Household saving in Australia

Susie Thorne and Jill Cropp[1]

After falling steadily from the mid-1970s, the share of disposable income that Australian households devote to saving has picked up in recent years. This paper explores a number of possible explanations for this development and their implications for household saving into the future.

Rapid income growth associated with the terms of trade boom is proposed as one of the key factors contributing to the rise in the household saving ratio over the past few years. Other factors which may also have contributed include: a moderation in capital gains growth; an increase in households' perception of risk around high leveraging; changes to Australia's tax mix in the early part of this decade; and a sustained increase in real interest rates until very recently.

In the future, the household saving ratio is expected to be influenced by conflicting forces. On the one hand, anticipated falls in Australia's terms of trade and a rapid easing of monetary policy are likely to exert downward pressure on the household saving ratio. On the other hand, heightened uncertainty surrounding the economic outlook and global financial markets can be expected to encourage saving.
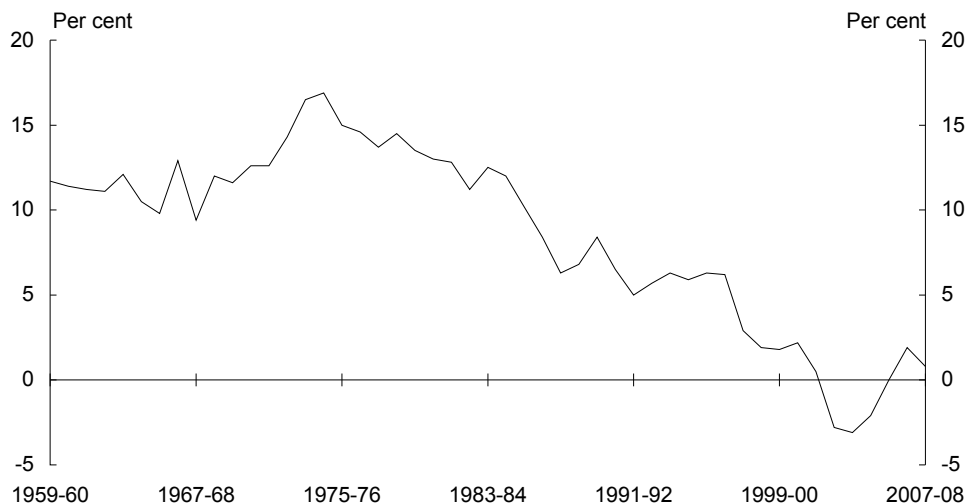

Introduction

For around 30 years from the mid-1970s, household saving in Australia declined steadily as a share of disposable income, eventually becoming negative around the early part of this decade. However, over the past few years, we have witnessed a reversal in this trend, with the fraction of households' income devoted to saving rising (Chart 1).

The reasons behind the trend decline have been the subject of considerable research and are well documented, if not universally agreed upon (see for instance Hiebert, 2006; Edey and Gower, 2000). By contrast, there has been little exploration of what has been driving the rise in Australia's saving ratio in more recent years.

The first section of this paper briefly reviews the concept of the household saving ratio, the reasons behind its 30 year decline and the economic theory of saving. The second section explores a number of possible explanations for the turnaround over the past few years and their implications for the future of household saving in Australia.

We consider the most compelling of these arguments to be that households have reacted to what they perceive as a transitory boost to their incomes from the terms of trade boom, by putting aside a higher share of this additional income for future consumption. Nonetheless, a number of other factors appear to have also contributed to the rise in the household saving ratio in Australia over the past few years.

Chart 1: Household saving ratio

Source: Australian Bureau of Statistics (ABS), *Australian National Accounts,* cat. no. 5206.0, Canberra, 2008.

Box 1: What is household saving?

The Australian Bureau of Statistics defines household saving as the part of current after-tax income that is not directly used up or transferred as part of household consumption.

It is calculated as a residual item, by deducting household final consumption expenditure from household disposable income. As these two aggregates are large, and the difference between them is small, household saving is hard to measure accurately and is prone to significant revisions.

The published household saving ratio is calculated net of depreciation, that is:

$$\text{Saving ratio} = \frac{(\text{Gross disposable income - Depreciation}) - \text{Consumption}}{(\text{Gross disposable income - Depreciation})}$$

The household sector in Australia's National Accounts includes not only households, but also unincorporated enterprises (including family farms) and non-profit institutions serving households.

While earnings on capital (such as dividends) are counted as income from a National Accounts perspective, capital gains and losses are not. The Australian Bureau of Statistics publishes an analytical measure of household saving in the Annual System of National Accounts which includes other changes in real net wealth.

The decline of household saving in Australia

Household saving in Australia declined from a peak of 18.0 per cent of household gross disposable income (less depreciation) in the March quarter 1975 to a trough of -4.4 per cent in the June quarter 2002.[2] Australia is not alone in having experienced persistent falls in household saving over this period; the same trend has been witnessed in a number of countries with similar institutional features, in particular the United States, the United Kingdom and Canada (Chart 2).

Literature surrounding this issue tends to attribute much of the decline in the household saving ratio to strong capital gains over the period (see for instance Hiebert, 2006). Real net wealth per capita has approximately doubled over the past 15 years, mostly due to growth in the value of housing and equity assets. Since capital gains tend to stimulate consumption, but are not counted as income from a National
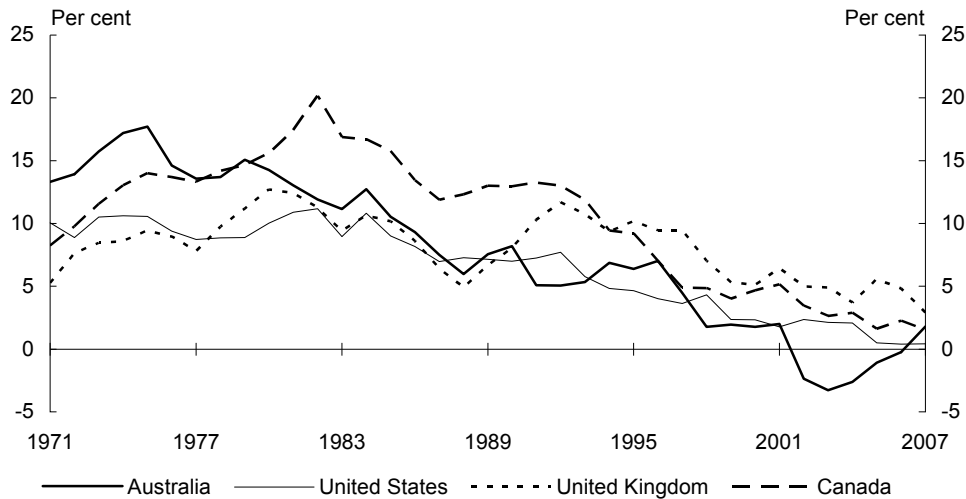
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2   Certain technical modifications can be made to the saving ratio to account for measurement and classification problems. These have the effect of flattening, but not eliminating, the decline in household saving from the mid-1970s. For a comprehensive summary of these modifications, see Treasury, 1999 and Edey and Gower, 2000.

Accounts perspective, this has put downward pressure on the saving ratio. Compounding this, asset price growth increases capital gains tax, reducing disposable income and thus the household saving ratio.

Chart 2: International comparison of household saving rates
(Per cent of household disposable income)

Note: Saving rates for all countries except the United Kingdom are net of depreciation.
Source: OECD, Economic Outlook Database.

Another key explanation for the decline in the household saving ratio since the 1970s relates to the rapid financial deregulation and innovation which took place over this period. Economic theory suggests that individuals tend to prefer a smooth consumption profile over their lifetime (Box 2), and the extent to which they are able to achieve this depends crucially on their ability to borrow and save. Financial deregulation and innovation have afforded households easier access to credit, enabling more efficient consumption smoothing and a reduction in the rate of saving out of income.

Hiebert (2006) notes that a relaxation of borrowing constraints will tend to reduce aggregate saving, although the impact will be transitory and may be offset by increased opportunities for, and returns to, saving induced by financial system developments.

A statistical explanation for the decline in household saving since the 1970s relates to the increased corporatisation of unincorporated enterprises. As these enterprises have increasingly moved into the corporate sector, some of the saving that previously accrued to the household sector is now measured as corporate saving instead (Treasury 1999).

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Box 2: What motivates people to save?

There are a number of reasons why households choose to save. One of the most well-known theoretical frameworks for consumption and saving is the Permanent Income Hypothesis (Friedman 1957). This hypothesis contends that consumption is determined not by current income, but by permanent income, a measure of income over a longer period of time than just a year or two.

A related theory, the Life Cycle Hypothesis (Modigliani and Brumberg 1954), emphasises the relationship between income, consumption and wealth at each stage of life. It posits that individuals tend to dissave when young, save and pay off debt in peak earning years around middle age and draw down on accumulated saving in retirement.

According to these theories, individuals seek to maintain a smooth consumption profile over their lifetime. Hence, they increase saving in times of strong income growth, in particular if this income is unexpected or is perceived to be temporary, and draw down on accumulated savings when times are lean.

Another reason why individuals might save is the precautionary motive. This theory suggests that individuals put money aside as a buffer against unforseen events.

Households may also save due to liquidity constraints. In the presence of credit restrictions, individuals must save in order to purchase large expenditure items, such as consumer durables or vacations.

Finally, households may choose to save in order to leave assets behind to heirs. This is known, unsurprisingly, as the bequest motive.

What has caused the turnaround in the saving ratio?

Over the past few years, we have witnessed a reversal of the trend decline in Australia's household saving ratio. This development has not been apparent in the countries to which we are most directly comparable (Chart 2), although it should be borne in mind that Australia's household saving ratio fell more rapidly and further than its comparators (becoming negative in the early part of this decade, which indicates that spending was outstripping disposable income not including capital gains).
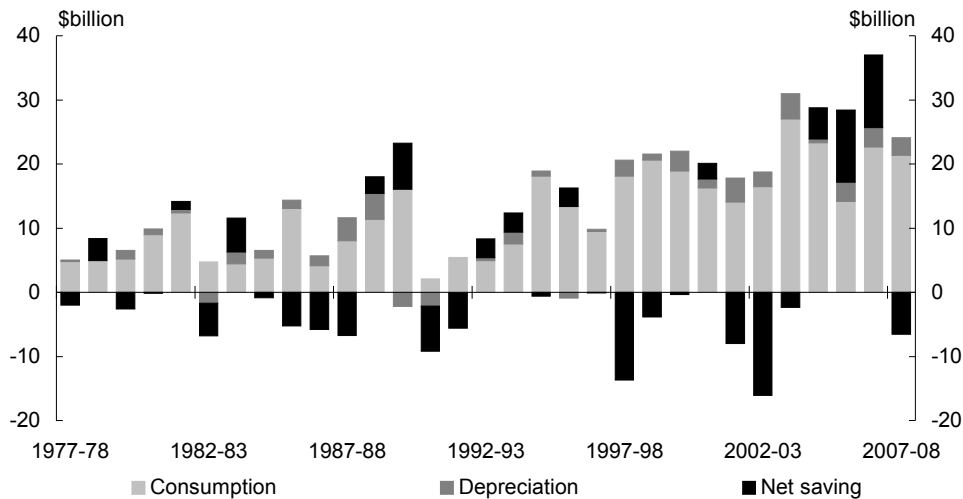
The following sections explore several possible explanations for the turnaround in the saving ratio.

Strong income growth flowing from the terms of trade

The turnaround in Australia's household saving ratio has occurred at a time of particularly strong growth in disposable incomes, largely driven by the terms of trade boom. Australia's terms of trade increased by around 10 per cent per annum over the five years to the September quarter 2008, significantly higher than average annual growth over the previous five years (around 2 per cent). Consistent with this, household gross disposable income grew by an average of around 5 per cent per annum over the past five years in real terms (accounting for inflation), considerably higher than the long-term average of around 3 per cent per annum.

While households have taken advantage of strength in incomes to lift consumption, growth in consumption has not been commensurate with growth in incomes. This is reflected in an increase in the share of disposable income being devoted to saving over the past few years (though not in 2007-08) (Chart 3).

Chart 3: Uses of real gross disposable income
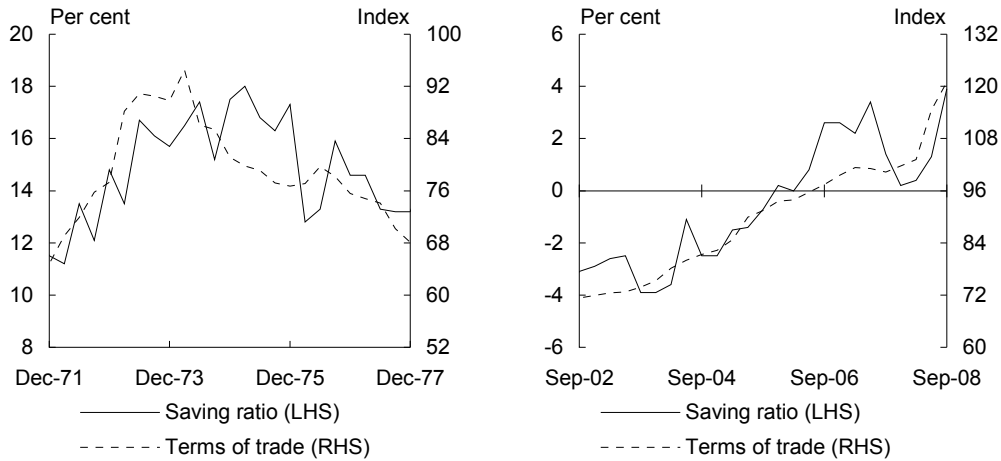(Change in financial year)

Source: ABS, *Australian National Accounts*, cat. no. 5206.0, Canberra, 2008.

This pattern of behaviour is not unprecedented; for instance, during the 1970s terms of trade boom, the household saving ratio rose and subsequently fell concurrently with the terms of trade (Chart 4).
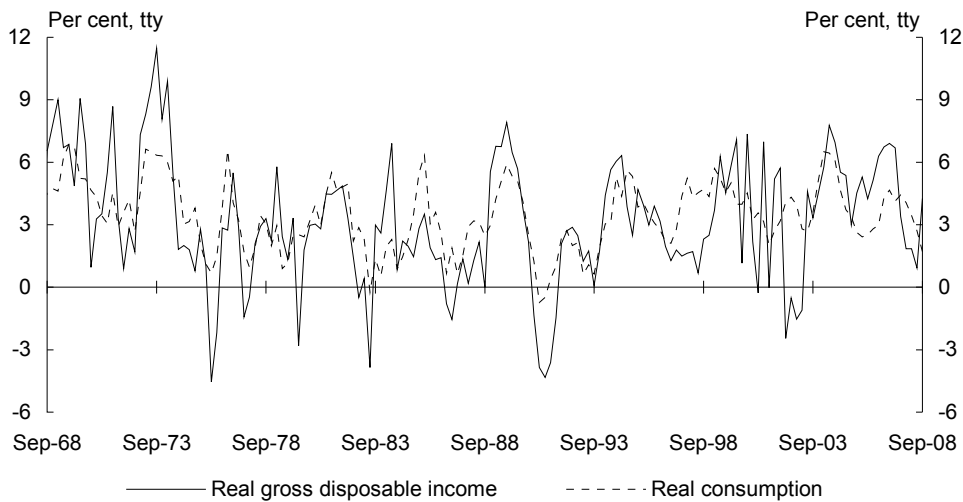
One possible explanation for this behaviour is that the rapid income growth flowing from the terms of trade boom is perceived as temporary and, consistent with the permanent income and life cycle hypotheses (Box 2), households have increased saving in order to facilitate a smooth consumption profile over time. Consistent with this, consumption growth is generally less variable than income growth (Chart 5).

**Chart 4: The household saving ratio and the terms of trade –
1970s and today**

Source: ABS, *Australian National Accounts*, cat. no. 5206.0, Canberra, 2008.

Chart 5: Growth in real gross disposable income and real consumption

Source: ABS, *Australian National Accounts*, cat. no. 5206.0, Canberra, 2008.

Global spot prices for Australia's major non-rural commodity exports have fallen significantly in recent months, with iron ore prices down more than 60 per cent and thermal coal prices down around 50 per cent since July 2008 (in US dollar terms). Despite this, Australia's terms of trade are expected to remain strong in 2008-09, reflecting high contract prices which are locked in until the end of March 2009 (Treasury 2008). This could be expected to provide support to incomes and thereby household saving in the short term. However beyond that, slower global growth is expected to trigger sizeable falls in Australia's terms of trade (Treasury 2008). The

consequent slowing in income growth can be expected to reduce some of the additional saving that has been undertaken as a reaction to temporarily higher incomes.

Modifications to the taxation mix

The structure of a country's taxation system impacts on household saving by changing the price of present consumption vis-à-vis future consumption. There may be reason to believe that the alteration of the tax mix brought about by the introduction of a consumption tax (and associated reductions in other taxes in July 2000) has contributed to the rise in household saving over the past few years.

Intertemporal consumption theory suggests that compensating individuals for the imposition of a consumption tax with reductions in income taxes will tend to encourage an increase in saving. This is because income taxes distort intertemporal consumption choices by decreasing the post-tax interest rate, thus taxing future consumption more heavily than current consumption. Conversely, consumption taxes are intertemporally neutral. Hence, a shift from income taxes to consumption taxes will increase the opportunity cost of consuming today, encouraging households to substitute away from consumption toward saving.

Another way of looking at this is to consider that a utility-maximising individual will choose to consume at the point where their rate of time preference (preference for current over future consumption) is equal to the real interest rate. By effectively increasing the real interest rate, an alteration of the tax mix in favour of consumption taxes will create a gap between the real interest rate and an individual's rate of time preference, encouraging that individual to increase saving at the expense of current consumption. An important caveat to this is that if households are liquidity constrained, they are less likely to be able to respond to a change in the relative return on saving, reducing the potential impact of a change in the tax mix (Freebairn 1991).

Based on saving and tax revenue data from OECD countries over a period of 25 years, Tanzi and Zee (1998) provide empirical evidence that income taxes negatively affect the household saving rate much more than consumption taxes. However, other empirical estimates suggest that the impact on saving of switching from an income tax to a consumption tax is likely to be small (for instance Freebairn 1991). The lengthy delay between the alteration of Australia's tax mix and the point at which the saving ratio began to turn around would tend to support the theory that the change to the tax mix played only a minor role in increasing the household saving ratio.
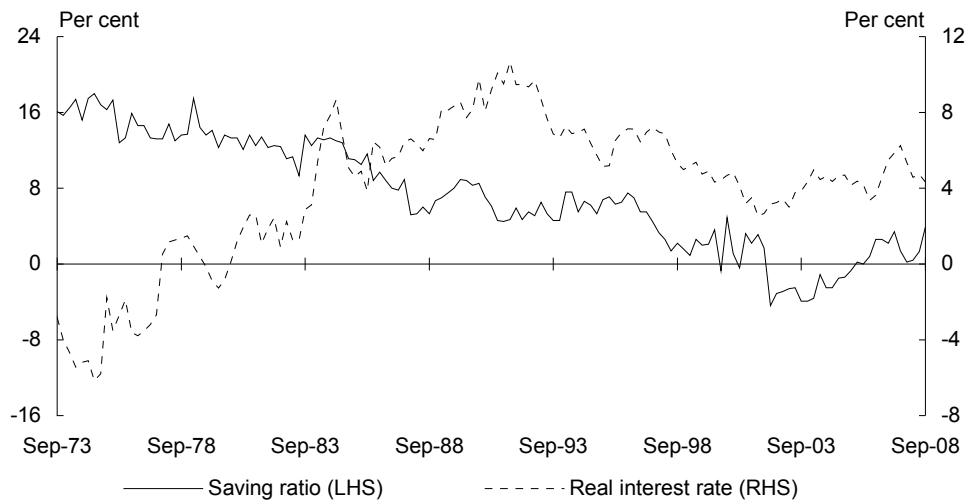
Rising real interest rates

Recent increases in the household saving ratio have occurred against the backdrop of upward trending real interest rates. The impact of changes in the real interest rate

depends on the direction and relative magnitudes of: the *substitution effect*, which alters the price of current and future consumption; the *income effect*, which changes the level of income; and the *wealth effect*, which affects the value of capital holdings. While the substitution and wealth effects unambiguously encourage an increase in saving when interest rates rise, the income effect will depend on whether the individual in question is a net lender or a net borrower.

Whether the relationship between the real interest rate and the saving ratio is positive or negative is unresolved in the empirical literature. Ouliaris (1981) finds a negative relationship between post-tax real interest rates and the saving ratio. Chart 6 indicates that there does appear to be a negative relationship between the saving ratio and real interest rates prior to the late 1980s.

Chart 6: Household saving ratio and the real interest rate

Note: The interest rate is the standard variable mortgage rate. It has been deflated by a measure of headline inflation which has been adjusted to exclude the effects of the introduction of The New Tax System.
Source: ABS, *Australian National Accounts*, cat. no. 5206.0, Canberra, 2008; ABS *Consumer Price Index*, cat. no. 6401.0, Canberra, 2008; and Reserve Bank of Australia.

However, more recent empirical results are either ambiguous or find a weak positive relationship between interest rates and the saving ratio (Callen and Thimann 1997; Edey and Britten-Jones 1990; Elmendorf 1996). Chart 6 shows that these two variables have tended to move in the same direction as one another since the late 1980s. It is plausible that the relationship between interest rates and the saving ratio should have changed around this time as, among other things, the 1990s was a decade characterised by rapid financial deregulation and innovation, substantial declines in inflation and a switch in the financial position of households from net lenders to net borrowers.

In response to turmoil on international financial markets, and a deterioration in the global economic outlook, the Reserve Bank of Australia has cut the official cash rate by

300 basis points since the beginning of September 2008. If a weak positive relationship does indeed exist between interest rates and the household saving ratio, then recent large interest rate cuts could be expected to be accompanied by some reduction in the household saving ratio. However, this is likely to be small compared to the effect of an economic slowdown, which will also tend to reduce saving.

Capital gains

As discussed in the first section of this paper, one of the most oft-cited explanations for the decline in household saving since the 1970s is that increasing capital gains over the period acted as a substitute for traditional saving. In seeking to explain the turnaround in the saving ratio in recent years, it is pertinent to assess whether the inverse is true over the more recent period. Girouard et al (2006) note, with reference to the United States, that the possibility of cooling asset markets and higher borrowing costs may tend to raise the saving ratio.

In Australia, the period since the saving ratio began to rise has been characterised by some moderation in capital gains, particularly when compared to the strong growth witnessed in the previous years (Chart 7). It could be argued that, by slowing growth in the net worth of households, moderating asset price growth has contributed to the rise in household saving in recent years. However, the slowdown in capital gains has not been remarkable (abstracting from the past year) and it is therefore difficult to draw firm conclusions as to the import of this explanation.

Chart 7: Household net saving and capital gains
(Per cent of household gross disposable income)

Note: 'Total other changes in real net wealth' includes real holding gains and losses, net capital transfers and other changes in volume.
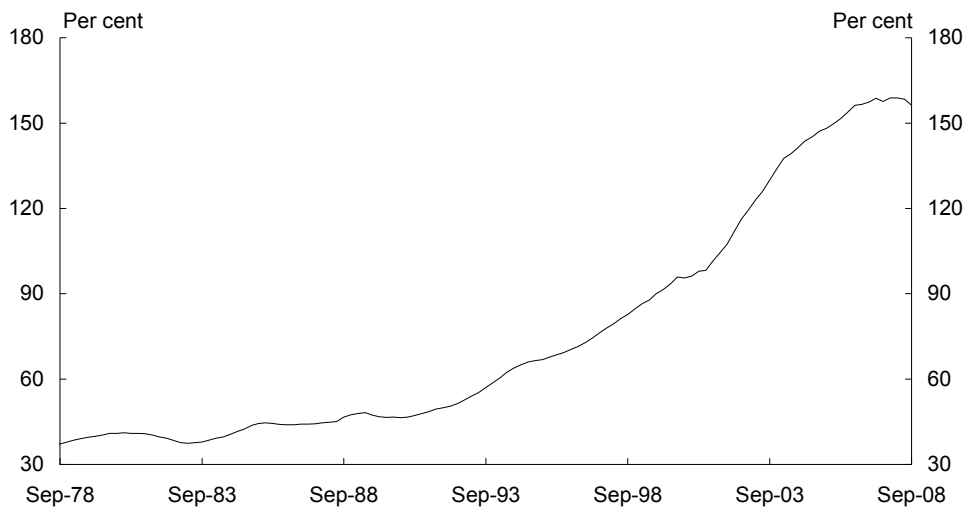Source: ABS, *Australian System of National Accounts*, cat. no. 5204.0, Canberra, 2008 and ABS, *Australian National Accounts*, cat. no. 5206.0, Canberra, 2008.

Household wealth has dropped significantly over the course of 2008, as deteriorating global economic conditions and large falls in international stock markets have flowed through to Australian households. The ASX 200 is down by more than 40 per cent since its peak in late 2007 and established house prices have fallen in the June and September quarters 2008. If capital losses do in fact encourage households to increase the share of income that they devote to saving, then we could expect this to provide support to the household saving ratio in the near future. This does not appear to have been the case in 2007-08 (Chart 7). However, the global financial crisis has caused sudden changes in structural relationships, meaning that data may not yet fully reflect the impact of these changes (ABS, 2008b).

Precautionary saving

Another possible explanation for the increase in saving by Australian households over the past few years relates to the precautionary motive to save. Over the past 15 years or so, Australian households have become increasingly indebted. The ratio of household debt to annual household disposable income has more than tripled since the early 1990s, to around 160 per cent (Chart 8).[3]

Chart 8: Household debt-to-income ratio

Source: Reserve Bank of Australia and Treasury.

This expansion in holdings of debt has been driven by a number of factors, such as financial innovation and deregulation, declining inflation, relatively low global interest
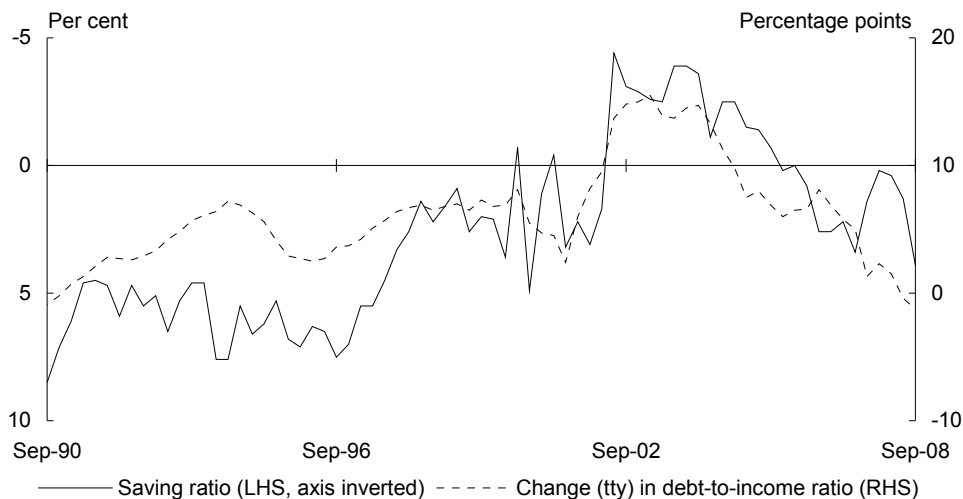
3   The debt-to-income ratio is useful in providing a measure of household leverage; however some economists take issue with it, since it compares a stock with a flow (RBA 2003). A more appropriate measure is the household gearing ratio (debt-to-assets), which has also almost doubled since the early 1990s. The less rapid increase in the gearing ratio compared to the debt-to-income ratio reflects strong growth in asset prices over this period.

rates, growth in wealth outstripping growth in incomes and a desire by households to devote a higher share of income to housing (Stevens 2008).

This is likely to have made households more sensitive to house price and interest rate developments (Girouard et al 2006). The same could be said for Australian households' exposure to movements in the share market, since equities have increasingly been embraced as a form of investment. Given this, the increase in the saving ratio over the past few years may be reflective of households increasing precautionary saving in order to buffer against a perceived increase in risk. This can also be seen in slower growth in the debt-to-income ratio (Chart 9).

Chart 9: Saving ratio and change in the household debt-to-income ratio

Note: The debt-to-income ratio is calculated using gross disposable income for households only, before net interest payments, while gross disposable income in the (published) saving ratio includes unincorporated enterprises and interest.
Source: ABS, *Australian National Accounts*, cat. no. 5206.0, Canberra, 2008; Reserve Bank of Australia and Treasury.

Related to this, some analysts suggest that households have been going through an adjustment phase for some time and are now stabilising at a new equilibrium. The Reserve Bank of Australia Governor has hypothesised that the long period of 'gearing up' may be coming to an end and that, in future, households may consolidate their balance sheets and align spending more closely with incomes (Stevens, 2008). Indeed, over the past few years there has been a marked slowdown in the rate at which households have been accumulating debt relative to income, with the ratio of debt to household disposable income rising by an estimated 15 percentage points over the past four years, compared to an increase of around 45 percentage points in the previous four years (Chart 8).

Recent turmoil on international financial markets, combined with a deterioration in the outlook for global and domestic economic growth, has heightened uncertainty for Australian households. This is likely to encourage households to increase precautionary saving. Combined with expected weaker income growth, this would tend to increase the household saving ratio.

Conclusion

This paper has considered a number of theories regarding what may have been driving the rise in Australia's household saving ratio over recent years. Of course, there may be other factors not explored here which have played a role in the turnaround in the household saving ratio. Of particular interest for further research are demographic issues such as the distribution of income and wealth across age cohorts, immigration and the role of superannuation.

It seems likely that several of the factors explored in this paper have contributed to the recent rise in the saving ratio. However, the factor which seems to most adequately explain the rise is that households perceive strength in incomes from the terms of trade boom to be transitory and, consistent with what economic theory would predict, have increased saving over the period with a view to better smoothing consumption over the life cycle.

In the future, we expect the saving ratio to be subject to conflicting forces.

An anticipated weakening in Australia's terms of trade is likely to curtail that part of saving which has been spurred by temporarily higher incomes. Recent monetary policy easing would tend to reinforce this effect if the positive relationship between real interest rates and the household saving ratio which appears to have existed over the past twenty years continues to hold.

However, heightened uncertainty surrounding international financial market turmoil and the economic outlook could be expected to encourage households to increase precautionary saving. Similarly, falls in wealth resulting from the global equity market crisis and weaker house prices may encourage households (which almost certainly consider capital gains as a form of implicit saving) to increase traditional forms of saving.

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