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Current Issues

UK house prices: end of the rally in sight

- House prices in the UK have rocketed in recent years, rising by an average of more than 17% p.a. over the last four years. While much of this rise can be attributed to strong growth of disposable income, a sharp drop in interest rates and moderate construction activity, it is clear that there has been a disconnect between house prices and the fundamental drivers of growth.
- Indices measuring the affordability of houses in the UK have reached dangerously high levels. These levels were only previously reached prior to a sharp drop in house prices. There have been three periods of falling real house prices in the last 50 years and each of these periods was preceded by a strong rise in interest rates. The increases in the Bank of England's base rates, by 125 bp over the past year, clearly raises the possibility of an erosion in recent gains in house prices.
- Against this is the mildness of inflationary pressures and the likely near peaking of the current interest cycle. Certainly, interest rates are unlikely to rise as dramatically as the hikes that preceded past downswings in house prices. Beyond this, the strength of the labour market differs markedly to previous downturns, and this provides some support for current price levels.
- On the balance of these pressures we believe that the scenario of a soft landing, where growth of house prices comes down well below trend growth rate for some years, is still more likely than the scenario of a hard landing. However, it is clear that the risks of a hard landing have increased markedly during the last 18 months.
- The risks of an economic crisis being triggered by a soft landing in house prices appear to be slight. While the expiry of the positive wealth effects will mean that private consumption expands much more slowly than in the past, it is unlikely that the housing market alone will drive the economy into recession.
- However, as the positive stimulus of rising house prices will be absent, the UK economy is today more vulnerable to negative economic shocks, such as terror events, reductions in external demand or rising commodity prices than in the last four years. On this basis, it might be appropriate for the financial industry to consider the implications of a sharper reduction in house prices. This might include the introduction, for instance, of hedging instruments for the UK housing market in order to mitigate the risk of a price decline.

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1. Introduction

House prices in the United Kingdom have risen sharply since the mid-1990s. At the beginning of 1995, the average house price was around GBP 51,000. By the start of 2000, it had climbed to GBP 77,000 and the current average house price is now GBP 150,000. The average growth rate over the last four years has thus been over 17% p.a. – a rate of growth that suggests speculative excesses and the danger of a heavy correction like that seen recently following the speculative excesses of the dot-com bubble. If a fall in house prices is seen across the board, this could have a detrimental effect on the economy, with households tightening consumption to compensate for losses in asset prices.

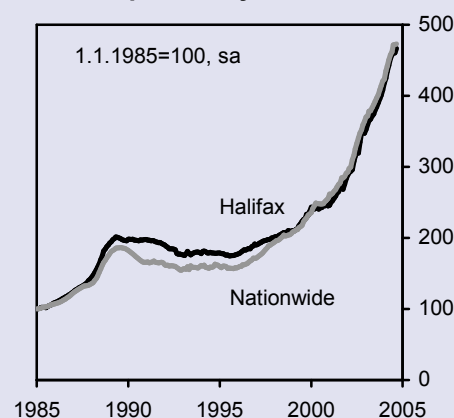
As a result, participants in the real estate market are not the only ones carefully monitoring the development of house prices. Economists are also speculating over the future direction of house prices. In order to demonstrate the amount of attention house prices are receiving, we have developed a simple attention index by counting the number of times the term “house price” appears in the Bank of England’s quarterly inflation reports. In August 2004 it was mentioned 38 times, pushing the indicator to its highest level since the beginning of 1997 — obviously the Bank of England is taking this topic seriously at the moment.¹ In two previous Deutsche Bank publications, we indicated that houses in the UK are only modestly overvalued and that prices would fall only moderately at most.² However, these publications are now one and a half years old since when prices have risen by another 30% whilst rising interest rates have further increased the risk of prices falling.

2. House prices in the UK and their key drivers

Since 2000, UK house prices have increased by an average of 1.2% per month. This means that UK house price inflation was stronger per month than over the entire 3.5-year period since 2000 in Germany. In August 2004, however, the Halifax index fell slightly (-0.6% month on month, seasonally adjusted), and the normally less volatile Nationwide index rose only marginally (+0.1% month on month, seasonally adjusted). It would be premature, however, to interpret this as a trend reversal - for one, house prices were still around 20% higher than a year earlier; for another, the seasonally adjusted values have fallen on numerous occasions during the recent boom. The Halifax index has fallen slightly eleven times in total in the month-on-month comparison since the start of 2000; the Nationwide index has fallen six times. In September house prices rose again (Halifax: +1.4% month on month, Nationwide: 0.2% month on month, both seasonally adjusted).

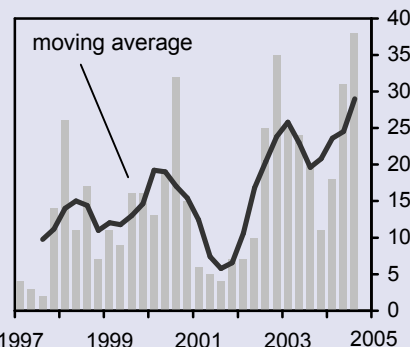
Housing markets across all UK regions have been very dynamic for years but it is striking that the strongest growth has not been seen in urban centres. Whilst the house price index for London has risen by around 70% since the beginning of 2000, the index for the North region has climbed almost 130%. With the exception of the housing markets in Scotland and Northern Ireland, there is a clear negative correlation between the absolute level of house prices in 2000 and the subsequent level of house price inflation.

House price rally in the UK



Sources: Halifax, Nationwide, DB Research

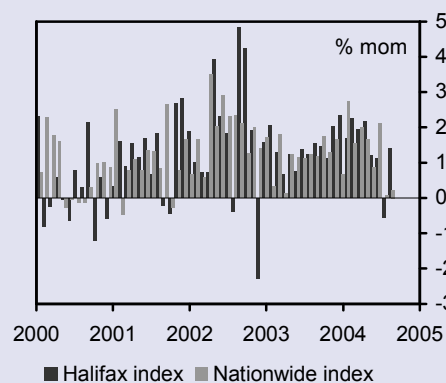
House Price Attention Index



Annotation: The House Price Attention Index counts how often the words “house price” appear in the quarterly Inflation Report of the Bank of England.

Sources: Bank of England, DB Research

House price growth - sa



Sources: Halifax, Nationwide, DB Research

¹ Bank of England (2004), Inflation Report, August 2004.

² Just, T. (2003), Bubble trouble in the housing market?, in: Frankfurt Voice, Deutsche Bank Research, February 21, 2003 and Tyrrell, N. (2003), No bubble, no crash, DB Real Estate, May 7, 2003.



Does this development point to speculative excesses, or is it merely the expression of a normal market reaction - in effect the result of a change on the supply and/or the demand side? Because housing displays the properties of a consumer good as well as those of an investment good, the determining factors for housing demand include income, population growth, interest rates and yields on alternative investments.

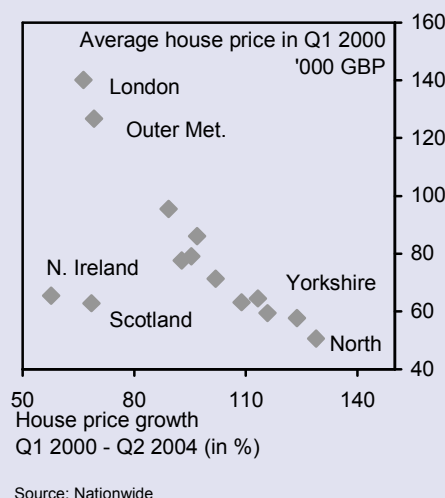
In the UK, the most significant factors for the development of house prices are incomes and mortgage rates. The correlation between income levels and house prices follows the usual economic logic whereby demand for normal goods – and these include housing – increases as income rises. If conditions otherwise remain unchanged, this extra demand results in higher house prices. If one compares the growth in British house prices against the growth of disposable income over the last 50 years, a clear positive correlation can be seen.

But it is also apparent that there are serious deviations from the trend component of this time series, on both the upside and the downside. This becomes even clearer when we divide house prices by disposable income and obtain a simple indicator for the affordability of housing. This indicator has a long-term average of just over 8 but currently lies at an all-time high of over 11.3 – i.e. 40% above the long-term average. Similarly high levels were reached in the early 1970s and the late 1980s. In both cases the level did not remain above 11 for long. The subsequent adjustments differed though - in the 1970s, nominal house prices did not drop, but subsequently rose at a much slower rate than disposable income. In the light of the high inflation rates of the 1970s, it makes sense however to consider real house prices, i.e. adjusted for consumer price inflation. These actually dropped between 1973 and 1977 by over 25%. In this phase, UK housing was therefore a very bad inflation hedge. The trend in the early 1990s was even more dramatic: nominal house prices fell by almost 20% between 1989 and 1993, real house prices by around a third.

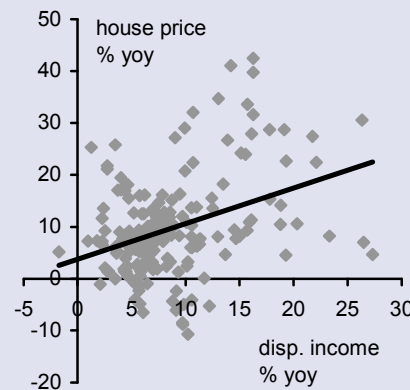
Three periods of declining real house prices

Altogether, there have been three periods of falling real house prices in the last 50 years. What these periods have in common is the fact that just beforehand interest rates rose dramatically. Between 1972 and 1974, the base rate was raised by 800 basis points, between 1977 and 1980 by 1,000 basis points and between 1988 and 1990 by 600 basis points. Since mortgage rates move in tandem with the main refinancing rate, these draconian rate hikes increased the financial burden on households. This interest policy also led to heavy recession and a sharp increase in unemployment. In seeking to assess the future development of house prices, therefore, it is not sufficient just to look at the simple affordability index. This fails to take into account the fact that despite recent increases, interest rates are still at a historically low level and given only moderate inflation in the UK, we do not expect interest rates to be raised as dramatically as prior to the phases of house price deflation in the past. On the following pages, we present two affordability indices which take into account the interest component.

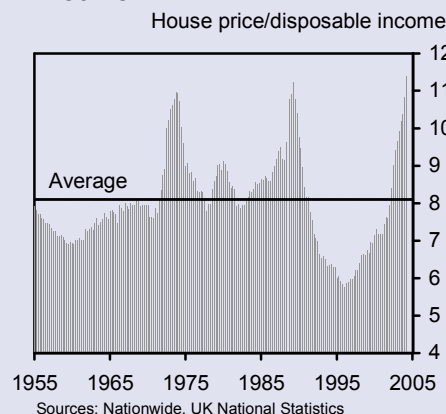
Regional house price growth since Q1 2000



House price inflation and growth of disposable income



House prices and disposable income



3. How affordable are houses in the UK really?³

In this section we look at two purchaser groups that are potentially most at risk in the current scenario of higher interest rates, rising house prices and falling affordability and therefore key determinants in the future development of the UK housing market – first time buyers and buy-to-let investors.

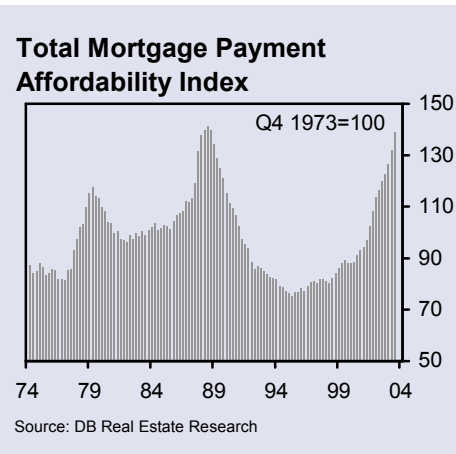
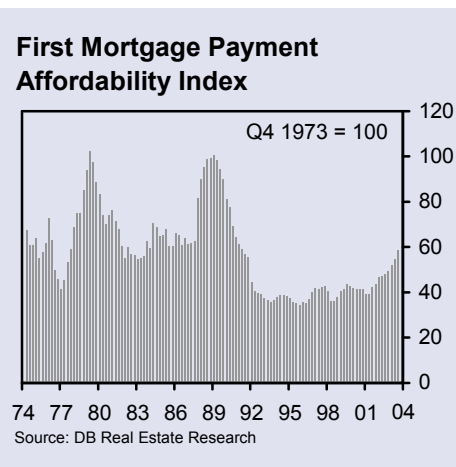
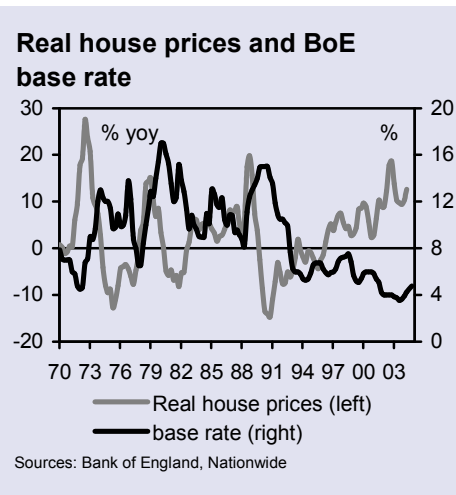
First-time-buyers under pressure

First-time buyers have traditionally accounted for a significant proportion of all new mortgages issued in the UK and are therefore an important driver of demand for housing – in the late 1990s for example they accounted for close to half of all new mortgages issued. As house prices have risen over the last few years, however, and housing affordability eroded, demand from first time buyers has slowed with their share of new mortgages shrinking as a result - the Council of Mortgage Lenders reported a fall in the percentage of new mortgages accounted for by first time buyers from 48% in 1998 to 29% in 2003.⁴

First time buyers typically dedicate a larger proportion of their income to mortgage repayments than other buyers as young people usually have lower incomes and less wealth than older buyers. They are consequently potentially more at risk in a rising interest rate environment. First time buyers acquiring an average dwelling in the UK currently devote some 43% of their annual gross income on average in their first mortgage payment (assuming 90% Loan to Value) - this percentage remains close to its long term average and is way below the last peak. Total first mortgage payments have, however, now reached 1988 levels in real terms, close to the 1989 historic peak.

To demonstrate the impact of low interest rates on affordability we presented the First Mortgage Payment Affordability Index in an earlier study.⁵ This index measures affordability as a proportion of mortgage payment to income in the first year only. Due to low interest rates, this index is now very close to its long term average and way below its last peak. However, we believe, that this index is underestimating the recent fall in affordability and is consequently not reflecting the fall in the proportion of total mortgage lending that first time buyers' account for.

We have therefore developed a new affordability index, that we have called the Total Mortgage Payment Affordability Index, which takes into account all mortgage payments and changes to income over the life of the mortgage (see box on page 5 for a detailed explanation) rather than just the first year of the mortgage. In our opinion it is a better measure of affordability than our original index as it captures the prospect of rising interest rates to their trend level as well as the prospect of rising incomes at today's index levels. This composite index is now very close to its all time high of the late 1980s and is much higher than its peak in the late 1970s. Clearly, the Total Mortgage Payment Affordability Index suggests that affordability in the UK has now reached its long term peak and this is a likely explanation of the fall in the proportion of new mortgages accounted for by first time buyers.



³ We would like to thank José-Luis Pellicer-Gallardo for his valuable contribution to this section
⁴ To avoid confusion please note that the affordability indices presented in this paper are all constructed with income in the equations' denominator. A rise in the respective indices therefore reflects an erosion of affordability.
⁵ Tyrrell, N., Pellicer J.-L. (2002), UK Property Outlook 2002/II, DB Real Estate Research.



More buy-to-let investors

Whilst first time buyers are accounting for a decreasing share of mortgages, the proportion accounted for by buy-to-let investors has increased in recent years. Buy-to-let investors accounted for 7% of all new mortgages in the UK in 2003 compared to less than 3% in 1999.

This increase has occurred in spite of recent interest rate rises and a relatively muted private rental market, particularly at the prime end of the market. This is because the buy-to-let investment market has been boosted by a number of factors: Investors, including “non-professional” landlords (i.e. individuals with one or more properties with limited management skills), have been attracted to the UK market where prices have continued to rise significantly in recent years compared to the recent slump in equity markets. The 1988 UK Housing Act, which included the assured shorthold tenancy, also allowed rents to be adjusted to market levels within a year of letting. Improved access to the buy-to-let market was facilitated by increased competition from buy-to-let mortgage providers.

Buy-to-let investors, like first time buyers, are vulnerable to further interest rate rises and falls in house prices. There is little data available on the buy-to-let market and its investors and little information on whether investors have a short or long-term horizon with funds to see them through market voids and rising mortgage payments and on whether they are looking for income or capital appreciation. It is therefore difficult to assess the risks faced by the buy-to-let section of the market.

Short- and medium term outlook

Our Total Mortgage Payment Affordability Index is currently close to its historic peak suggesting that further rises in interest rates are likely to put more downward pressure on affordability.

As the Total Mortgage Payment Affordability Index captures all likely mortgage rate developments, it is not reasonable to use it for scenario analysis of different interest rate paths. By construction, a short term rise in interest rates (assuming constant house prices going forward) does not affect our new affordability index. This is because our index relies on mortgage rates in 25 years, which are assumed constant in the long term, whilst all our short term scenarios assume that mortgage rates go back to trend levels by 2008 at the latest.⁶ We therefore come back to the First Mortgage Payment Index to illustrate the impact of different future interest rate adjustment paths on affordability. We have therefore carried out analysis using the First Mortgage Payment Affordability Index based on three mortgage rate forecast scenarios.

- **Base case:** short term moderate increase in mortgage rates, peaking in Q1 2005 (at 6.8%), slowly falling from Q2 2005, returning to trend levels in Q2 2006.
- **High increase:** short term high increase in mortgage rates, peaking in Q4 2005 (at 7.15%), returning to trend in Q3 2007.
- **Very high increase:** short term very high increase in mortgage rates, peaking in Q4 2005 (at 7.5%), returning to trend in Q3 2008.

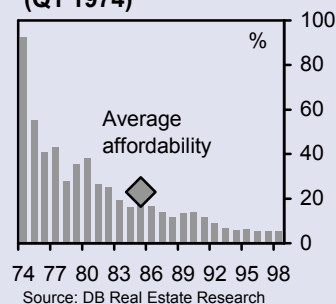
⁶ Even if we try to discount mortgage payments at a constant rate, in an attempt to increase the weight of first mortgage payments in the affordability index, the impact of increased rates does not affect affordability unless discount rates are set at unrealistic 50%. This implies that although the new affordability index is a good indicator for the state of affordability, it cannot be used for scenario analysis.

Total Mortgage Payment Affordability Index

The new affordability index takes into account each payment and each income level over the life of a mortgage. Let us explain the index with an example:

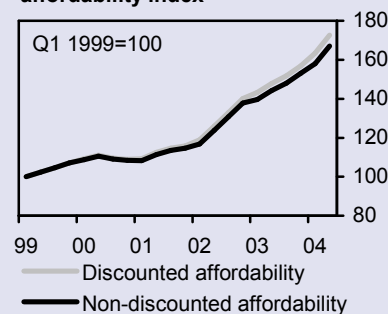
- A dwelling is bought in Q1 1974.
- The buyer gets a 100% Loan to Value, 25 year mortgage at the Q1 1974 mortgage rate. This rate will vary annually in Q1 of each year for 25 years.
- A total mortgage payment is then calculated for each of the 25 years. The rate used for each year is the “spot” mortgage rate in Q1 of each of the 25 years. We assume for simplicity that mortgages are paid annually in advance.
- The buyer earns the average wage per person in the UK and his income rises by the rate at which average salaries grow every year.
- Affordability is then calculated for each of the 25 payments as the ratio of the mortgage payments and the buyer’s income in that year. Obviously, affordability improves over time (i.e. the percentage of income used for mortgage payment decreases).
- The affordability index for Q1 1974 is then the average affordability of all ratios for each year.

Percentage of income paid on residential mortgage (Q1 1974)



- In more recent years, we have used both income and mortgage rate forecasts to calculate affordability in the future.
- We have also tried a version of the index in which affordability is discounted at 8%, i.e. the buyer gives more weight to first year mortgage payments.

Impact of discount rate on new affordability index



It can be clearly seen from the graph that a short term increase in interest rates will dent first mortgage affordability to varying degrees even if we assume constant house prices going forward. However, the relative difference in the impact of the three scenarios is limited.

Who is buying buy-to-let properties?

The buy-to-let market in the UK is still fairly undocumented. Whilst it is apparent there are an increasing number of non-professional investors filling the market, it is unclear as to whether they will panic-sell their investments in the event of a downward correction in capital values and higher interest rates or hold them for longer term capital gain and income return. Indeed, higher interest rates triggering a mass exodus of non-professional small investors is perhaps the most important risk factor in the buy-to-let market. Buy-to-let investors paying 6% mortgage rates and earning low yields can easily get “out of the money” i.e. mortgage payments exceed income receipts as in 2003 when net yields were 180 basis points below mortgage rates.

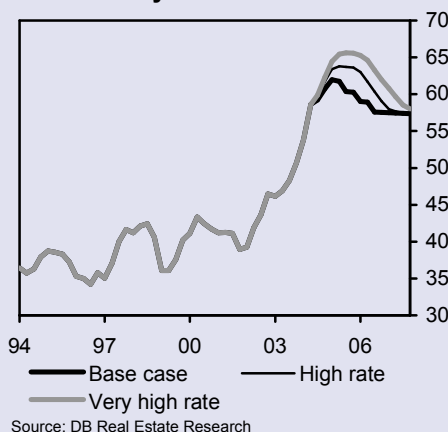
With higher mortgage rates in 2004 and the resulting lower yield premiums, together with more moderate capital appreciation and talk in many sections of the press of a housing crash, there is a significant risk that buy-to-let investors exit the market “en masse”, which may put strong downward pressure on house prices. This effect may however be moderated by the fact that some investors may be in residential investment for the long term, seeking long term appreciation, rather than short term gains, and thus they may be willing to hold on to their properties in the event of a downturn.

Furthermore the private rental market may be recovering, with the potential for residential rents to rise, due to increased demand as economic activity improves and potential first-time-buyers decide to stay in the rental market rather than buy due to the potential risks involved and high level of prices. Increases in demand for rented accommodation in turn could attract new buy-to-let investors despite the current low yield spreads.

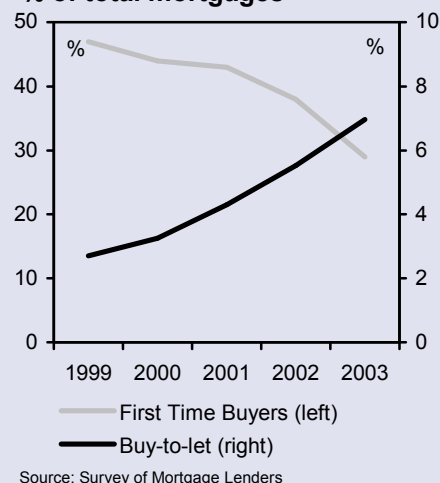
4. Effects on the macroeconomy

House price fluctuations are monitored carefully by economists, with private consumption considered to depend on the change in wealth of households as well as on their disposable income. According to this textbook theory, households attempt to smooth their consumption over their lifecycle. Their current consumption plans are not based simply on their current situation, but also on expected income. Since assets represent future income possibilities, consumption increases with growing wealth. Additionally, higher house prices enable higher mortgage withdrawals and can thus stimulate private consumption. Consequently, present consumption should decrease with asset losses including falls in house prices. A bursting asset bubble thus has a dampening effect on economic growth. Numerous studies show that this type of wealth effect occurs to a greater extent with real estate assets than with shares, for example. This could be due partly to the tendency of private investors to regard value growth of real estate as more lasting than that of shares. Another factor is that most real estate is largely debt financed; this is seldom the case with share-buying. Empirical studies clearly show the significance of wealth effects, even though the size of the effects varies. Depending on the model used, a 10% increase in house prices in the UK leads to a consumption increase

Affordability scenarios



First time buyers and buy to let investor's mortgages as a % of total mortgages



Mortgage rate and property yields

	Mortgage rate	Net yield	Capital growth
2001	5.8	5.2	10.9
2002	5.6	4.4	14.7
2003	5.6	3.8	7.2
2004 *)	6.6		

*) estimation
Sources: IPD, Datastream



of between 0.2 and 0.8%, and the adjustment process lasts between one and four years.⁷

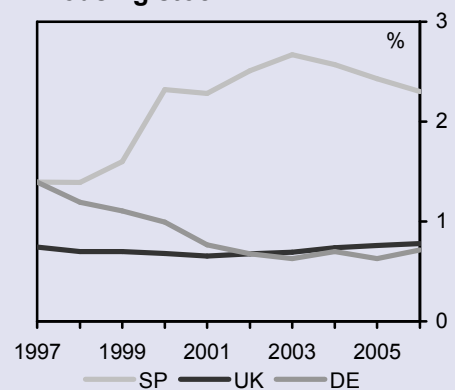
The following calculations are based on an average value of 0.5% consumption growth in response to a 10% house price increase.⁸ On this basis, the 15% p.a. growth in real house prices since 2001 would have contributed significantly to consumption. The wealth effect alone would have caused private consumption to increase by 0.9% p.a. The growth rate for private consumption between 2001 and 2004 was around 2.9%. Without the rally in house prices, it would therefore have been just over 2% p.a.

There are two possible adjustment scenarios in reaction to the overvaluation in the UK housing market: either house prices will grow below average over a long period (soft landing – our baseline scenario), or there will be a short and sharp correction with falling house prices (hard landing – our risk scenario). In the case of a soft landing, real house prices would grow more slowly than disposable income, for example at 2% p.a. The wealth effect would be almost negligible at 0.1% p.a. If it came to a hard landing with falling house prices (a 10% fall in both 2005 and 2006), there would even be negative wealth effects. Private consumption would then grow around 0.5 of a percentage point more slowly per year than if prices were stagnant, and 1.5 percentage points p.a. more slowly than if prices continued to increase sharply. House prices would have to drop by 40%, however, before wealth effects led to private consumption stagnation.⁹

5. Conclusion

House prices in the UK have shot up in recent years mainly on the back of strongly rising disposable incomes and a steep fall in interest rates. Now, the most commonly used indicators of the affordability of houses signal that the boom can no longer be sufficiently explained by the fundamental driving forces. In the past, house price busts were mostly triggered by interest rate hikes of several hundred basis points. While the Bank of England has started to raise rates (by 125 bp over the past year), recent increases have been very moderate and not comparable with the steps that preceded past downswings in house prices. Since inflation risks are mild, the coming months are unlikely to see any draconian interest rate hikes either. The rate of increase in house prices will probably fall considerably and in the coming years lie below the trend growth rate of approximately 5% p.a. in nominal terms.¹⁰ In individual years there could well be moderate price declines. This is supported by the finding of the IMF that house price movements in the industrialised world are becoming increasingly synchronised and a fall in prices can no longer be excluded in some countries (e.g. Ireland or Spain): the danger of "contagion" is greater than in the past.¹¹

New completions as a % of housing stock



Source: Euroconstruct

⁷ See among others Girouard, N. and S. Blöndal (2001), House prices and economic activity, OECD Economics Department Working Paper 279, Paris and IMF (2002), World Economic Outlook, April 2002.

⁸ In addition, it is assumed that all wealth effects lead directly to a consumption increase in the year considered.

⁹ This only holds true if all other conditions remain unchanged, i.e. if consumption expenditure – excluding the wealth effect – grows by 2% p.a. over the following years.

¹⁰ Since 1957 real house prices have risen by 2.8% p.a. on average. In the coming years annual inflation is expected to be just about 2%, so house prices should increase by somewhat less than 5% per year in nominal terms.

¹¹ IMF (2004), World Economic Outlook September 2004.

In addition, the very intense debate among economists and in the media about a housing bubble could cause the market to overreact. The price correction could then be more pronounced than the fundamentals would warrant.

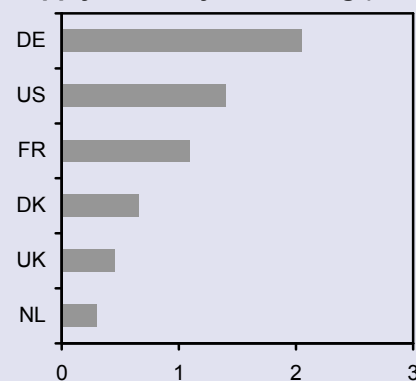
The supply side of the British housing market, though, does not react very strongly to changes in prices (the price elasticity of supply is low). There is consequently no danger at present of a glut arising just at the time when the housing market might start to turn downwards. Indeed, construction intensity – defined as the number of housing completions in relation to housing stock – has barely risen in recent years. It is only marginally higher than the reading for Germany, where house prices have been stagnating for years.

A recent survey by the IMF illustrates just how difficult it is to predict how house prices in the UK are going to develop, despite the clear signs of overvaluation. The authors expect the growth of real house prices to ease to around 2.5% p.a. by autumn 2005 as a result of gradual monetary tightening. However, the 95% confidence interval in their forecast extends from -15 to +20% p.a. This means for the coming year there is a 95% probability of a sharp rise, a sharp fall, or a value in between!¹²

The risks of an economic crisis being triggered by the housing market appear to be slight, though. While the end of the positive wealth effects will probably mean that private consumption expands much more slowly than in the past, it is unlikely that the housing market alone will drive the economy to the brink of recession. Barring changes in other factors, house prices would have to plunge about 40% for that to happen – a much more severe slump than during the last crisis in the housing market in the early 1990s. However the UK economy is today more vulnerable to negative economic shocks like rising oil prices than during the last years, as the positive stimulus of rising house prices will be absent. House prices could therefore reinforce any downswing trigger. It might therefore prove interesting for the financial industry to offer hedging investments for the UK housing market in order to mitigate the risk of price cuts.

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Supply elasticity of housing*)



*) Reaction of housing supply to a 1% increase of house prices

Source: Swank, J., Kakes, J., Tieman, A. (2002), The housing ladder, taxation, and borrowing constraints, MEB Series 2002-9, De Nederlandsche Bank, Monetary and Economic Policy Department

¹² IMF (2004), World Economic Outlook, September 2004.