Some Observations on Low Inflation and Household Finances

Talk by the Assistant Governor (Economic), Mr G.R. Stevens, to the Real Estate Institute of Australia Conference on 'New Horizons for Property', Canberra, 8 October 1997.

I am pleased to be taking part in the Real Estate Institute's annual conference.

The topic I would like to address today is the implications of low inflation for household finances, and the housing sector. Low inflation is, I hope you have gathered, a fact of economic life in Australia in the 1990s. It is our intention in the Reserve Bank to perpetuate that state of affairs indefinitely, as we believe that price stability is the main way we can contribute to sustainable long-run growth in the economy and improvement in the lot of the average person. As we have stated over recent months, the outlook at present appears to be one in which inflationary pressures remain well controlled in the foreseeable future.

But the full implications of the shift from high inflation to something approximating price stability are still being worked out in many sectors of the community, including in the housing and real estate sectors. I would like to explore some of the ramifications of the fact of low inflation, and the low nominal interest rates which low inflation brings, for the accessibility of housing finance. I contend that the advent of low inflation has made access to home ownership much more widespread; this is one of the equity considerations of having low inflation which has hitherto been underrated in my view. At the same time, more affordable housing loans have been encouraging people to borrow much larger amounts; an important question here is the extent to which these borrowing decisions have been based on a realistic assessment of the medium-term path of incomes in a low-inflation world.

I want also to consider house prices. Over the past year or so, there has also been a significant lift in demand for established houses, and a rise in prices in some areas. This is an area where there is something to be gained by setting out a framework for thinking about the housing market, in order to arrive at a sensible evaluation of recent developments.

The Facts about Low Inflation

I will begin by recounting the main facts about inflation. They are reasonably well-known, but bear some repeating. Inflation as measured in consumer prices has averaged about $2^1/_2$ per cent during the 1990s, using either the CPI or any number of 'underlying' measures of inflation. This marks a profound departure from two decades of high inflation which really began in the late 1960s and did not end until 1990. Table 1 illustrates that the

Table 1: Inflation in Australia
Annual average rates; per cent

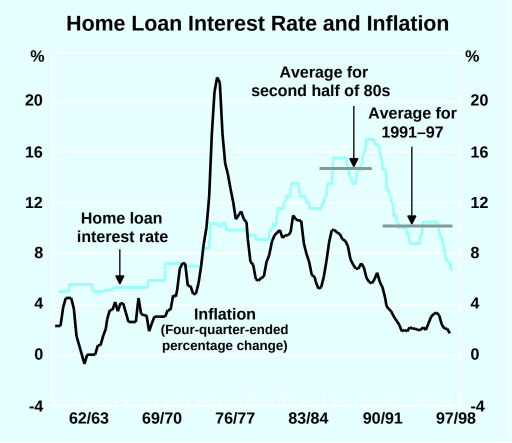
	1960s	1970s	1980s	1990s
Goods and Services Prices				
CPI	2.5	10.1	8.3	2.6
Underlying CPI	n.a.	10.1	8.1	2.8
Non-farm GDP deflator	3.3	10.6	8.4	2.2
Asset Prices				
House prices	5.3	12.3	11.4	3.2
Share prices	6.5	1.5	13.5	5.9

Sources: ABS, Australian Stock Exchange, Commonwealth Treasury, REIA/Departments of Valuers General

1990s inflation performance is, in fact, a return to that of the 1960s.

With this return to 1960s inflation performance has come a return to something like the interest rates we saw in the 60s as well (Graph 1). It is well known that high inflation produces high nominal interest rates. At one level, this is because policy-makers resist the higher inflation with tighter policies. But more fundamentally, lenders demand compensation for the erosion of the real value of their principal. Borrowers come to accept this, because they can see the real value of what they owe falling. Hence, market forces will tend, in time, to produce an equilibrium in which nominal interest rates embody an inflation premium. It may or may not be a premium which varies one-for-one with inflation, and there are complications which arise in the case where taxation enters the calculation – as it would with most business loans, and loans for investor housing. But by and large, there is no doubt that high inflation produces high interest rates, and that price stability goes with low interest rates.

Graph 1



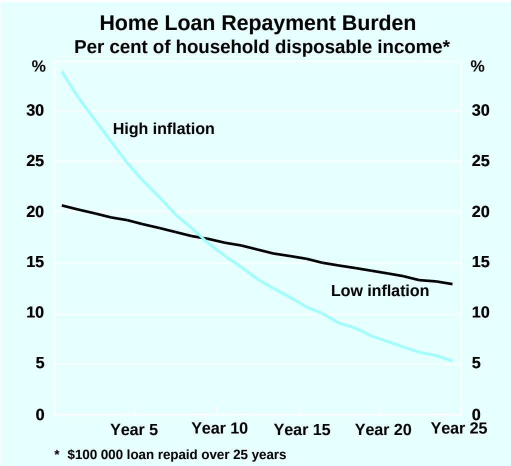
For the sake of accuracy, it is worth pointing out that the return to 1960s interest rates is not as complete as the return to 1960s inflation rates. Why not? The answer is, I think, that we are not comparing exactly the same thing in the case of many loans, and especially housing loans. In brief, whereas the interest rate is the principal, or sole, device for rationing credit today, that was not so 30 years ago. In the case of housing loans, the borrower's record of savings at the bank, even the individual branch, making the loan counted for a lot in getting access to a loan, as did some other factors. Bank interest rates were much more controlled, and the actual availability of funds was not well signalled by the price. Hence, we should not expect that the liberalised market of today would produce the same interest rates as the 1960s under the same macroeconomic conditions – the market works differently. I should think, however, that one could state without much fear of contradiction that the combination of affordability *and availability* of finance for housing seen today has not been bettered at any time in our modern economic history.

Implications of Low Inflation: The Economics of a Housing Loan

What does all this mean?

It has several implications. The first one I would like to draw out is the distinct lessening of the phenomenon of 'front-end loading' in conventional housing loans. This occurs in the case of the standard mortgage contract under conditions of high inflation and high nominal interest rates. The premium for inflation built into the interest rate, and the tendency for incomes to rise over time with inflation, effectively amounts to a tendency for the servicing and repayment burden to be most acute in the very early phase of a loan, falling over time. This is illustrated in Graph 2, which shows repayments as a share of household disposable income for a $100 000 loan over 25 years, under two alternative scenarios. The 'low inflation' scenario uses numbers prevailing at present: the interest rate is 6.7 per cent, which is currently the most common rate on a standard variable-rate mortgage, the term of the loan is 25 years, and the rate of inflation assumed is 2 per cent.

Graph 2



Total payments amount to just under $700 per month, which is about 21 per cent of average household disposable income as measured according to the national income accounts.[1] The 'high inflation' calculation uses an inflation rate of 8 per cent, and a nominal interest rate of 13 per cent, (the same 'real' rate as in the earlier case). Here the burden starts out quite high, at about 34 per cent of disposable income, but declines considerably over the life of the loan. The point of the two sets of calculations is obvious. Under conditions of high interest rates there is a considerable hurdle to get over in the early years of the loan, because of the premium demanded by the lender to compensate for inflation.

This is, of course, a highly stylised example. Nonetheless, the point it makes is, I think, understood at the intuitive level by anyone who was a mortgage borrower over the 20 years during which inflation was high: it was usually rational to borrow as much as you could possibly service at the beginning, because after a while inflation made things easier.

But this front-end loading must have made it much harder for people on low incomes to get started in home ownership at all. Banks and other lenders apply repayment-to-income tests to intending borrowers. Obviously, for any given size of loan, one needs a higher income in order to pass the test, the higher is the nominal interest rate. The fact that almost anyone would find it easier to service a loan in a year's time (because of inflation) does not change the fact that those on low incomes would have found it hard to overcome the initial hurdle. Admittedly, banks eventually developed 'low-start' loans, designed to overcome this problem. But this was quite late in the piece – in the late 1980s or early 1990s, just as inflation was fading, having been high since the early 1970s, so the front-end loading problems existed for a long time. This phenomenon was well understood by

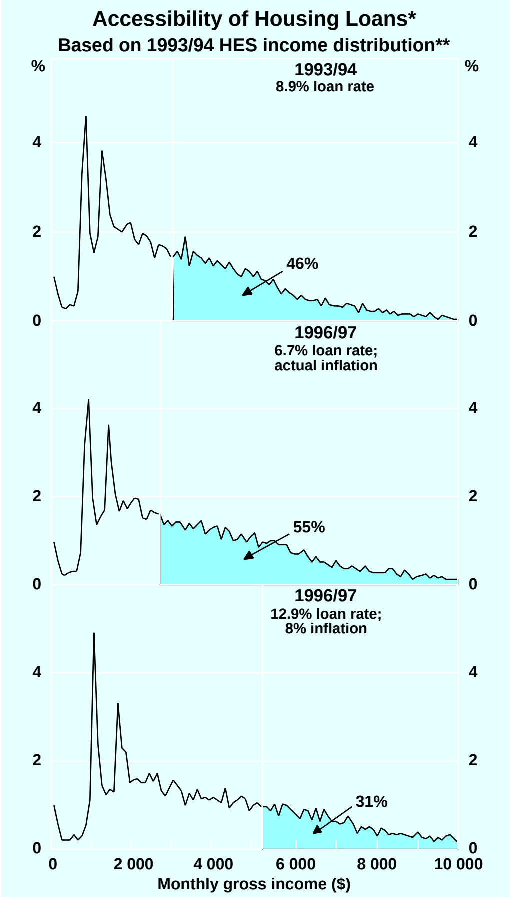
1. The servicing costs here are based on standard calculations. Income data come from the ABS National Income Accounts. Imputed dwelling rent is excluded. Average income is calculated by dividing total household disposable income by the number of households, extrapolated from the 1991 Census.

economists,[2] but it is surprising that more was not made of it in general discussion. Equally, the advent of low inflation, all other things constant, must have meant that low-income households have a better chance of entering the home ownership stakes than they ever had under high inflation.

How important is this quantitatively? How many people have been affected by this change? There is no way of assessing this directly. There has certainly been a sizeable increase in the number of new loans made for intending owner occupiers in the low-inflation period. In the five years 1992–96, the number of loans approved (excluding re-financing) was almost 2 million; an increase of some 27 per cent on the number for the preceding five years. This is suggestive that the order of magnitude could be sizeable, but is hardly definitive evidence.

Perhaps we can get closer by asking the following question: how many more households can qualify, on standard repayment-to-income tests, for a loan to buy the median-priced house today, compared with what would have been the case under higher inflation and interest rates? To get an idea of the orders of magnitude, we need some source of information on the distribution of household income. The main one which is available is the Household Expenditure Survey for 1993/94, data from which are shown in Graph 3. In the top panel, we take the median house price prevailing in 1993/94 (which was $149 000 nation-wide), apply a 70 per cent loan-to-valuation ratio, assume that recipients of a loan had to pass a repayments-to-income test of 30 per cent, and ask what proportion of households had enough gross income to pass such a test, given the then-prevailing mortgage rate (8.9 per cent). The vertical line shows the cut off point in the income distribution. Those with this income or more pass the test, those with less fail. The estimates suggest that about 46 per cent of households (the shaded area) would have passed such a test.

Graph 3



* Minimum gross income required to qualify for a standard housing loan for a median-priced house.
** Per cent of households

We then estimate the situation prevailing in mid 1997, allowing for average growth in household incomes (assumed to be equally spread across income groups), changes in the median house price, and a decline in the mortgage rate to 6.7 per cent. This is shown in the middle panel. Now, the shaded portion of the distribution is bigger: some 55 per cent of households pass the same test. That extra 9 per cent is equivalent, according to census data, to about 600 000 households.

Now these numbers are pretty rough. There is a fair amount of estimation involved in the comparison, which is of two points in time and not necessarily the two we would choose

2. See Yates, J. (1983), 'Access to Housing Finance and Alternative Terms of Housing Loans in the 1980s', University of Sydney Working Paper No. 68.

if we had a fuller range of data. After all, 1994 was a period in which we had already achieved low inflation and a substantial reduction in interest rates. Cash rates in mid 1994 were, in fact, similar to current levels. The net fall in housing loan rates since then is mainly due to a contraction in lenders' margins, rather than a further fall in inflation. But the point of the calculation is to demonstrate the likely effect on access to finance of a change in interest rates, regardless of its cause; the actual source of the change in rates over this particular short period is less important. One is on firm ground in claiming that the bulk of the decline in mortgage rates, from an average of around 15 per cent in the second half of the 1980s, to about 10 per cent on average over the 1990s, has been due to a structural decline in inflation. If so, the effects of this on access to finance for aspiring home owners in the bottom half of the income distribution are likely to have been significant.

An alternative (and more speculative) calculation would be to ask how things might look today if we had experienced, say, 8 per cent inflation (the average for the 1980s) since 1993/94, with nominal interest rates, growth of nominal incomes and increases in house prices correspondingly higher. The answer (shown in the third panel) is that the cut off point in the distribution would have moved to the right rather than the left, pricing out about 15 per cent of households, instead of pricing *in* 9 per cent. On this example, a lot fewer households would today have been able to qualify for a loan for the median house.

These simple examples, of course, do not capture the full complexity of the relationship between interest rates, demand for housing finance, and house prices. In the higher inflation scenario I just sketched, the higher interest rates assumed would presumably reduce demand for houses at least in some areas; hence, the median price of houses might not rise by as much as I have assumed, and the number of people priced out of the median house would be lower than the figure I quoted. In the same way, the decline in interest rates associated with low inflation prices people into the market, but as they seek to take advantage of this, they will tend to bid up house prices; hence, the total number of people in the new equilibrium who end up having access to housing would probably not be as high as the simple figuring here suggests. (House prices are indeed being bid up in some areas, which is something I will talk about in a moment.)

In other words, short of a full general equilibrium model of the economy, we cannot know exactly what the counterfactual would have looked like. Nor can one claim that, just because people qualify for a loan, they actually have one. They may chose not to. Actually, many households (numerically, the majority in fact) already own their home; a further proportion may choose not to own for various reasons. For all these reasons, and possibly more besides, we cannot develop a hard figure on the number of people that have taken out loans in recent years that would not have been able to do so in the past.

Nonetheless, the simple analysis suggests to me that the orders of magnitude involved here are probably large: substantial numbers of actual and potential borrowers are likely to have been affected by these changes, even if the exact numbers are uncertain. So my conclusion is that the advent of low inflation and low interest rates has made it a lot easier for those in the lower parts of the income distribution to get access to housing finance and home ownership. For those who do want to own a house, and my assumption is that a large fraction of low-income households would have that aspiration, it has become easier to get a start.[3] This conclusion is likely to be a fairly robust one. And, to repeat, it is a facet of low inflation which has been little remarked upon.

3. Someone might also observe that a lot of the lower part of the income distribution shown above still does not qualify for a loan. But remember that we have done all this analysis on the basis of a median house price for Australia – which is around $170 000 presently, according to data supplied by REIA (this is the series used in Graph 3). There are a lot of homes – by definition half the homes in the country – whose prices are less than the median. So the number of households who can qualify for a loan to buy *some* sort of house is in fact larger, and always has been larger, than the number shown here. This exercise is just an attempt to gauge, in one simple, summary measure, how far the fall in interest rates shifts the cut off point to the left.

Trends in Household Borrowing

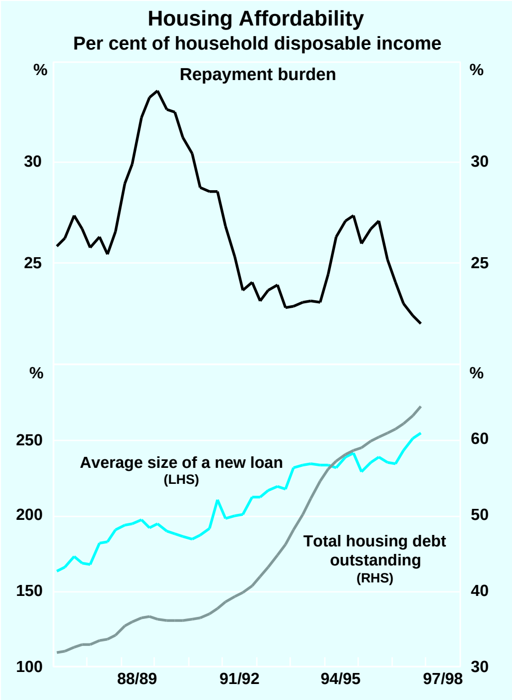
The next part of the story is that the extent of household borrowing in aggregate has increased dramatically over the past several years. This is not surprising: to the extent that the cost of access to credit has fallen dramatically, as I have shown above, many more households have made use of it. Graph 4 shows some relevant facts. It suggests that as the repayment burden has fallen relative to income, a result of falling interest rates, households have responded by increasing the amount of debt they are carrying, relative to their income. This has occurred through a large increase in the number of loans being taken out, but also an increase in the average size of a loan. Since 1990, the average size of a new loan approved for an owner-occupier has increased by about 60 per cent.

An increase in household indebtedness was, I think, to be expected in this period. One reason was that Australian households, by international standards, have carried very little debt historically (Graph 5).[4] This may have been due to innate conservatism, but probably also reflected the long period of financial regulation which lasted from the Second World War until the 1980s. Whatever the reason, there was always a likelihood that Australian households would become more like those in other developed countries, given time.

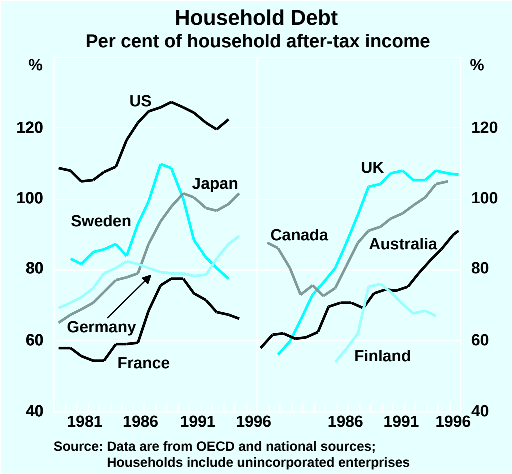
At the same time, it has become more feasible for households to run up their debt over the past decade. Financial liberalisation removed constraints which formerly prevented some people from having their finances arranged in the way they desired. It took quite some time for liberalisation to be accompanied by the kind of innovation and competition among intermediaries which is usually required for consumers actually to benefit from the liberalisation process: for liberalisation to deliver benefits, the behaviour of supplying firms has to change. It is well known, moreover, that the first area to see the benefits of financial liberalisation, innovation and competition was the corporate sector in the 1980s. The full benefits did not really reach households until the 1990s. Nonetheless, banks and other intermediaries have chased household business much more aggressively in the 1990s.

So forces which favoured an increase in debt were already there. My contention, however, is that the advent of low inflation and low

Graph 4



Graph 5



4. The data in Graph 5 include borrowings by unincorporated businesses. This is to facilitate international comparison.

interest rates prompted, and allowed, an acceleration in this trend. It made loans much more affordable to a wider range of households, as argued above, and also made it feasible for those who were already borrowers to contemplate bigger loans. Low inflation has also altered the relative positions of households and businesses. Taxes introduce a great many complexities into calculations, but on the whole, the tax deductibility of (nominal) interest costs is worth quite a bit to businesses under conditions of high inflation, and this is something which is not available to average owner-occupiers. Correspondingly, as inflation and interest rates fall, the position of household borrowers will improve relative to those of business borrowers. The fact that many businesses overdid their borrowing in the 1980s, moreover, and had to spend the first half of the 1990s repairing balance sheets, whereas households had low debt levels and were ready to increase debt and thus provided a market with significant growth potential, cannot have escaped the notice of lenders.

So this combination of forces – a household sector with low debt compared with their international peers, a dramatic increase in the affordability of housing finance, a weaker appetite for borrowing by companies and financial intermediaries looking for growth opportunities, has combined to produce a very substantial lift in household debt.

But while some increase in household debt was to be expected in this period, the juxtaposition of rising debt and low inflation obviously prompts the question of whether households have based their borrowing decisions on an accurate assessment of the outlook for inflation, and particularly their own nominal incomes, and hence servicing capacity, over time. This question can be posed in its most simple way in the context of Graph 2: have people fully understood that the likely path of the repayment burden is a rather flat one, not the rapidly declining one which was associated with high inflation?

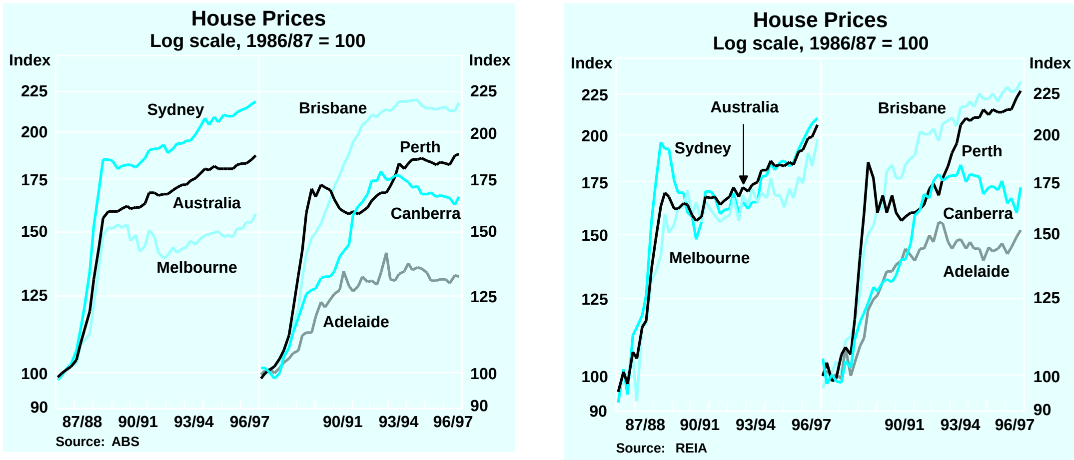
Before trying to answer that question, I want to bring in the third element of the story, namely house prices.

House Prices

In a conference of this nature, no doubt we will be hearing a good deal about trends in prices in various parts of the market. I will give you my thumbnail sketch of the broad facts about house prices over the past decade or so:

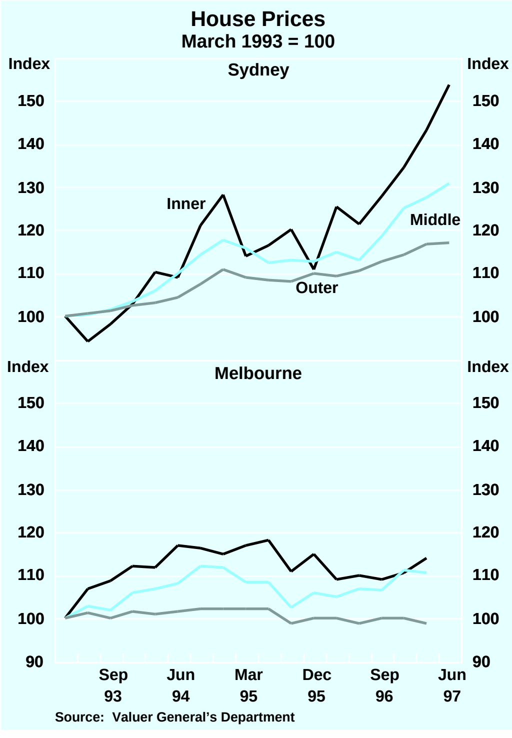
- There was a surge in house prices in 1987 and 1988 across the country. This was part of a general tendency towards asset price inflation at that time. The rise was most pronounced in Sydney, where prices almost doubled in less than two years. This is shown quite clearly in Graph 6.

Graph 6



- After that, prices dipped a little in cities where the rises had been biggest, such as Sydney, Melbourne and Perth, but continued to rise, though more slowly, in other areas. Subsequently, at least on some measures, prices in south-east Queensland and particularly Canberra, seem to have fallen.
- Over the past year, there has been an appreciable rise in prices of houses in the inner suburbs of Sydney and Melbourne (Graph 7). There may be some tendency for these price rises to be occurring more widely now, but it could not be said, at this stage at least, that substantial price rises are widespread (though perhaps we will hear differently at this conference!). There have certainly been some periods of rather breathless excitement in some areas of Sydney, with tales of furious bidding at auctions, high clearance rates and apparently enormous sums of money paid for the proverbial 'renovator's dream' and so on. But these appear to have remained reasonably localised.

Graph 7



Source: Valuer General's Department

In our own thinking about house prices, and asset values generally, we believe it is important to try to develop some sort of framework. In particular, movements in a particular asset price may reflect a general inflationary environment. Alternatively, they may be a change in the price of that asset *relative to* the prices of other assets and of goods and services, because of some fundamental factor affecting the demand and supply balance for the asset in question. It matters a great deal which is the case. In the case of assets where geographical position is an important element in determining value, it is also important to decide whether the increase being observed is localised, or widespread. A rise in prices of prime waterfront properties might just be a relative price shift, since such property is scarcer than the common block of land. (It is also worth noting that this part of the property market is probably part of a world market for prestige/luxury property – and so a sort of international arbitrage may be at work.) A second key question in assessing the implications of an asset price movement is whether it is associated with leverage: are borrowers 'gearing up' the purchase of assets, with the possible risk that a subsequent fall in the asset price will put them, and perhaps their lenders, in a position of distress?

Keeping that framework in mind, what can be said about the general trends in house prices over recent years?

There can be little doubt that the much lower structure of nominal and real interest rates which has prevailed over recent years in comparison with the 1980s has played a role in the rise in house prices which has been seen in some areas. Nor should this be all that surprising. A decline in interest rates, particularly a lasting decline in real interest rates, would usually be expected to increase asset values, all other things equal.[5] At the

5. Strictly speaking, assets like shares or houses which have a nominal income flow should not necessarily see a rise in price, if the fall in nominal interest rates reflects only lower expected inflation. In a straightforward discount model, the nominal income flow will be discounted by a lower nominal interest rate, but will itself inflate more slowly over time; in a simple example, these two effects might exactly offset each other, leaving the price of the asset unchanged.

same time, the lower interest rates have prompted the take-up of debt finance which facilitates the bidding up of the asset prices. This is what is supposed to happen when interest rates fall.

So there are some grounds for saying that what we have been witnessing is an adjustment of asset prices to the fact that inflation, and nominal and real interest rates, have been reduced in a structural way. The fact that the increases have, so far, been prominent only in high value areas may also suggest that there are some other fundamental forces at work. In particular, a change in tastes towards inner-city living, which may be most pronounced in those who have the incomes to service substantial debts, is probably also relevant. In part, the pattern of house price movements may mirror the diverging trends in income across the community. At the same time, the excess of housing stock remaining from the previous upswing is likely to have been largest in the outer suburban areas of the major cities and south-east Queensland. If this is so, it has presumably been a dampening factor in price growth in these areas. This would all add up to a story in which prices of certain exclusive areas rose relative to the rest.

As far as it goes, this picture is one in which the developments in house prices are based on fundamentals, and thus are reasonably benign. But that could almost always have been said at the early stage of asset price cycles in the past. Some of those cycles later gained a good deal of momentum based on speculation, and went on to do great damage to the fabric of economies, and especially financial systems. So before we reach too comfortable a conclusion, it is time to return to the issue of whether people have fully understood the implications of low inflation. In particular, two questions arise from the recent rises in house prices, accompanied by a run up in household debt:

- Will house price inflation, and asset price inflation generally, be as high in future as it was in the 1980s (or even the recent past)?
- Were all the borrowing and purchasing decisions based on a sober assessment of the prospects for asset appreciation and income growth?

The answer to the first question is surely no. A regime approaching stability of general prices for goods and services will, over time, be associated with much more modest rates of capital appreciation in real assets. To be sure, there will be periods in which prices can rise noticeably over short periods. And it may be that prices for property assets will rise faster than consumer prices on average, but in absolute terms these price rises should be much more modest than they were between 1970 and 1990. This is, I suspect, becoming conventional wisdom these days, though people are still working through the implications. One is that negative-gearing strategies will surely be less effective at generating wealth. Another is that if property prices were, somehow, to get out of line (say because of 'irrational exuberance'), then a fall in their relative price would most likely be accomplished by an absolute price fall, as opposed to a period of stability while other prices in the economy 'caught up', as happened in the past.

The answer to the second question – whether people have fully understood the implications of a low inflation environment in making their borrowing and purchasing decisions – is less clear. It is certainly the case that the community's expectations about future inflation have taken a long time to recognise fully the fall in actual inflation and the determination of the Bank to keep it low. This is in some ways understandable, since the conditioning of two decades of high inflation will have had a powerful effect on behaviour. So one has to wonder whether some of the borrowing that has been done has been based on the old idea that you borrowed heavily and over time inflation made things easier from a servicing point of view, at the same time as asset prices rose strongly. It seems plausible, to me at least, that this has happened in some instances. If it has, then disappointed expectations among some households as regards both how much income was left after mortgage payments for other purposes, and the extent to which the value of nominal housing equity rose, might have been an element of the economic scene over the past year or two. It might have been a lot more important, perhaps, had it not been for the fact that interest rates fell to new lows.

We have also seen, however, a further step down in inflation expectations over the past year, associated with the success of the monetary policy framework in seeing off the first cyclical surge in inflation pressures in 1994 and 1995. So the message is sinking in, and one has to expect that this can only improve the quality of decisions in future – which is, after all, one of the main reasons we want to have inflation low.

As part of this, I suspect we should see, at some stage, some moderation in the pace at which household debt is increasing, though it is not possible to say precisely when. Debt levels are still not high by world standards – though they are a good deal higher than they were. We should also expect (keeping in mind location issues and relative price changes etc.) that double-digit rises in property prices will not be common – and if they do occur there would be a higher risk of a reversal than in the past. It will be of interest to observe how these developments work themselves out.

Conclusion

The advent of low inflation, and with it lower rates of interest than seen for a generation, has been an important change in the economic environment. These changes have implications across a number of areas. I have today sought to talk about some implications for households which, up to now, have not received much attention, and to set out some principles which ought to be applied in thinking about house price movements.

My arguments are basically that:

- Low interest rates have lessened the front-end loading hurdle in a conventional housing loan. This is likely, other things equal, to have improved access to ownership of housing for a good number of households lower down the income distribution.
- The low inflation-low interest rate world has also hastened the process of households incurring, in aggregate, a lot more debt. This was probably always going to happen anyway but has now happened more quickly than it would have otherwise.
- Associated with this, there has been a noticeable rise in house prices in some areas over the past year. To some extent this should be anticipated, and contrary to fears in some quarters, the Reserve Bank does not panic about these trends, though we do watch them. To date, the trend has not been an important issue for macroeconomic policy. Nonetheless, it would be unusual, in our view, were strong rises to persist over a long period or become widespread. That would raise some questions.
- Some decisions might have been partly built on less than accurate assessments of the inflation outlook and its consequences. That should now be passing, however. If so, we should expect to see a soundly based evolution of the housing sector in future.