Household saving

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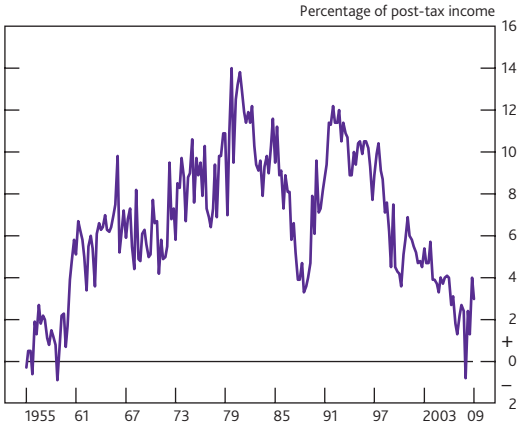
Household decisions on whether to save or spend play a key role in the outlook for aggregate demand. A range of factors could help to explain the fall in the household saving ratio over the period 1995 to 2007. Declines in long-term real interest rates, looser credit conditions, rising asset values and greater macroeconomic stability are all likely to have reduced the incentive or the need to save. Lower household saving was also offset to some extent by higher corporate saving. Since 2007, the financial crisis and subsequent recession have unwound some of these factors and may continue to lead to a rise in household saving.

Introduction

Household consumption accounts for around two thirds of aggregate spending in the UK economy. So decisions by households on whether to spend or save are a key influence on the economic outlook. The share of their income that households saved fell steadily over much of the period 1995 to 2007 (**Chart 1**).

Chart 1 Household saving ratio



More recently, the economic environment has changed substantially with credit conditions tightening sharply and a global slump in confidence leading to a recession across much of the world. In the United Kingdom, output has fallen by around 5½% over the past year. These developments are likely to have altered households' views of the appropriate balance between saving and spending. By the end of 2008 and early 2009, the saving ratio had picked up a little relative to 2007 and early 2008. The August 2009 *Inflation Report* also highlighted the outlook for household saving as a key uncertainty (page 43). The Monetary Policy Committee (MPC) considered it likely that the saving ratio would rise further.

This article considers some of the factors that are likely to have driven the changes in saving outlined above. The next two sections set out the theoretical underpinnings for household spending and saving decisions. Subsequent sections then consider possible explanations for the decline in the saving ratio between 1995 and 2007 and the potential impact on saving of the recent global financial turbulence, before concluding.[2]

What is household saving?

Households' saving represents the balance between their current income and their current consumption. By not spending some of their current income on consumption, or alternatively by borrowing, households can accumulate financial assets, such as deposits and shares, and housing assets. This identity for funds raised and assets accumulated can be written as:

$$\underbrace{S + D}_{\text{Funds raised}} = \underbrace{A + H}_{\text{Assets accumulated}}$$

where S is saving; D is the net acquisition of debt; A is the net acquisition of financial assets; and H is the net acquisition of housing assets.[3]

(1) The authors would like to thank Stephen Burgess for help in producing this article.
(2) For discussion of the contribution of international savings and investment imbalances see Astley, Giese, Hume and Kubelec (2009) in this edition of the *Quarterly Bulletin*.
(3) Net acquisition means acquisition minus disposal. For example, the net acquisition of financial assets is the purchases minus the sales of financial assets. Similarly, the net acquisition of debt is new borrowing minus the repayment of the principal on existing debt.

In practice, some households will be borrowing to increase the funds they have available for consumption while others will be saving. In aggregate, though, households tend to save, and do so mainly to finance investment in housing. Accumulating more financial assets raises households' stock of net financial wealth, while accumulating debt reduces it, other things being equal. Of course, wealth may also change independently of households' saving decisions, as changes in financial asset prices will alter the value of the stock of assets.

Consumption and saving theory

There are many reasons why different households' incomes and spending decisions may vary. This section abstracts from these different saving motives at the individual household level and focuses on the macroeconomic determinants that help to explain why aggregate household saving can vary over time.

Permanent income

Following the work of Friedman in the 1950s, modern consumption theory has been built on the life-cycle/permanent-income model. In that model, households base their current spending decisions on their so-called permanent incomes, the income they would expect to receive on average over their entire lifetimes. This approach recognises that households are to some degree forward looking and that they would prefer a smoother consumption path to a more variable one.

The permanent-income model has clear implications for saving behaviour. If income is higher now than it is expected to be in the future, then households will save today. If income is lower now than it is expected to be in the future, then households will dissave (by borrowing or selling existing assets). For example, in an economic downturn in which current incomes temporarily fall below future incomes, households will run down their savings to support current consumption. Although simple, this logic is powerful and may be able to explain some of the historical swings in saving and spending. For example, Attanasio and Weber (1994) provide evidence that part of the consumption boom and decline in the saving ratio in the late 1980s was due to rising optimism on the part of households about their future income prospects.

Interest rates

The risk-free real interest rate is a key determinant of the amount of real spending that a household can achieve in the future by forgoing consumption today and saving. Here, risk-free means there is no possibility of a borrower defaulting on loan repayments. A higher real interest rate encourages consumers to postpone consumption because it increases the real return to saving (and the real cost of borrowing). It also redistributes income from borrowers to savers. If savers are less likely to spend that income than borrowers, this could also push down on aggregate spending and increase the saving ratio.

Anticipated changes in the real interest rate should already be factored in to households' spending plans and so would not be associated with a large change in saving. But an unanticipated increase in the real interest rate, for example, would tend to lead to a fall in current spending and an increase in the saving ratio. The strength of that effect will depend on households' preferences over the timing of their spending. Households may choose not to postpone much spending in response to an unanticipated rise in real rates if they prefer a very smooth consumption profile over time.

Credit conditions

Some households may not be able to borrow as much as they want to finance their desired consumption. In practice, banks charge a higher rate on borrowing, and pay a lower rate on deposits, than the risk-free rate assumed in the standard permanent-income model. And some households that are deemed to be less creditworthy may face a much higher cost of borrowing or may be denied access to credit altogether. If credit becomes more expensive or more difficult to obtain, then borrowing and spending will be lower and so aggregate saving will be higher. That means that changes in the price or quantity of credit may be important drivers of the aggregate saving ratio in a similar way to changes in the risk-free real interest rate.

Uncertainty

Uncertainty about future income may also play an important role in shaping households' consumption and saving decisions (see for example Leland (1968) and Carroll (2001)). In the absence of perfect insurance markets, risk-averse consumers will wish to maintain a buffer of savings as a precaution against unexpected falls in income. That will help them to avoid undesirable swings in spending and smooth their consumption. A rise in uncertainty, for example if households believe there is a larger risk of losing their job, is likely to lead to an increase in the amount of precautionary saving that households choose to undertake.

Wealth

A household's financial wealth forms part of its lifetime resources so an increase in its value, for example as equity prices rise, would tend to encourage households to spend more and save less. Of course, the extent to which a change in asset prices is associated with a change in consumer spending also depends on why asset prices changed (Millard and Power (2004)). For example, if equity prices rose because of a fall in the volatility of equity returns — implying a fall in the compensation for holding riskier assets such as shares instead of government bonds — then consumption and the saving ratio may not change. The dividends paid and household permanent incomes would be unchanged.

There are a number of reasons why households may not respond, or may respond only slowly, to movements in wealth.

Asset prices can be volatile and households may not expect recent changes to persist. Moreover, around half of households' financial assets are tied up in life assurance and pension funds. Changes in the value of those assets may be less visible to households. Corporate ownership is also likely to be unevenly distributed. For example, the British Household Panel Survey suggests that only around 25% of households own equities directly. Such households are likely to be wealthier and so may be less likely to increase their spending in response to a rise in the value of their assets than if corporate ownership were more evenly distributed across the population.

Some studies suggest that the long-run marginal propensity to consume out of wealth in the United Kingdom is around 0.04–0.06. That suggests that if wealth increases by £1, consumption increases by around 4 to 6 pence per year (see Bertaut (2002), Boone *et al* (2001) and Ludwig and Sløk (2002)). But such estimates are subject to considerable uncertainty.

Housing assets are rather different from financial assets because households also obtain a stream of housing services from them. As Benito *et al* (2006) highlight, declines in house prices make some people better off (those expecting to trade up or potential first-time buyers) and some people worse off (those expecting to trade down). So it is not clear that changes in the value of housing assets should have any impact on aggregate consumption through an ordinary wealth effect.

Changes in house prices could still affect aggregate consumption and saving through a number of other channels. In particular, a rise in house values means that households have more collateral against which to borrow. That can make it easier for households to obtain credit. If that leads them to spend more, it would temporarily reduce the household saving ratio. Housing equity can also form part of a household's precautionary saving balances. For example, in the event of job loss, a household may be able to withdraw equity from their home to tide them over until they find another job. An increase in house prices can therefore reduce the need to hold alternative forms of precautionary saving like financial assets, allowing households to spend more and save less.

Government and corporate saving

Households are also likely to be influenced by how much other sectors of the economy are saving. Saving by companies and the government should ultimately flow back to households via lower taxes or higher dividends. Therefore, in principle, it should be the overall level of saving in the economy — or national saving — that households care about.

The theory of Ricardian equivalence, dating back to the work of Ricardo (1820), suggests that households view their own saving and government saving as perfect substitutes. So if the government borrows to fund a tax cut, households should anticipate that this will require higher taxes in the future (for unchanged government spending). They will save the tax cut to pay for the future increase in taxes and maintain a smooth profile for consumption. Lower government saving (or higher government borrowing) is therefore offset by higher household saving. A similar argument applies to corporate saving as well.

In practice, while government and corporate saving are likely to be important influences on household saving, they are likely to be imperfect substitutes. So the level of household saving is important as well as national saving.

One important assumption for Ricardian equivalence is that perfect capital markets exist. As noted earlier, some households are likely to be constrained in the amount of credit they can obtain, so they may be currently consuming less than they would ideally like. For those households, a tax cut allows them to increase their current consumption towards the desired level. So if some households are credit constrained, they will spend the extra income from a tax cut rather than save it, and lower government saving would be only partly offset by higher household saving.

Ricardian equivalence also assumes that households care about their children's well-being and that they leave bequests (Barro (1974)). Tax rises that are expected to occur beyond the lifetime of the current generation will only lead to an increase in household saving now if households care about their children who will have to pay the extra taxes. Intergenerational altruism is likely to be imperfect in practice, although there is no consensus about the extent of that imperfection (see for example Modigliani (1988) and Kotlikoff (1988) for two alternative views). Other assumptions required for full Ricardian equivalence to hold, such as that taxes do not distort the allocation of resources, may also be unrealistic.

The relationship between household saving and corporate saving is likely to be affected by the ownership of companies. As noted earlier, much of the corporate sector is owned indirectly by households through pension funds, and ownership is unevenly distributed. That could make the response of household saving to changes in corporate saving more muted. Furthermore, a substantial part of the UK corporate sector is owned by overseas investors — almost half of UK quoted shares. So not all UK corporate saving will flow back to UK households. Conversely, some UK households own shares in overseas companies, either directly or indirectly, so corporate saving in other countries may also affect household saving in this country.

Inflation

Some household assets are fixed in nominal terms, such as deposits. Inflation erodes the real value of these assets. To compensate for this loss, a higher inflation rate is usually

associated with a higher nominal interest rate and higher interest receipts. But households must save rather than spend those higher interest receipts for the real value of their wealth to be maintained. Higher inflation should therefore lead to higher saving. If the higher inflation was not anticipated, it may not be reflected in longer-term interest rates and so interest receipts may not fully compensate households for the fall in the real value of their assets. They would then need to reduce their consumption to finance the additional saving. Large swings in inflation could therefore generate significant changes in the saving ratio.

Demographics

The life-cycle/permanent-income model implies that households' saving behaviour is likely to differ systematically over their lifetimes. The model predicts that households should borrow when they are young and their incomes are relatively low, save for retirement during middle age when their incomes are higher, and then run down that saving during retirement. Although the simple life-cycle model cannot explain all aspects of the data, empirical evidence supports that broad life-cycle pattern of saving (eg Banks and Blundell (1994)).

Changes in the age structure of the population over time can therefore affect the aggregate saving ratio. For example, the passing of the large baby-boom generation through middle age into retirement would be expected to be associated with a decline in the saving ratio as the 'baby-boomers' move from a stage of their life in which they are saving to a stage of their life in which they are dissaving. Other demographic trends may affect aggregate household saving too. For example, rising life expectancy would encourage higher saving to the extent that households have to fund longer retirements than they had previously expected. Over long periods of time, these demographic changes can be powerful drivers of saving. But they are likely to be very slow moving, reflecting gradual changes in the demographics themselves.

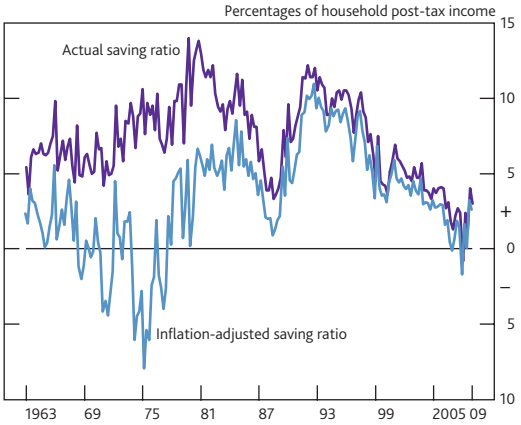
Why did household saving fall between the mid-1990s and 2007?

The household saving ratio fell from around 10% in the mid-1990s to around 2% by mid-2007, before the financial crisis began. That does not necessarily imply a boom in household consumption. As Nickell (2004) pointed out, while consumption growth was strong in the late 1990s, this has not been true since 2000. The average quarterly growth rate of real household consumption between 2000 and 2007 was around 0.7%, in line with the average rate since 1975. And over the same period, nominal household consumption fell slightly as a share of GDP. The fact that the consumption share fell despite the falling saving ratio can be explained by the fact that household disposable incomes also fell as a share of GDP over that period. Even if consumption was not unusually strong, households did choose to save less. Using the key determinants set out above, this section briefly considers some potential explanations for that decline in saving.

Was saving low in 2007?

By mid-2007 the household saving ratio was low by historical standards. But that does not take into account the impact of inflation. Since inflation targeting began in the early 1990s, inflation has been lower and more stable than it was during the 1970s and 1980s. **Chart 2** presents a measure of the household saving ratio that has been adjusted for inflation. This strips out the saving required to maintain the real value of nominal assets as it is eroded by inflation. It shows that the saving ratio was low during the 1970s once the high levels of inflation were taken into account, and the saving ratio in the early 1990s looks relatively high. The subsequent decline in the late 1990s and through much of the current decade could simply be saving returning to more normal levels. But it could also be that households did not respond fully to the high inflation in the 1970s and so using an average of saving ratios for comparison which includes that period may be misleading.

Chart 2 Inflation-adjusted household saving ratio[(a)]



Sources: ONS and Bank calculations.

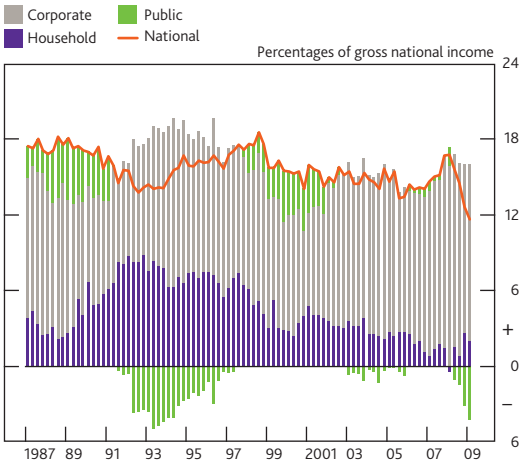
(a) Saving adjusted for the impact of inflation on the real value of assets and debt held by the household sector which are fixed in nominal terms. Percentage of inflation-adjusted post-tax income. See Davey (2001).

As noted earlier, households' saving decisions are also likely to be influenced by corporate and government saving. National saving was much more stable than household saving from the mid-1990s to 2007, mainly due to rising corporate saving (**Chart 3**). To the extent that corporate saving is a substitute for household saving, that may have been a factor in households' decisions to reduce their saving ratio. But as Whitaker (2007) points out, national saving was still low relative to the level required to finance enough investment to maintain the capital stock.

Factors pulling down on household saving

From the mid-1990s to 2007, changes in a number of the key determinants of household saving are likely to have encouraged households to save less. Between 1997 and 2006,

Chart 3 Sectoral breakdown of national saving

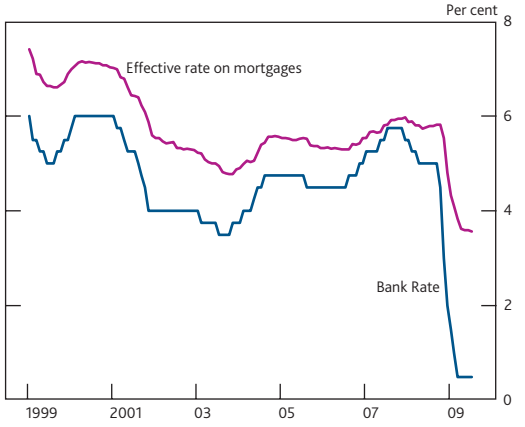


UK long-term real interest rates (as measured by index-linked gilts) fell by over 2 percentage points. Analysis using a disaggregated model of household behaviour in Benito *et al* (2007) suggests that this might explain a fall in the saving ratio of around 4 percentage points, or half of the decline in the household saving ratio over that period.

The late 1990s and early 2000s were also characterised by stable non-inflationary growth. The unemployment rate fell sharply in the late 1990s and remained stable at around 5% for much of this decade. Greater macroeconomic stability is likely to have reduced precautionary saving by households as the risks of an unexpected fall in income were lower.

In the earlier part of this decade, the supply of credit appeared to increase substantially. Spreads between Bank Rate and mortgage rates narrowed from over 100 basis points at the start of the decade, to around 50 basis points at the end of 2006 (**Chart 4**). The average loan to income ratio on new mortgage lending also rose over this period. Cheaper and easier access to credit is likely to have made some households bring forward consumption and therefore reduce aggregate saving.

Chart 4 Effective interest rate on the stock of outstanding mortgages and Bank Rate



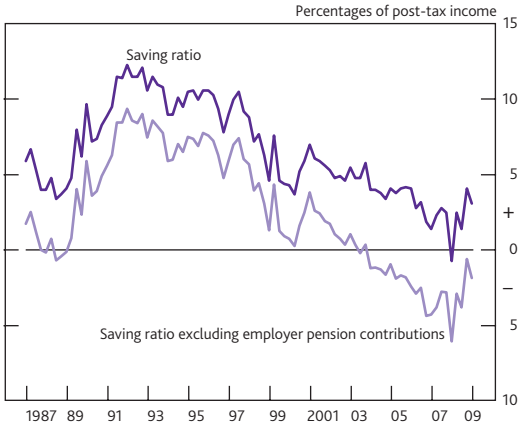
Rising asset prices may also have encouraged households to save less. Capital gains on their existing stock of assets acted to offset the decline in saving, so that households' net financial wealth was still at around the same level, relative to income, at the end of 2006 as it was a decade earlier. On average, households had been drawing down on their net financial wealth over that period as debt accumulation (mainly associated with homeownership) outstripped new purchases of financial assets. Without the capital gains, therefore, saving may have needed to be higher to maintain households' financial wealth. Rapid increases in house prices may also have facilitated lower saving by providing more collateral against which to borrow.

Survey data from the British Household Panel Survey on the balance sheets of individual households suggest that it was older households that gained the most from asset price rises. But it appears to be younger households that reduced their saving the most. That might suggest that asset prices played less of a role in reducing saving, unless those gains were eventually expected to be passed down from the older generation.

Factors pushing up on household saving

There are some other factors that might have worked in the opposite direction over the 1995 to 2007 period. Demographics may have been pushing up on the saving ratio. The proportion of middle-aged households has been rising over the past decade, and they are typically expected to save more than younger or older households. In addition, employers boosted their pension contributions substantially in the earlier part of this decade. Excluding such contributions, the saving ratio would have fallen even more sharply over that period (**Chart 5**). Theory suggests households would have factored these additional payments into their own saving decisions — so if companies had not boosted their contributions, households may have boosted theirs, leaving the saving ratio unaffected. But if households did not fully

Chart 5 Household saving ratio and employer pension contributions



Sources: ONS and Bank calculations.

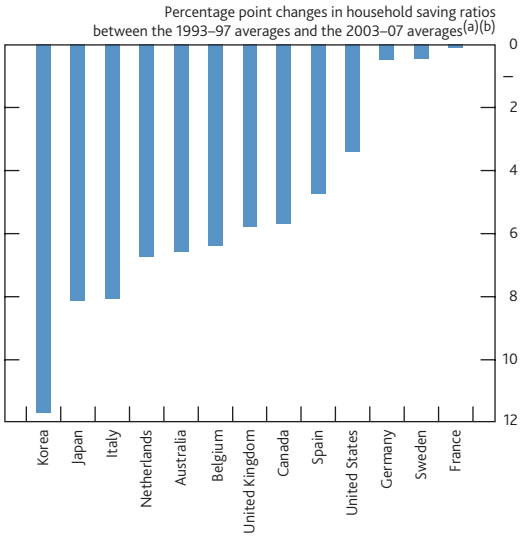
factor them in, the company contributions will have raised the saving ratio.

The decline in household saving in an international context

Many of the factors that are likely to have pulled down on household saving in the United Kingdom are likely to be related to some extent. For example, lower long-term real interest rates could be associated with rising asset prices and looser credit constraints. Many of the factors are also global in nature. Falling real interest rates, rising asset prices and greater macroeconomic stability were present in many countries. The loosening in credit conditions also appears to have been an international phenomenon. As the IMF (2009) indicated: 'While the credit boom in the 1920s was largely specific to the US, the boom during 2004–07 was global, with increased leverage and risk-taking in advanced economies and many emerging economies'.(1)

This is consistent with a fall in saving ratios across many countries, although there is a large dispersion in the size of the falls (**Chart 6**). This dispersion suggests the influence of these factors may have varied across countries and that there may also be a role for country-specific influences driving the behaviour of saving.

Chart 6 Changes in saving ratios across countries



Source: OECD.

(a) The UK data do not incorporate revisions arising from the June 2009 *Blue Book*.
(b) Data for the United Kingdom and Spain are on a gross basis, including consumption of fixed capital (for example housing depreciation). Data for all other countries are net of fixed capital consumption. Data include saving by non-profit institutions serving households (NPISH) except for France and Japan.

In summary, there are a range of factors that are likely to have pushed down the household saving ratio in the United Kingdom between the mid-1990s and 2007. The decline over that period may not, therefore, be surprising. But that is not to say that such a low level of saving by historical standards will persist. Many of the factors that have acted to push down saving can unwind, as is shown in the next section.

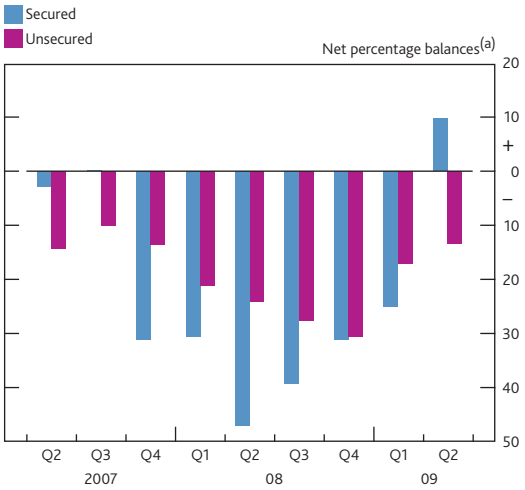
The potential impact of the financial turbulence since 2007

The abrupt change in financial conditions and the economic outlook over the past two years is likely to have led to a marked change in households' perceptions of their own financial position.(2) That could have important consequences for their spending and saving decisions. By the end of 2008 and early 2009, the saving ratio had picked up a little relative to 2007 and early 2008. This section looks at some of the key factors that may lead to a change in saving behaviour, most of which represent a reversal of the factors outlined above that are likely to have pushed down on saving in the past.

Tighter credit conditions

As the financial crisis has unfolded, banks have become much less willing to extend credit to households (**Chart 7**). This tightening in credit conditions has taken the form of a rising cost of borrowing relative to risk-free interest rates and greater quantity constraints (for example larger deposits being required on mortgage loans). This may make some households less willing or able to spend as much as they might otherwise have done, thereby increasing saving.(3)

Chart 7 Bank of England *Credit Conditions Survey*: availability of credit to households



(a) Net percentage balances are calculated by weighting together the responses of those lenders that answered the question. A negative balance indicates that less credit has become available over the past three months.

Furthermore, households may be more concerned that credit will be expensive or difficult to obtain should they need it in the future. The spread over risk-free rates charged on new mortgages has risen by around 2½ percentage points over the past two years. If at least part of that is expected to persist this could lead to higher precautionary saving.

(1) For a discussion of some of these factors see Astley, Giese, Hume and Kubelec (2009) in this edition of the *Quarterly Bulletin*.
(2) As noted earlier, an international perspective on the credit crisis is provided in Astley, Giese, Hume and Kubelec (2009) in this edition of the *Quarterly Bulletin*.
(3) Higher spreads have been more than offset by the decline in Bank Rate, so the effective rates paid on new borrowing have fallen. But quantity restrictions mean that less credit is available at these prices.

Increased job uncertainty

As noted earlier, the level of precautionary saving undertaken by households also depends on the risk of a significant fall in income. As the recession has deepened, job losses have become more widespread. The unemployment rate has risen by around 2½ percentage points over the past two years. Households' expectations of how unemployment will change in the future have also risen (**Chart 8**). A rise in saving may be even more likely given that the current recession followed a prolonged period of economic stability and low unemployment, when households may have kept precautionary saving at a low level.

Chart 8 Households' expectations of unemployment

Source: Research carried out by GfK NOP on behalf of the European Commission.

(a) Net balance of households expecting unemployment in the United Kingdom to rise over the following twelve months.

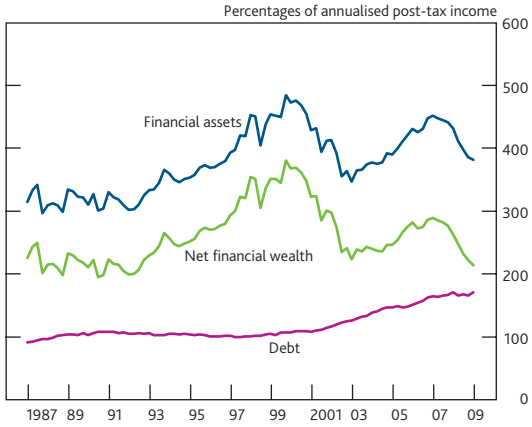
On the face of it, an increase in precautionary saving while the economy is in recession may seem counterintuitive. Instead, households might be expected to run down their saving to smooth their consumption. But during the recession in the 1990s, saving increased sharply. The saving ratio rose from a trough of just over 3% in 1988 Q3 to a peak of just over 12% in 1992 Q1. Concerns about households' future financial position may at times outweigh the desire to maintain earlier consumption levels.

Falling asset prices

The financial turbulence over the past two years has been accompanied by sharp falls in asset prices. That has reduced the value of assets held by households and hence reduced their wealth (**Chart 9**). Net financial wealth fell by around a quarter in the two years to 2009 Q1, although the subsequent rebound in financial asset prices is likely to have recovered part of those losses. The decline in wealth may lead households to look to increase their saving for a period to rebuild their balance sheet.

It is difficult to assess how much, if at all, households might seek to rebuild their wealth. This will depend on a variety of factors, including expectations of key drivers such as future incomes. Nevertheless, net financial wealth relative to

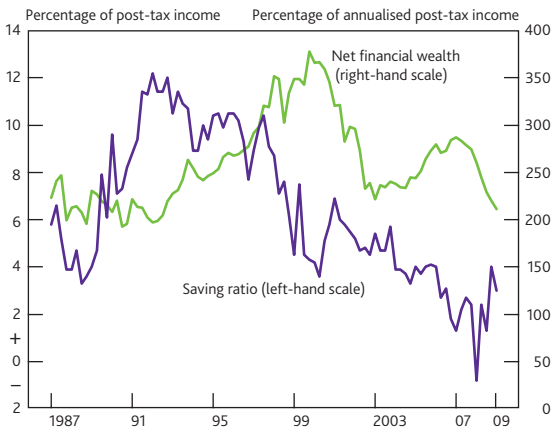
Chart 9 Household sector balance sheet



post-tax income is currently low compared with its average over the past 20 years.

The stock of wealth held by households is large relative to their income, and so saving flows are only likely to have a gradual impact. For example, even if households saved as much as 10% of their income, it would take them nine years to bring wealth back up from its 2009 Q1 level to the average over the past 20 years (assuming no further changes in asset prices and households continued to invest around 4 percentage points of their saving in new housing). This might suggest, therefore, that a sharp adjustment in saving is required in response to movements in asset prices. But in practice, sharp changes in saving are not always seen. For instance, although the saving ratio fell in the late 1990s as asset prices rose, it remained little changed as asset price falls reduced net financial wealth again in the early part of this decade (**Chart 10**).

Chart 10 Household net financial wealth and the saving ratio



The value of housing assets has also declined sharply over the past two years. Although, as noted earlier, this is less likely to have an impact through an ordinary wealth effect, lower house values mean that households have less collateral against which to borrow. Hellebrandt *et al* (2009) estimated that around 7%–11% of owner-occupier households with

mortgages were in negative equity in Spring 2009, meaning the value of their mortgage exceeded the value of their house, and hence had no collateral against which to borrow more. The proportion of households with high loan to value ratios (in excess of 75%) is also estimated to have increased sharply over the past two years. This is likely to interact with tightening credit conditions to make it harder or more expensive to obtain credit, leading to lower consumption and higher saving.

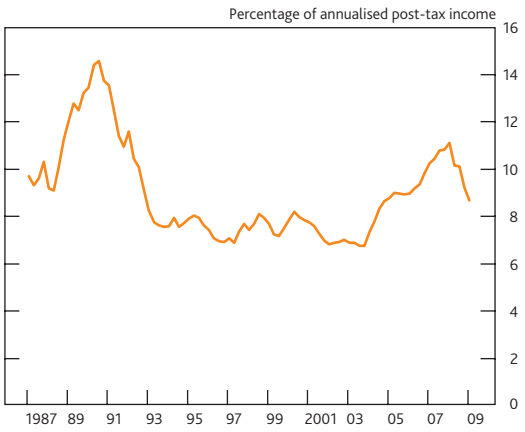
Reassessment of debt levels

Households may also seek to increase saving to repay debt, although as this section highlights, aggregate debt levels can also adjust in other ways over time. In principle, it should be households' net financial wealth that matters for consumption and saving. But gross balance sheet positions may also matter (see Benito *et al* (2007)). Even if high debt levels are backed by assets, they make households more vulnerable to changes in asset prices or financing costs. Debt levels have risen substantially over the past decade, to around 1.7 times annualised post-tax income, compared with one times income for most of the 1990s. Given the sharp increase in asset price volatility during the recent financial turbulence, households may seek to reduce their debt levels.

Households may be less likely to try to reduce their debt levels rapidly provided they can continue to service those debts. A standard measure of affordability — income gearing — has improved since early 2008. That is, the proportion of household income devoted to paying debt interest has fallen back recently and is now close to the average of the past fifteen years (**Chart 11**). This reflects falls in Bank Rate, which have brought down interest costs in spite of increasing spreads of lending rates over Bank Rate. Of course, debt may become less affordable if Bank Rate were to rise.

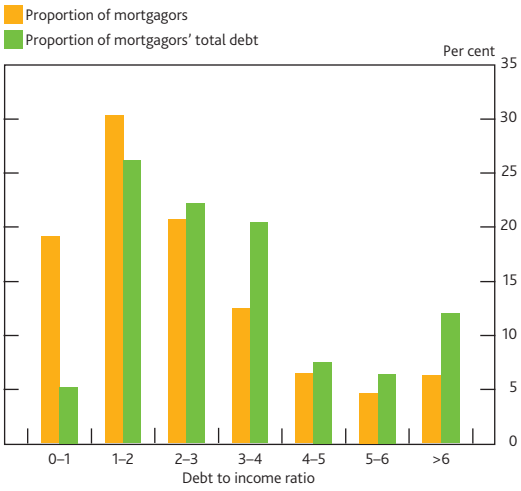
The distribution of debt across households can also be important. Even if average debt levels appear manageable, a significant minority of mortgagors for example have relatively high debt to income ratios (**Chart 12**). But any adjustment depends on how far such households might seek to reduce their ratios. For example, if all those with ratios above five sought to reduce them to five that would require a reduction in aggregate debt of around 6% (around 10% of annualised post-tax income). That could imply a significant increase in saving, even if the adjustment took place over a few years. Furthermore, unsecured bank credit levels, although much smaller, have also risen, by around 6% of annualised post-tax income since the start of the decade. An adjustment in those debt levels could also imply a significant increase in saving.

Chart 11 Household income gearing[a]



(a) Interest payments as a percentage of household post-tax income. The interest payment series excludes the adjustments made by the ONS to account for financial intermediation services indirectly measured (FISIM).

Chart 12 Distribution of mortgagors' total debt to income ratios



Sources: NMG Research survey 2008 and Bank calculations.

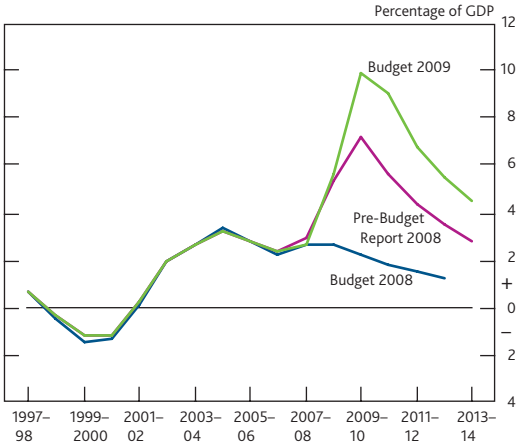
Household saving does not necessarily need to rise for debt levels to be reduced. Some households may be able to sell financial assets and use the proceeds to repay debt, although the scope for this may be limited because many debtors are unlikely to have substantial asset holdings. Aggregate debt levels could also fall as declines in house prices feed through. Households entering the housing market now have to take out lower mortgages than those who bought when prices were high. It can take some time for this to feed through to the entire stock of mortgages given that turnover in the housing market is relatively low (a house might typically change hands only once every ten years or so). Furthermore, some existing mortgages will have been taken out before the sharp increases in house prices earlier this decade. So when those houses are sold, the new mortgages may still be higher than the previous ones. Aggregate debt levels may not fall that far, therefore, as they are still responding to earlier house price increases as well as the subsequent falls.[1] This link between the housing market and debt levels also suggests that any desire by households to reduce mortgage debt levels could feed through to lower house prices.

(1) For a more detailed description of mortgage debt dynamics, see Hamilton (2003).

Higher government borrowing

As noted earlier, Ricardian equivalence can mean that increases in public sector borrowing lead to greater saving by the private sector. Cyclical swings in public sector borrowing can help households to smooth their consumption over the cycle, for example as lower taxes and higher benefits cushion the falls in incomes during a recession. In that case, private saving may not adjust. But structural changes in public sector borrowing are more likely to provoke a change in private saving. Over the past year, projections of cyclically adjusted public sector net borrowing have been revised up sharply (**Chart 13**). In the August 2009 *Inflation Report*, the MPC noted that households might feel that they need to save more to meet a higher future tax burden, given the fiscal consolidation that will be necessary in the years ahead.

Chart 13 HM Treasury projections of cyclically adjusted public sector net borrowing



Source: HM Treasury.

As noted earlier, credit constraints may mean that households are less likely to increase their saving in response to higher government borrowing. The number of credit-constrained households is likely to be higher than usual in the current environment. In the 2008 NMG survey of households conducted for the Bank, the number of households reporting that they had been put off spending by concerns about credit availability had risen to 16%, from 10% in 2006. To the extent that tax cuts allow households to spend more without accessing credit, this could reduce the impact of higher government borrowing on household saving somewhat.

Lower expected future income

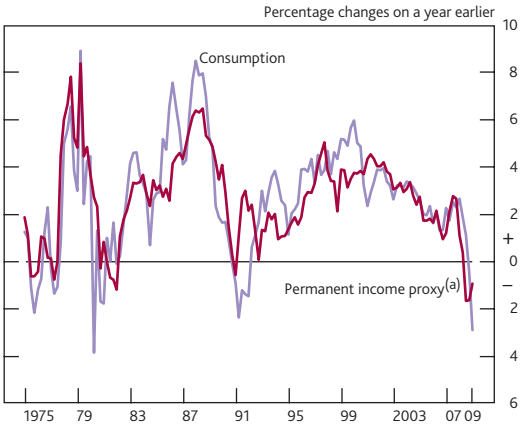
The recession may also have influenced households' expectations of their future income and hence permanent income. In the August 2009 *Inflation Report*, the MPC expected growth in the productive supply capacity of the economy to be eroded. For example, capital spending is likely to be weaker and some unemployed individuals may choose to leave the labour market altogether. If households have revised down their expectations of future income relative to current income, this would lead them to save more now to smooth their consumption path.

It is difficult to measure households' expectations of future income. But a number of indicators might be expected to provide a guide to any changes in permanent income. Survey measures of consumer confidence should reflect changes in households' financial position. And households might be expected to rein in spending on durable goods particularly sharply in response to a change in permanent income. This is because durable goods provide a flow of services that households consume over a length of time — so any desired change in the flow of services requires a larger swing in expenditure to adjust households' stock of durables.(1) Persistent changes in actual income growth might also signal a change in permanent income rather than temporary fluctuations. **Chart 14** shows a measure constructed from these indicators and scaled to match the mean and variance of household consumption. This proxy measure of permanent income has fallen sharply since the start of the financial crisis, which might suggest that households have revised down estimates of their permanent income.

Monetary policy

Over the past year, monetary policy has been providing a substantial stimulus to the economy that should act to smooth any adjustment in household saving. Bank Rate is close to zero and the asset purchases being undertaken by the Bank of England should act to push up asset prices. Low interest rates encourage households to spend rather than save, and higher asset prices will increase households' wealth. As a result, monetary policy will tend to cushion the extent to which saving may rise in the near term.

Chart 14 Household consumption and a proxy measure of permanent income



Sources: Research carried out by GfK NOP on behalf of the European Commission, ONS and Bank calculations.

(a) Average of three measures: a four-quarter moving average of post-tax labour income growth, the share of durables in total household spending and consumer confidence. Each measure has been scaled to match the mean and variance of household consumption.

(1) Spending on durables could be thought of as an additional part of household saving, in addition to accumulating financial assets and investing in housing. Instead of purchasing a durable good, households could choose to rent items for a period and use the money not spent on the good to accumulate financial assets.

Conclusion

Household decisions to spend or save reflect a wide range of factors, and they will be affected both by current developments and changes in households' expectations for the future. The household saving ratio declined over the period 1995 to 2007, reaching historically low levels. Much of that may be explained by falling real interest rates, looser credit conditions, rises in asset prices and greater macroeconomic stability. Lower household saving may also have been offset to some extent by higher corporate saving.

More recently, the financial crisis and the subsequent recession have led to tightening credit conditions, falling asset prices and greater job insecurity. Households may respond by increasing their precautionary saving. They may also save more if they are concerned about higher taxes in the future to reduce the fiscal deficit. Finally, households may seek to rebuild their balance sheets. All of these effects are, however, highly uncertain. History does not provide a clear guide. Saving increased sharply in the early 1990s recession and remained high for some time. But in the 1970s, the response of saving was muted and when adjusted for inflation, the saving ratio fell and was actually negative at times.

The persistence of the different influences on saving will vary: some factors currently pushing up on saving may be temporary, whereas others are more likely to persist. For example, increased job uncertainty might be expected to be a temporary feature of the recession. But job uncertainty could be persistently higher if households now believed that the economic stability from the mid-1990s to the mid-2000s was unusual.(1) One influence that is likely to persist is that credit conditions are likely to remain tighter than in the period leading up to the financial crisis, although not as tight as at present.

Any adjustment in saving is likely to have important consequences for the economic outlook, given the importance of household spending within aggregate demand. Indeed, any attempt to reduce consumption is likely to push down on output and hence household incomes. That could actually make it harder for households to increase their saving — an effect known as the paradox of thrift. The substantial stimulus provided by monetary policy is not designed to prevent an adjustment in saving from taking place, but it should smooth the path of spending, and reduce the disruption to output and therefore inflation.

(1) Back in 2004, it had already been suggested that this 'nice' (non-inflationary consistently expansionary) decade would come to an end. See King (2004).

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