but its reliability is far from certain: the American economist Samuelson once remarked that "Wall Street indices predicted nine out of the last five recessions". Since the level of economic activity, i.e. the degree of pressure on the productive capacities of the economy in the broad sense, influences price movements, stock market indices may also provide useful information for assessing inflation risks. However, they generally have a negative correlation with inflationary expectations. In principle, shares – which are property rights on real assets – should immunise their holders against inflation, which is considered to influence g and r in the same way. However, inflation, especially if it is caused by supply shocks (higher costs), and the disinflation which is expected to follow are generally harmful to corporate profitability.

As in other areas, the influence of monetary policy over share prices depends very much on the credibility of the central bank. Thus, a monetary policy easing in the form of a cut in short-term interest rates will generally tend to bolster share prices: in the first place, it will stimulate economic activity for a while, exerting a positive effect on expected dividend growth; secondly, it may pull long-term

interest rates down as well, reducing the opportunity cost of holding shares and therefore the rate of discounting future dividends; thirdly, it lowers the cost of financing short-term equity investments. Conversely, however, an easing which is interpreted as inflationary will push up long-term interest rates and drive down share prices.

The credibility generally enjoyed by central banks today has prompted observers to reconsider the link between monetary and financial stability. While it is still generally admitted that monetary instability may cause financial instability (since inflation leads to an inefficient allocation of resources, and disinflation – or even deflation – increases the real weight of the debt and may cause a contraction of activity and financial tension), monetary stability still does not preclude marked increases in asset prices followed by sudden falls and financial difficulties. Borio and Lowe (2002) see various reasons for this:

- favourable supply side developments (increased productivity) may simultaneously exert downward pressure on product prices and upward pressure on asset prices, or even trigger a boom (as in the case of the "new economy");
- the central bank's credibility anchors price expectations and makes them more rigid, moderating at least for a time the inflationary pressure which is normally generated by excessive expansion of demand;
- the very success of monetary policy may create excess optimism;
- by eliminating the need to tighten monetary policy, such conditions allow the imbalances to continue accumulating.

In the case of **property**, the factors which operate are similar to those determining share prices. Thus, the price of a house may be viewed as representing the discounted value of future rents. Like share prices, property prices are influenced by the rate of economic growth, owing to its effect on households' disposable income, and by long-term interest rates. However, the housing market differs from the stock market in that it relates to assets which provide services to households, and is less liquid. Apart from households' disposable income and interest rates, many variables determine prices, such as demographic developments, the availability of credit, taxes and subsidies, and supply factors (town and country planning, building costs, etc.)[1].

Monetary policy influences house prices via its impact on economic growth, and hence on households' income, and by its effect on mortgage interest rates, which is more direct if those rates are variable. In contrast to what happens with shares, inflation generally pushes up house prices, since property is seen as a safe haven protecting against monetary erosion. The probability that an easing of monetary policy may cause a price increase is therefore higher than in the case of shares. On the other hand, the stability of the general price level does not prevent the occurrence of steep increases in property prices. Indeed, it is relatively common for such price increases to follow a rise in share prices.

1.2 Influence of asset price fluctuations on macroeconomic developments

An asset price increase may stimulate aggregate demand for goods and services via three main channels: it increases demand for new assets ("Tobin's q"); it exerts wealth effects on consumption; it facilitates credit ("financial accelerator").

First, the increase in the price of existing assets boosts demand for new assets: fixed capital formation by companies and housing construction. In the case of shares, Tobin (1969) formulated a theory which states that net corporate investment depends on the market value of the capital compared to its replacement cost[2]:

$$q = \frac{\text{stock market value of the existing capital}}{\text{replacement cost of the existing capital}}$$

The acquisition of an additional unit of capital is profitable so long as its marginal productivity (stock market value, which is equivalent to the discounted value of future dividends) exceeds its marginal cost (replacement cost). Thus, a firm with a q ratio higher than 1 will issue shares to finance its new investments until that ratio is equal to unity. The explanatory power of Tobin's theory remains subject to debate. The theory is perhaps more relevant in economies where it is more common practice to finance companies by issuing quoted shares (United States).

In the case of property, rising prices on the second-hand market generate demand for new housing: an increase in prices in relation to replacement costs (increase in "q") will make it more attractive to build new houses. The increased investment in new housing will exert a positive impact on aggregate demand and stimulate growth.

(1) See ECB (2003) and Baugnet, Cornille and Druant (2003).

(2) In its basic form, Tobin's model contains only one private sector and two assets: the money issued by the government to finance its deficits, and tangible capital. In that context, monetary policy is non-existent as the money supply is equal to the public debt. Finally, in this simplified world, the q ratio could to some extent be interpreted as the ratio between the firm's stock market value and its net accounting value (liabilities minus assets payable).

Secondly, the rise in the value of their assets encourages households to step up their consumption. Current consumption is not only a function of current income but is also influenced by future income[1]. The latter depends on households' overall wealth, which therefore also influences their consumption behaviour[2].

The effect on consumption of an increase in share prices depends partly on the holding of quoted shares by households – a practice which is more widespread in the United States than in Europe – and on whether the increase is seen as permanent.

Households generally hold the major part of their wealth in the form of property. The ultimate effect of a rise in house prices on their consumption will depend on the underlying factor. In contrast to other assets, houses have a use value and provide a service for households. If the price increase is due to an upward valuation of that service – e.g. because of demographic pressure or an increase in rents (and imputed rents) – it will make households richer, but will also increase the cost of consuming the services provided by the housing. Potential buyers and tenants therefore have to save more, hence a decline in their current consumption. For the owners, it is generally considered that the positive wealth effect entailing an increase in consumption, outweighs the negative income effect (of higher imputed rents). However, even if the net wealth effect is zero for the economy as a whole, the redistribution of income resulting from the rise in property prices could influence aggregate demand if the consumption profile of the losers differs from that of the winners. On the other hand, if the rise in house prices is due to a fall in interest rates which persists for some time and is not corresponding to slower growth expectations, a positive net wealth effect becomes more likely. Consumption will actually tend to rise, since the gains made by the owners are not negated by the losses incurred by the potential buyers. It is therefore essential to identify the origin of the economic shock underlying property price fluctuations in order to make an adequate assessment of their impact on aggregate demand.

(1) Modigliani's life cycle theory links consumption to income calculated over a consumer's entire life. Since that income varies during life, households will smooth their consumption by saving while at work and dissaving after retirement. Friedman's permanent income hypothesis considers that income is subject to random and temporary variations. Friedman breaks down consumers' income into two elements: permanent income and transitory income. Consumers expect to maintain the first (a kind of average income) whereas the second is seen as temporary (as a deviation from the average).

(2) See Eugène, Jeanfils and Robert (2003) for an analysis of the Belgian situation.

Finally, the rise in asset prices may exert a positive effect on demand via the credit channel. On the credit market, information is in fact asymmetric. In view of the existence of moral hazard and adverse selection, banks demand guarantees to protect themselves against the risk that the borrower will not repay the loan granted. The rise in asset prices affects those guarantees, attenuates the problem of asymmetric information and therefore makes it easier to arrange credit.

Thus, the value of the guarantees that a company can offer increases as share prices rise, reducing the importance of the adverse selection problem. At the same time, a rise in the company's market value also makes the moral hazard problem less acute – the owners have less incentive to embark on riskier projects since their potential losses, which are confined to the value of the shares which they own in the company, are also higher. The rise in share prices will therefore encourage financial institutions to grant credit more readily and thus finance additional investment.

A rise in house prices has a similar effect. It increases the value of the guarantees that individuals are able to provide for lenders, making access to credit easier. The expansion of credit may in turn fuel further price rises on the housing market or bolster consumption. The scale of the impact on consumption will depend on the ease of obtaining liquidity following the upward valuation of property ("house equity withdrawal"), which in turn depends on the structural characteristics of the mortgage market (transaction costs, loan-to-value ratio, degree of competition). For the banks, a rise in prices on the housing market reduces the risk of default on the part of borrowers. Since they incur lower losses on non-repaid loans, the banks are able to extend more credit without any change in their capital, which may also encourage investment.

The stimulation of aggregate demand by an increase in asset prices may exert inflationary pressure. As already mentioned, however, this can be contained and the danger may lie more in possible deflation once a financial bubble bursts. In particular, a sudden asset depreciation triggers the financial accelerator effect: a decline in asset prices makes the banks far more cautious in their lending. The contraction of credit and activity may be even sharper in the case of a financial crisis characterised by the failure of major institutions.

1.3 How should asset prices be taken into account in the conduct of monetary policy?

Should monetary policy react to sharp fluctuations in asset prices? It seems obvious that the monetary authorities have to take account of the informative value of such fluctuations in the pursuit of their macroeconomic objectives. Thus, at the very least they must respond to a rise in asset prices to the extent that the rise is an advance indicator of the business cycle and of future inflationary pressure – a yardstick which is difficult to define! – and react to a crash in proportion to its impact on activity and prices.

Is it necessary to make a specific response to an increase in asset prices extending beyond its inherent inflation risk? That question is more controversial. In fact, if the risk lies not in inflation but in the accumulation of financial imbalances which could lead to a financial crisis, or even subsequent deflation, then in the short term there could be a conflict between the price stability and growth stabilisation objectives and the aim of financial stability.

In practice, the central banks are alert in varying degrees to the medium- and long-term risks resulting from the accumulation of financial imbalances. In order to weigh up the pros and cons of preventive action in a period of rising asset prices without inflationary pressure, one might start with the optimal conditions for such action and see that, in many cases, a strong dose of judgment is needed on account of the uncertainty.

The first point to check is whether the rise in asset prices is "excessive"; that is no easy task as it is normal for such prices, which incorporate future income prospects, to fluctuate considerably. The nature of the shocks driving up these prices is important: a permanent rise in productivity calls for less response than speculative euphoria (a "bubble"). Supporters of market efficiency reject the idea of a "bubble" and consider that the central bank does not have better information for estimating an "equilibrium value" than the many market operators. The central bank therefore should not concern itself with the setting of these particular prices, but only with the general (consumer) price level. Others, however, take the view that a combination of indicators sometimes permits a fairly certain diagnosis of an excessive increase, and – above all – points to the risk of a financial crisis. If asset prices display a significant and growing deviation from their trend, and there is a simultaneous strong expansion of credit, that would be a fairly reliable indicator here.

When a bubble is forming, it is still necessary to predict how it will develop: will it burst before long, in which case a tightening of monetary policy would be contra-indicated, or is it liable to get larger before bursting?

The costs entailed when the bubble bursts are another reason to act. An abrupt downturn in asset prices is generally followed by a significant slackening of growth (often accompanied by a bank crisis). In this connection, the analysis by Detken and Smets (2004) shows that property market bubbles, which quite often follow stock market bubbles, appear to be the most damaging.

Will action by the central bank be effective? The bubble could be encouraged by a too accommodating monetary policy, causing credit expansion and a rise in asset prices even before inflationary pressure becomes apparent. In that case, a tightening of monetary policy may stop that source of increases. Nonetheless, the impact of a tightening is uncertain and depends on psychological factors. Sometimes, large interest rate hikes would be needed to stop the bubble, in others the tightening may cause a slump in asset prices. The scale of the monetary policy tightening required determines the cost of the action in terms of the short-term restraint on activity or a level of inflation which is below the target.

Finally, one important argument in favour of some response to rising asset prices is that it restores symmetry. The economic agents expect the central bank to compensate for the effects of an asset price fall, therefore attenuating it. This perceived safety net creates a moral hazard problem, which may encourage the formation of bubbles. If the central bank responds symmetrically to excessive variations in asset prices, it limits the risk of having to intervene when the correction takes place and thus of encouraging the creation of new imbalances.

The conduct of monetary policy can therefore be seen as a form of risk management, over a longer or shorter period. Naturally, the ideal conditions for action aimed at preventing the formation or amplification of a financial bubble when hardly any inflationary pressure is present are never fulfilled. It is therefore seldom that decisive action is taken for this purpose alone, given its immediate cost and its uncertain benefits. On the other hand, the monetary authorities generally take account of asset price movements to a limited extent in their deliberations, and may intervene verbally.

2. Share prices in the United States and in the euro area

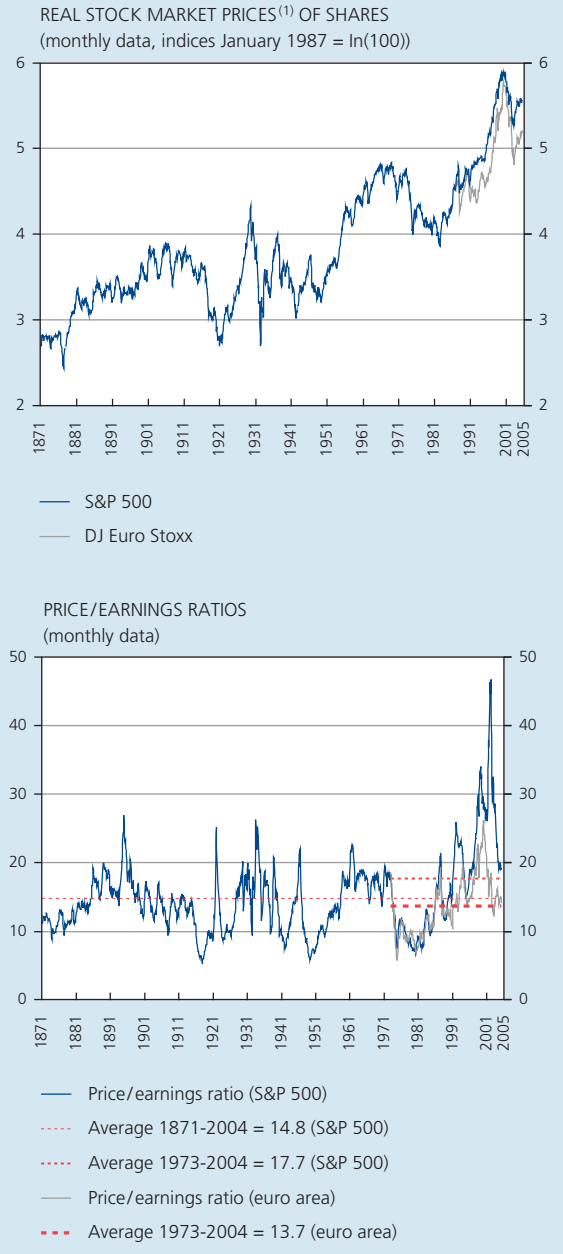
In the past twenty years, share prices have fluctuated widely, both in the United States and in the euro area. These movements were fairly similar owing to the increased financial market integration.

Following a sharp fall in late 1987 (1), share prices gradually made good their losses so that, by the end of 1989, they had returned to the levels prevailing before the "Black Monday" crash. In the early 1990s, the slowdown in economic activity once again caused share prices to fall; though the fall was less sudden, it was more protracted, especially in the euro area. While share prices subsequently regained momentum, the increases achieved between February 1991 and December 1994 were modest overall, while exhibiting greater volatility on the Old Continent, with annual growth averaging, in real terms, 3.2 p.c. in the United States and 3.9 p.c. in the euro area. From the mid 1990s, there was a fundamental change in the underlying trend and – apart from a weakening caused by the problems with LTCM (2) against the background of the financial crisis in Russia during the second half of 1998 – this marked the start of one of the longest expansion periods ever seen on the stock markets. Between December 1994 and August 2000, the S&P 500 index recorded sustained growth during which share prices almost tripled in real terms, representing an annual increase of almost 20 p.c. over a period of just under six years. In the euro area, prices began their climb from a lower level and slightly later, in March 1995, while they peaked slightly earlier in March 2000, so that the DJ Euro Stoxx index increased by almost 28 p.c. per annum over those five years. The exuberance was gradually dampened by profits warnings, initially originating mainly from companies in the information and communication technology sector, in anticipation of a downturn in economic activity. As so often happens, this was followed by a sudden collapse in prices which some refer to as the bursting of the financial bubble. At the beginning of 2003, share prices on both sides of the Atlantic had reverted in real terms to the levels prevailing at the end of 1996. Nonetheless, after bottoming out in the first quarter of 2003, prices once again began rising rapidly until early 2004, recording growth rates of around 35 p.c. per annum on both sides of the Atlantic.

(1) On 19 October 1987, known as "Black Monday", the S&P 500 index lost just over 20 p.c. of its value, the biggest fall ever recorded in a single trading day.

(2) LTCM (Long-Term Capital Management) was regarded as one of the most important "hedge funds" in the United States. The problems arose because of a gamble that went wrong. Noticing an "abnormally" large spread between the prices of US Treasury bonds and corporate bonds, the fund took massive bear positions on this spread. However, the collapse of the financial system in Russia in August 1998 drove the spread in the opposite direction.

CHART 1 SHARE PRICES IN THE UNITED STATES AND IN THE EURO AREA



Sources: Shiller (2000), Bisciari, Durré and Nyssens (2003), Datastream.
(1) Data deflated by the consumer price index.

However, following this rebound prices stabilised in the United States, whereas between February 2004 and June 2005 they increased at a moderate annual rate of around 7 p.c. in the euro area. The Federal Reserve's progressive withdrawal of the monetary stimulus in the United States and the still wavering economy in the euro area probably contributed to this slowing of the rate of increase in share prices.

Did the steep rise in share prices during the second half of the 1990s represent the formation of a financial bubble? If so, has the bubble collapsed altogether or are shares still overvalued today? There is no unequivocal answer to those questions, as is evident from the analysis of the movement in the prices themselves, the prices in relation to other variables (financial ratios) and the combination of prices and credit aggregates.

Not all sustained price increases necessarily constitute a bubble, defined as a rise based on the expectation of even higher prices tomorrow, whereas the fundamental variables do not seem to justify such increases. As already stated, bubbles are difficult to identify, either ex ante or even ex post. It often happens that favourable developments in the fundamental factors – such as productivity gains, especially if they are regarded as permanent, or interest rates which are expected to remain persistently lower – lead to excessive optimism among market players, generating euphoria on the stock markets. The question then is to what extent rational and irrational factors are both involved. Ex post, not every sharp rise is necessarily followed by a lasting price correction. In particular, in contrast to the market corrections which followed the peaks of September 1929 and February 1937, the 1956 price fall and the 1987 crash did not produce long-lived corrections, so that it is questionable whether they actually represented the bursting of a speculative bubble.

An approach frequently adopted in practice to assess the overvaluation or undervaluation of shares makes use of financial ratios, such as the price/dividend ratio or the price/earnings ratio[1]. The latter, which is most commonly used, can be incorporated as follows in the Gordon and Shapiro formula mentioned earlier (equation 2):

$$\frac{P_0}{E_0} = \frac{D_0}{E_0} \times \frac{1+g}{r+\sigma-g} \quad (3)$$

in which E_0 represents the last earnings figure.

These ratios are in fact very useful for two reasons: for one thing, they link the movements in share prices to fundamental variables; also, they exhibit a tendency to return to the average over varying periods of time. An extreme value for a ratio therefore suggests that either the numerator or the denominator, or both, should be adjusted to restore the ratio to levels closer to its historical average. Nonetheless, the capacity of the ratios to predict future movements in share prices is highly uncertain.

For instance, the historical average of the price/earnings ratio relating to the S&P 500 index, calculated over the period from January 1871 to December 2004, is about 15. That figure is generally taken as the benchmark, indicating that the share is neither too expensive nor too cheap[2]. In September 1929 and August 1987, when the price/earnings ratio stood at 20.2 and 21.4 respectively, it "correctly" indicated that shares were overvalued, thus predicting a fall in prices. The same applied in August 2000, when the price/earnings ratio was 28, although it had fallen below the record for that period (34 in April 1999). In contrast, in February 1937, just before a sharp price correction (the gains of the five years preceding the peak being totally wiped out over the ensuing five years), the price/earnings ratio was only a little higher than the benchmark figure, at 16.8. When the S&P 500 index peaked in July 1956 ahead of an admittedly modest share price correction, the ratio had stood slightly below its historical average, namely at 13.7. Furthermore, there have also been "false alarms", e.g. in December 1921 (25.2), July 1933 (26.3), March 1992 (25.1) or March 2002 (46.2). In the first place, these steep increases were due to a sharp, temporary fall in earnings. In conclusion, while this ratio probably provides an indication of whether share prices are over- or undervalued, it signals the possibility of a correction rather than its exact timing. An extreme value is not an automatic predictor of a collapse in prices.

The use of the financial ratios for prediction purposes presupposes that they continue to fluctuate within a relatively stable range, without remaining at extreme levels for extended periods. Up to the mid 1990s, the price/earnings ratio corresponding to the S&P 500 index appeared to move within a symmetrical range around its historical average. The length and scale of the deviations observed since then are worrying. Although it is not impossible that the long-term "equilibrium value" may have risen somewhat, as a result of a reduction in the risk premium, and although the deviations from that value may prove to be fairly persistent, the high levels reached by the price/earnings ratio at the beginning of 2000 were probably due to a "bubble".

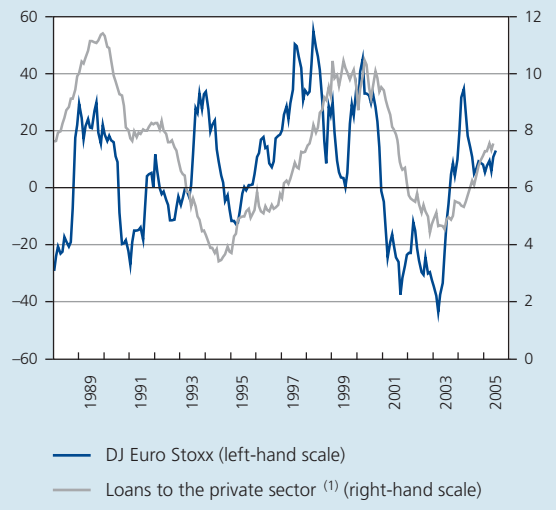
The data relating to the euro area do not go back so far in time. Over the period 1973-2004, price/earnings ratios in the euro area and the United States averaged 13.7 and 17.7 respectively. At the end of the first half of 2005, the

(1) Tobin's q ratio, already mentioned, can also supply useful information. However, no data are available for the euro area. Bisciari, Durré and Nyssens (2003) show that Tobin's q is better at predicting turning points for American shares than the price/earnings ratio.

(2) This value of 15 is also the average for 1926-1997. For this period it corresponds to the following average values of the variables in equation (3) (see Wibaut, 2000):
D/E = 50 p.c.
r nominal = 5.25 p.c. (r real = 3 p.c.)
g nominal = 4.2 p.c. (g real = 1.9 p.c.)
σ = 2.3 p.c.

CHART 2 SHARE PRICES AND CREDIT IN THE EURO AREA

(annual percentage change)



Sources: Datastream, ECB.

(1) Loans by credit institutions in the euro area to the euro area private sector.

ratio was close to that average in Europe and still lightly higher across the Atlantic.

Analysis of the expansion of lending can supply useful information for detecting the threat of a crisis. The combination of rapid credit expansion and a sustained rise in share prices, often accompanied by abnormally low spreads between the yields on corporate and government bonds, could presage the accumulation of financial imbalances and thus indicate an increased risk not only of a fall in share prices but also of a contraction in lending, followed by a slowdown of economic growth or even a recession. This mechanism appears to have been a contributory factor, at least in part, to the economic expansion of the late 1980s, which was followed by a downturn in business activity in the early 1990s. More recently, it was probably a factor in the economic and stock market boom of the late 1990s, followed by the slump in 2000. According to this argument, if the credit revival seen since the beginning of 2003 were to accelerate and be accompanied once again by a prolonged and sustained rise in share prices, that would indicate a possible accumulation of imbalances on the stock market.

(1) The residual divergences between the national series mainly concern the housing considered (houses and/or apartments, new housing only or all housing taken together) and the method of adjusting for quality variations.

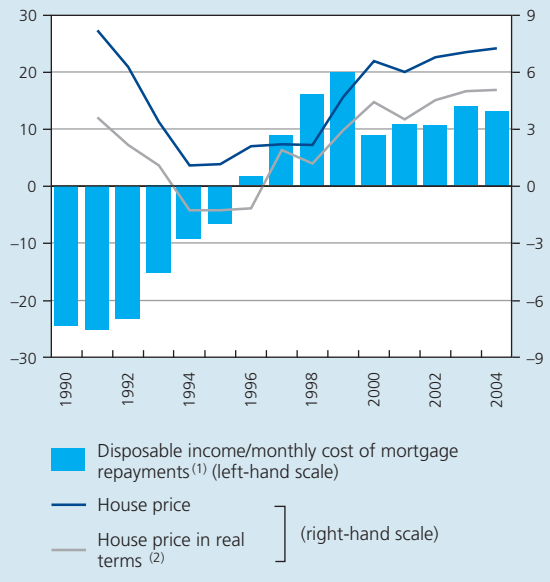
3. House prices in the euro area

In the case of house prices it is also extremely difficult to identify a bubble before it has burst. A sharp rise in property prices is not necessarily synonymous with the development of a bubble, especially if the rise is due to a surge in demand for housing, fuelled in turn by a favourable movement in fundamental factors. In the case of the euro area, the identification of a bubble is further complicated by the fact that there are no harmonised national data on average property prices. Therefore, any international comparison – and hence also the interpretation of the weighted average growth rate for the euro area – has to be conducted with caution. The time series relating to the house price index used for the purposes of this article were calculated by the ECB on the basis of national series which have been harmonised as far as possible and relate to the period 1990-2004 (1).

House prices in the euro area rose at an average rate of 7.2 p.c. in 2004, in line with the rises of 6 to 7 p.c. recorded since 2000. However, this period of soaring house prices followed a period of weak price increases averaging 2 p.c. between 1992 and 1998, and may therefore be considered partly as a catching up process.

CHART 3 HOUSE PRICE DEVELOPMENTS IN THE EURO AREA

(annual percentage change, unless otherwise stated)



Sources: EC, OECD, ECB.

(1) Percentage deviation from the average level for the period 1990-2004.

(2) Data deflated by the deflator of final private consumption expenditure.

Taking account of inflation in the euro area, the recent rise in property prices (5 p.c. in real terms) is the highest for fourteen years. However, estimates based on less harmonised time series produced by the BIS indicate that the rate of increase has remained well below that of the late 1980s. If history is any guide to the future, there seems to be no immediate danger of a sharp fall in the average rate of increase of property prices in the euro area. The cumulative effect of the increases of the past five years is nonetheless substantial. It is therefore appropriate to check to what extent the recent trends could persist in the longer term.

In this respect, the first step is to compare the movement in house prices with its main determinants. Since the supply of housing is relatively slow to adapt to market conditions, that movement will generally be determined by the demand for housing. The rest of this section concentrates mainly on the influence of disposable income and mortgage interest rates. If a rise in house prices is due primarily to an increase in disposable income and/or a fall in mortgage interest rates, the purchase of a more expensive house will not take up a larger percentage of the household budget, and an average house will therefore still be just as affordable.

A simple yardstick which is often used to assess the affordability of housing is the ratio between disposable income and the monthly cost of mortgage repayments. Between 1991 and 1999, this rough indicator of affordability increased sharply, following the modest rise in house prices and the decline in mortgage interest rates. Since 2000, although house prices have risen much faster than in the 1990s, the continuing decline in mortgage interest rates has largely offset the negative impact on affordability. As a result, over the past five years, affordability has hovered around a level which is still well above the average for the period 1990-2004. There therefore appears to be no question of the property market being generally overvalued in the euro area.

However, two factors shed a different light on this conclusion. First, the exceptionally low interest rate cannot be regarded as permanent, and allowance must be made for the risk of a future increase in mortgage interest rates. Second, house prices in a number of euro area countries have risen much more sharply than the average, so that further research is needed on the possible overvaluation of the housing market in those countries. Both these points will now be examined in more detail before the situation on the Belgian housing market is analysed.

3.1 The risk of an increase in mortgage interest rates

Although it is certainly necessary to bear in mind that the lower mortgage interest rates, compared to the level prevailing in the 1980s, have made housing more affordable, this positive effect must not be taken as entirely permanent. Only part of the fall in mortgage interest rates is structural, namely the part resulting from the increased credibility of monetary policy. In addition, a number of exceptional factors have helped to bring mortgage interest rates down to their current – historically low – level, and this situation is therefore unlikely to persist in the years ahead. Once mortgage interest rates start to rise, the affordability of an average house will decline fairly rapidly, unless the interest rate rise causes the pace of house price inflation to slow down significantly.

To illustrate the impact of a gradual rise in mortgage interest rates, we examine a scenario in which rates increase from 5 p.c. in 2004 to 7 p.c. in 2008. It is also assumed that both house prices and disposable income will continue to rise at the average rate seen over the past six years, namely 6.4 p.c. and 3.7 p.c. respectively. In that scenario, by 2006 the affordability of an average house would already have fallen to the average level prevailing in the period 1990-2004, and by 2008 it would be more than 10 p.c. below that average. To avoid such a reduction in affordability, euro area property prices would need to fall by 0.2 p.c. per annum over the next four years.

The impact of a gradual rise in mortgage interest rates therefore certainly must not be underestimated. On the one hand, heavier mortgage repayments will curb private consumption. This direct effect will apply mainly to individuals who have arranged a variable rate loan and who therefore need to set aside a larger proportion of their income to pay the interest charges. On the other hand, the less buoyant demand for housing will probably moderate the pace of house price rises, and will subsequently restrain consumption and investment through the wealth effect. However, the scale of this indirect effect for the euro area is far more uncertain. Since there are currently no clear signs of general overvaluation of the housing market, the cooling will probably tend to be gradual. Furthermore, empirical studies indicate that, in the large euro area countries, the movement in house prices has hardly any influence on private consumption [1].

(1) See for example Catte et al. (2004).

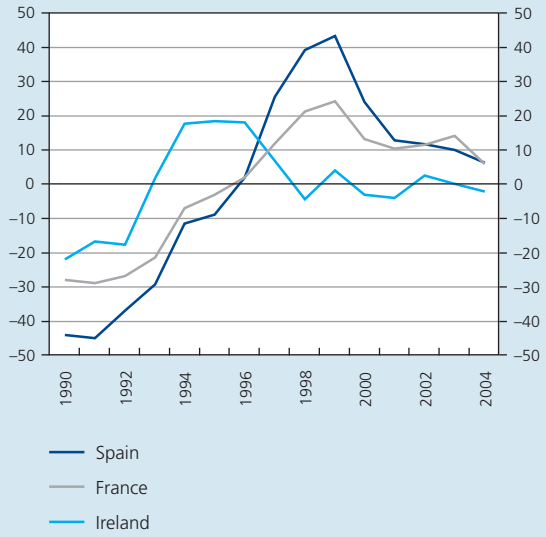
3.2 The strong surge in house prices in Spain, Ireland and France

In recent years, house price developments have varied greatly between countries in the euro area. In 2004, the average house in Germany was selling at a lower price than in 1998, whereas Spain, Ireland and France, for example, have seen annual increases averaging 10 p.c. or more in the past six years. Belgium is in an intermediate position, with house price rises averaging 6.4 p.c. per annum between 1998 and 2004. However, these wide variations do not necessarily imply that the housing market in Spain, Ireland and France was overvalued in 2004, or that it was undervalued in Germany, as they can be attributed in part to differences in the fundamental macroeconomic factors. Yet it remains questionable whether an annual increase of 10 p.c. or more is ultimately sustainable.

In the euro area, it is Spain that has seen the sharpest rise in house prices in recent years. Although the rate of increase did slow down slightly from 17.6 p.c. in 2003 to 17.3 p.c. in 2004, the trend is still upwards. Between 1998 and 2004, house prices in Spain have risen by an average of 15.3 p.c. per annum. Part of that extremely steep increase can be explained by a number of macroeconomic developments. For instance, the above-average economic growth contributed to an increase in the disposable income of Spanish people, causing demand for housing (both first and second homes) to rise more sharply than in most other euro area countries. In addition, demand was underpinned by the further fall in mortgage interest rates and the greater availability of long-term loans. Martínez Pagés and Maza (2003) show that the low equity returns in recent years have also pushed up house prices. Finally, the price of the average house had risen by only 1.5 p.c. per annum between 1991 and 1998, so that the current price increases may also be seen partly as a catching up process. In Ireland, too, house prices have soared in recent years, while the growth rate in 2004 was slightly below the 2003 level. Although they have risen considerably less fast in the past few years than in the peak year of 1998 (when the increase came to 28.6 p.c.), the price of an average house in Ireland still increased by 13.5 p.c. per annum between 1998 and 2004. The strong economic growth and the continuing fall in mortgage interest rates played an important role here, too. In addition, McQuinn (2004) finds a positive link with the high level of immigration and the banks' greater willingness to grant larger mortgage loans. Finally, in France the sharp rise in house prices is more recent. Following a substantial increase in 1990, the house price index in France hardly rose at all in the ensuing years. It is only since 1998 that the pace of growth has gradually picked up, reaching 15 p.c. in 2004, the second highest rate in the euro area. The strong demand for housing in France appears to be due mainly to the robust economic growth in the late 1990s and the favourable financing conditions. Combined with slow growth in the supply of housing, this strong demand has exerted upward pressure on the price of an average home in France.

CHART 4 AFFORDABILITY OF HOUSING (1)

(percentage deviation from the average level for the period 1990-2004)



Sources: OECD, ECB.
(1) Disposable income/monthly cost of mortgage repayments.

In Spain and France, the affordability of an average house increased significantly for much of the 1990s. Not only did house prices rise more slowly than disposable income, the decline in mortgage interest rates also meant that more individuals could afford to buy a house than had previously been the case. However, since 2000 affordability has declined in both countries, as a result of the stronger rise in house prices. Nonetheless, affordability is currently still above the average level for the period 1990-2004. In Ireland the situation is somewhat different. There, the surge in house prices began earlier, so that the improvement in affordability had already ceased by 1995. After that, affordability declined fairly rapidly as a result of the sustained rise in house prices, and since 1997 it has hovered within a fairly narrow range around the average level for the period 1990-2004.

In each of these three countries, the affordability measure of an average house is currently above or close to the average for the period 1990-2004. The recent movements in the house price index in Spain, France and Ireland therefore do not appear to be a definite indication of an overvalued housing market. However, that conclusion is not always borne out by more complex empirical assessments. Although Bessone, Heitz and Boissinot (2005) deduce that the French housing market is not overvalued (as yet), studies for Spain and Ireland conclude that there are indeed risks associated with the recent price increases. In the case of Ireland, while most models indicate that the housing market is not overvalued, the central bank is nevertheless concerned about the substantial rise in the indebtedness of individuals, which has accompanied the sharp rise in house prices. In the case of Spain, Martínez Pagés and Maza (2003) and Ayuso and Restoy (2003) actually find that the price of an average house was already above its equilibrium value in 2002. The scale of the overvaluation depends very much on the model used, but the deviation is not unusually large, in historical terms, in any of the models. Nonetheless, the economic impact of any house price correction could be significant. Moreover, an assessment of the risks needs to take account of the fact that the mortgage interest rates will probably not remain so low in the future. If an increase in the mortgage interest rates does not coincide with a sufficiently sharp cooling of house prices, the affordability of an average house will soon decline.

3.3 House price developments in Belgium

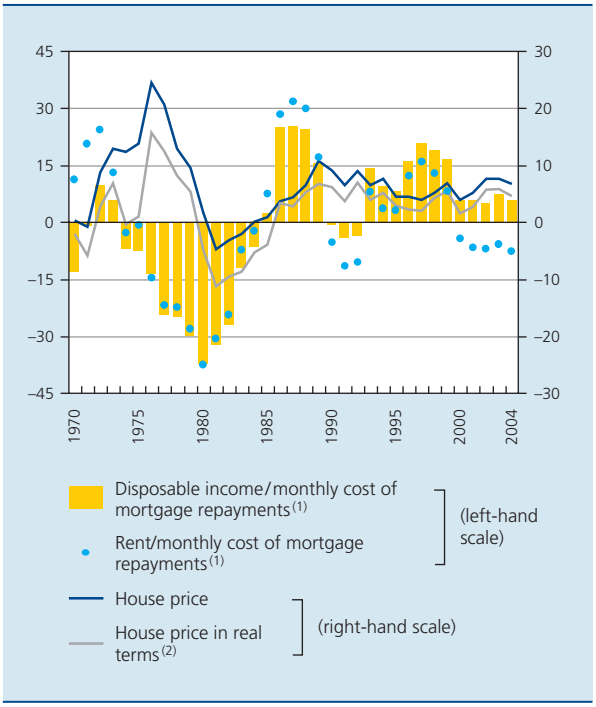
In Belgium, the annual increase in the house price index dropped from 7.8 p.c. in 2003 to 6.8 p.c. in 2004. Although the rate of increase in 2004 was above the average for the preceding five years, it was still well below the peak levels attained in 1976 and 1977. During the 1970s and 1980s, the Belgian house price index fluctuated much more widely than in later years. During the first half of the 1970s, the rate of house price rises in Belgium accelerated steadily, culminating in increases averaging over 10 p.c., even after adjustment for inflation, in the period 1976-1978. It was no coincidence that this peak followed a period of very high inflation. Indeed, the latter may have encouraged many individuals at that time to invest in property, considered to offer good protection against a fall in the value of money. A substantial correction followed, mainly caused by a sharp rise in mortgage interest rates. Since 1990 the annual increase in house prices has fluctuated between 4 p.c. and 9 p.c.

In the past eighteen years, house prices in Belgium have systematically risen faster than the disposable income of individuals. One reason may be the strong demand for housing following the decline in mortgage interest rates, but the scarcity of building land has undoubtedly contributed to growing demand for existing housing. However, the affordability of an average house improved, because the increase in the house price was more than offset by the substantial fall in mortgage interest rates during the 1990s. At the end of the 1990s, an average house was actually more affordable than in the 1970s and 1980s, except for the years 1986-1988. Since then, affordability has declined slightly once again, but in 2004 it was still above the average for the period 1970-2004. The Belgian housing market therefore does not really seem to be overvalued.

A comparison of the movement in rents with that in mortgage loan repayments may also provide an indication of the possible overvaluation of the housing market in Belgium. In the 1970s and 1980s, the ratio between rents and repayments displayed quite considerable fluctuations, which mainly reflected the movements in house prices [1].

CHART 5 HOUSE PRICE DEVELOPMENTS IN BELGIUM

(annual percentage change, unless otherwise stated)



Sources: EC, OECD, Stadim, NBB.

(1) Percentage deviation from the average level for the period 1970-2004.

(2) Data deflated by the deflator of final private consumption expenditure.

(1) Rents generally take quite a time to follow movements on the housing market, as the majority of rents in any given year are covered by existing contracts, and these are only adjusted in line with the consumer price index. Since it is only the rents under new contracts that can be adjusted to the changed situation on the housing market, only very sharp increases in those rents will have an impact on the overall rents index.

A sharp fall in this ratio between 1972 and 1980 was followed by a substantial correction in the ensuing seven years. Since 1990 the ratio between rents and repayments has fluctuated within a relatively narrow range, although in the past few years it has dropped once again. In 2004, it was below the average for the period 1970-2004, indicating that the current situation is not entirely without risk.

Furthermore, the affordability of housing will decline rapidly once mortgage interest rates begin to rise, unless the rate of increase in the house price index slows significantly. The impact on private consumption in Belgium will probably be small, however. Firstly, there are clear limits on the maximum adjustment to interest rates on variable rate mortgage loans, so that the increase in the interest burden for individuals will probably tend to be small. Secondly, Eugène, Jeanfils and Robert (2003) found no indications of any significant wealth effect of house prices in Belgium. Nonetheless, it cannot be excluded that an increase in mortgage interest rates and a house price moderation will have adverse economic consequences.

4. Asset prices and the monetary policy of the Eurosystem

The ECB Governing Council has adopted a monetary policy strategy oriented towards the medium term, featuring anticipatory action based on the analysis of all the available data in a structured framework. Movements in asset prices are therefore closely monitored and they play a role in the decision-making process – without, of course, being a target in themselves[1].

The framework for analysing the risks to price stability comprises an "economic" and a "monetary" pillar. The economic analysis tries to assess the upward and downward pressure exerted on prices in the short and medium term by the interaction between supply and demand and by the cost developments. The macroeconomic projections produced at regular intervals for a two-year horizon take account of the "normal" effects of the movement in asset prices, such as the wealth effects. The risks associated with any financial imbalances are harder to incorporate in the projections, since it is not easy to determine their probability and scale.

The monetary analysis serves primarily to assess the risks to price stability in the medium and long term. Originally, the emphasis was on the growth of M3, as an advance indicator of inflationary pressure, since during the period 1980-1998 there was a fairly stable medium-term link between M3 and consumer prices in the euro area. However, the very rapid monetary expansion between 2001 and 2003, due mainly to a strong increase in the preference for liquidity in a period of uncertainty, did not generate inflationary pressure. There is no doubt that the monetary aggregates are being increasingly influenced by portfolio reallocations, and that their impact on activity and prices is being felt more via the financial markets. The monetary analysis was therefore extended and refined. On the basis of a series of indicators relating to money and credit, together with indicators of any overvaluation of asset prices, it is possible, in particular, to assess the risk that an expansionary monetary policy may lead to an accumulation of financial imbalances.

As regards the recent movements in asset prices, share prices in the euro area do not appear to be obviously overvalued. However, in the United States the price/earnings ratio still remains high in historical terms, despite the downward trend of the past few years, and a possible drop in American share prices could affect stock markets in the euro area. The fluctuations in house prices are generally less substantial, but could be more damaging. The average increase in house prices in the euro area does not appear excessive, but there is a considerable difference between Germany, where prices are falling, and countries such as Spain, France and Ireland where they are rising strongly. In these last countries, the price increase can be attributed mainly to fundamental factors. However, one of those is the low interest rate which, though partly structural – since the credibility of the Eurosystem renders it unlikely that interest rates will return to the level seen in the 1980s and the early 1990s – could also be to some extent temporary.

The ECB Governing Council therefore has little reason to tighten monetary policy solely in order to control any financial bubble, but it remains vigilant as regards the consequences for liquidity, credit and asset prices – especially house prices – of maintaining interest rates at a low level. Since the common monetary policy cannot be used to solve national problems, national governments can also take measures to counteract domestic house price movements, if they consider them as excessive. For instance, the supply of housing can be stimulated or the tax rules which encourage demand can be changed.

(1) See ECB (2005).

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