The housing market and the economy

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Recent developments in the housing market have prompted increased interest in its links with the wider economy. After summarising the historical trends in the UK housing market—compared with those in other major industrial countries—over the past 50 years, this article looks at those links in recent years, and discusses a number of differing explanations of them. It also considers how the relationship might be affected by an environment of sustained low inflation.

Introduction

The changing price trends in the UK housing market—particularly over the past decade—have stimulated interest recently in the links between house prices and the economy as a whole. House price movements are an important element in several of the alternative explanations of the consumer boom in the 1980s. And the falls in housing wealth brought about by falling prices in the past five years have been seen by some as a reason for the weakness of consumer spending.

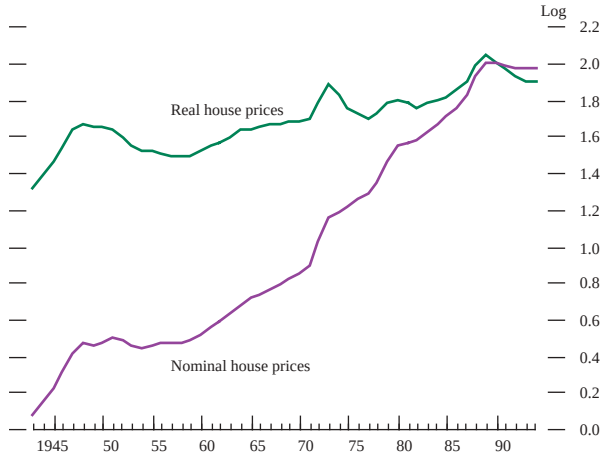
This article focuses on price developments in the housing market (looking at housing finance only indirectly) and mainly on the owner-occupied sector. It looks at the links between house price movements and the economy generally, and considers how the two might interact in the second half of the 1990s. It concludes that the simultaneous boom in house prices and consumption in the second half of the 1980s should not be interpreted as evidence of a causal link between the two. Other developments in the 1980s may have caused them to move together: in particular, the liberalisation of credit and mortgage markets allowed households to raise their demand for both housing and other goods by increasing their borrowing. Their *willingness* to borrow is likely to have been influenced by, among other factors, rising expectations about the prospects for income growth, generated by an above-trend growth rate in the economy as a whole.

A more stable macroeconomic environment in the 1990s—with lower and less volatile general price inflation—is likely to reduce the demand for housing as a hedge against inflation. In addition, the experience of nominal house price falls in the early part of this decade and the possibility that, in a low-inflation environment, such falls might recur in the future may have raised the perceived scale of the risks of investing in housing relative to other assets. And other factors, such as demographic changes, are not likely to provide much of a stimulus to housing demand in the 1990s. These developments point to a possible change in the balance of the incentives to house purchase in future, with greater importance being given to the shelter and other services that houses provide, and less to the financial return from ownership.

Trends in house prices over recent decades

Historical trends in UK house prices provide a context for the recent developments. Since the early 1940s, the trend in house prices has been steadily upward, with two exceptions—in the first half of the 1950s and the beginning of the 1990s. Adjusted for general inflation, house prices rose fourfold between 1943 and 1994, at an average annual rate of 2.7% (see Chart 1).(1)

Chart 1
Trends in real(a) and nominal house prices



(a) Department of the Environment nominal house prices deflated by RPIX inflation.

There has been a similar upward trend in real house prices in other countries (see Table A). Between 1970 and 1992, house prices relative to consumer prices rose by an average of 1.6% a year in the Group of Seven (G7) countries. Among the G7 countries, the United Kingdom and Japan experienced the fastest average real rates of house price growth.

(1) Because of improvements in the quality of the housing stock, this simple calculation exaggerates the rise in real house prices, especially before 1968 when the Department of the Environment house price index began to be weighted for a constant mix of dwellings—by type, size (number of rooms) and age. According to one estimate, the rate adjusted for the improvement in quality was around 2.5% per year. See Holmans, A E, 'House prices: changes through time at national and sub-national level', *Government Economic Service Working Paper No 110*, January 1990.

Table A
House prices[a] and income in G7 countries, 1970–92

Annual percentage changes; *per cent in italics*

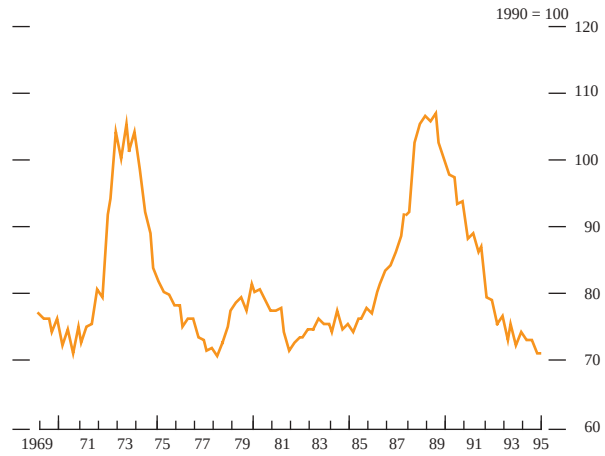
	Nominal house prices	Real house prices	Real personal disposable income (b)	Rate of owner occupation (1990)
Canada	8.8	2.0	3.4	*63*
France	6.7	0.9	2.4	*54*
Germany	5.4	1.6	2.7	*40*
Italy	12.5	0.3	2.3	*67*
Japan	7.8	2.5	3.6	*60*
United Kingdom	12.6	2.6	2.2	*67*
United States	7.7	1.6	2.5	*64*
G7 average	8.8	1.6	2.7	*59*

Sources: Bank for International Settlements (BIS), except for United Kingdom (Department of the Environment house price data deflated by RPIX) and Italy [from Holmans, A E, 'House prices, land prices, the housing market and house purchase debt in the UK and other countries', *Economic Modelling*, 1994].

(a) For the period 1970–92, except for France (1980–92), Germany (1971–92) and Italy (1970–89).
(b) Personal disposable income deflated by the consumer price index for the period 1970–92, except for France (1972–92) and Japan (1970–88).

In the United Kingdom, house prices have also risen faster than incomes, on average; by contrast, in other G7 countries, the growth in incomes has been significantly higher than that of house prices. There have been several sharp cyclical fluctuations in house prices relative to income in the United Kingdom—in the early to mid-1970s; the late 1970s/early 1980s; and the late 1980s/early 1990s (see Chart 2).

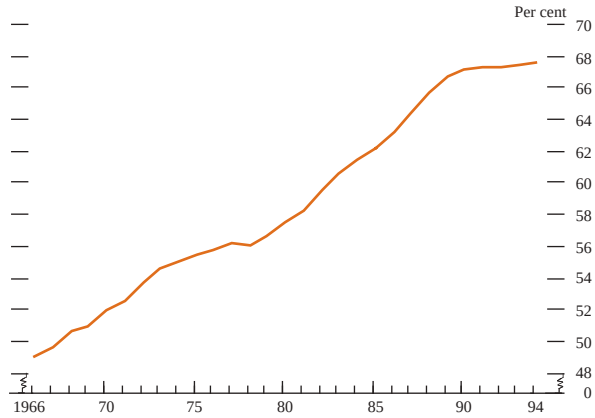
Chart 2
Ratio of house prices to personal disposable income in the United Kingdom[a]



(a) Department of the Environment house prices (1990 = 100) divided by total disposable income (1990 = 100).

The upward trend in house prices relative to consumer prices is explained by a combination of steadily rising demand for owner-occupied housing—as a result of rising *per capita* real incomes and an increasing population, combined with the greater availability of mortgage finance and tax advantages favouring homeownership[1]—and a relatively inelastic supply of new dwellings because of the limited supply of land. Since the 1950s, the share of households that are owner-occupiers has increased from under a third to more than two thirds (see Chart 3), as the importance of the private and (more recently) the public rented sectors have declined.

Chart 3
Owner-occupied dwellings as a proportion of housing stock



Source: Department of the Environment.

Although tax incentives in favour of owner-occupation are common in other countries, they were particularly large during the period in the United Kingdom (though they have recently been diminished) and the United States;[2] owner-occupation rates in these countries are among the highest in the G7 countries (see Table A).

One possible explanation for the sharp cyclical fluctuations in real house prices is that they are asset prices. Theoretical models which treat housing as an investment asset providing a stream of services suggest that changes in expectations can cause house prices to move sharply, as new information about changes in the future supply or demand for housing is quickly reflected in current house prices.[3]

The 1980s housing-market boom and the wider economy

The house-price boom in the second half of the 1980s was larger (relative to RPIX inflation) and longer-lasting than that of the early 1970s. Moreover, it immediately followed a smaller boom in prices in the early 1980s (1982–84), with the result that house prices doubled relative to retail prices between 1982–89.

Table B
A comparison of house-price booms

Percentage changes from trough to peak; *annual average change in italics*

Period	House prices		Real personal disposable income (a)
	Nominal	Real (a)	
Early 1970s (1971 Q2–1973 Q3)	97 *35.3*	68 *25.8*	15 *6.2*
Late 1970s (1978 Q2–1980 Q3)	68 *25.9*	25 *10.2*	9 *4.1*
Late 1980s (1985 Q1–1989 Q3)	119 *19.0*	79 *13.7*	24 *4.9*
1980s overall (1982 Q1–1989 Q3)	190 *15.2*	103 *9.9*	35 *4.1*

Sources: Department of the Environment house price index and Bank of England.

(a) Deflated by RPIX.

(1) Owner-occupied housing is exempt from capital gains tax and is eligible for tax relief on mortgage interest payments (MIRAS). Since August 1983, tax relief has been available only up to a ceiling of £30,000, and in April 1995 the rate at which relief is given was reduced from 20% to 15%.
(2) See 'Housing finance—an international perspective', in the February 1991 *Quarterly Bulletin*.
(3) See Breedon, F J and Joyce, M A S, 'House prices, arrears and possessions: A three equation model for the UK', *Bank of England Working Paper No 14*, June 1993.

Other countries also experienced an exceptional increase in house prices relative to consumer prices during the second half of the 1980s, but among the G7 countries the overall increase in real house prices between 1985–90 in the United Kingdom was second only to that in Japan (see Table C).

Table C
Real house prices[a] in G7 countries

Percentage changes; *annual average percentage changes in italics*

	1985–90		1970–92 (b)	
	Total	Annual rate	Total	Annual rate
Canada	42	*7.2*	56	*2.0*
France	22	*4.1*	11	*0.9*
Germany	4	*0.8*	39	*1.6*
Italy	5	*1.2*	6	*0.3*
Japan	76	*12.0*	73	*2.5*
United Kingdom	55	*9.2*	178	*2.6*
United States	8	*1.5*	41	*1.6*
G7 average	30	*5.1*	58	*1.6*

Sources: Bank for International Settlements (BIS), except for United Kingdom (Department of the Environment house price data deflated by RPIX) and Italy [from Holmans, A E, 'House prices, land prices, the housing market and house purchase debt in the UK and other countries', *Economic Modelling*, 1994].

(a) Deflated by consumer price indices.
(b) Except for France (1980–92), Germany (1971–92) and Italy (1970–89).

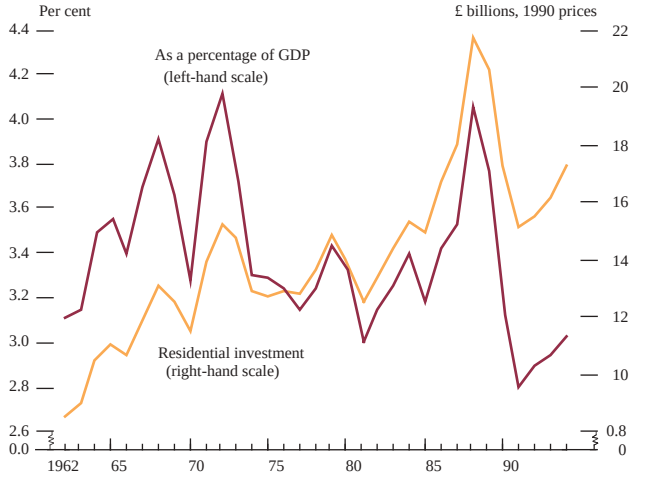
The volume of housing transactions in the United Kingdom—as measured using the number of particulars delivered to land registries—also picked up sharply: it rose from 1.2 million in 1981 to a peak of around 2 million in 1988; and, as a proportion of the total housing stock, from 12% to 16% (see Chart 4).(1)

Chart 4
Volume of property transactions

Sources: CSO, Department of the Environment.

The increase in housing demand stimulated an increase in new house building and in improvement work. At the height of the boom, between 1985 and 1988, the value of private sector residential investment (at constant 1990 prices) increased at an average rate of over 13% a year to reach around £22 billion; its share of GDP rose from 3.2% to 4.0% (see Chart 5). Although the number of new private sector housing starts in 1988 was much the same as in 1972—at the time of the previous peak in residential investment—there was much more home improvement work in the late 1980s.

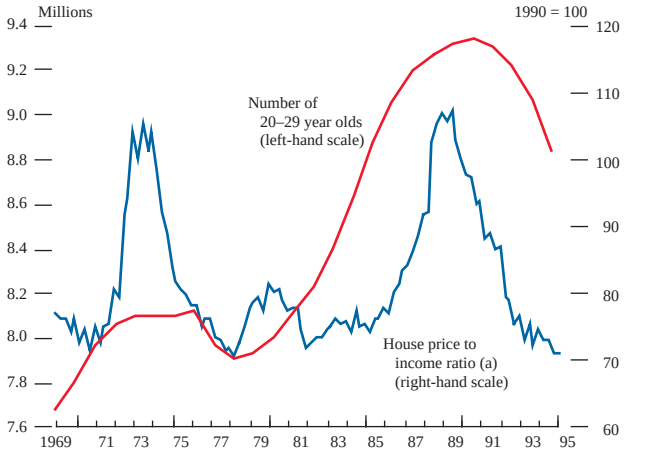
Chart 5
Private sector residential investment



Source: CSO.

There has been some debate about the relative importance of demographic factors, income expectations and financial liberalisation in generating the 1980s housing-market boom. It is likely that demographic pressures played an important role. The population in the 20–29 age range rose by 1.3 million, compared with 0.1 million over the previous decade (see Chart 6). The rate of household formation also increased: first-time buyers brought forward their entry into the owner-occupied sector as house price inflation rose.(2) Purchases were also brought forward in response to the announcement in March 1988 that from August of that year mortgage interest tax relief would be restricted to £30,000 per residence regardless of the number of borrowers; in the five months after the announcement, the number of transactions was 12,000 a month higher than in the previous five months. Interestingly, although the number of first-time buyers (excluding public sector sitting tenants) increased from 371,000 in 1982 to 545,000 in 1988,(3) their share in all

Chart 6
Number of 20–29 year olds and house price to income ratio



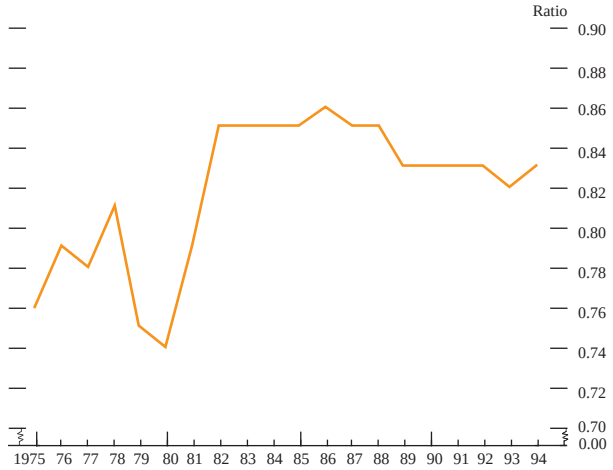
(a) Department of the Environment house prices (1990 = 100) divided by total disposable income (1990 = 100).

(1) All housing transactions in England and Wales must be recorded at land registries; residential property transactions are estimated to account for about 91% of particulars delivered.
(2) The rate of household formation may be endogenous to house prices. On this point, see for example, Dicks, M J, 'A Simple Model of the Housing Market', *Bank of England Discussion Paper No 49*, May 1990.
(3) Estimates by Alan Holmans in 'Where have all the first-time buyers gone?', *Council of Mortgage Lenders Housing Finance*, February 1995.

transactions fell, because the number of existing owner-occupiers trading rose even faster.

Financial liberalisation is also likely to have contributed to higher housing demand in the 1980s. Prior to that decade, mortgages were rationed. So there was a distinction between the *notional* demand for owner-occupied housing—the level of demand that would have been present had potential buyers been able to obtain the necessary finance at an acceptable cost—and the *effective*, or actual, level of demand. Following the abolition of restrictions on bank lending in 1980, which enabled banks to compete with building societies in the mortgage market, and from 1983 the ending of the Recommended Rates System (which kept interest rates at too high a level to clear the market) and the granting of permission to building societies to pay interest gross (which gave them access to the wholesale money markets), rationing disappeared. As a result, the average loan-to-value ratio for first-time buyers rose from 0.74 in 1980 to 0.86 in the mid-1980s (see Chart 7).

Chart 7
Average loan-to-value ratio for first-time buyers

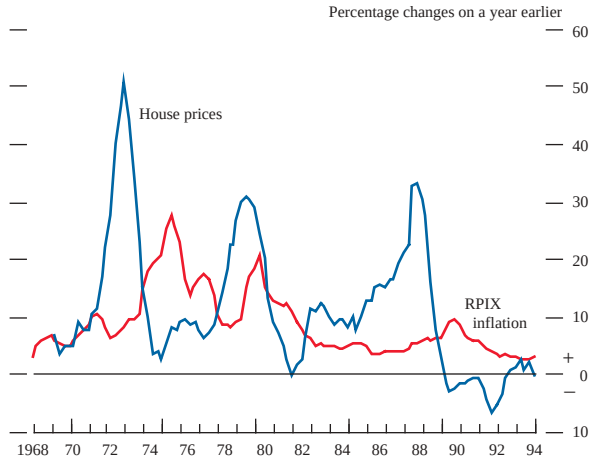


Source: Department of the Environment.

But the fact that the main boom in house prices came several years *after* the deregulation of mortgage markets suggests that other factors also played a major part in generating the increase in housing demand between 1986 and 1989. In particular, rising household expectations about their future income—at a time of strong economic growth—are likely to have increased the demand for housing and the pressure on house prices.

The coincidence of the booms in house prices and the wider economy in the second half of the 1980s has stimulated interest in the *channels* linking house price movements and the general economy—via consumption, investment and inflation. The relationship between house-price and general inflation is shown in Chart 8. Periods of high general inflation have tended to be preceded by rapid increases in

Chart 8
House prices and general inflation



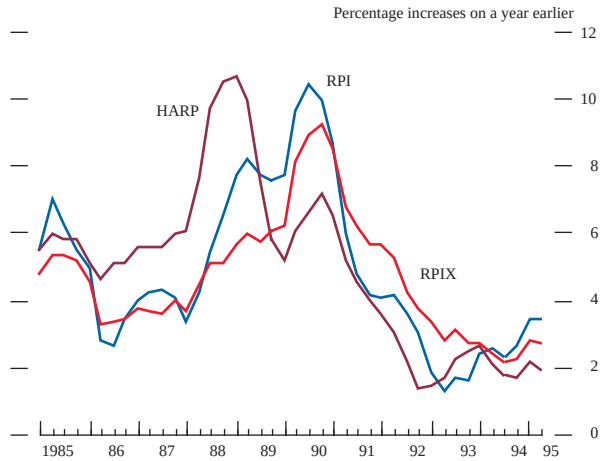
Sources: Department of the Environment and CSO.

house prices, although the relationship has not been a stable one.

There are, of course, some mechanical links between house prices and general inflation, because the retail prices index (RPI) includes the shelter costs of owner-occupiers in the form of mortgage interest payments(1) and a depreciation component.(2) The Bank also publishes a housing-adjusted retail prices (HARP) index, which includes not only depreciation and other running costs, but also the opportunity costs of money tied up in housing that could be invested in an interest-bearing asset. A further refinement to the HARP index strips out the effect of indirect taxes on inflation—the tax and housing adjusted retail prices, or THARP, index.

But there is also a less direct relationship between house prices and general inflation, because house prices can act as a *signal* about demand and price pressures in the wider economy. One reason for this is that house prices and consumption, for example, tend to be influenced by many of

Chart 9
Measures of inflation

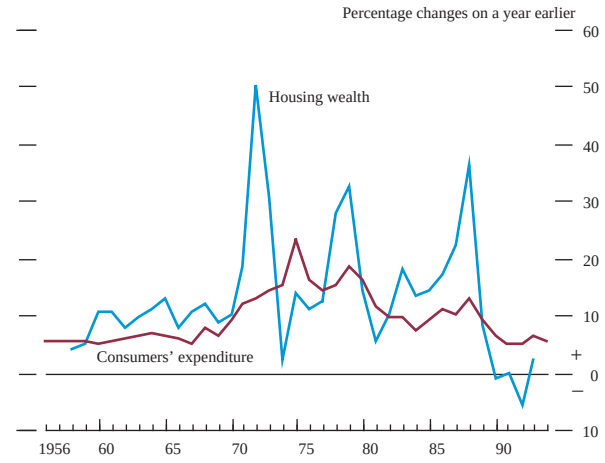


(1) The inclusion of mortgage interest payments has the perverse effect that when interest rates are increased to combat inflationary pressure, and mortgage rates rise, inflation will (temporarily) increase. That is why the Government's target—RPIX—measure of inflation excludes mortgage interest payments.
(2) The latter was introduced in February of this year, on the recommendation of the RPI Advisory Committee, in order to reflect the costs of homeownership more accurately in the measured cost of living (see the box on page 8 of the February 1995 *Inflation Report*).

the same factors—and in particular by household expectations about their future income. But, as asset prices, house prices can be expected to reflect shifts in expectations more quickly than consumer prices. In this way, the house-price boom in the 1980s might have provided a warning of the pick-up in consumption and inflationary pressure (see Chart 9).(1)

Some economists have argued that there are *causal* links between changes in real house prices and consumption, which operate via changes in housing wealth. This argument is grounded in the life-cycle model of consumption, according to which consumer spending will depend not only on current income but also on the present discounted sum of expected income, or 'lifetime wealth'—provided individuals can borrow. The evidence often cited in support of this view is the importance of housing wealth in personal sector wealth, and the simultaneous rise in housing wealth and consumption in the second half of the 1980s (see Chart 10).

Chart 10
Changes in housing wealth and consumers' expenditure



Source: CSO Blue Book.

However, as suggested above, it is not clear how house price increases can *cause* consumption to rise since, in a general equilibrium framework, they are jointly determined (ie they are 'endogenous'). In other words, changes in house prices (and housing wealth) cannot be considered in isolation from developments in the rest of the economy and, more often than not, they reflect—or act as a signal of—those developments.

Moreover, at an *aggregate* level, the effects on consumption of changes in wealth are debatable. The price of a house can be understood as the present discounted sum of the value of housing services derived from it, as measured by the user-cost of housing.(2) When house prices rise, as long as homeowners continue to demand the same quantity of housing services, they are not in any real sense better off. Homeowners could, of course, choose to 'trade down' to realise their gains, but for each person trading down there will be one trading up.(3) So when real house prices rise, there will be 'winners'—last-time sellers, or those who trade down—and 'losers'—first-time buyers and those who trade up. This argument suggests that the *aggregate* effects on consumption of a change in house prices would not be large.(4)

Moreover from a microeconomic perspective, the effect of rising house prices on consumers' spending is not

Equity withdrawal

Equity withdrawal from the housing market can be defined as the difference between increases in housing market liabilities (ie mortgage loans) and housing assets (ie new building and improvement work, net of depreciation and slum clearance). Some estimates of equity withdrawal are given in the table below. Homeowners' ability to use the positive equity in their homes to extend their mortgages provides one possible channel through which changes in house prices can influence consumption.

Value of equity withdrawal from the housing market(a)

£ billions; *as a percentage of real disposable income in italics*

	Net new loans for house purchase *a*	Investment in new dwellings *b*	Other investment *c*	Equity withdrawal *d = a-b-c*	Real equity withdrawal (b)	
1965–69	0.8	1.0	0.1	-0.3	-2.1	*-1.0*
1970–79	3.2	2.7	0.2	0.2	0.8	*0.3*
1980–89	21.1	10.8	2.9	7.5	9.5	*3.1*
1990–94	23.0	16.8	3.4	2.8	2.9	*0.8*

Source: Bank of England.

(a) All figures are annual averages.
(b) Deflated by RPIX.

In the 1980s, the annual amount of equity withdrawal (at 1990 prices) was more than ten times higher than in the previous decade, at £9.5 billion compared with £0.8 billion in the 1970s; as a proportion of real disposable income, it was 3.1% compared with 0.3%.

The substantial increase in equity withdrawal in the 1980s in part reflected a one-off adjustment by the personal sector to higher debt levels as borrowing constraints were eased. The average ratio of debt to income in the personal sector rose from 0.57 in 1980 to 1.17 in 1990; within this total, mortgage debt rose as a share of total personal sector debt, because it provided a cheaper means of borrowing than consumer credit. The increased scope for equity withdrawal is likely to have made consumers' expenditure permanently more sensitive to changes in average house prices than in the past.

(1) See the minority report by Sir Samuel Brittan (1995) on the RPI Advisory Committee's recommendations on housing costs.
(2) This is similar to the idea of a share price being the present discounted sum of the stream of expected future dividend payments.
(3) The population cannot trade down *en masse*, unless the whole of the housing stock is sold off to overseas buyers; even then, it would still need to be rented back.
(4) See Fisher, P G, 'Housing and consumption in the United Kingdom', in *Changes in the business cycle and the implications for monetary policy*, BIS, April 1993.

straightforward either. The *income effect* from a rise in the price of housing is negative: homeowners can afford less of both housing and other consumer goods. But, in theory, this negative income effect on consumption might be offset by a positive *substitution effect*—as homeowners substitute away from housing, whose relative price has risen, towards goods and services whose relative prices have fallen. In practice, however, the demand for housing is fairly inelastic and the substitution effect is likely to be small.

There may, however, be another channel from increases in house prices to consumption, involving collateral rather than wealth. Muellbauer and Murphy(1) have emphasised the role that financial liberalisation played in the transmission of the house-price boom to the wider economy in the mid-1980s, by enabling homeowners to borrow against the (rising) collateral provided by their homes. (The box on page 264 explains equity withdrawal in more detail.) It could be added that the *willingness* of homeowners to borrow is likely to have been influenced by, among other things, rising expectations of future income: it is generally easiest and cheapest to borrow by extending a mortgage, which is *secured* borrowing.

The 1990s to date

The downturn in the housing market has resulted in unusual (but not unprecedented) falls in nominal house prices; since 1989 Q3, prices have fallen by around 12%. The falls were, in part, a reflection of lower general inflation than in past downturns, when higher general inflation allowed real house prices to fall while nominal house prices continued to rise. Between 1973 Q3 and 1978 Q2, house prices rose by 43%, but nevertheless relative to RPIX fell by around 35%; but between 1989 Q3 and 1995 Q1, a similar fall in real house prices required an 12% fall in house prices (see Table D).

Table D
A comparison of UK real house price downturns

Percentage changes from peak to trough; *annual average changes in italics*

	House prices	Retail price index excluding mortgage interest payments	Real house prices (a)	Real personal disposable income
Mid 1970s	43	121	-35	-3
(1973 Q3–1978 Q2)	*7.8*	*18.2*	*-8.8*	*-0.7*
Early 1980s	—	16	-13	-2
(1980 Q3–1982 Q1)	*0.2*	*10.1*	*-9.0*	*-1.3*
Early 1990s	-12	28	-31	7
(1989 Q3–1995 Q1)	*-2.2*	*4.7*	*-6.6*	*1.3*

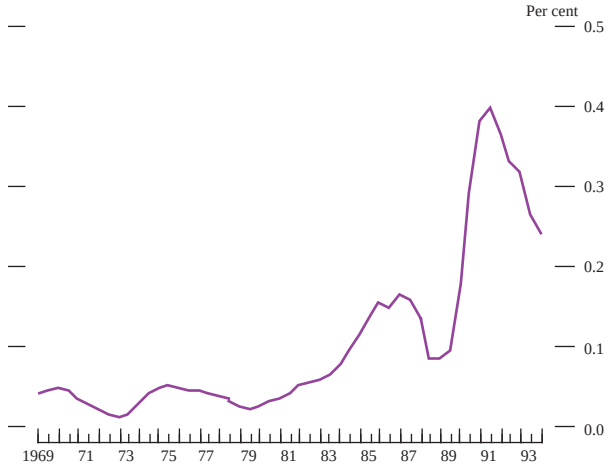
Sources: Department of the Environment house price index and *Economic Trends.*

(a) Deflated by RPIX inflation.

There have been similar occasional falls in other countries. All of the 15 countries covered in a recent BIS study(2) had experienced a nominal house price fall of 7% or more during some period between 1970 and 1992. In seven cases (including the United Kingdom), the falls had been in excess of 10%; Finland and the Netherlands had both experienced a fall exceeding 30%.

For a large number of UK households, the fall in house prices resulted in the value of their properties falling below the size of their outstanding mortgages—the problem of *negative equity*. The appearance of negative equity on a significant scale may have raised the perceived risks of capital losses from owner-occupation. It has also made homeowners with difficulties in meeting mortgage payments more vulnerable to possession.(3) Between the second half of 1989 and 1991, mortgage possessions rose as a proportion of all mortgages from 0.09% to 0.4% (see Chart 11).

Chart 11
Possessions as a proportion of total mortgages



Source: Council of Mortgage Lenders.

In some cases, negative equity is likely to have reduced households' ability or willingness to move for job-related reasons, thereby lowering labour mobility. It may also help to explain the sharp fall in housing-market transactions between 1990 and 1994; last year's volume of about 1.2 million was three quarters of the average level during the 1980s. As a proportion of the owner-occupied housing stock, transactions were around 9%, compared with an average of 12% in the 1960s and 1970s (see Table E).

Table E
Housing market turnover

Percentages in italics

	Level ('000s) (a)	Change	As percentage of owner-occupied housing stock
1960–69	870	. .	*11.3* (b)
1970–79	1,100	*26*	*11.9*
1980–89	1,530	*39*	*13.2*
1990–94	1,150	*-25*	*8.6*

Sources: Department of the Environment and Inland Revenue.

. . not available.

(a) Estimated as 91% of the number of particulars delivered in *all* property transactions.
(b) 1966–69.

A number of links have been suggested between the downturn in the housing market and the general state of the

(1) In Muellbauer, J and Murphy, A, 'Is the UK balance of payments sustainable?', *Economic Policy, Vol II*, 1990.
(2) Kennedy N, and Andersen, P, 'Household saving and real house prices: An international perspective', BIS, 1994.
(3) The courts take into account the amount of negative equity in exercising their discretion in applications by lenders for possession. A recent survey found that three quarters of homeowners whose houses were possessed had no positive equity in their homes: see Ford, J, Kempson, E and Wilson, M, 'Mortgage arrears and possessions: perspectives from borrowers, lenders and the courts', *Housing Research Report*, HMSO, 1995.

Negative equity and the personal sector balance sheet

Negative equity occurs when the market value of an individual's house falls below the value of the outstanding mortgage secured on it. It became widespread in the early 1990s, particularly in the South of England, as a result of a combination of falls in house prices and high levels of gearing by some participants in the housing market.

There are two reasons why negative equity has been singled out for special attention (and differentiated from other forms of personal sector debt). The first is that in some cases it reduced the ability of homeowners to move. This was particularly true in the early part of the 1990s, when lenders in general did not allow homeowners with negative equity to transfer their mortgage between properties. The second is that falling house prices in the early 1990s represented an unexpected loss of wealth. Many of those affected by negative equity had been first-time buyers only a few years earlier, when house prices had been high, and had negative net financial wealth when house prices fell. The concentration of the loss of wealth within this group probably meant that it affected consumption and savings behaviour more than it would have otherwise.

Estimates of negative equity

The amount of negative equity has been estimated in several ways. 'Snapshot' estimates for particular dates can be produced using information from household surveys. Using a different approach, Dorling of Newcastle University has produced estimates from a large sample of mortgage transactions through the Halifax Building Society.(1) These sample-based estimates require grossing up to produce aggregate estimates of negative equity for the United Kingdom as a whole.

An alternative method, which has been used by the Bank and others, starts with aggregate data on the number of loans for house purchase, average loan-to-value ratios (or deposits put down) and average house prices. The value of negative equity is calculated for various groups of buyers (defined according to the region in which they buy, first-time buyer/existing buyer status and their loan-to-value ratio). The value of a representative buyer's outstanding mortgage within each group at the time of purchase is given by the purchase price multiplied by the loan-to-value ratio. In subsequent periods, an estimate of the equity position is calculated by subtracting the remaining mortgage from the new level of house prices for that group. The groups are aggregated to produce estimates of negative equity for the United Kingdom as a whole. These estimates then need to be adjusted to make allowance for possessions (which reduce negative equity but do not eliminate the residual unsecured debt), and for further advances and arrears (which increase negative equity). The wide range of published estimates indicates the difficulty in knowing how large these adjustments should be and the serious measurement problems involved.

Problems with estimates

The assumptions necessary to calculate negative equity have been recently reviewed by the Bank, to take account of new information which has become available since the original method was first applied. Four main measurement problems have been identified:

- An inadequate adjustment for 'abnormal' (lump-sum) loan repayments made by households with negative equity (which will have reduced the value of their outstanding mortgages).
- Failure to take full account of household moves.
- Uncertainty about the adjustment for possessions, further advances and arrears which affect the level of unsecured housing debt.
- Uncertainty about property values.

Although it is fairly simple to measure the value of a typical individual's original mortgage, the amount outstanding can be reduced by loan repayments, or increased by further advances. Loan repayments can be either scheduled (for homeowners with repayment mortgages) or discretionary lump-sum repayments. Bank calculations include an adjustment for both sorts of repayment, but it is highly likely that lump-sum repayments are underrecorded. The simplifying assumption made is that households with negative equity make a lump-sum repayment each quarter in line with the average for all households, but in practice they are likely to make larger than average repayments to reduce their debt. The inaccuracies induced by this assumption are likely to have increased over time.

Second, estimates of negative equity typically do not take full account of moves by households with negative equity within the owner-occupied sector. This may result in some double-counting of the number of households affected. For example, if a household with negative equity moves and finds that the price of its new home falls, it may be counted twice. If, alternatively, the household leaves the owner-occupied sector by selling its home, it will continue to be included in the estimate of the number of households with negative equity.(2) It is not possible to make an adjustment for these effects in the absence of any information about the mobility of households with negative equity. Again, the associated inaccuracies are likely to have increased over time.

(1) Dorling, D, 'The spread of negative equity', *Housing Research Findings No 101*, Joseph Rowntree Foundation, 1993.
(2) A decision to leave the owner-occupier sector may be made to limit the household's exposure to further house price falls. An outstanding debt may remain.

Bank estimates, however, have made an allowance for the technical elimination of negative equity through possession by the lender, and for additions to negative equity through advances and arrears. The adjustment involved simply grossing up the original estimates by 15%. This is a crude assumption:[3] preliminary work based on recent survey information suggests that this adjustment biases the estimates upwards.[4]

Without further information, it is not possible to make an accurate adjustment for the factors outlined above. In particular, such adjustments are hampered by the fact that the factors are not independent of other influences on negative equity. Nonetheless, the evidence that is available tentatively suggests that making no adjustment for these factors may be better than using the 15% scaling factor. When the original method was first applied, the level of arrears was very high and the positive contribution of arrears, together with that of further advances, was thought to outweigh the negative contribution of properties taken into possession. Since then, however, the cumulative number of possessions has risen while the number of households in arrears has fallen, and recent survey evidence suggests that the effect of these factors may be approximately offsetting. Making no adjustment for arrears, possessions and further advances would reduce the estimate of the number of households with negative equity in 1995 Q2 from 1.1 million to around 925,000, and the estimated value of UK negative equity from £5.0 billion to around £4.3 billion.

Finally, there are alternative sources of data on house prices. Bank estimates of negative equity have been based on Halifax Building Society data on average house prices in each region. However, the average house prices recorded by the Department of the Environment are higher than those recorded by the Halifax (particularly in the South East) and hence produce a lower estimate of UK negative equity.

As well as these measurement problems, there is an important conceptual problem. Estimates of negative equity are a measure of the excess of housing debt over the value of housing assets or wealth. Using this to explain household spending/savings patterns represents a partial approach to the analysis of the personal sector balance sheet.

The value of financial savings accumulated by households with negative equity (including endowment policies[5]) matters for the economic interpretation, if not the technical measurement, of negative equity. From a macroeconomic viewpoint, negative equity is relevant because of its possible effects on the mobility and savings of the households affected. These effects were widely thought to be significant in the early 1990s, when negative equity first became widespread. Since then, however, some of those households that were affected by negative equity will have responded to it by increasing their savings, and to the extent that their negative equity is now matched by accumulated savings, there is no reason to think that their behaviour will any longer be affected.

There is some evidence about the recent savings behaviour of households with negative equity over and above that through endowment mortgages. According to the General Household Survey, in 1993–94 16% of households with negative equity had savings which exceeded their negative equity, and the remaining 84% had savings amounting to 14% of their negative equity. In addition, information from the annual British Household Panel Study suggests that households with negative equity in 1991 saved more than the average household between 1991 and 1993. This might also suggest that there may have been some accelerated repayments of principal.

Conclusions

The above discussion illustrates the many uncertainties surrounding published estimates of negative equity (including the Bank's). They rely on a number of very uncertain assumptions which cast doubt on their accuracy; and the inaccuracies are likely to have increased over time. There is also a major conceptual problem with using these estimates to explain household behaviour. Negative equity was thought to be important because it affected mobility and because it changed consumer spending/savings patterns. It is now several years since negative equity became widespread. During this period, there are likely to have been important behavioural changes which mean that its significance has probably diminished. As suggested above, some households will have accumulated savings which match their negative equity. Moreover, increasingly households and mortgage lenders have found ways of overcoming the constraints on mobility which negative equity had earlier created. For example, many lenders now offer schemes to enable households to transfer negative equity between properties.

Given these developments, it would clearly be unsatisfactory in current circumstances to regard negative equity as a summary indicator of housing distress. There are other indicators which deserve (at least) equal attention, for example those on arrears and possessions. That is not to suggest that negative equity is not still a problem for a substantial number of mortgage borrowers: the point is rather that it is not the *only* source of housing-related financial problems; and that some of the problems associated with negative equity have been overcome.

(3) It was based, in part, on the limited survey information available when the calculations were first undertaken.
(4) Information on arrears and possessions is provided in a household survey, commissioned by the DoE in 1994: see Ford *et al* (1995) (*op. cit.*). This found that of the buyers who had lost their homes through possession 72% had negative equity, higher than the proportion of borrowers in arrears who had negative equity, of 28%.
(5) There are penalties for the early surrender of endowment policies, but it would clearly be wrong to ignore their value completely in analysing household behaviour. As was pointed out recently, for many individuals who took out endowment mortgages in the second half of the 1980s, the growth in the surrender value of these funds would probably now be sufficient to offset their negative equity: see 'No house room for the myth of negative equity' by Anatole Kaletsky, *The Times*, 22 June 1995.

economy. For households, the weakening of the personal sector balance sheet is likely to have contributed to slower growth in consumers' expenditure in general, and the demand for household goods in particular.(1)

The weakness in the demand for housing has been associated with a sharp fall in private sector residential investment during the recession. At 1990 prices, the value of new house building almost halved from its peak in 1988, but, perhaps more unusually, there was also a dramatic decline in the value of home improvement work (see Table F). This lends some support to the view that with lower inflation, the demand for housing in its widest sense—including the quality as well as the quantity of housing—is likely to be lower. One reason for this is that there is less need for a hedge against unpredictable inflation—which housing has traditionally provided.

Table F
Private sector residential investment at 1990 prices

Percentage changes

	Value of total private sector residential investment	Value of new starts	Value of repair, maintenance and improvement work (a)
Upturns			
1977–79	16.4	4.5	40.1
1985–88	45.9	48.7	25.0
Downturns			
1972–75	-16.2	-32.2	-4.5
1979–81	-15.7	-28.4	-5.7
1988–92	-28.6	-47.5	-14.4

Source: CSO.

(a) Includes public sector—figures for private sector are not available separately before 1985.

The housing market in a low-inflation world

Sustained low inflation is likely to reduce the amplitude of the economic cycle, avoiding the damaging booms and busts which have characterised the past quarter of a century. What are the implications for the demand and price of housing, and for future fluctuations in house prices?

It is not immediately obvious that lower general inflation will affect the *real* rate of return to housing, as approximated by the user-cost of housing.(2) However, because the majority of house purchases are financed by a mortgage which is fixed in nominal terms, housing has in the past provided a hedge against high and unpredictable general inflation, and such purchases have generally yielded large amounts of positive equity. With lower and less variable inflation, the demand for housing as a hedge against inflation should fall. In addition, the reduction in the tax advantages of investing in housing has reduced its relative attraction as an asset.

But low inflation will not eliminate all fluctuations in the economy, nor will it prevent changes in relative prices of goods and services in response to changing relative supply and demand. House prices are likely to continue to be more cyclical than other prices, both because they are particularly sensitive to expectations and (in the short run, at least) housing is in fixed supply. In an environment of overall price stability, this is likely to mean that house prices will fall in some years.

To illustrate this point, since the early 1940s real house prices have risen by around 2.7% a year. But (as outlined above), there has been a wide distribution of real house price fluctuations within this: in about 60% of the years, there was a rise in real house prices; in the remainder, real house prices fell. If there were to be the same distribution of real house price changes—which reflects the distribution of underlying shocks to the housing market—in future, lower general inflation would mean that house price falls would be more common than in the past.

However, if real house price fluctuations in part reflect instability elsewhere in the economy, low inflation should lead to less volatility in real house prices. For example, the economic conditions which are conducive to low general inflation are likely to involve smaller fluctuations in real income expectations and in the induced demand for housing. If sustained low general inflation could be achieved then there would be less danger of housing-market booms in which the expectation of higher returns becomes self-fulfilling in the short run, but eventually proves unsustainable.

Low general inflation can also be expected to lead to lower and less variable interest rates, which would reduce the problem of '*front-end loading*'. Assuming real interest rates are constant, higher inflation implies higher nominal mortgage rates, which have the effect of tilting the real burden of repayments towards the earlier years of a mortgage. This can cause cash-flow problems for some households in servicing their mortgage debt.(3) Households' ability to service their debt may also be improved with a move towards smaller loans, either from a shift towards purchasing cheaper houses, or (more likely) a shift towards higher initial deposits and lower loan-to-value ratios. From the lenders' viewpoint, lower loan-to-value ratios can be expected to reduce the risk of arrears and default.

Another factor which should serve to reduce desired loan-to-value ratios is that, with lower expected returns to owning a home financed by a mortgage, households will feel less pressure to gear up in debt in order to maximise their potential return on housing investment. This will mean that

(1) There would be a positive relationship between housing-market turnover and the demand for household goods if housing and other goods were complements. They may be complements or substitutes: a higher level of housing transactions raises the demand for soft furnishings and white goods, but owners unable or unwilling to move may choose to spend money on improving their existing homes.

(2) The user-cost of housing is the post-tax cost of holding housing as an asset. At its simplest level (an individual who takes out a 100% mortgage), this is the cost of finance—given by the (post-tax) mortgage rate (1-*t*) (r_m)—minus capital gains on housing, as measured by the percentage increase in house prices (%*hp*), multiplied by the house price (*HP*). A more sophisticated measure will also take into account the way in which house purchase is financed, either through mortgage borrowing or savings. It can be written as:

$$[(1-t)\, r_m\, lvr + r\,(1-lvr) - \%hp]\, HP$$

where the additional term, *lvr*, is the loan-to-value ratio. A higher level of gearing, as measured by the loan-to-value ratio, magnifies gains and losses from house purchases financed by a mortgage. See, for example, King and Atkinson, 'Housing policy, taxation and reform', *Midland Bank Review*, 1980.

(3) In the long run, nominal incomes will rise with inflation enabling households to service the higher nominal repayments. In the short run, because the rise in nominal interest rates is designed to check future inflation, nominal incomes may not keep pace with the rise in inflation and higher nominal interest rates may cause a cash-flow problem for some households.

the demand for mortgage funds is likely to be lower, as new and existing borrowers reduce their exposure to house price fluctuations.

Summary

Fluctuations in house prices are relevant to a broader economic assessment,(1) because of the information they can contain both about household expectations and about demand and price pressures in the economy.

Developments in the housing market over the past few years—including arrears and possessions, and negative equity—have increased the perceived risks of borrowing for house purchase. In addition, lower general inflation is likely to mean that the demand for housing as a hedge will be reduced.

A climate of price stability may also lead to smaller fluctuations in real house prices, as uncertainty about the rate of return from housing is reduced; in the past, changing expectations have been an important source of volatility in real house prices. Moreover, both lenders and borrowers may shift towards lower desired loan-to-value ratios to take account of the likelihood that with lower general inflation house price falls may occur from time to time.

(1) House prices are one of the many indicators considered by the authorities in assessing the stance of monetary policy.