

FINANCIAL INDUSTRY MONITORING SERVICE

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## Why the U.S. consumer can withstand weaker housing markets

The double-barrelled threat posed by retreating U.S. housing markets through rapidly falling home equity withdrawals (HEWs, chart 1) and adjustable rate mortgages (ARMs) that are being reset at higher interest rates (chart 2) is causing considerable angst among U.S. economy watchers and lenders going into 2007. Combined, they will temporarily slow the pace of growth in consumer spending and continue the gentle deterioration in U.S. household credit quality that we've been seeing since the historical peak in quality that occurred at the end of 2004.

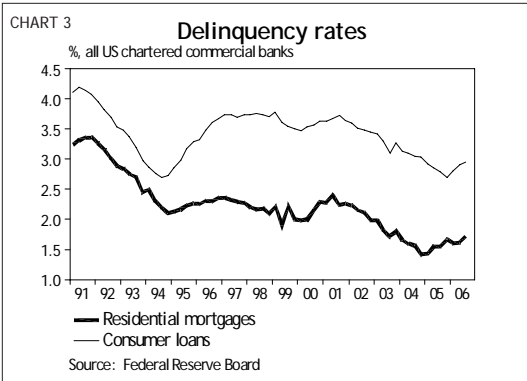
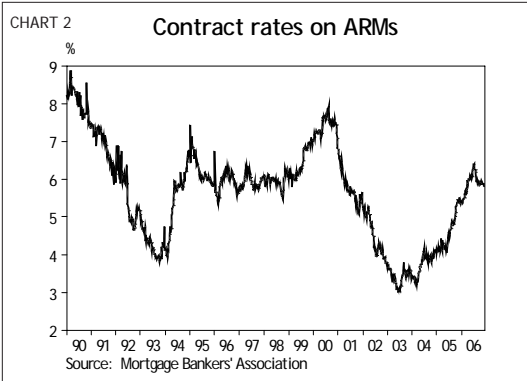
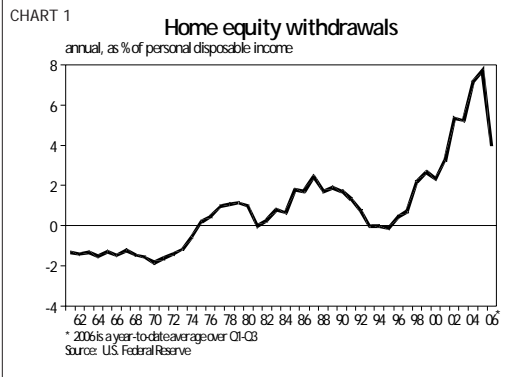
These two forces do not, however, have the ability to spark a sustained recession in either consumer spending or the broader U.S. economy, nor will they trigger a recession-like deterioration in U.S. household credit quality. Talk to that effect involves mistakenly treating individual borrower and lender anecdotes as evidence of a macroeconomic event and faces the same fate as other narrowly based theories of pending consumer gloom that have been wrong for so many years. The real story, however, lies in 2008 and beyond when the U.S. consumer is poised for a stronger comeback. For financial institutions, misunderstanding what is happening risks viewing financial innovation — and the need for much more of it — through a distorted lens.

### 1. Overall consumer credit quality remains strong

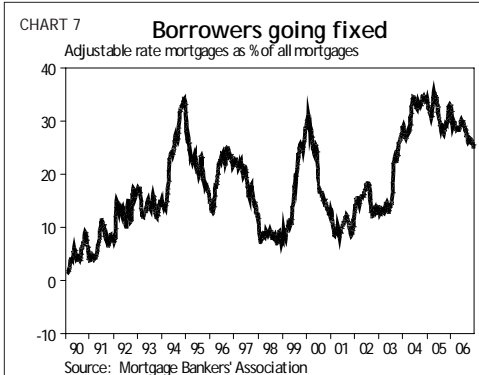
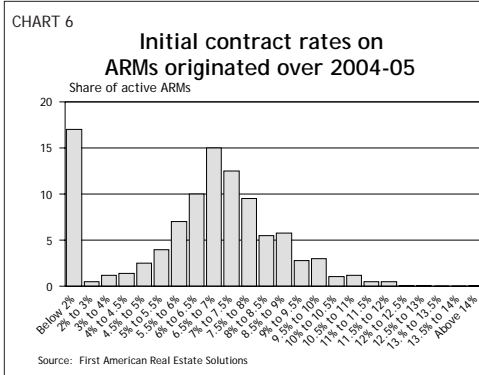
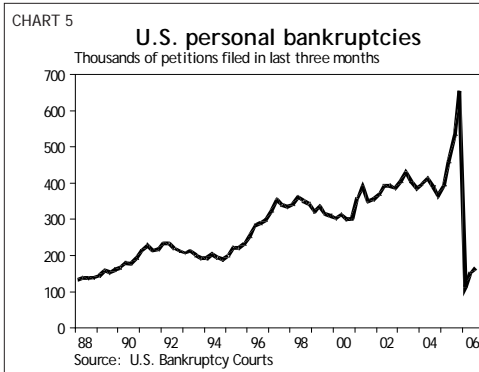
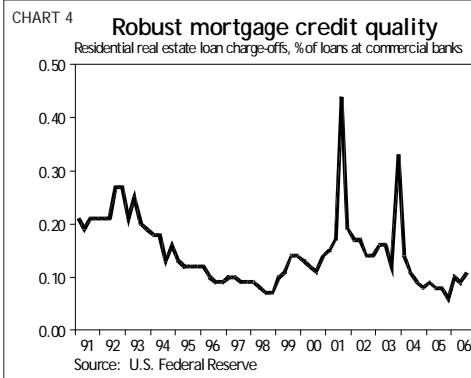
Given the tone of recent commentary, one would think that consumer credit worthiness is already taking a sharp, readily observable turn for the worse — far from it as seen in charts 3, 4 and 5. Apart from anecdotal lender, or borrower-specific, evidence, collapsing consumer credit quality remains just a forecast view provided by some observers.

The delinquency rate on residential mortgages at all banks in the United States sits at 1.7% as at the third quarter of 2006 (chart 3). It has been on a gradual upward trend for three years since the end of 2004 when it bottomed out at an all-time record low of 1.4%. From 1994 to 2002, the residential mortgage delinquency rate was running in the 2% to 2.5% range. In other words, although we are not forecasting this to occur, today's delinquency rate could soar by another 1.5 times and still only be within the cruising speed on delinquency rates during non-recessionary periods. Similar arguments can be made for the delinquency rate on non-mortgage consumer loans.

Modestly higher residential real estate loan charge-off rates are also consistent with our view that quality peaked at extremely good heights some time ago and would deteriorate along a volatile path but remain generally healthy on average



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(chart 4). In fact, current charge-off rates remain gently off the all-time record bottom recorded in the final quarter of 2005.

Lastly, today's pace of personal bankruptcy filings is among the lowest ever recorded (chart 5). We argued several years ago that changes to U.S. bankruptcy legislation would cause a spike in filings to restructure debts and then give way to a return to bankruptcy rates that existed prior to the change in legislation and the effects of last year's hurricanes on the southern states. The story has actually been even better than we had expected as bankruptcy filings have utterly collapsed, and even more so in per capita terms that compensate for population growth over time. Marginal cases were rather zealous when it came to restructuring their finances and the upside is that many of the weakest cases were aggressively cleared off the decks. To be sure, bankruptcy filings will most likely rise from today's very low levels, but only modestly, while still leaving a generally healthy picture of U.S. consumer credit quality intact.

## 2. Measuring the scope and impact of ARMs resets

As a point of clarification, an adjustable rate mortgage offers low fixed interest rates for an introductory period that is sometimes as short as one month and can extend up to 10 years. After this introductory period, interest rates can be reset, usually higher these days and usually at annual intervals, although sometimes semi-annually. Most ARMs involve making mixed principal and interest payments. A small component of ARMs are interest-only, while some are option-ARMs that allow borrowers to pick from a schedule of payment options. Chart 6 shows the distribution of ARMs contract rates issued during 2004-05.

About 24% of all U.S. mortgages are offered at adjustable rates, and three-quarters at fixed rates. As chart 7 shows, ARMs have been falling in market share since peaking at 37% of all U.S. mortgages in March 2005. The United States and Canada actually have among the world's lowest degrees of reliance on adjustable or variable rate mortgages (chart 8). European households are much more likely to use variable rate products, have the least developed refinancing marketplaces and usually experience weaker growth in jobs and wages.

Since bottoming out at 1% in late 2003 and early 2004, the Fed funds measure of interest rates now stands at 5.25%. Similarly, the average ARMs contract rate increased from 3% in June of 2003 to a peak of 6.4% in July of this year and has since retreated to 5.8% (chart 2 again). As fixed terms expire, many of these ARMs face resets at higher interest rates compared to when they were originated.

### 2.a. The extreme case

The starting point in evaluating the impact of ARMs resets will be to lay out four extremely worst-case assumptions before crunching some numbers.

▲ The first assumption concerns the dollar amount of ARMs facing resets. The Mortgage Bankers' Association argues that the range of estimates runs from a low of \$1 trillion to a high of \$1.5 trillion. Some analysts argue it lies only in the \$300-500 billion range, while some argue it could be as high as \$2 trillion. We'll go with \$2 trillion.

▲ The second assumption that is needed concerns the time period within which ARMs resets will occur. Most observers suggest that the resets will occur over a two to three year period and beyond. We'll tighten that up to assume that all of them will be reset either by necessity or through choice by the end of 2007.

▲ Third, we'll assume that none of the ARMs have already been subject to resets and that all of them were taken out at the trough of interest rates and must be reset by the full three percentage-point rise in ARM rates since 2004.

▲ One final assumption is to rule out any scope for offsetting changes to choices regarding terms and amortization periods, or different products.

Given these assumptions, a 3% higher interest rate on \$2 trillion in ARMs amounts to an extra \$60 billion in interest payments having to be paid in 2007. This may sound large, but economics and business are all about drawing meaningful comparisons through ratios. In this case, growth in debt payments has to be compared to growth in incomes. With this in mind, we're forecasting growth in U.S. personal disposable income of 5.5% during 2007. On \$9.6 trillion in estimated annual personal disposable income in 2006, this growth rate translates into more than \$500 billion in extra income to be earned in 2007 compared to 2006. So, at the aggregate level, the worst-case scenario is that ARMs resets absorb about 11% of income growth during the next year.

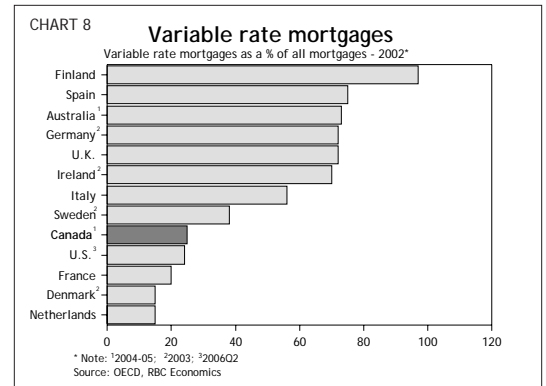
Or, another way of looking at it lies in terms of the impact on the debt service burden of the household sector. Presently, U.S. households spend 14.4% of disposable income (excluding income from net capital gains) on interest and principal payments on all types of debt. In dollar terms, that amounts to about \$1.4 trillion in annual debt payments. A further \$60 billion spent on ARMs resets would be a 4.3% rise in debt payments and would be equivalent to a one-half of one percentage point rise in the debt service burden compared to today's income levels. If nothing else changed, then a year from now, 5.5% income growth and \$60 billion in extra interest payments would actually lower the debt service burden to about 14.2% as income growth outstrips growth in interest expense.

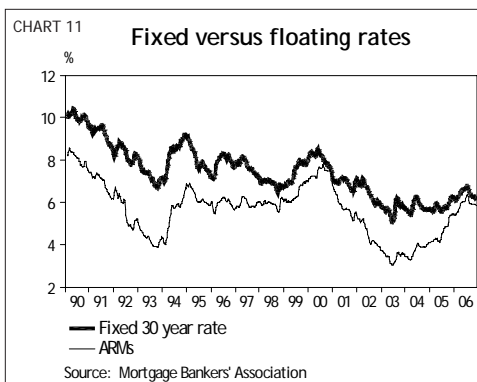
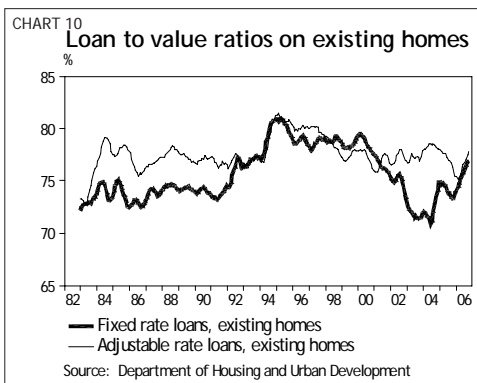
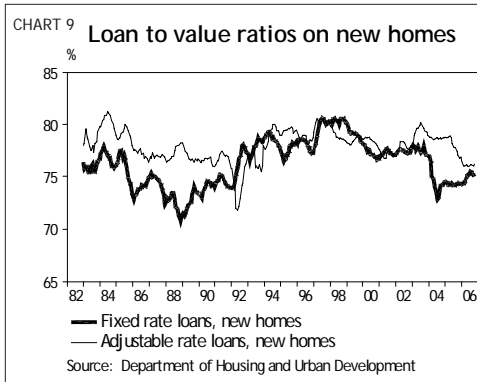
## 2.b. Reining in the worst-case scenario

The point of the exercise so far is that, even under the absolute worst case set of assumptions, U.S. consumers have the flexibility to absorb the impact of ARMs resets. But, from this point forward in the analysis, the impact of ARMs only gets smaller as much more reasonable assumptions are made. For example, if instead of \$2 trillion in ARMs we're looking at \$1 trillion being reset during the next year, then this chops the increase in the interest bill in half to \$30 billion, absorbing under 6% of income gains.

Or, if resets are spread over two years instead of one year, then the effect is absorbed within two years of income growth. If one-half of ARMs face resets in each of the next two years, then chop the impact on interest expense in half, or if two-thirds are reset in 2007, then that still knocks a hefty one-third off the bill.

Further, most ARMs are not going from 3% at the trough in rates in 2004 to about double that at current rates. This is a common, but mistaken, inference that is





made in much of the recent commentary on this topic. Some ARMs were taken out before or after the trough in rates. Many of those that were taken out at the trough in rates have already been subjected to multiple staggered reset dates. Further, short-term interest rates may drop by the end of next year and into 2008, so ARMs could be refinanced at lower rates than are currently being offered. So, while difficult to nail down reliable estimates, if, say, the average ARM contract faces a 2% further reset during the next year, then this effect alone would also reduce the interest bill by one-third compared to the worst case. Further, the anecdotes about the hardest-hit individuals were likely in the far right tail of the distribution of rates found in chart 6 to begin with.

Already, and without allowing for offsetting changes, the likely range of more reasonable estimates points to a rise in interest expense due to ARMs resets that is on the order of \$10-20 billion in 2007. That would amount to using up about 2% of income gains next year, but ARMs borrowers can also respond to resets by changing the financing terms.

ARMs borrowers can bump up loan-to-value (LTV) ratios on their contracts to smooth out the impact on incomes and lower their payments, and the evidence says they're doing that, too, but not outside the norms of typical cyclical effects with the ups and downs on LTV ratios substantially driven by yield curve changes (charts 9 and 10). In fact, the starting points on LTV ratios were at cyclical lows in 2004 for fixed-rate borrowers for new and resale homes and ARMs borrowers for resale homes, but not so for new homes. An interesting related observation is the fact that ARMs have tended to be significantly more popular in the new home segment since 1998 which, in turn, suggests that market concerns about some new home builders shouldn't be as readily applied to the overall U.S. housing market or total consumer sector. Just as some lenders target or attract riskier segments than others, so do some builders.

Also, although it isn't clear why they would do this (chart 11), borrowers can switch to fixed rates and, indeed, are doing just that (chart 7 again). Going fixed still retains the embedded option to refinance should fixed rates move lower.

## 2.c. The bullish case for rate effects on U.S. consumers

In a sense, ARMs borrowers have had the best of all worlds in recent years. They enjoyed much lower interest rates than fixed rate borrowers from 2001 to 2005, paid down principal faster and most of them can now smooth out the impact of higher rates by unlocking what still amounts to very large home equity positions.

By comparison, fixed-rate borrowers experienced somewhat leaner years for cash flow when fixed rates were roughly double ARMs rates. However, while ARMs resets get all the attention, no one is talking about the nearly total rate immunity of the 76% of U.S. mortgage borrowers who now have very long fixed contracts with one-way options to refinance. Unlike other countries, most U.S. households have locked in generational lows in interest rates for many years thanks to much longer terms than are available elsewhere. This should help to anchor long-run household inflation expectations. For this three-quarters of borrowers with fixed borrowing costs, income gains are pure gravy to be saved

or spent on all manner of things as a heavy offset to even the gloomiest scenario for ARMs resets. This is on top of the fact that the majority are prime-rated borrowers, with only about 13% of total mortgage loans in the United States going to so-called sub-prime borrowers (chart 12).

### 3. Measuring the scope and impact of HEWs

Properly utilized, HEWs can be a very efficient way of reallocating inefficiently amassed savings away from home equity that itself is subject to great estimation uncertainties, low liquidity and very high transactions costs. If properly used, HEWs can improve the diversified optimality of household portfolios.

Home equity withdrawals have soared to unprecedented levels in recent years, reaching an all-time single-quarter high of about US\$260 billion in the third quarter of 2005. This was equivalent to about 11% of personal disposable income at annualized rates (chart 1 again). These figures are dropping off rapidly, with only \$60 billion having been withdrawn in the third quarter of 2006, in turn equal to about 2.5% of personal disposable income when annualized. HEWs are defined in this paper as net home equity injection derived from flow of funds accounts and can arise in many ways, not just by cashing out on a refinanced mortgage. As such, the figures used in this paper tend to be much larger than figures derived from just gross cash-out refinancing activity, portrayed as such in chart 13.

This evidence on withdrawals is used to support the argument that U.S. consumers are using their homes as cash ATMs, withdrawing equity to fund consumer spending. If true, then the already booked decline in HEWs, with possibly more of a decline to come, may cool off consumer spending. There are two ways of evaluating this argument through the use of stylized facts and attempts at econometric estimation.

#### 3.a. Stylized facts on how HEWs are used

As we have long argued, the house-as-ATM argument is a weak one. About 45% of mortgage equity "withdrawals" (chart 14) are actually put right back into homes to fund renovation spending. The ATM analogy would still only be partly correct if it recognized that these machines also accept deposits. This type of activity adds to the value of the housing stock, albeit imperfectly given the varying returns to different types of renovation spending. Further, this type of spending is not consumer spending *per se* in the manner defined as such in the national income accounts that are used to determine growth rates in the overall economy. They are counted as residential construction expenditures and, therefore, fall outside the realm of debates about the outlook for the type of consumer spending that makes up about 70% of the U.S. economy. Less than one-quarter of HEWs are used to fund consumer spending.

To this point, see chart 15. As HEWs soared from nothing to 8% of personal disposable income on a smoothed basis by the end of 2005 and early 2006 (11% at its single-quarter peak), the rate of growth in consumer spending was influenced to nowhere near this extent. In fact, it is difficult to observe much of any clear relationship between the two variables. The reason is likely partly due

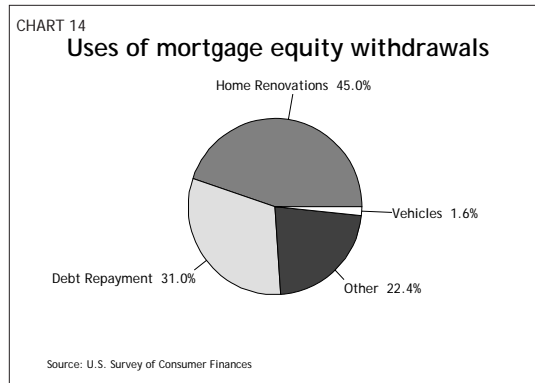
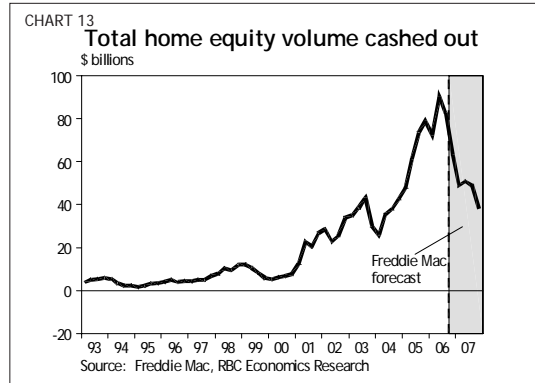
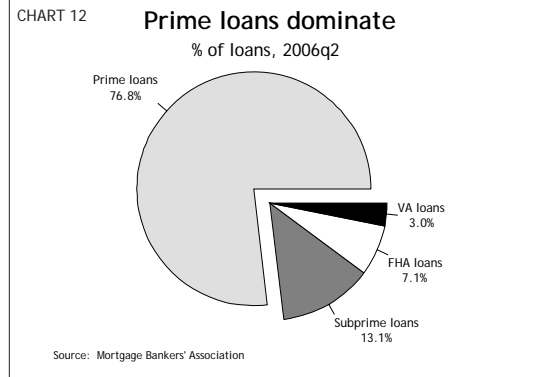


CHART 15  
Home equity withdrawals  
and consumer spending

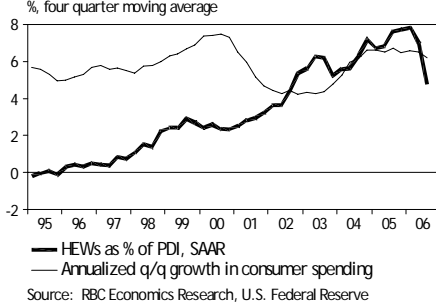


CHART 16  
Household equity substitution

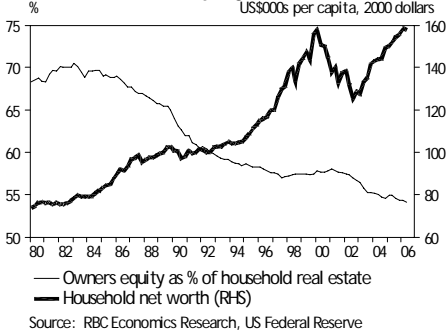
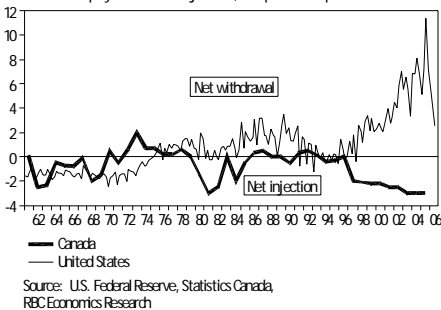


CHART 17  
Canada's missed opportunity to diversify  
Net home equity withdrawals/injections, % of personal disposable income



to the fact that some of it funded renovation spending, but there's another major use to HEWs.

The remaining almost one-third of home equity withdrawals goes toward debt consolidation, which is akin to acquiring net financial assets by diversifying out of real estate. This has been the dominant source of change in U.S. household finances during the past two decades. Households have been engaged in tax-motivated substitution towards lower-cost real estate debt and away from higher-cost non-real estate debt like credit cards and installment loans that are practically dead markets in terms of balance growth compared to past cycles.

We have long argued that tax changes in 1986 motivated this long-term trend by ending the tax deductibility of interest on non-real estate debt, but continuing to allow interest deductibility for real estate debt. U.S. households have, therefore, been rationally taking steps to lower their after-tax cost of debt, but this gives the appearance of "spending" their home equity even while net worth has climbed (chart 16). In short, they are substituting other types of equity for home equity by leveraging other taxpayers through the U.S. Treasury. In short, mortgage interest deductibility is bad public policy, but relatively affluent households have reacted to it in a fairly rational manner.

### 3.c. The IMF model of HEWs

As a complement to this stylized facts interpretation, the IMF recently attempted to evaluate the impact of home equity withdrawals on consumer spending in the United States, Australia, the United Kingdom and Canada.<sup>1</sup> The HEWs marketplace is really only significantly developed in the first three countries and remains virtually nonexistent in countries like Canada (chart 17).

In fact, as housing markets cool off in Canada, Canadians may have missed a wonderful opportunity to diversify. While U.S. borrowers wisely diversified out of some of their home equity, Canadians just sat on it. This may have been partly due to complacency since some of the same options for extracting home equity exist in Canada. However, another reason is that through the Bank Act, the state mandates that in the absence of a 25% downpayment (that is being lowered to 20%), one must pay mortgage insurance premiums. This is a material constraint for any one seeking to change their loan-to-value ratio in order to cash out from home equity. The loan-to-value ratio should not only be lowered to 20% as planned, but eliminated outright since it partly forces homeowners to keep all of their eggs in one basket.

The IMF estimated equations relating growth in consumer spending to standard cyclical factors like net worth as a ratio of personal income, the short-term real interest rate and inflation. They also added in the ratio of HEWs to incomes in their equations. Their bottom line is that a housing market slowdown that drops HEWs sharply from the heights of a year ago to a near-zero long-run average within one year will bump the personal saving rate up by about 1 1/4% within that year as households seek to make up the negative impact on their saving position. That would still leave room for real spending growth roughly in line with our base-case forecast. This is exactly the path that we find ourselves on as

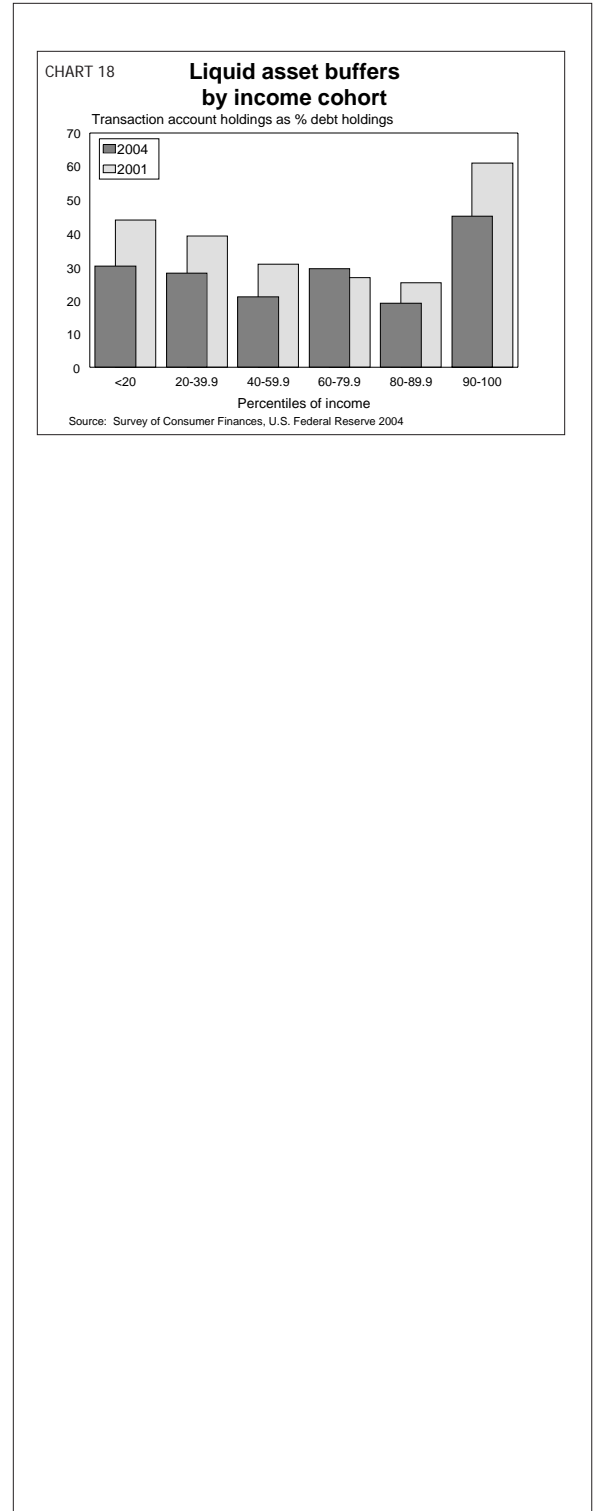
HEWs collapse, but so far concentrated within just the past two or three quarters. So, falling HEWs will likely hit consumption relative to what would otherwise have been the case for a short-lived concentrated period in the final quarter of 2006 and first quarter of 2007 before the effects stabilize and point to a more bullish performance in the second half of 2007 and on into 2008.

Intuitively, why would both the stylized facts approach and the IMF equations arrive at such a conclusion? Simply put, people don't default on their homes and stop spending just because the book value of an asset has taken a haircut relative to some uncertain starting value. They also do tend to do generally — but not perfectly — rational things with their funds over time when properly assessed. Beyond short-lived HEW influences, it is cash flow that matters far more as a sustainable driver going forward. As a result, the risk factors to watch are healthy employment and wage growth, a topping out in short-term interest rates, declines in long-term mortgage rates (the classic, oft-repeated automatic stabilizer), lower energy prices and strong gains in equity markets — all of which act as firm supports to consumer spending. To these factors should also be added the fact that U.S. household liquidity generally remains strong among individual income cohorts properly measured relative to same-cohort debt (chart 18).

#### 4. Implications for financial innovation

It would be a mistake — and a reversal of cause and effect — to conclude that the challenges facing ARMs, HEWs and a plethora of new household debt products are signs that financial innovation was not sustainable and was driven by over-heated real estate markets. Financial innovation deserves much of the credit for influencing the resiliency of U.S. consumers by offering them a growing universe of debt and liquidity management vehicles by which to smooth out income and consumption over the cycle through good times and bad.

Despite near-term challenges, the legitimacy of financial innovation has to be evaluated over the full cycle, and a 15-year bull-run in U.S. housing markets has generated attractive long-term returns to lenders and their shareholders. To dismiss this with a few quarters of evidence pointing towards retreating U.S. housing markets substitutes alarmism for good business acumen. Further, to dismiss innovation because of the riskiest practices of a minority of lenders amounts to the proverbial throwing of the baby out with the bath water. As the risks facing the mass market have grown, now is actually the point at which targeting financial innovation to more readily defined market segments should be ramped up as we have previously argued in *Three Cheers for Mortgage Innovation* <[click here](#)>.



<sup>1</sup> "Is Housing Wealth an "ATM"? The Relationship Between Household Wealth, Home Equity Withdrawal, and Saving Rates," IMF Working Paper, June 2006.