

# House prices and consumer spending

By Andrew Benito, Jamie Thompson, Matt Waldron and Rob Wood of the Bank's Monetary Analysis area.

*This article explores the complex relationship between house prices and consumer spending. It explains that the strength of the relationship can vary considerably over time. And it highlights the key roles that both common factors and causal links have played in the weakening association between house prices and consumer spending in recent years.*

## Introduction

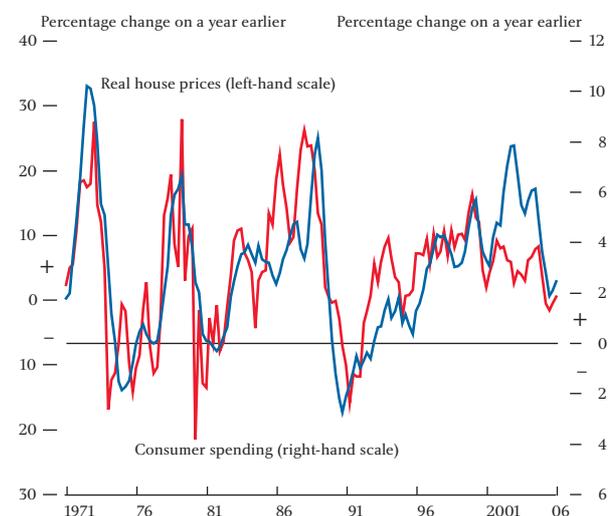
In a famous experiment, Pavlov showed how a past association between two events could be mistaken for a causal link between the two. In his experiment, a bell was rung as his dogs were provided with food. Over time, the dogs learned to associate the two, believing that the ringing of a bell would be accompanied by the arrival of food. Of course, that was not necessarily the case. It is an example of the fact that correlation is not causation.

A similar point applies to the interpretation of correlations among many macroeconomic time series. The link between consumer spending and house prices is a good example. The two series have tended to move together in the past. In part, that is because house price movements can cause changes in spending. But the correlation also reflects the influence of common factors, like expectations of future income, that affect both house prices and consumption.

More recently, the empirical association between house prices and spending has waned (Chart 1). That might reflect a weakening in the causal links between them. Or it could be the case that, in contrast with the past, recent fluctuations in house prices have not been driven by common factors like expected income. Instead, a different set of factors might have been important. They could have boosted house prices, but had a more limited impact on consumer spending. This illustrates that the implications of a rise in house prices for consumer spending depend on why house prices have risen.

This article starts by discussing the common factors and causal links that lie behind the association between

**Chart 1**  
Real house prices<sup>(a)</sup> and consumer spending



Sources: Nationwide and ONS.

(a) Nationwide house price index deflated by the consumer expenditure deflator.

house prices and consumer spending. It then examines how changes in the strength of these different channels, and the impact of other influences, might account for the apparent weakness of that relationship in recent years. Throughout the article, a common theme is that the linkages between house prices and consumer spending are more subtle — and rather less stable over time — than is often supposed.

## What explains the past empirical association?

### Common factors

There are a number of factors that affect both house prices and consumer spending. For example, a reduction in interest rates, an increase in people's access to credit, and an improvement in income expectations would all tend to boost demand for consumer goods and

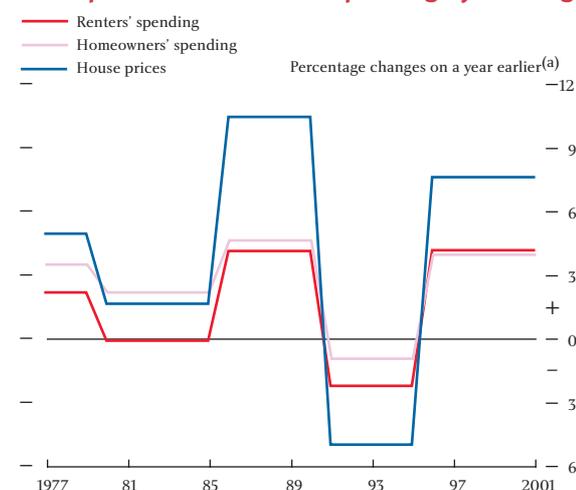
services, as well as demand for housing. In such cases, there might appear to be a direct relationship between higher house price inflation and higher consumer spending growth. But, in reality, both outcomes are driven by a common influence.

The key common factor is probably expected income (see King (1990) and Attanasio and Weber (1994)). If there is an increase in the income households expect to earn in the future, that would lead them to plan higher spending — both now and in the years ahead. Households would demand more consumer goods and services, and their demand for housing would rise too. The increase in future expected income would therefore lead to a rise in both consumer spending and house prices.

Evidence suggests that income expectations have at times played an important role in the comovement between house prices and consumer spending. For example, changes in income expectations should affect the behaviour of renters as well as homeowners. So if income expectations had played a key role, we might expect the spending of renters to have moved with house prices — even though they do not own a home. Based on evidence from household surveys, that appears to have been the case (Chart 2).

Similarly, if income expectations have been important, then house price movements would tend to be more closely related to the spending of the young than the old. Younger households have more years of work ahead

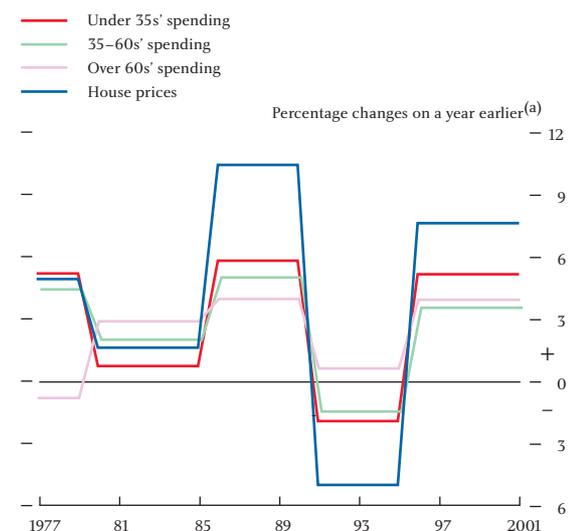
**Chart 2**  
House prices and consumer spending by tenure group



Sources: Attanasio *et al* (2005) and the ONS Family Expenditure Survey.

(a) In order to smooth year-on-year fluctuations, annual data are averaged over periods of high or low consumption growth: 1977–79, 1980–85, 1986–90, 1991–95, and 1996–2001. Underlying data are for calendar years until 1992 and for financial years thereafter.

**Chart 3**  
House prices and consumer spending by age group



Sources and footnote: see Chart 2.

of them and should benefit most from a general rise in the wages that people expect to earn in future. Chart 3 shows that the spending of younger households did indeed appear to move more closely with rising house prices in the late 1980s and late 1990s, as well as with the fall in house prices in the early 1990s. As the box on page 145 explains, however, some studies have also pointed to a strong link between house prices and the spending of older households. So evidence on the spending behaviour of different age groups is not clear-cut.

### House prices and household wealth

Wealth and consumer spending are closely linked. The amount that a household can spend over its lifetime is limited by the wealth it can accumulate. And, in general, a household is likely to respond to an increase in wealth by spending more both now and in the future.

As a result, it is often supposed that house prices influence consumer spending because housing is a major part of households' wealth. Housing accounts for around 40% of total household assets. More people own homes than shares (see Banks and Smith (2000)). And, for many households, housing is the most valuable asset they own (see Barwell *et al* (2006)).

But, in reality, the link between house prices and aggregate wealth cannot explain the historical association between house prices and consumer spending (see Aoki *et al* (2001)). That is because of a key characteristic of housing.

## What makes housing different?

Housing is very different from other assets, such as shares. People not only own houses, they obtain a service from them — they live in them. By contrast, households only own shares; they do not ‘consume’ them.

This characteristic means that house price movements affect people in two key ways. First, they affect the value of the houses that people own. Second, they affect the cost of living in them. When house prices rise, typically rents do too — so renters face higher housing costs.<sup>(1)</sup> And even though homeowners’ mortgage payments do not necessarily change, they have to pay more for their housing as well. A homeowner who intends to move house will have to pay more to live in the new home. Those staying put will also pay more, albeit implicitly, by continuing to stay in their now more expensive house.<sup>(2)</sup>

The overall impact on the wealth accumulated by an individual — and hence their spending — depends on the balance of these two effects. For some households, they will roughly cancel each other out. The rise in the value of their home is matched by the rise in their future housing costs. But an increase in house prices can also generate winners and losers.

Broadly speaking, homeowners planning to ‘trade down’ to a cheaper home, or sell for the last time, are likely to be better off following a rise in house prices. Their gain from the increased value of their home should exceed their loss from the increased housing costs they face in the future. By contrast, renters or homeowners who plan to ‘trade up’ tend to be worse off.

In aggregate, gains in household wealth would be slightly larger than losses, to the extent that some part of the increase in future housing costs is borne by future generations. However, when forming their spending plans, people may take into account the cost of higher house prices to be faced by their children and grandchildren. Some will plan to leave them money (or even a home) to assist with their future housing costs.

Such households may not perceive any change at all in the resources that they have available for spending over their lifetimes.

Housing is therefore very different from other assets.<sup>(3)</sup> In particular, house price rises cannot provide a significant boost to consumer spending by raising aggregate wealth. But housing has a number of other characteristics, such as its role as collateral against which people can borrow to finance spending. As the next section highlights, this means that house price increases can stimulate spending in ways that many other assets cannot.

## Causal links between house prices and consumer spending

### Redistribution of wealth

Changes in house prices redistribute wealth. When house prices rise, those who plan to trade down gain while those who intend to trade up lose (see above). If these groups respond differently to changes in their wealth, that redistribution of wealth could be a significant influence on aggregate spending.

In practice, households planning to trade up tend to be younger households and those planning to trade down are often older homeowners. Older households do not need to spread any change in wealth over as much time as younger households, which could lead them to react more strongly to a change in wealth than younger households.

However, other factors may dampen that redistributive impact. First, the extent to which house price changes redistribute wealth may be limited by bequests (see above). Second, constraints on borrowing may mean that younger households’ spending is more closely related to changes in disposable income than that of older households.<sup>(4)</sup> So when house prices and rents increase, they may be forced to cut back on their consumption in line with the increase in their housing costs. That could lead them to react more strongly to a change in wealth than older households.<sup>(5)</sup>

(1) Weeken (2004) discusses developments, such as falls in real interest rates, that can lead to higher house prices relative to rents.

(2) This cost is often referred to as an opportunity cost. The opportunity cost of living in a house as an owner-occupier is the rent that would be received if the house were let to a tenant. As house prices and rents rise, so too does the opportunity cost of being a homeowner or the implicit cost of living in that home.

(3) A further reason is that housing is not traded internationally. As a result, UK households in aggregate cannot realise their capital gains on housing when house prices rise.

(4) Younger households, and particularly renters, are more likely than older households to face constraints on their ability to borrow. This may make it difficult for these households to maintain their current level of consumer spending as housing costs rise. See Flemming (1973) for a broader discussion of the implications of borrowing constraints for consumption.

(5) Other factors could have a dampening effect. For example, some households may be so uncertain about their future housing needs, or about future movements in house prices, that they are unwilling to adjust their spending plans when house prices change.

## How important are the different channels from house prices to consumer spending?

Aggregate data may not be sufficiently informative to explain why house prices affect consumer spending. That is because different theories predict broadly similar behaviour in aggregate. But the same theories make distinct predictions for how households with certain characteristics should respond to changes in house prices. This box considers what we can learn from the spending behaviour of those individual households.

If the links between house prices and consumer spending reflect a common influence like income expectations, then house prices should have a stronger impact on the spending of the young than the old (see page 143). By contrast, a causal link like wealth redistribution points to a stronger effect on the spending of older households — those most likely to trade down in the future and benefit from house price rises.

The different theories also have implications for the behaviour of renters and homeowners. On the one hand, higher income expectations would affect renters and homeowners, so the spending of both of these groups might rise with house prices (see page 143). On the other hand, the collateral and precautionary savings channels should affect only those who own their homes. That implies a closer relationship between house prices and spending for homeowners than renters.

Two recent studies have attempted to use these insights to explore the practical importance of the explanations for the comovement between house prices and consumer spending. Both use data from the Family Expenditure Survey, a survey of UK households that provides information about their spending behaviour, income and family demographics over the past few decades. But they adopt different methodological approaches.

The study by Attanasio *et al* (2005), using data from 1978 to 2001/02, provides evidence that income expectations have in the past played a crucial role in accounting for aggregate variation in consumption and house prices. The authors find that the association between house prices and consumer spending was stronger for the young than for the old, and broadly similar for homeowners and renters. A study by Campbell and Cocco (2005), using data from 1988 to 2000/01, is also consistent with income expectations being important. But it provides evidence of a strong link between house prices and consumer spending for older households as well. The reason why the studies' results differ is not clear.

Existing studies do not provide a definitive guide to the links between house prices and spending. Nonetheless, analysis of the behaviour of individual households appears to be key to gauging the relative importance of the various links between house prices and consumer spending.

Overall, redistributive effects may help to explain the positive relationship between house prices and consumer spending shown in Chart 1. But the influence of the factors discussed above is very uncertain and is likely to vary from time to time — for example, as the borrowing constraints faced by households change. As such, there is no reason to expect the strength of this channel to be stable over time.

### Housing as collateral

Unlike many other assets, housing can be used as collateral for loans. When house prices rise, there is an increase in the amount of housing equity and hence collateral at homeowners' disposal. That can boost spending because lenders are usually prepared to lend

more, and at a lower interest rate, when there is more collateral. (It also implies a link between mortgage equity withdrawal and consumer spending. The strength of that link is examined in the box on page 146.)

This affects the spending of two different sorts of household. The first are households who wanted to borrow and spend more prior to a rise in house prices, but were unable to do so because they did not own any equity in their homes and lenders refused to extend them credit. A rise in house prices would allow these households to borrow where they previously could not.

More homeowners probably fall into a second category. They already have access to credit of some form. But the

## The role of mortgage equity withdrawal

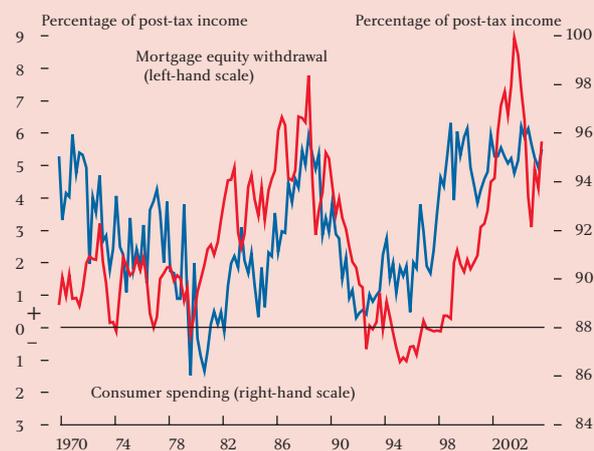
Mortgage equity withdrawal (MEW) occurs whenever households, in aggregate, increase the borrowing secured on housing assets without spending the proceeds on improving or enlarging the housing stock. MEW can be thought of as a mechanism by which households can finance spending.<sup>(1)</sup>

Different types of household behaviour contribute to MEW. Equity can be withdrawn when someone remortgages or takes out an additional secured loan to finance their spending. But other types of equity withdrawal do not increase the indebtedness of the individual withdrawer. For example, households might trade down or leave the housing market entirely. As such, the motivation for withdrawing equity — and the propensity to consume out of funds withdrawn — varies considerably between households.

The link between MEW and consumer spending can also vary markedly over time. Until the mid-1980s, it was difficult for homeowners to borrow actively against the value of their house to finance spending. As a result, MEW did not move closely with consumption. With financial liberalisation, however, credit constraints were eased and equity could be withdrawn to meet pent-up consumer demand. For a while, MEW and consumption moved together. But that period was exceptional: over the past decade, the association between MEW and consumer spending has been weaker (Chart A).

This weak association between MEW and consumption should not be surprising. Consumption need not be financed by equity withdrawal: it can also be funded by income, the sale of financial assets<sup>(2)</sup> and unsecured borrowing. Moreover, the bulk of equity withdrawals are related to trading down or sales where there is no subsequent purchase. Households making such withdrawals are more likely to pay off debt or save withdrawn equity than immediately spend the proceeds. And the value of those withdrawals will tend to move with house prices, rather than reflect any decision to finance additional spending (see Benito and Power (2004)).

**Chart A**  
Mortgage equity withdrawal and consumer spending



(1) MEW is most often associated with the collateral effect discussed on pages 145–47. However, it may also be associated with other channels like the redistribution channel (for example, older households may spend increased housing wealth by releasing housing equity); and the precautionary channel (households who become unemployed may release some of the equity in their homes to tide them over). See pages 144–45 and 147 respectively.

(2) For example, the proceeds from building society demutualisations might have been used to fund consumption. In 1997, households received around £35 billion from this source.

issue for them is the price (or rate of interest) at which that credit is available. The rate of interest on secured borrowing is generally lower than on unsecured borrowing because it is less risky for lenders: collateral limits their potential losses should the borrower default on the loan. And, to a certain extent, the greater the collateral held by households the cheaper it is for them to borrow. That provides another reason why increases in collateral can lead to greater borrowing and spending.

Research suggests that these effects could be important. For example, Aoki *et al* (2001) show how house prices can affect consumer spending — and housing investment — through the collateral channel.

Evidence also suggests that the strength of the collateral channel is likely to vary from year to year. One reason is the availability and price of unsecured credit (see Bridges *et al* (2006)). The interest rate charged on unsecured loans may be higher than for secured borrowing. But it could still be attractive to some homeowners since unsecured loans do not typically incur a fixed fee, whereas there may be fixed costs associated with the withdrawal of equity. The impact of house price gains might therefore vary as the availability and price of unsecured credit changes over time.

In addition, the strength of this channel depends on the collateral households already have at their disposal.

When levels of housing equity are low (or even negative as they were for a significant number of households in the early 1990s), then house price rises that increase the level of equity and collateral could provide a relatively large boost to consumer spending. But when borrowing is already supported by the widespread availability of collateral — most notably, following a period of sustained house price rises — then the impact on consumer spending should be more limited.

Finally, the collateral effect of house prices on spending is complicated by its impact on future, as well as current, spending. An increase in the amount of collateral available to homeowners does not, by itself, increase household wealth. So rather than implying an increase in overall lifetime consumption, the collateral channel implies a change in the timing of consumption. By withdrawing equity, a homeowner boosts current spending at the expense of lower spending in the future.<sup>(1)</sup>

### Precautionary saving

House prices can also affect consumer spending via precautionary saving. This is saving by households as a response to uncertainty about their future financial situation. For example, if it is difficult or costly to take out insurance against unanticipated future events like redundancy, households can instead save as a form of ‘self-insurance’ (see Benito (2006a)).

Housing wealth can form part of households’ precautionary savings. For instance, if homeowners fall ill and this affects their earnings, they may be able to withdraw equity from the home to tide them over until their earnings recover. As house prices and housing equity rise, the need to hold other forms of wealth for precautionary reasons may be reduced.<sup>(2)</sup> That can provide further support to spending.<sup>(3)</sup>

Research suggests that households may respond to income uncertainty by leaving housing equity in the home, instead of extracting it, as well as accumulating liquid savings (see Carroll *et al* (2003)). That suggests

that households look to their housing equity as fulfilling some kind of precautionary savings role.

The strength of this channel would vary in response to changes in perceived uncertainty. For example, households may be less willing to run down their precautionary savings if they became more uncertain about their future job prospects.

In common with the collateral channel, the strength of the precautionary savings channel is also likely to depend on the amount of housing equity that households have at their disposal. When households already have a sufficient amount of equity in their homes to satisfy the need for precautionary saving, further increases in equity provide no further insurance. In such cases, homeowners are less likely to run down financial balances of precautionary saving and consumer spending is less likely to increase.

But the precautionary saving channel is distinct from the collateral channel. To the extent that households were saving to provide a cushion against unexpected events like redundancy, a higher home value means that saving is no longer so important. And rather than respond to that increased home value by borrowing more, they may just save less instead.

### Housing market activity and spending

Another way in which housing market developments can cause changes in consumption is through spending related to moving home. Housing transactions may be associated with consumer spending if households are more likely to purchase some goods and services when they move home (Chart 4). And, in the past, housing transactions have tended to move closely with house prices (see Benito (2006b)). That could explain some of the observed comovement between house prices and consumer spending.

But any effect on consumer spending from this channel is likely to be small and short-lived.<sup>(3)</sup> The types of goods and services that are closely related to moving house account for a relatively small proportion of total consumption. And the number of households that move

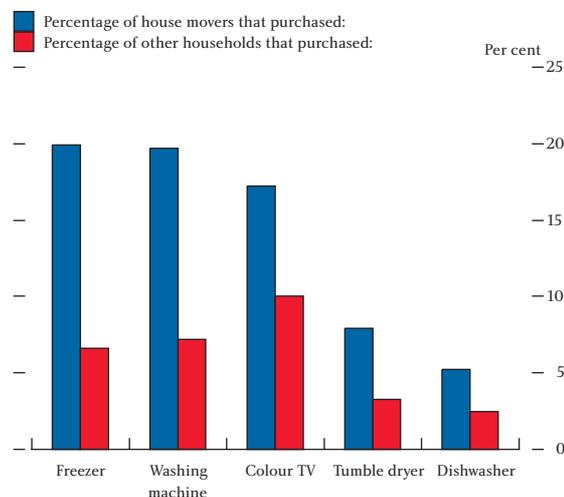
(1) The effect on current spending could be quite large if the homeowner were credit constrained prior to the rise in house prices. By contrast, the effect on spending in any particular period in the future is likely to be much smaller as that lower future spending is spread out over time.

(2) Housing equity is an imperfect substitute for other types of precautionary savings, such as bank deposits, because its future value is more uncertain and it is more costly to access. As a result, households may not wish to hold a high proportion of precautionary savings in the form of housing equity — notwithstanding recent innovations in mortgage markets that allow households to draw on equity when required (see Smith and Ford (2002)).

(3) In common with the collateral channel, this represents a change in the timing of consumption: any additional current spending comes at the expense of future expenditure.

home each year typically constitutes only a small proportion of all households (see Benito and Wood (2005)).

**Chart 4**  
**Consumer spending and moving house<sup>(a)</sup>**



Source: British Household Panel Survey 1992–2002.

(a) Refers to purchases and house moves over the past year.

## Why did the empirical relationship weaken?

The previous section highlighted the likely factors behind the historical association between house prices and consumer spending. Common factors are likely to have played a key role. Certain causal links, such as the collateral channel, may have been important too. But why should these channels have weakened in recent years?

### Common factors

The influence of common factors can vary considerably over time. But, in many cases, these factors cannot be directly observed. That is the case for perhaps the most important common influence — income expectations.

Fortunately, a number of measures provide an indirect indication of households' perceptions of future income prospects. Recent income growth can be informative if households use past developments as a guide to future income growth. The pattern of consumer spending may also be telling. Any change in household perceptions of future income prospects would tend to affect the share of durable spending in overall consumption, as adjusting the stock of durable goods to a new desired level requires a large initial swing in expenditure (see Power (2004)). Finally, surveys of consumer confidence might

provide a rather more direct read on households' perceptions (see Berry and Davey (2004)).

Over recent decades, marked movements in house prices and consumption have typically been accompanied by similar fluctuations in these indicators of expected income. That would be consistent with this common influence playing an important role in driving movements in both house prices and consumer spending.

But the indicators have remained relatively stable over the past few years, at or around the average levels of the past 30 years (Table A). That is illustrated by Chart 5, which presents a simple proxy for income expectations — the average difference of each indicator from its mean. The relative stability of the proxy contrasts markedly with the pickup, and subsequent fall, in real house price inflation over this period.

**Table A**  
**Indicators of income expectations<sup>(a)</sup>**

	Average since 1975	2001	2002	2003	2004	2005
<i>Percentage changes on a year earlier</i>						
Real post-tax labour income <sup>(b)</sup>	2.4	4.2	2.8	1.9	2.6	1.5
<i>Percentage of total nominal spending</i>						
Spending on durables	12.0	12.2	12.1	12.3	12.4	12.0
<i>Balance</i>						
GfK consumer confidence	-6.3	1.1	3.1	-4.4	-3.4	-3.1
<i>Memo: Percentage changes on a year earlier</i>						
Household consumption <sup>(c)</sup>	2.8	3.0	3.5	2.6	3.5	1.7

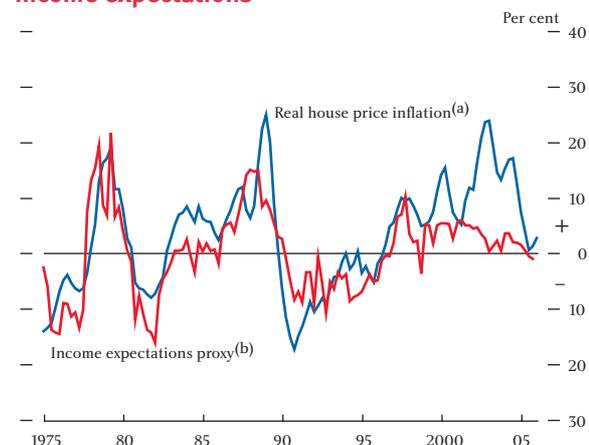
Sources: GfK and ONS.

(a) Averages of quarterly data.

(b) Deflated by consumer expenditure deflator.

(c) Chained volume measure.

**Chart 5**  
**Real house price inflation and a simple proxy for income expectations**



Sources: Bank of England, GfK, Nationwide and ONS.

(a) Four-quarter rate. Real house prices were calculated by deflating the Nationwide house price index by the consumer expenditure deflator.

(b) Simple average of the Table A indicators' deviation from mean. The indicators differ in their variability so, for comparability, each series was normalised by dividing by its standard deviation relative to house price inflation.

The evidence suggests that, in contrast with the past, recent fluctuations in house prices have not been driven by common influences like expected income. That appears to be a key reason why consumer spending growth remained relatively stable as house prices surged. Indeed, the relative stability of spending growth is, in itself, an indication that income expectations had not risen sharply.

Instead, it seems likely that a different range of factors has driven house prices higher in recent years. Demand for housing has been boosted by the rate of household formation, which has tended to exceed the limited response of supply. A further source of increased demand may have been investment demand. And other developments, like the decline in long-term real interest rates, may have been important too.

Such factors are likely to have had a less marked influence on consumer spending than on house prices. And that should explain some of the divergence between house prices and consumer spending in recent years.

### Causal links

#### Redistribution of wealth

The earlier discussion noted that a rise in house prices could increase aggregate spending by redistributing wealth from younger to older households. It also noted that the size of this wealth redistribution would be smaller if older households transferred some of their increased wealth to their children. Such transfers might be more likely to occur when house prices rise sharply, as they have in recent years. Indeed, Tatch (2006) estimates that the proportion of first-time buyers under the age of 30 receiving assistance with their deposit increased from less than 10% in 1995 to almost 50% in 2005. Correspondingly, the amount of wealth redistributed from younger to older generations over this period is likely to have been smaller than it otherwise would have been.

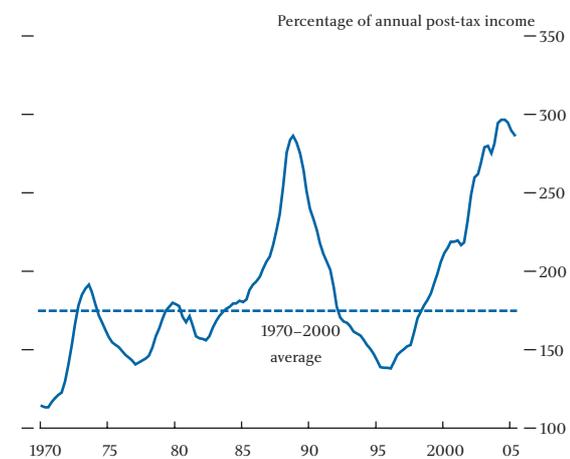
#### Housing as collateral

The strength of the collateral channel depends crucially on the extent to which households are prevented from bringing forward spending by borrowing against the value of their homes. Those constraints may have been particularly binding prior to the rapid rise in house prices of the late 1980s, given that lenders only began to

offer equity withdrawal in the mid-1980s (see the box on page 146). But there are a number of reasons to believe that such constraints on households were relatively weak at the beginning of this decade.

House prices rose significantly in the latter half of the 1990s. That had a large impact on the amount of equity at homeowners' disposal. By 2000, housing equity was twice as large as annual household income — above the average of recent decades (Chart 6). So at the start of the current decade, the aggregate amount of collateral at homeowners' disposal was already substantial.

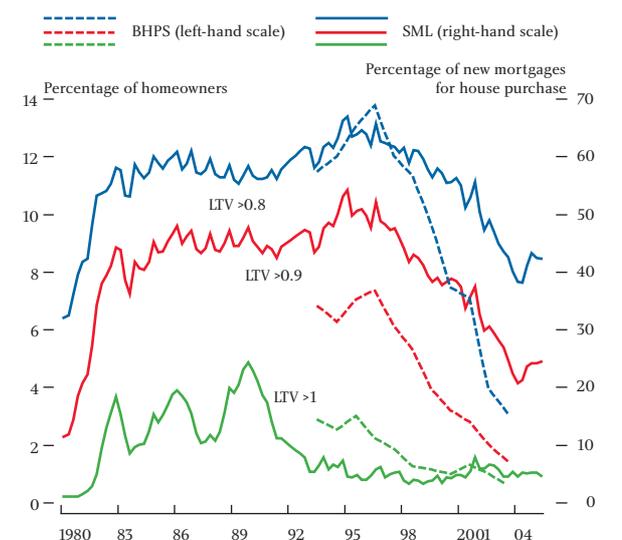
**Chart 6**  
Housing equity



The large amount of collateral available could indicate that households were generally not prevented from bringing forward spending. However, the aggregate amount of collateral can be a poor guide when equity is unevenly distributed. As such, it is also important to consider the disaggregate picture.

The British Household Panel Survey (BHPS) and the Survey of Mortgage Lenders (SML) provide information about the distribution of housing equity (see Hancock and Wood (2004)). According to the BHPS, the proportion of homeowners with a large mortgage and hence low equity, relative to the value of their house, fell sharply in the latter half of the 1990s (Chart 7). The SML, which covers only those taking out a new mortgage, reports similar findings. It suggests that, by the beginning of the current decade, high loan to value ratios were less prevalent than they had been throughout the previous 20 years. Some of that decline might be related to more cautious bank lending policies. But it is also consistent with a broadly based rise in the collateral at households' disposal.

**Chart 7**  
**Loan to value (LTV) ratios**



Sources: British Household Panel Survey (BHPS) and Survey of Mortgage Lenders (SML).

Moreover, homeowners (and non-homeowners) would also have benefited from greater access to unsecured credit during the 1990s. Households appear to have taken increasing advantage of more flexible types of unsecured debt, such as credit cards (see May *et al* (2004)). And that could also have weakened their dependence on house price gains to facilitate spending (see Bridges *et al* (2006)).

Overall, it seems likely that households were rather less constrained at the beginning of this decade than they had been prior to previous periods of rapid house price rises. That points to a less important role for house prices in loosening spending constraints. And it suggests that, over the past few years, the collateral channel should have been weaker.

### Precautionary savings

Precautionary savings provide a type of self-insurance against unanticipated future events. So the strength of this channel depends on both households' desire for such insurance and the role of further house price gains in providing it.

It is possible that households' desire for precautionary savings has declined in recent years. The economic environment has been much more stable since the inflation-targeting framework was introduced (see

Benati (2005)). That increased stability might have lowered households' perceptions of the probability of future adverse developments, like redundancy.<sup>(1)</sup> And, in turn, that could have reduced households' desired precautionary savings.

It also seems likely that recent house price gains have played a less important role in providing insurance. As discussed above, housing equity had already reached high levels by the beginning of the current decade. So many households would already have had more than enough equity in their homes to satisfy the need for precautionary savings — especially if they required less insurance on account of the more stable economic environment. In addition, housing equity may have become a less important provider of precautionary savings in recent years because of the easier availability of unsecured credit on favourable terms. These developments would point to a weaker impact of house prices on consumer spending through this channel.

### Additional influences

Consumption is affected by a range of factors other than house prices. So the looser empirical association between house prices and consumer spending might not only reflect weaker causal links and the limited role of common factors like income expectations. It could also be related to other determinants of consumption, such as financial wealth. Direct and indirect holdings of shares account for around a third of household net assets. And the FTSE All-Share index fell by around 40% between 2000 Q1 and 2003 Q1.

The implications of that decline in financial wealth are not straightforward. Share prices are much more volatile than house prices, so households may look through some share price movements in case they are quickly reversed. Two thirds of households' equity wealth is held indirectly, for example in pension funds. The value of that wealth might not be as easily observed, or indeed accessed, as directly held equity wealth (see Davey (2001)). And, crucially, the implications for consumer spending of any change in share prices depend on its cause.<sup>(2)</sup>

Moreover, share prices affect both consumption and house prices.<sup>(3)</sup> By lowering household wealth, a fall in

(1) This might not have lowered overall earnings uncertainty if earnings at the household level have become more variable. There is evidence that earnings were more uncertain in the early 1990s than they had been in the late 1970s and 1980s (see Dickens (2000)).

(2) See Labhard *et al* (2005), Millard and Power (2004), and Millard and Wells (2003).

(3) The factors that cause movements in share prices — such as changes in expected future economic prospects — can also affect house prices and consumption (see pages 142–43).

## Estimating the role of housing

The relationship between house prices and consumer spending appears to have weakened in recent years. This box examines the extent to which the association has waned.

A common way of quantifying the relationship between house prices and consumption is to estimate an economic model. One such model is the *Bank of England Quarterly Model* (see Harrison *et al* (2005)). The Bank model maintains that, in the long run, aggregate consumption depends on financial wealth like shares and non-financial wealth such as households' lifetime earnings. Consumption does not depend on house prices in the long run,<sup>(1)</sup> given the special characteristics of housing described on page 144. In the short run, consumption growth depends on changes in housing wealth, income, employment, interest rates, how much consumption and net financial wealth differ from their long-run or 'core' values, and an error term.<sup>(2)</sup>

The coefficient on housing wealth provides a guide to how closely house prices move with consumption, when we allow for other factors that also influence spending. It conflates a variety of links between house prices and consumption. It captures the impact of causal links, like the collateral channel. And it may also reflect the influence of common factors like income expectations.<sup>(3)</sup>

To assess whether the association between housing wealth and consumption has changed over time, we estimated the short-run equation over rolling 20-year periods.<sup>(4)</sup> In other words, we estimated the equation over the first 20 years of data, and moved that sample window forward one quarter at a time. As we did so, we recorded how the estimated coefficient on the housing variable changed. This is shown in Chart A.

The chart shows that the housing wealth coefficient varies considerably. That is consistent with the idea that the implications of a house price rise for

**Chart A**  
Rolling estimates of housing wealth coefficient in *Bank of England Quarterly Model*<sup>(a)</sup>



(a) Each data point represents the housing wealth coefficient obtained when the short-run equation was estimated over the 20-year period to that quarter. The dotted lines show the 95% confidence interval.

spending depend on the factors behind the house price rise, and those factors are likely to differ from period to period. It is also consistent with marked changes over time in the strength of causal links between house prices and spending.

Further, the chart shows that the coefficient on housing wealth tends to decline as we use more recent data.<sup>(5)</sup> We obtained similar results when estimating the coefficient in a more conventional error-correction consumption function, similar to that estimated by the IMF (2006). This suggests that the empirical relationship between house prices and consumption has indeed weakened.<sup>(6)</sup>

Overall, the empirical association between house prices and consumer spending appears to have declined, even when we allow for additional influences like income and financial wealth. That accords with the idea that causal links may have been weaker, and common factors less influential, in the recent past. But, as the box on page 145 discusses, there is a limit to what aggregate models can tell us about the factors behind the waning association between house prices and spending.

(1) Note that changes in the value of the housing stock that are caused by home improvements or the building of new homes, rather than changes in the general price of housing, do affect consumption in the long run.

(2) The core values are from the theoretical part of the *Bank of England Quarterly Model*, which can be thought of as an organising framework for analysing economic issues. See Harrison *et al* (2005) for more details.

(3) The model directly controls for the common influence of interest rates, by including it as an explanatory variable. It may also indirectly control for some of the influence of common factors like income expectations, to the extent that they are captured in the core part of the model or proxied by other variables in the equation such as current income.

(4) This included the variables listed above as well as a constant.

(5) The Wald coefficient test suggests that this decline is statistically significant: the coefficient estimated over the first 20-year period is significantly different to the coefficient estimated over the most recent 20-year period.

(6) In practice, the *Bank of England Quarterly Model* includes an additional variable that allows the incorporation of judgements that change the size of the effect on consumption of changes in the value of housing (see pages 203–04 of Harrison *et al* (2005)).

share prices would lead households to demand fewer consumer goods and services and less housing. So the decline in share prices earlier this decade should have depressed not only consumption but also house prices.<sup>(1)</sup>

Overall, the decline in share prices is likely to have depressed spending growth in the early part of this decade. But even allowing for such additional influences, the empirical association between house prices and consumer spending appears to have declined (see the box on page 151).

## Conclusion

House prices and consumer spending have often moved together in the past. But that relationship is unlikely to be driven by the impact of house prices on aggregate wealth. Instead, it is more subtle. The relationship depends on causal links, such as the impact of house prices on the equity that people can withdraw from their homes to finance spending. And, crucially, it depends on common factors — influences that affect both house prices and consumer spending.

The strength of these channels can vary considerably over time. For example, collateral effects depend importantly on the amount of equity already available to households. The causes of house price movements are also important. Sometimes common factors can drive changes in both house prices and consumer spending. At other times, house prices may shift on account of housing market developments that are of limited significance for spending. In general, the implications of any rise in house prices rest on why house prices have risen.

The evidence suggests that causal links have been weaker, and common factors less influential, in the recent past. To what extent is unclear. Unfortunately, controlled experiments, such as those by Pavlov, are not feasible when examining the economy and attempting to quantify such effects. But, overall, it seems likely that both common factors and causal links are key to the weaker association between house prices and consumer spending of the past few years.

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(1) This effect could have been mitigated by a shift in investors' preferences from equities to housing.

## References

- Aoki, K, Proudman, J and Vlieghe, G (2001)**, 'Why house prices matter', *Bank of England Quarterly Bulletin*, Winter, pages 460–68.
- Attanasio, O, Blow, L, Hamilton, R and Leicester, A (2005)**, 'Consumption, house prices and expectations', *Bank of England Working Paper no. 271*.
- Attanasio, O and Weber, G (1994)**, 'The UK consumption boom of the late 1980s: aggregate implications of microeconomic evidence', *Economic Journal*, Vol. 104, pages 1,269–302.
- Banks, J and Smith, S (2000)**, 'UK household portfolios', *Institute for Fiscal Studies Working Paper no. 00/14*.
- Barwell, R, May, O and Pezzini, S (2006)**, 'The distribution of assets, income and liabilities across UK households: results from the 2005 NMG Research survey', *Bank of England Quarterly Bulletin*, Spring, pages 35–44.
- Benati, L (2005)**, 'The inflation-targeting framework from an historical perspective', *Bank of England Quarterly Bulletin*, Summer, pages 160–68.
- Benito, A (2006a)**, 'Does job insecurity affect household consumption?', *Oxford Economic Papers*, Vol. 58(1), pages 157–81.
- Benito, A (2006b)**, 'How does the down-payment constraint affect the UK housing market?', *Bank of England Working Paper no. 294*.
- Benito, A and Power, J (2004)**, 'Housing equity and consumption: insights from the Survey of English Housing', *Bank of England Quarterly Bulletin*, Autumn, pages 302–09.
- Benito, A and Wood, R (2005)**, 'How important is housing market activity for durables spending?', *Bank of England Quarterly Bulletin*, Summer, pages 153–59.
- Berry, S and Davey, M (2004)**, 'How should we think about consumer confidence?', *Bank of England Quarterly Bulletin*, Autumn, pages 282–90.
- Bridges, S, Disney, R and Gathergood, J (2006)**, 'Housing collateral and household indebtedness: is there a household financial accelerator', paper presented at the Consumption, Credit and the Business Cycle workshop in Florence on 17–18 March.
- Campbell, J and Cocco, J (2005)**, 'How do house prices affect consumption? Evidence from micro data', *NBER Working Paper no. 11534*.
- Carroll, C, Dynan, K and Krane, S (2003)**, 'Unemployment risk and precautionary wealth: evidence from households' balance sheets', *Review of Economics and Statistics*, Vol. 85(3), pages 586–604.
- Davey, M (2001)**, 'Saving, wealth and consumption', *Bank of England Quarterly Bulletin*, Spring, pages 91–99.
- Dickens, R (2000)**, 'The evolution of individual male earnings in Great Britain: 1975–95', *Economic Journal*, Vol. 110(460), pages 27–49.
- Flemming, J S (1973)**, 'The consumption function when capital markets are imperfect: the permanent income hypothesis reconsidered', *Oxford Economic Papers*, Vol. 25(2), pages 160–72.
- Hancock, M and Wood, R (2004)**, 'Household secured debt', *Bank of England Quarterly Bulletin*, Autumn, pages 291–301.
- Harrison, R, Nikolov, K, Quinn, M, Ramsay, G, Scott, A and Thomas, R (2005)**, *The Bank of England Quarterly Model*, Bank of England.

**IMF (2006)**, 'United Kingdom: selected issues', *IMF Country Report No. 06/87*.

**King, M (1990)**, 'Discussion', *Economic Policy*, October, pages 383–87.

**Labhard, V, Sterne, G and Young, C (2005)**, 'Wealth and consumption: an assessment of the international evidence', *Bank of England Working Paper no. 275*.

**May, O, Tudela, M and Young, G (2004)**, 'British household indebtedness and financial stress: a household-level picture', *Bank of England Quarterly Bulletin*, Winter, pages 414–28.

**Millard, S and Power, J (2004)**, 'The effects of stock market movements on consumption and investment: does the shock matter?', *Bank of England Working Paper no. 236*.

**Millard, S and Wells, S (2003)**, 'The role of asset prices in transmitting monetary and other shocks', *Bank of England Working Paper no. 188*.

**Power, J (2004)**, 'Durable spending, relative prices and consumption', *Bank of England Quarterly Bulletin*, Spring, pages 21–31.

**Smith, S and Ford, J (2002)**, 'Home ownership: flexible and sustainable?', *CML Housing Finance*.

**Tatch, J (2006)**, 'Will the real first-time buyers please stand up?', *CML Housing Finance*.

**Weeken, O (2004)**, 'Asset pricing and the housing market', *Bank of England Quarterly Bulletin*, Spring, pages 32–41.