
The outlook for the US housing market

A report prepared by Lombard Street Research for Knight Vinke Asset Management

Executive summary

Lombard Street Research was asked by Knight Vinke Asset Management to review the outlook for the US housing market. Specifically, we were asked to address three questions:

- 1) US households are (perforce) borrowing less and saving more: is this cyclical (i.e. temporary and reversible) or structural (permanent and irreversible)?
- 2) If cyclical, when will house prices begin to rise again? When are they likely to return to “fair value”?
- 3) If a structural shift, what does it mean for the housing and financial sectors?

In our opinion:

- 1) **We judge current developments to be structural.** Record household debt is the key difference between now and past cycles. US households have debt levels that can no longer be serviced at normal interest rates. Before the US economy can recover, household debt must return to manageable levels. Once there, US households are unlikely to go on another borrowing and spending spree. Current experience – falling house prices, repossessions etc. – is extremely painful. Consequently US households will substantially raise their savings rate. It will remain higher than today.
- 2) **If current developments were cyclical, we would not expect house prices to return to their October 2005 peak until the middle of the next decade.** US households would not begin to borrow and spend again until debt returned to manageable levels (down about one-sixth from here). Even then it would take years before house prices returned to previous peak levels. Unlike the current cycle, nominal house prices did not fall in these previous cycles, yet it took longer and longer for real prices to return to peak levels. In the early 1970s it took over two years, nearly seven years in the early 1980s and nine years plus in the 1990s.
- 3) **If developments are structural, as we believe, it will take much more than a decade for prices to regain their former peak**
- 4) **The US finance sector is likely to shrink substantially, as demand for credit will remain extremely weak for a long time.**

These points are developed in greater detail throughout the report.

The housing bust – “This time was different”

Different in degree, kind and character

When asset prices surge – whether real or financial – people say “This time it’s different”. It rarely is. Bubbles burst. When they do, people say “This is nothing new”. But it often is. History never repeats itself exactly. Today’s burst housing bubble is different in degree, real house prices have fallen by almost a quarter from their peak. It is different in kind, nominal as well as real house prices have fallen this time. It is different in character, debt during previous bubbles was never so high. The debt itself is different – due to securitisation which spawned a proliferation of sub-prime lending

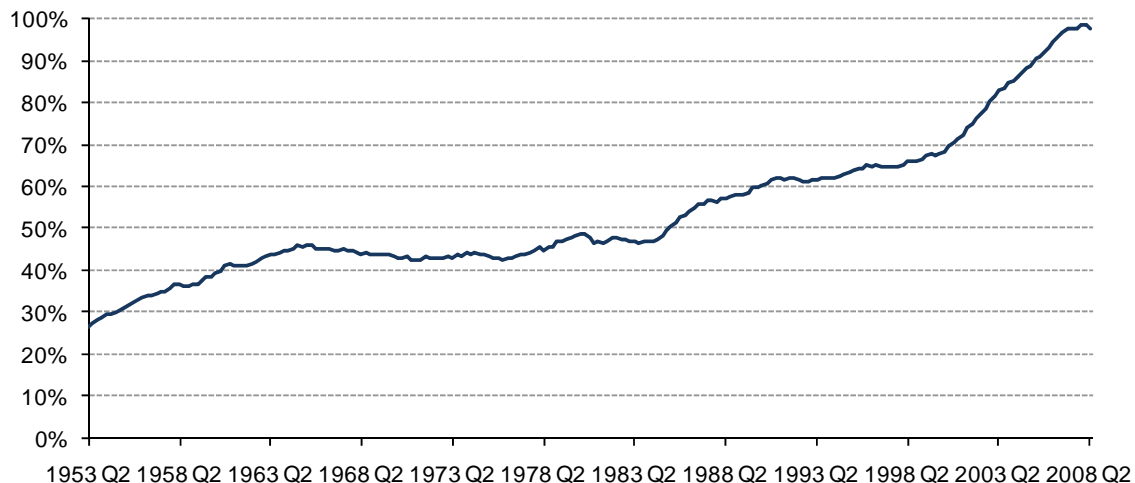
Prices down in nominal as well as real terms

In previous American housing busts, “all” that was needed for a recovery was real house prices (nominal average prices for existing homes deflated by the CPI). to fall sufficiently so that buyers would again start to buy. In the early-decade 1970s, 1980s and 1990s major housing busts the average real price fall was between 10% and 12% over up to three years. But on the same measure, US real house prices had by August 2008 already fallen by 22% from their peak in October 2005 – three years ago.¹ The unprecedented (since the 1930s depression) sustained nominal house price fall was 14%. (There have been short-lived dips in recent decades.) More to the point, there seems to be little prospect of this fall stopping for some time yet. Clearly, this time it’s different.

A massive hangover of household debt to be cleared

Moreover the difference is clear – a massive hangover of household debt to be cleared. Chart 1 shows that in the four previous housing downturns, US household debt was considerably lower than it is now. Throughout the period from the early 1960s to the mid-1980s, household debt totaled between 40% and 50% of GDP. In the early 1990s, it had just edged above 60%. By contrast, it is now (Q2 2008) just short of 100% of GDP. Put another way, US households’ financial obligations ratio (debt service + fixed financial costs as a percentage of disposable income) has gone

Chart 1 Household debt as % of GDP



Source: Federal Reserve, Flow of Funds

from less than 14% in the early 1980s (when the data begin) to a peak of 18.16% in 2007, and has since only fallen marginally (to 17.5%) in early 2008 (Chart 2). Further, it is not only that households collectively carry greater debt; it is also the case that more of them individually do. *The Economist* (issue of 18-24th October 2008) quotes Ivy Zelman of Zelman & Associates who points out that in the early 1980s, one half of households held a mortgage, but that this figure now is two-thirds.

Most of this build-up in debt was accumulated during a period of low interest rates. Given that US households do not save anything of their income, current debt levels are essentially not possible to service at normal interest rate levels.

How lender-frenzy drove the borrowers' bonanza

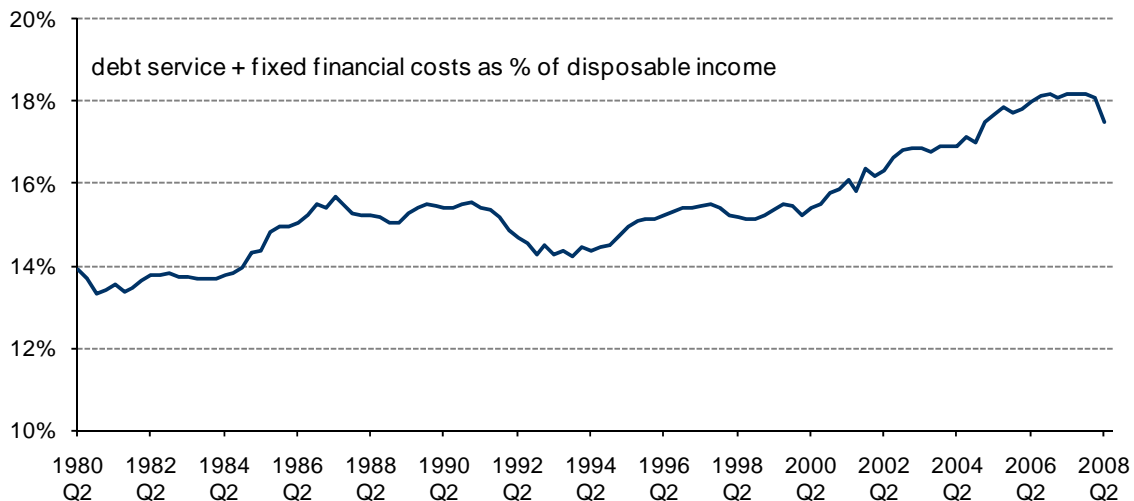
Securitisation fed the debt bubble

The housing boom and subsequent bust were exacerbated by two other developments, securitisation and with it the rise in sub-prime lending. Where previously the originator of a mortgage would generally hold that mortgage on its books until it was repaid, securitisation enabled the originator to get repackaged, bundle and sell off loans, thus removing much of the risk from its own balance sheet while at the same time generating more money that could be lent again. The issuance of mortgage-backed securities rose from \$492.6bn in 1996, to \$3,071.1bn in 2003, before falling back to \$2,050.1bn in 2007. The total stock of asset-backed securities (ABS) rose from \$3.2trn in 1999 to \$7.4trn in Q2 2008, of which mortgage-backed securities – MBS – rose from \$2.7trn to \$6.5trn (Chart 3). Total US mortgage debt outstanding at the end of Q2 2008 was \$14.8trn (of which \$10.6trn was owed by households) meaning that 44% of US mortgage debt is now securitised.

Sub-prime loans fed the securitised

US bank regulators define sub-prime loans in terms of the borrower's status. They are loans to those with damaged credit including such

Chart 2 Household financial obligations ratio, % of disposable income



Source: Federal Reserve

bubble, meaning loans to sub-prime borrowers

objective criteria as a FICO score of below 660.² The proliferation of sub-prime mortgages is largely a consequence of securitisation. If the originator no longer intends to hold the loan on its own books, standards can be let slip. Unsurprisingly, the early years of the decade saw a surge in sub-prime lending. In 2003, sub-prime and Alt-A mortgages (Alt-A are mortgages that are riskier than prime, yet better than sub-prime) made up 8% of all new US mortgages; in 2004 the figure was 18% and by mid-2006, it was 22%.³ By mid-2008, out of a total of \$10.6trn worth of mortgages held by households, sub-prime constituted 14% (\$1½trn) and Alt-A another 5% (about \$500bn).⁴ Other sources give slightly different numbers; in an op-ed article in the *Wall Street Journal Europe* on 27th October – *Let's use Fannie to clean up the mess it made* – Peter Wallison and Edward Pinto, using data from the New York Fed, estimate the stock of outstanding sub-prime and Alt-A loans at \$3trn – 21% of the total.

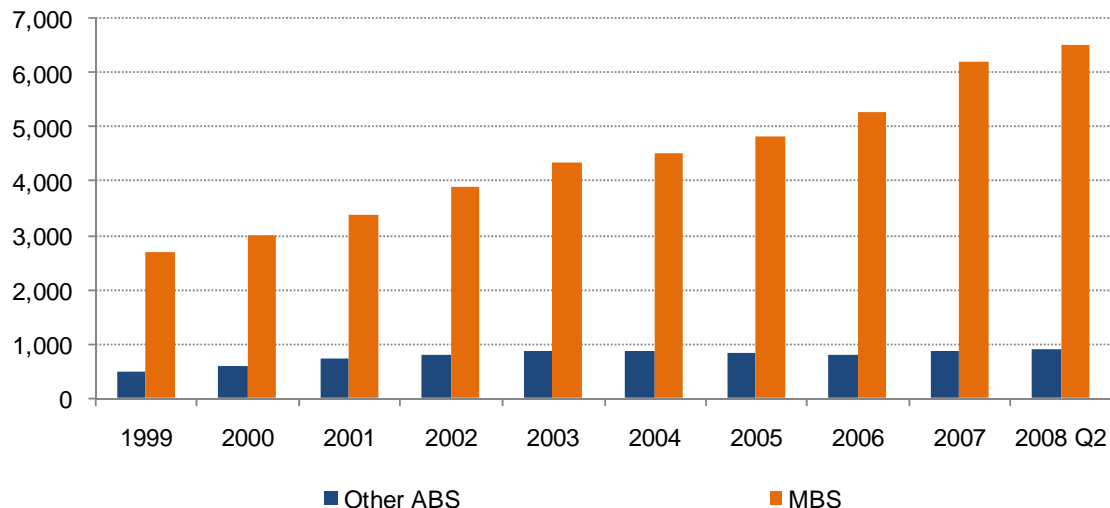
Sub-prime low-pay loans for sub-prime no-pay borrowers

While sub-prime mortgages could be entirely straightforward, this sector also provided fertile ground for more exotic forms of borrowing. Among these were the negative amortisation or 'teaser mortgages – mortgages where the rate of interest paid for an initial period (generally 2, 3 or 5 years) is kept artificially low, with the unpaid interest rate added to the loan. After the initial period, the loan is then reset to an interest rate higher than the prevailing market rate. There was also the rise of the NINJA loan, loans extended to applicants with no income, no job (or) assets.

Original lenders no longer ultimate losers: the more the merrier

Lower loan quality was partly a consequence of the rise of the originate and distribute model. By selling off mortgages once they were set up, the originator got rid of his own risk exposure to the loan, while retaining the fees for servicing the loans as well as (usually) the income from selling the loans at a profit. This meant that loan quantity became more important to the originator than quality, since that risk had passed to someone else.

Chart 3 Stock of asset-backed securities outstanding in US, billion dollars



Source: Securities Industry and financial Markets Association

.... Ponzi loans collapsed with asset prices

All these were "Ponzi" loans: Sub-prime loans to sub-prime borrowers drove up house prices. Higher prices justified more sub-prime lending. As long as interest rates remained low, a teaser mortgage could be rolled over for a new teaser loan with another provider. If the worst came to the worst, it was always be possible to sell the underlying property without loss to pay off the loan. But when either – or both – of these conditions failed, the housing bubble burst – the more so as US households did not save anything. Since the increased cost of housing loans could not be met from any buffer or reserves, it would have to be met by cutting down on spending. In an economy where consumer spending makes up just over 70% of GDP, any cuts in spending would immediately be felt in lower output growth.

Once the Fed began to raise rates, the game was soon up

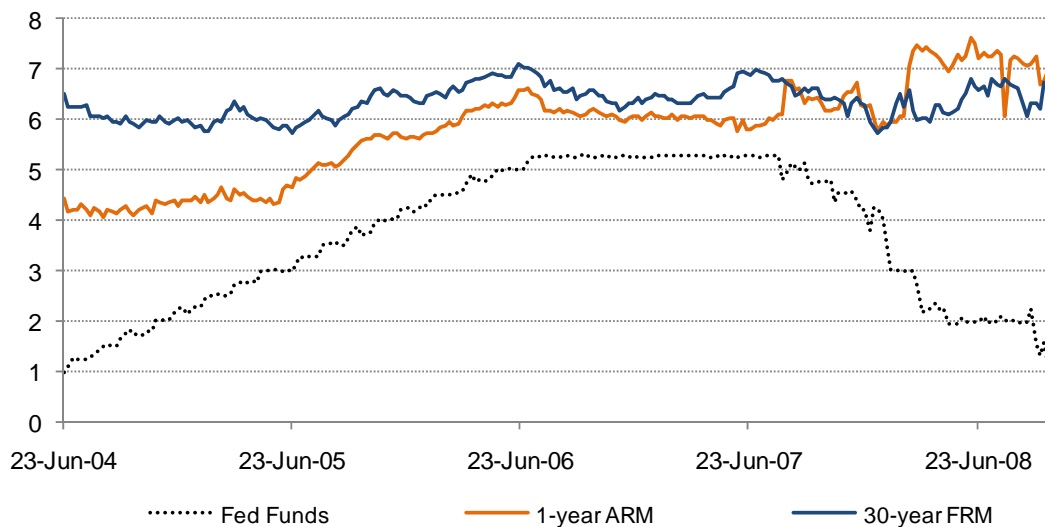
This is, of course, what happened. On 30th June 2004, a year and five days after it had cut the Fed Funds target rate to 1%, the Fed started raising interest rates. Over the next two years, regular as clockwork, it raised interest rates by 25bps per meeting until the Fed Funds target rate stood at 5¼%. Crucially, this was accompanied by a rise in mortgage rates. To take but two, the interest on a one-year adjustable rate mortgage rose from 4.4% in June 2004 to 6.6% two years later; while for a 30-year fixed rate mortgage, the interest rose from 6.5% to 7.1% (Chart 4). House prices continued to rise for some time, but total home sales peaked in September 2005 and the average price of existing homes peaked one month later at \$275,000. Three years later, it had fallen by 14% (nominal, 22% real). Along the way, the US economy had slid into recession amidst a spectacular housing bust, centred very much on the sub-prime sector.

Unprecedented measures vainly seeking to solve an unprecedented crisis: why they can't work

The Fed's bank rescue efforts made it worse

As the crisis was without precedent, so has been the official response. So far it has not been successful. The economy is going to 'hell in a hand cart'. Partly this is due to mistaken crisis control – like spraying water on

Chart 4 Fed monetary policy and mortgage interest rates



Source: Federal Reserve, Mortgage Bankers Association of America

an electrical fire. The burst bubble led at first to what was seen as a liquidity crisis. It was really a solvency crisis due to unknown and unknowable losses and losers that spawned the liquidity crisis. That in turn exacerbated the solvency problem. The authorities have concentrated on saving the banking system at all costs. The Fed correctly injected massive liquidity into financial markets in attempts to free up inter-bank lending. It also slashed interest rates, taking the Fed Funds rate from 5¼% all the way down to 1% again. But this policy was misguided, counterproductive and least in so far as it was aimed at boosting credit growth, ineffective. It was misguided, because if excess debt is the problem, it cannot be cured by attempting to make borrowers take on more debt. It was counterproductive in that it exacerbated an inflation problem. Once markets perceived that Fed's intentions to 'save Wall Street at all costs', a search for safe non-dollar assets began, chiefly commodities and among them mainly oil, which pushed US headline inflation to 5½%. But, above all, the policy was ineffective because while policy interest rates came down, mortgage interest rates did not (Chart 4).

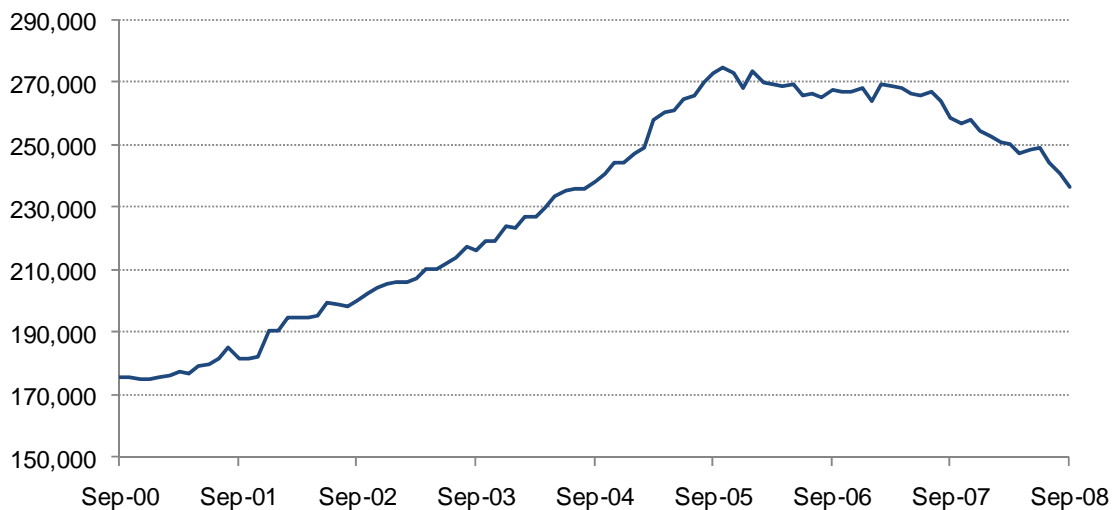
TARP in two minds has not helped

A third step from the authorities is the Emergency Economic Stabilisation Act, also known as the TARP (troubled asset relief program). This is a \$700bn program, originally initially intended to purchase toxic assets of the banking system, but since its inception changed towards providing banks with fresh capital and more recently to buying other asset-backed securities. So far (November 2008), \$125bn has been injected in nine banks – most of which did not either need or (in at least one case) want it. The result is that the US now has a banking system very much dominated by the government.

US banks need more capital to support less lending

More importantly the shift in direction of the TARP clearly spells out that whatever happens, the US banking system will have to shore up its balance sheet. Moreover, given that the key problem for US households is excess debt, credit will have to shrink. This is not just a question of

Chart 5 US house prices, existing homes, average price, dollars, nominal



Source: National Association of Realtors (seasonal adjustment by LSR)

household borrowing growing but at a slower pace. US households will have to go from living well above their means – savings rates of zero or even negative savings – to living within their means. This is not simply a question of a year or two of retrenchment, following which the US will return to its previous pattern. Rather, there are a number of factors which imply that this is a structural shift in US banking and in household behaviour, both of which will have long-term consequences.

The easy-lending, easy-borrowing days are over: it will be a long time before house prices recover

Originate and distribute will be off the agenda for a long time – as will a lot of sub-prime lending

Easy lending has been mortally wounded by trashed balance sheets. Easy borrowing ends with stringent conditions. No more low-pay loans to no-pay borrowers. Those willing to borrow will be unable to: those able to borrow will be unwilling to. The supply of and demand for credit must contract. Moreover the supply contraction within the financial sector will be agonising. This is called ‘de-leveraging’. As noted above, US financial institutions, will have to retrench and shore up their balance sheets. It is probably a safe bet to say that securitisation – the originate and distribute model – will be off the agenda for a long time to come. This is particularly true for the shadow banking system (Other Financial Institutions or OFIs in British parlance) which were very much the big players in this context. They will therefore be unable to extend as much credit as in recent years (they won’t be able to get the leverage to do so). In turn – and particularly given the public sector interest in many banks – this means that many of the lending practices of recent years will disappear. There will almost certainly be a clamp-down on teaser mortgages, on NINJA loans and on other practices. The future of sub-prime lending is less clear. The banks themselves will no doubt wish to concentrate on lower risk lending, at least over the next 3-5 years. However, there is likely to be political pressure on them not to pull the plug on lending to poorer segments of the population. Some sub-prime lending is therefore likely to persist.

Chart 6 Total home sales, thousand units, annualised rate



Sources: National Association of Realtors, Commerce department

The time for a housing market recovery has lengthened in each bust since the 1970s

A key question then becomes how rapidly the housing market is likely to recover. Looking at previous episodes, there is no clear pattern, either for sales or for prices (Charts 6 and 7). The peak-to-trough sales period in clearly discernible cycles was 28 months in the early 1970s (September 1972-January 1975), during which period home sales fell by 20%; two years in the late 1970s (April 1978-April 1980) and again in the early 1980s (September 1980-September 1982) with total sales falling by 42% in the first cycle and by 45% in the second. But in the late 1980s this period lengthened to 4 years (December 1986-December 1990), although home sales only fell by 29%. This is possibly of more relevance to today's situation, since it coincided with a financial crisis (the S&L crisis), which squeezed credit growth. In the current cycle, home sales peaked in April 2005 and have since fallen by 33%. Looking instead at the return to previous home sales levels (ie, when the previous peak was regained), this was three years in the early 1970s (September 1972-September 1975). But in the downturn of the late 1970s, it took 15 years and 8 months before the previous peak in home sales was regained (April 1978-December 1993), a period which actually encompassed a mini housing boom and bust.

Both in terms of sales and in terms of prices

But sales numbers do not tell the whole story. It is all well and good when house sales recover, but – both for banks and for home-owners – it is possibly of greater importance to know what happens with prices. The periods will not be the same as those for the number of home sales; house prices tend to peak later (sometimes much later) than house sales. (All data in this paragraph refers to real prices – the average price of existing homes, deflated by the consumer price index). In the early 1970s, house prices peaked in June 1974. They then fell by 4.5% before bottoming out four months later, in November 1974, and recovered their previous peak in August 1976, after 26 months. The next peak was in June 1979, following which house prices trended down for almost 3 years before

Chart 7 US house prices, existing homes, average price, dollars, real



Source: National Association of Realtors (seasonal adjustment by LSR)

reaching a bottom in May 1983, 8.8% below the peak. House prices then recovered their peak level in April 1986, 6 years and 10 months after they began to fall.

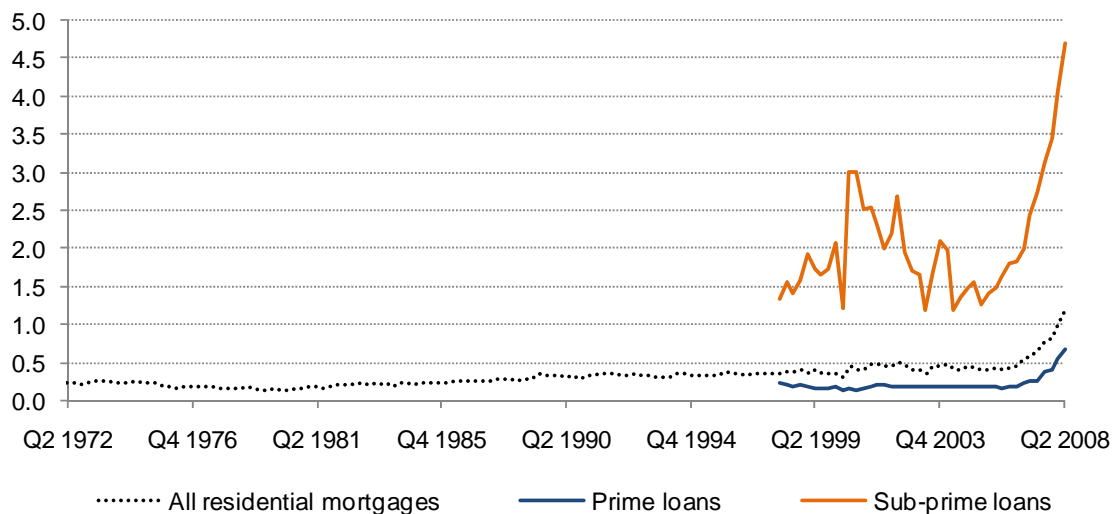
This will be even worse given the severe fall in nominal house prices

Just as the late 1980s cycle was worse in terms of sales than preceding ones, so it was worse in terms of price developments. Prices peaked in June 1988 and then fell by 11.8% over a 30-month period before reaching a bottom in December 1990. But, crucially, they did not recover their June 1988 peak until December 1997 – 9 years and 4 months later. In the current cycle, house prices peaked in October 2005 and have since fallen by 22%. But this is not the whole story. The entire price discussion above relates to *real* house prices (deflated by the CPI). But the current cycle is also unusual in that *nominal* house prices also have fallen down 14% from their October 2005 peak (Chart 5). House price falls are not unprecedented – but they have not occurred, certainly not on the sustained basis we are now seeing, at any time over the past forty years.

The longer house prices fall, the longer it has taken them to recover

As noted above, there is no entirely clear pattern, either in home sales or in house prices. However, what is clear (and possibly not particularly surprising) is that the further house prices fell from peak to trough, the longer it took them to recover their previous peaks. Also, it does seem as if the housing cycle has grown progressively more severe over the decades. This is particularly worrying for the current state of the US housing market. The very latest data show that home sales did pick up in September. But this came at the cost of further price falls. Existing homes for sale are equivalent to 10.4 months of sale, a powerful backlog and price depressant. Moreover, this does not take account the impact on house prices of sales of repossessed homes. Although foreclosures fell by 12% in September, they were up by 3% in Q3 compared with Q2 and up by 71% compared with Q3 2007.⁵ In addition, RealtyTrac points out that the slower pace of repossessions primarily is due to changes in some state laws that are (at least temporarily) slowing the pace at which lenders are

Chart 8 Foreclosures started, % of total loans



Source: Mortgage Bankers Association of America, DataStream

moving forward with foreclosures. Chart 8 shows foreclosures as percentage of total loans for all mortgage loans and divided by prime and sub-prime loans. It is clear that foreclosures are at an all-time high – and likely to rise – but also (unsurprisingly) that foreclosures on sub-prime loans are considerably higher than on prime loans. Substantial number of foreclosures leading to more sub-prime properties being sold off is a further reason to expect that it will take longer for sub-prime loan collateral to recover to previous price levels.

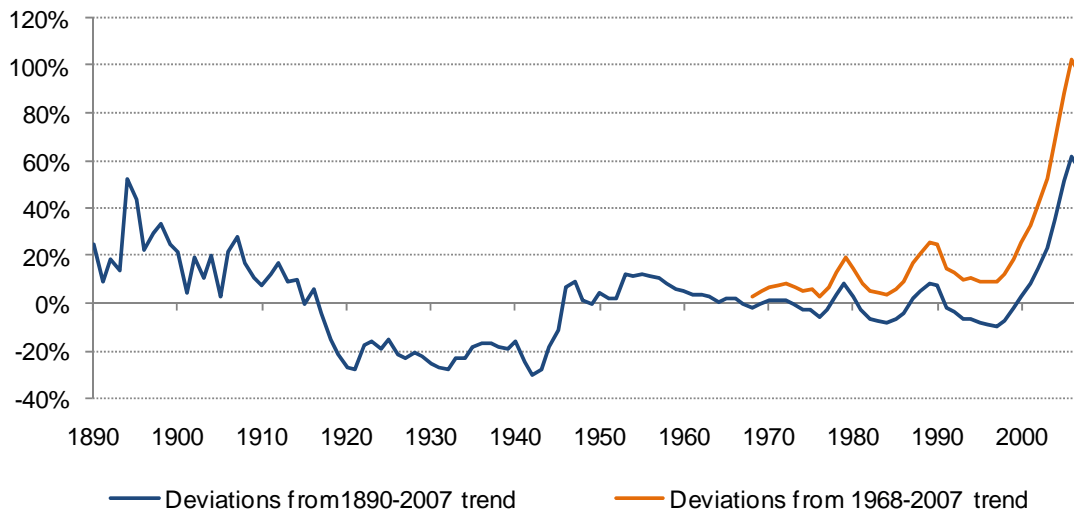
Relative to trend, house prices are still overvalued

There is another way of illustrating house price developments. This involves looking at their deviation from trend. There is a problem with this approach, in that it is not entirely clear that there is a trend in house prices. Although house prices generally keep pace with inflation, there are other important factors that can cause structural shifts in the housing market. Key factors include shifts in equilibrium interest rates; changes to housing market finance institutions (eg, the switch to originate and distribute, or other disintermediation); and changes in acceptable debt levels and loan-to-value ratios. Bearing in mind these caveats, we have attempted to show two measures of house price deviations from trend – one which looks at house prices over the period 1890-2007 and a second that looks at house prices from 1968 to 2007 (Chart 9).⁶ On these measures, house prices were 55% overvalued in 2007 (relative to 1890-2007 trend) meaning that they needed to fall by 36% to reach the trend; alternatively they were 96% overvalued (relative to 1968-2007 trend), implying a 49% fall in order to return to trend).

Possibly needing to fall by half

In a special report for Lombard Street Research (*Credit and Credulity Redux: How likely is deflation in America?*) Leigh Skene uses the same numbers to reach a slightly different conclusion. On his calculations, house prices were double “fair value” in 2006 and so needed to fall by half in real terms in order to return to “fair value”. By 2007 they had fallen by 27%, but half the necessary fall therefore remained.⁷

Chart 9 US real house prices, deviations from trend, %



Source: Robert Schiller, www.irrationalexuberance.com

Returns to trend are rare – overshooting is common

Leaving aside the actual numbers, the impression remains that house price were still very overvalued at the end of 2007 and remain so in spite of a 10% (real) fall since the end of last year. In addition, returns to trend or “fair value” are rarely, if ever, just that; more commonly, developments tend to involve an overshoot, sometimes substantially so, in both directions. The one possible balancing factor is that housing affordability has improved as house prices have come down and incomes have risen, which may dampen further falls somewhat.

House prices have more to fall

Even so, all these factors point to a similar conclusion: house prices have not yet reached their bottom and when they do, it will take a long time for them to recover to pre-bust peaks.

And sub-prime is likely to be worst hit

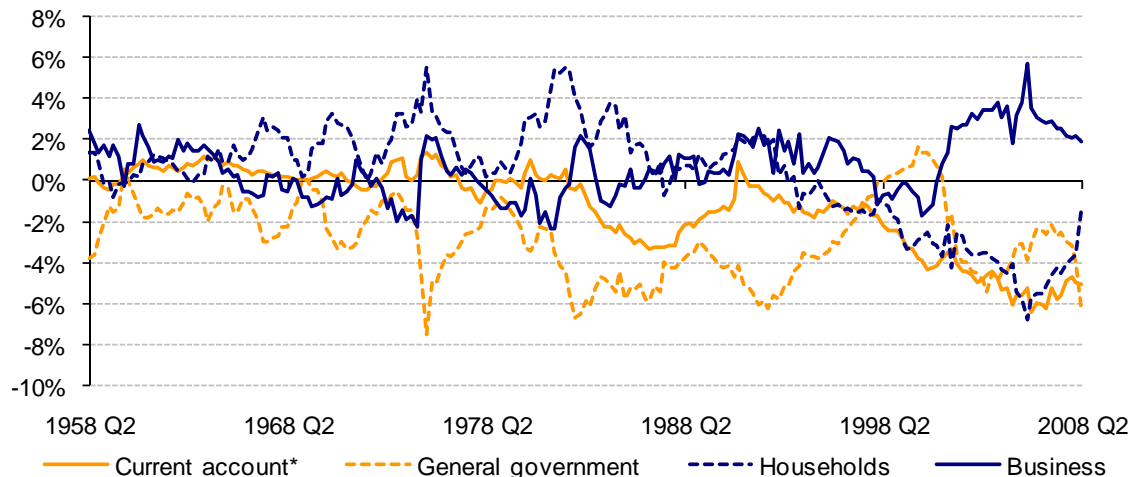
It is difficult to forecast how this will affect different segments of the housing market. However, the point made above, that financial institutions are likely to rein in their more speculative lending as they are forced to contract their balance sheets, while many of the more exotic lending forms developed in recent years are likely to be discontinued, implies that the sub-prime segment will be hit harder than prime lending. In other words, it is likely to take longer for Alt-A loans to return to full value than for prime, and longer for sub-prime than for Alt-A. This view is strengthened by likely developments on the borrower side.

More generally households have to learn to save once more

Household debt has grown faster than GDP for 40 years

At the beginning of this report, it was noted that one key difference between this housing cycle and previous ones is the excess debt accumulation by the household sector. This is the result of a long period – at least 40 years – of US domestic demand, notably household spending, growing faster than GDP.

Chart 10 US sectoral financial balances, % of GDP



*Equals the foreign sector balance with reverse sign

Source: Federal Reserve, Flow of Funds of the United States

Partly because of dollar primacy, partly because of policy

There are a number of reasons for this development. The US is a relatively self-contained economy. The dollar's primacy as the world's major currency enabled Americans to rack up debts to the rest of the world without the constraints that would have been in place with another currency. The Fed's policy under Alan Greenspan involved keeping interest rates low for long periods of time, generally ignoring asset price bubbles. But, in recent years, a crucial factor was what has been termed 'the Eurasian savings glut'. This concept – initially developed by Lombard Street Research in 2004 – referred to the situation that a large number of countries, primarily in the Far East (notably, but not exclusively, China) as well as in Northern and Central Europe, for different reasons were pursuing an *ex ante* savings surplus. But the world as a whole cannot have a savings surplus (or deficit). Savings by definition have to equal investment.

But others wanted to save, so Americans had to spend

The pursuit by some countries of a savings surplus meant that some other countries had to run a savings deficit. In other words, since the difference between savings and investment on a national basis is the current account balance, if some countries deliberately sought to run current account surpluses, some others had to run equivalent deficits. Chief among the deficit countries was the United States (although other countries – the UK, Spain, France, Italy and Australia, to name but a few – also ran current account deficits, occasionally bigger relative to GDP than the American one).

A digression on sectoral financial balances

But running a current account deficit does not necessarily mean that it is the household sector that goes into debt. To understand why this happened in the United States, we need to explore the concept of sectoral financial balances. As noted above, the current account balance is the difference between a country's savings and its investment. However, the same concept can be applied to the domestic sectors. Any economy can be divided into three sectors – government, private and foreign – where

Chart 11 US personal savings, % of disposable income



Source: US Department of Commerce, Bureau of Economic Analysis, NIPA tables

each sector will have a financial balance, again showing the difference between its savings and its investments as a percentage of GDP. (The foreign sector is simply the reverse of the current account balance – an American current account deficit of – say – 5% of GDP is the same as saying the foreign sector has a surplus vis-à-vis the United States of 5% of US GDP.) The private sector can be further divided into corporate and household sectors. It is then assumed that the household sector only invests in housing; and that all housing investment is done by the household sector.

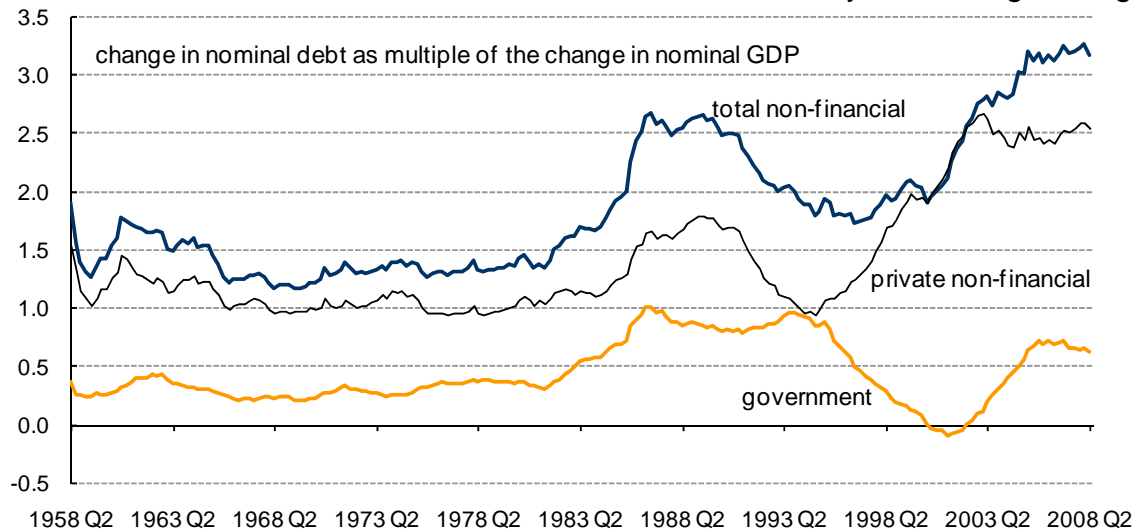
These must add up to zero

The key point about these sectoral balances is that they must – as a matter of accounting identity – add up to zero. Therefore, if, eg, the United States, for whatever reason, has a current account deficit, then at least one US sector must have a financial deficit, ie invest more than it saves. Chart 10 shows US sectoral financial balances from 1958 to 2008. The US corporate sector has run a small surplus (0.7% of GDP) over this period. Its current surplus is much bigger, at around 2% of GDP. The household sector has also run a small surplus (0.3% of GDP) on average over this period of time. But, crucially, the last quarter in which it ran a surplus was in Q4 1993 – 15 years ago. This is, essentially, the period of the last housing cycle, culminating in the recent boom and now bust.

A US current account deficit necessitated a deficit in at least one domestic sector

The household sector continued to run a deficit because the US continued to run a current account deficit – but the corporate sector was very much intent on returning to surplus after the stress of the dot-com bust; while the general government, although running a deficit, from 2001 onwards, was able to contain this thanks to strong revenues. The household sector therefore had to run an ever wider deficit, or else the US economy – and by extension the world economy – would slow. But there is a limit to how much anyone, in particular households, can go into debt, a limit that clearly has been exceeded in the United States (see again Charts 1 and 2).

Chart 12 Incremental non-financial debt/income ratio, 5-year moving average



Source: Flow of Funds of the United States

US authorities have not grasped the need for household deleveraging – but households have

Interestingly enough, although the US monetary and political authorities do not yet seem to have understood this point – hence calls by Treasury Secretary Paulson for banks to ‘deploy’ the capital injected in them through the TARP plan – US households do seem to have grasped it. In other words, they have understood the need to bring down their debt burden and that doing this means spending less and saving more. Chart 11 shows that the entirety of the \$110 billion dollar tax rebate distributed in May-July 2008 was saved. More importantly, in August, the savings rate remained at 1% of disposable income. This may be low by historical standards – the average for the entire period since 1959 is 6.9%, since 1968 it is 6.6% and even since 1988 it is 3.8%. But it is higher than in recent years. More to the point, it is likely to rise much higher over the near and medium-term future.

Yet they have not begun to save

Revert for a moment to the sectoral financial balances. Chart 10 showed that the household sector deficit has narrowed sharply, from close to 7% of GDP in Q3 2005, to 1½% by Q2 2008. But, importantly, the underlying data shows that this so far is only due to households no longer investing in housing. It does not as yet denote a rise in household savings.

How much will households save?

How much will households save? This is obviously difficult or impossible to save. But, as noted above, the long-term average of the household sector financial balance is a 0.3% of GDP surplus. US household income is just over 76% of GDP. Hence, increasing savings by roughly two percentage points of GDP is the same as saving a further 2.6% of disposable income. As it happens, with the current savings rate at 1%, another 2.6% would take us close to the 3.8% average savings rate of the past 20 years.

More than their long-term average

However, there are reasons to believe that savings will rise by more, primarily for demographic reasons (see p. 15 below). Obviously, increasing household savings and deleveraging, all else being equal, mean weaker output growth. But, from the perspective of this report, they also have an important impact on the growth of credit and therefore on the housing market (since mortgage borrowing is the by far biggest sector of household debt). In addition, the wealth factor – the loss of wealth involved in asset price falls – is also likely to spur US households to save more. On the historical relationship between household wealth and savings, the savings rate should rise to as much as 10% in the near future.

Because they need to bring down their debt burden

While it is difficult to gauge the future rate of household savings, it is possible to approach the problem from another perspective. Chart 2 shows that the household debt obligation ratio moved around 15% of disposable income from 1986 to 2000, and that it currently is 17½%. But the latest number is unrepresentative, because once again we are in a period with unusually low interest rates. At normal interest rates – ie, those prevailing until last summer – the financial obligations ratio is around 18%. We can therefore make the assumption that households at the very least would need to get their financial obligations ratio down to 15% – *at normal interest rates*.

By at least one-sixth	With a financial obligations ratio of 18% at normal interest rates, bringing it down to 15% involves reducing debt by one-sixth, from just under 100% of GDP to 82½% of GDP. This need not necessarily be done by repaying debt. Assume, eg, that nominal income and nominal GDP rise by 10% over three years. At no change in debt, this takes the debt down to 90% of GDP and the financial obligations ratio to 16.4%. In order to get down to 82½% you then need to cut the debt by a further 8%, which, with household debt at \$14 trillion means a fall of \$1.2 trillion.
Partly by default	Much of this is likely to take the form of outright default. US mortgage debt is frequently only secured against the property. An indebted homeowner who walks away from his property, dropping the keys to his creditor ('jingle mail') becomes debt free. This poses a major problem for the lenders. If the borrower defaults, they are left holding the collateral, which in many cases is worth less than the loan, and thus have an immediate loss to write off.
The most likely ones to default are sub-prime borrowers, whose repaying capacity in any case is limited	Here too is a reason why the sub-prime sector is likely to be worse affected by developments than others. The walking away recourse is more likely to be resorted to by those who have the least possibility of reaching some accommodation with their bank (or other creditor) and the least likelihood of being able to eventually repay a mortgage – in other words, those whose property has fallen the most in value and who have the lowest incomes. Again, this is, of course, subject to political initiatives to rescue borrowers and enabling them to keep their property. The <i>Financial Times</i> carried an article on 30 th October referring to discussions about a plan to guarantee mortgages to lenders that agree to restructure home loans to ensure affordable monthly payments. But it needs to be pointed out that any such efforts will involve smaller margins for banks, making them less enthusiastic for a return to riskier lending in the near or medium term.
An adjustment could take three years – assuming there is no more borrowing	Moreover, the implication of this calculation is that <i>there will be no growth of actual dollar debt for households over – say – a three year period</i> . This may be too extreme a conclusion. Nevertheless, it is clear that the growth of household debt over the next three years or so will be very limited, even if not non-existent.
Nor will households re-embark on a borrowing spree	Further, once the (painful) period of adjustment is over, it is unlikely that households will embark on a new borrowing and spending spree. Memories of debt are extremely powerful. The generations that experienced deflation in the 1920s and 1930s (varying from country to country) were extremely wary about going into debt later in life, even if the actual debt experience may well have been their parents', not their own.
Demographics will also boost household savings	There is another factor that is likely to boost US household savings and prove a dampener on the housing market. The US population is aging. In three years' time, the first baby-boomers, born in 1946, will turn 65 and, in theory, retire. However, as my colleague Brian Reading has pointed out, many will be unable to do so because of ill-wealth. Many baby boomers no doubt expect to be able to downsize their home in order to

augment their pensions, as was the pattern in the preceding generation. This source of retirement funds is even more important in that the average US pension assets per person in the labour force come to just short of \$80,000. (Obviously, the average pension fund is larger as many people do not have a pension fund.) Assuming a life expectancy of 20 years at retirement, a 5% interest rate and a complete drawdown of the fund over the expected life, this gives a pension of just under \$4,200 per annum!⁸

Particularly since house prices are down

However, a time when house prices already are subdued will not be a good time to sell – and if there are large-scale sales, this will further prolong the return to previous house price peaks. The alternative to selling the home and retiring on the proceeds will be to work for longer – and to save substantially more over the relatively short period of working life likely to be left – say, ten years – in order to be able to fund a retirement somewhat later. Again, this is another reason to expect household borrowing growth over the next decade to be weaker than in recent years, with much of the weakness concentrated in the near to medium term – up to five years.

Although US demographics are not dreadful

It should be said that the US actually has a better demographic profile than many other advanced and emerging economies. Continued large-scale immigration and a growing population mean that the US will also see demand for housing rise in coming years. It is difficult to estimate how these two factors will balance out.

Hence, recent developments are structural, not merely cyclical

The arguments developed in this entire section imply that what we are likely to see, is not just a cyclical and short-term shift in US household behaviour. Rather, this is a structural shift, away from a borrow-and-spend society to a save-and-lend one. This is not a trend restricted to the United States. The global financial imbalances built up during the years of the Eurasian savings glut need to be rolled back. This involves spending countries – the US, the UK, Spain, Australia etc – shifting towards greater saving – while saving countries – China, Japan, Germany etc – shift towards greater spending and stimulating domestic demand. This will also mean that a greater part of financial services is likely to be targeted towards the current savings countries, where faster growing domestic demand should mean increased credit growth and there is a need – particularly in the emerging economies of the Far East with their less developed financial systems – for intergenerational transfers from older peoples' savings to younger persons.

This has a major impact on housing in the future

Returning to the US, the shift from spending to saving will have a substantial impact. This will initially affect growth, but even when a new savings equilibrium has been reached, also the future growth of credit and therefore also the housing market. Judging by past experience, it can take many years for house prices to recover their previous levels. This also has an impact on the banking system, where the recovery of collateral to pre-crash prices is likely to be more prolonged than is currently appreciated. For reasons outlined throughout this report, this period is likely to be longer in the sub-prime segment of the market than in the prime or even Alt-A segments.

Bad news for US banking**The volume of loans outstanding could halve**

All this spells bad news for the future of US banking. Chart 12 shows how dependent the US economy has become on debt growth. For nearly ten years, the incremental debt per dollar of extra GDP has been \$3.20. But, as is clear from the argument throughout this report, the US now needs to deleverage. The debt of the entire non-financial sector in the US currently amounts to 230% of GDP, of which 180% of GDP in the private sector. The latter number needs to shrink, probably to somewhere in the 150-160% of GDP range. Achieving this means considerably slower credit growth. In order to get the debt/GDP ratio of the non-financial sector from 180% to 150-160%, the incremental private-sector debt per dollar of extra GDP cannot be higher than \$1 for the entire non-financial sector (public and private). Even at that rate, the target would only be reached once nominal GDP had grown by one-third. Obviously, that will not be quite necessary, since there will be a substantial amount of defaults, which also will lower the debt/GDP ratio. However, it does mean that the volume of loans to the non-financial sector over the near term will be less than half of what it was over the past ten years.

Much financial infrastructure will be destroyed

Moreover, once the new debt/GDP ratio (eg, 160% of GDP) is reached, the credit growth necessary to maintain it will still only be \$1.60 of debt per \$1 of GDP – again a far cry from the \$3.20 of debt per \$1 of GDP seen since the late 1990s. So much of the financial infrastructure and capital in the US (i.e. that supporting personal borrowing and particularly sub-prime lending) is likely to be destroyed – or move to service other markets elsewhere - along the way to a new equilibrium, which will have relatively more of other sectors than now and less of finance.

Gabriel Stein

With thanks to Leigh Skene for valuable input and comments

Footnotes:

¹Different house price series will yield slightly different results. The series on existing home prices is chosen because it is the longest unbroken monthly series of house prices, going back to 1968. Including new homes would also change the result slightly, as new homes tend to sell at a premium to existing.

²A FICO score is essentially a measure of the likelihood that a borrower will default. FICO stands for Fair Isaac Corporation, which developed the score. A FICO score can be between 350 and 800 (the higher the better), with the average at 678 and the median at 723.

³Wallison & Calomiris, p6.

⁴ Dumas, p 3.

⁵ RealtyTrac, press release 23rd October 2008.

⁶ Schiller, data downloaded from www.irrationalexuberance.com

⁷ Skene, p 3.

⁸ Flow of Funds, table B100, Bureau of Labor Statistics

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