# Research

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# US: Consumers under siege

- The economic slowdown in the US is no longer merely a housing story. In recent months US consumers have been under considerable pressure. Recent data suggest that consumer spending almost stalled around New Year.

- Importantly, the slowdown in consumption spending is not only driven by declining house prices. A whole range of negative factors, including high energy & food prices, a softer labour market, declining equity prices and tighter credit conditions have caught up with consumers. Consequently, the underlying pace of consumption has probably slowed to the 1-2% range.

- Generally, the uncertainty is currently very high and consumers might only be one major shock away from entering a period of protracted retrenchment. However, the most likely scenario is that consumption growth will trough in Q2 and rebound in Q3 as the fiscal stimulus package kicks in and the pressure from energy prices eases off a bit.

- Despite the tax boost the effect from credit tightening, slowing house prices and a softer labour market is unlikely to dissipate fast. With underlying fundamentals for spending likely to remain soft, there will be a renewed period of widespread weakness in consumer spending around New Year when the tax rebates lapse.

- Overall the outlook is for a bumpy pattern in consumer spending during the next 4-6 quarters. While we do not expect consumer spending to slide into a period of sustained contraction, the situation is set to remain unusually fragile for a prolonged period. US households are not likely to enter shallow waters before mid-2009.

- Further, the risks remain asymmetric to the downside as a more protracted slowing in the labour market, a sharp decline in asset prices or a sharper credit slowdown could generate a deeper and more sustained slowdown in consumer spending.

## A cliff-hanger

***Bust, boom, bust... and then what?***

The economic slowdown in the US is no longer only about housing. Evidence is mounting that consumer spending – and the rest of the economy – is slowing markedly and a recession may be imminent. That consumers are struggling is particularly evident in the recent string of retail sales reports showing that the pace of underlying spending has nearly stalled (see *Flash Comment - US: Retail sales - softer than you might think*)

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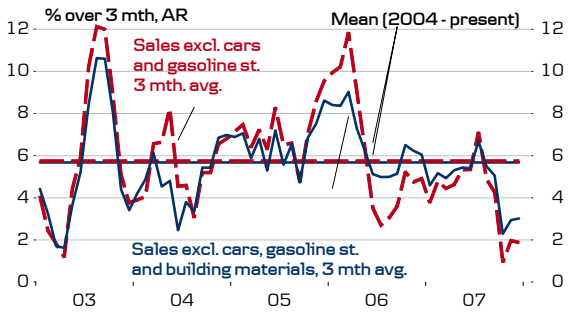
*Mounting evidence of consumer slowdown*




Note: The retail sales figures above is in nominal prices

Importantly, the stall in consumer spending is not only the story of a slowing housing market. In fact a whole range of negative factors, including high energy prices, a softer labour market, declining equity prices and tighter credit conditions have caught up with consumers in recent quarters.

With personal spending accounting for the major part of GDP, the crucial issue for the economic outlook is whether the recent months of slowing in consumer spending is only the beginning of a more prolonged period of struggle or if there is scope for improvement in the coming quarters.

Below we take a closer look at the profile for personal consumption and its underlying drivers. Generally, there is little doubt that the consumers are currently in a very fragile condition; maybe only one shock away from a more protracted retrenchment. Hence, the coming quarters are set to be a cliff-hanger for US households.

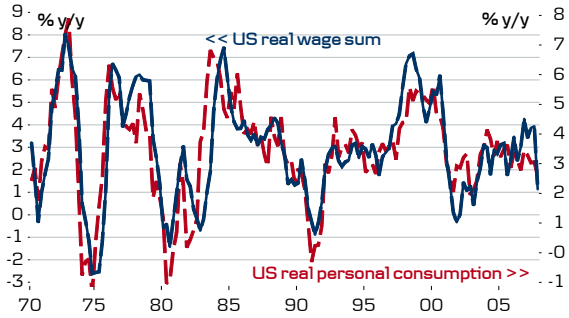
While risks are definitely high, we find it most likely that consumer spending growth will trough during Q2 and recover in Q3, as headwinds from energy prices ease and the fiscal stimulus package find their way to consumers' pocketbooks. However, in Q4 08 and Q1 09 a new period of weakness is likely to emerge as the fiscal boost fades, and negative effects from house prices and credit tightening are still in place. Hence, consumers will probably not enter shallow waters before mid 2009.

## A fundamental view on consumption

***The labour market holds the key***

There is little doubt that the most important driver behind household spending is real income. As the chart below illustrates personal spending growth and real total compensation income growth go hand in hand. Hence, the prospects for consumer spending are closely linked to the future course of the labour market.

*Real income growth – the anchor for consumers*



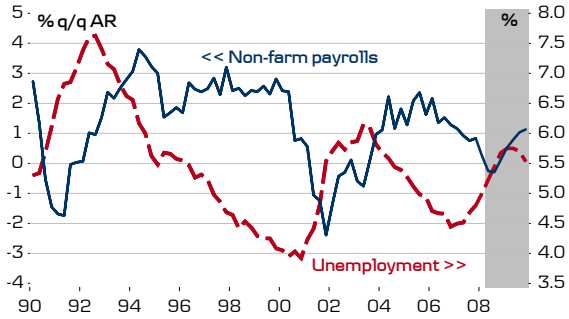

Generally, real total compensation growth can be divided into three overall categories.

- Compensation growth per employee
- Job growth
- Headline PCE inflation

Hence, a crucial issue is to which extent the current downturn will feed into slower job growth and how this will impact the wage dynamics.

In our current forecast we have pencilled in a continued but still relatively orderly slowdown in the labour market. We forecast non-farm payrolls to trough in slightly negative territory somewhere in Q2/Q3 before recovering gradually into 2009. This implies a gradual rise in the unemployment rate to around 5¾% around New Year. As a comparison this forecast is a notch weaker than the latest projections from the Federal Reserve, which was released with the January minutes (see *Flash Comment – FOMC: Downside risks and great uncertainty*).

*The labour market: Stalling, not falling*



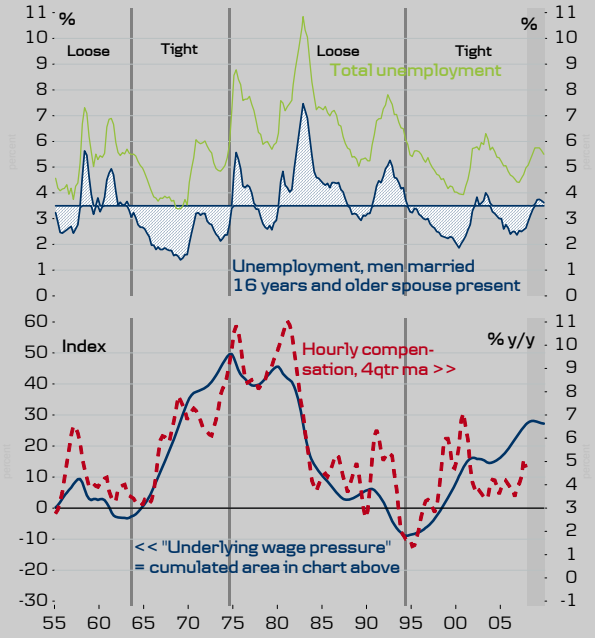

With the rate of unemployment increasing to around 5¾% the labour market will become slightly loose. That said, a slowdown of this magnitude will do relatively little harm to underlying wage dynamics if it is not sustained. This is elaborated in more detail in the box below.

### *Box 1: Wage dynamics*

The underlying wage dynamics are usually determined by the tightness in the labour market from a Phillips-curve relationship. However, a range of structural shifts over the recent 50 years make it difficult to use the aggregate unemployment rate. Instead it is more convenient to look at a more specific part of the labour force: Unemployment among married men in the working age (core unemployment). This core group has historically had a more stable participation in the labour force and has been less subjective to structural shocks.

Among this group the average unemployment rate can be considered as the long-term NAIRU (non-accelerating inflation rate of unemployment). Whenever the unemployment rate is below NAIRU wage pressures are building and vice versa. The relationship between hourly compensation and the deviation in the unemployment rate from the NAIRU in this group is charted below.

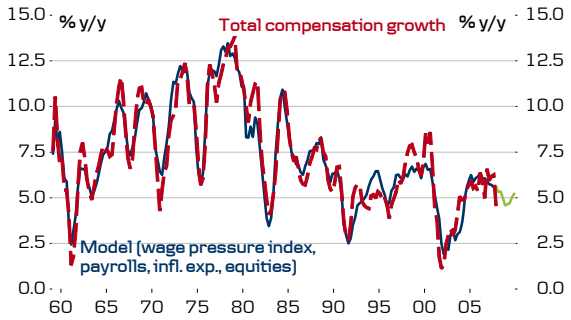
*Underlying wage dynamics relatively undamaged*




With the total unemployment rate rising to 5¾% by end year core unemployment is likely to rise to its average level of 3¾%. Hence, in this scenario underlying wage pressures will stop rising, but not really decline.

With underlying wage dynamics relatively undamaged, the major part of the slowdown in total compensation growth will arrive through the decline in job growth. To exactly quantify the dynamics between slower job growth, rising unemployment and compensation growth, we use the simple model cf. the chart below.

*A mild slowdown in total compensation*




Note: The model is estimated on annual growth rates in non-farm payroll, the lagged unemployment gap (unemployment relative to NAIRU), inflation expectations, and a measure of equity related wage compensation (based on the S&P500).

With a slightly negative trough in payroll growth by Q2/Q3, total compensation growth should slow to around 4.0% as indicated by the model estimated above.

### *Box 2: The precautionary savings effect*

Developments in the labour market do not only affect consumer spending through its impact on real income growth. In fact there is an additional effect in play known as *the precautionary savings effect*.

This effect arises from changes in the unemployment rate and reflects consumers' concern about losing their jobs. When the unemployment rate is on the rise consumers become more reluctant to spend their incomes. The idea is that consumers save more for a 'rainy day', when the probability of being out of job increases.

This effect can be empirically quantified. Our consumption model (see appendix) estimates a negative impact on personal consumption of 0.41pp from a 1pp rise in the unemployment rate.

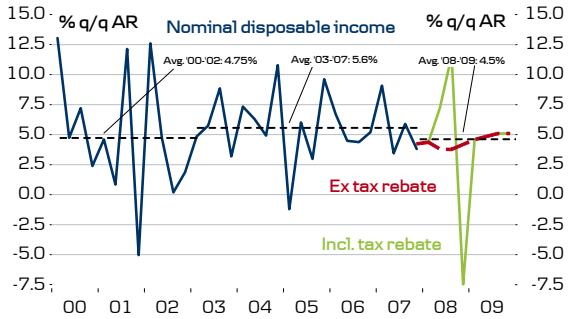
### *Fiscal stimulus*

In mid-February the Bush Administration approved a fiscal stimulus package worth USD 168bn or 1.2% of 2007 GDP (see the box below). Hence, consumers will receive tax-rebates and transfers worth USD 106bn or a little more than 1% of disposable income growth.

Most of the amount will be paid out by checks and send directly to US households. The payouts will start in May but may stretch all the way into August. Consequently, the fiscal stimulus package will lend some support to nominal disposable income growth already in Q2 and add a significant boost in Q3.

The backdrop of this boost is that nominal income growth will nosedive in Q4 when households stop receiving checks. Hence, nominal disposable income growth is set to oscillate in H2, as demonstrated in the chart below.

*A tax roller coaster*




This oscillating pattern generated by the tax package will be crucial for the path of real consumption spending in the coming quarters.

**Box 3: A résumé of the fiscal stimulus package**

The fiscal stimulus package was signed by the Bush Administration on 13 February. Generally, the package embeds the following initiatives:

**Tax incentives:**
*(USD 152bn in 2008 and USD 16bn in 2009)*

*Personal tax rebates*
(USD 105.7bn in 2008 and USD 9.7bn in 2009)

- *Tax paying individuals receive USD 600 per person
- *Non tax paying individuals with income above USD 3,000 receive USD 300 per person
- *Everyone eligible receives USD 300 per child
- *Rebates for recipients of social security and veterans.

*Tax deductions for businesses*
(USD 44.8bn in 2008 and USD 6.2bn in 2009)

- *Consists mainly of allowance of accelerated tax depreciation for investments

**Temporary housing initiatives:**

- *The conforming loan limit is increased for Fannie Mae and Freddie Mac
- *The loan limit for FHA-insured loans has been increased

See *press release* and *fact sheet* on *http://www.whitehouse.gov* and *Congress web*

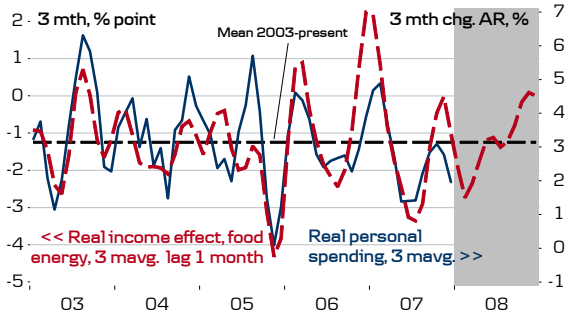
***High inflation tax for a while yet***

However, before elaborating further on the forecast for real consumption it is worth taking a look at the other part of the real income equation – headline PCE inflation.

The combination of slightly rising core PCE inflation from a relatively elevated level and surging food and energy (non-core) prices over the autumn has provided a significant lift to headline inflation. This is currently eroding real income growth and remains an important factor behind the slowdown in real personal spending over the recent months.

Interestingly, real personal spending is responding quite regularly and quickly to swings in headline inflation with a delay of approximately one month. This becomes evident from the chart below, which shows the impact on real incomes from food and energy prices versus the growth rate in real personal spending over a three-month-period.

*Strong headwinds from food & energy*




In Q4 non-core inflation subtracted 1.7% AR from real income growth. In Q1 we estimate that the drag will ease off a bit to around 1.5% AR. While this suggests that the headwinds are about to subside somewhat, food and energy prices are set to remain an obstacle for consumers all the way into Q2. However, unless the oil price jumps permanently above USD 100/barrel during the spring inflation pressures should settle somewhat in late spring and summer, lending some support to consumers.

The table below summarises the real disposable income picture for the coming two years based on the discussion above. Real disposable income growth is set to improve in Q2 and Q3 as the oil price stabilises and the tax rebate is implemented. However, in Q4 08 and Q1 09 the picture is set to reverse as inflation creeps a bit higher and consumers stop receiving checks in the mail.

**Income accounting**

| | 2007 | | 2008 | | | | 2009 | |
|---|---|---|---|---|---|---|---|---|
| | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2-Q4 |
| Total compensation | 4.7 | 4.4 | 4.3 | 3.7 | 3.7 | 4.1 | 4.5 | 4.9 |
| -Employment | 0.8 | 0.8 | 0.2 | -0.3 | -0.3 | 0.1 | 0.5 | 1.0 |
| -Comp./employee | 4.0 | 3.5 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Tax impact | 1.7 | -0.1 | 0.1 | 3.3 | 7.4 | -11.8 | 0.0 | 0.0 |
| Nominal DPI | 6.4 | 4.2 | 4.4 | 7.0 | 11.1 | -7.7 | 4.5 | 4.9 |
| PCE price index | 1.8 | 3.9 | 3.6 | 2.5 | 1.8 | 2.2 | 2.3 | 1.9 |
| -core (contr.) | 1.6 | 2.2 | 2.1 | 1.4 | 1.9 | 1.8 | 1.6 | 1.6 |
| -non-core (contr.) | 0.2 | 1.7 | 1.5 | 1.1 | -0.1 | 0.3 | 0.6 | 0.3 |
| Total real DPI | 4.6 | 0.3 | 0.8 | 4.5 | 9.3 | -9.9 | 2.2 | 3.0 |

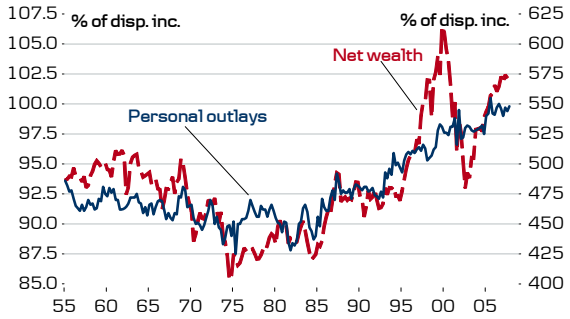
Note: DPI is Disposable income. Q2-Q4 '09 denotes the average over that period.

This profile will most likely generate a bust-boom-bust scenario for real personal spending growth – as consumers usually react to swings in real income growth.

### *Wealth effects*

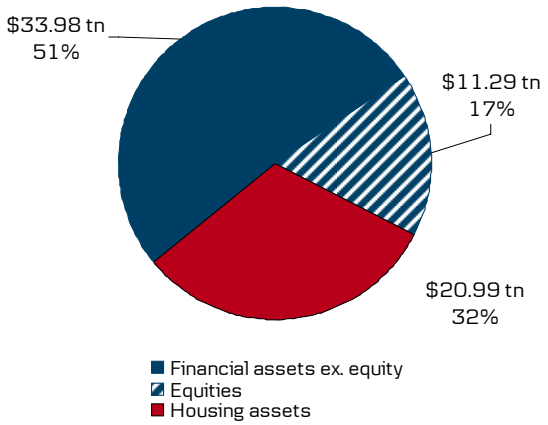
It will be constructive to look at other factors than income that affect consumer spending, such as wealth effects. The wealth to income ratio has been rising steadily in the US over the last 30 years. It stood at 571% in Q3 last year.

*A rising wealth-to-income ratio*




With an amount of wealth like that, changes in asset prices can have a significant impact on consumer spending. This was for instance the case with the equity market crash in 2000-2002 which proved to be a significant obstacle for US consumers. Nowadays this concern is centred on house prices, which are currently declining.

*Household financial & housing assets*

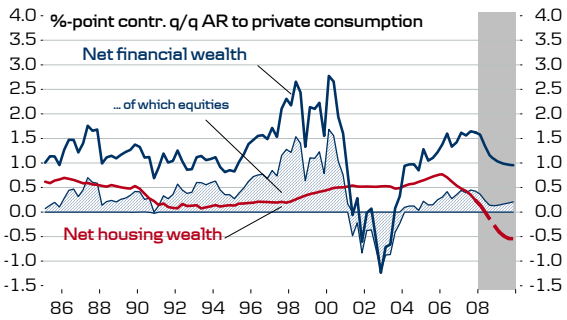



Before quantifying the wealth effects, it is worth adding a couple of notes on the composition of household assets. Firstly, 32% percent of household assets are constituted by housing assets; the remaining 68% is financial wealth. Secondly, 25% (or USD 11.29tn of USD 45.3tn) of financial assets is constituted by equities (see chart above). Three important observations emerge from these data.

1) Given that the propensity to consume out of wealth does not vary too much between asset types, households may be more vulnerable to financial asset prices than to housing assets (from an aggregate perspective).
2) The development in non-equity financial wealth might be just as important for consumers as equity prices.
3) Even though home prices constitute a larger share of the household assets than equity prices, the latter are more volatile, thereby having a potentially larger impact on household spending – even with a slightly lower propensity to consume.

To quantify the impact from asset prices we use a standard fed-type model, which is described in further detail in the appendix. The model estimates that the propensity to consume out of net financial wealth (including equities) and net housing wealth is 5% and 7% percent, respectively. The chart below shows the historical impact from net financial wealth (incl. and excl. equities) and housing wealth on annual growth rates in consumer spending.

*Wealth effects*




Note: The simulation takes into account that the speed of convergence is for wealth only 0.15, as estimated by the model. Hence, wealth effects work gradually and with long lags.

As the chart above indicates wealth effects are generally an important driver behind consumer spending. This has also been the case during this expansion.

Of particular interest is the relatively large contribution from non-equity financial wealth (credit market instruments, deposits, equity in non-corporate business and pension fund reserves) which has added a little more than 1pp to private spending over the recent years. Hence, while house prices and equities usually get a lot of attention, this class of assets is potentially equally important for consumer spending. In fact this 'invisible' factor is currently providing significant support.

With equity and house prices declining, a lot of the support from the wealth base is fading. In combination with high energy prices and a slowing job slower wealth accumulation is putting a strain on personal consumption.

The table below illustrates our main scenario for house prices (OFHEO), equity prices (S&P500) and non-equity financial assets.

**Assets**

| | 2007 | | 2008 | | | | 2009 | |
|---|---|---|---|---|---|---|---|---|
| % q/q AR | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2-Q4 |
| SP500 | -1.5 | 0.9 | -10.1 | -6.5 | 2.0 | 6.2 | 6.2 | 6.2 |
| Net financial wealth | 6.3 | 6.9 | 0.1 | 1.1 | 3.4 | 4.4 | 4.4 | 4.4 |
| - Equity assets | 2.6 | 0.9 | -10.1 | -6.5 | 2.0 | 6.2 | 6.2 | 6.2 |
| - Non-equity fin assets | 7.5 | 8.8 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| - Financial liabilities | 5.6 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| Impact | 1.6 | 1.6 | 1.6 | 1.4 | 1.2 | 1.1 | 1 | 1 |
| OFHEO | -1.4 | 0.4 | -2.5 | -4.9 | -5.9 | -6.8 | -5.9 | -2.5 |
| Net home equity | -4.8 | -5.8 | -10.5 | -14.7 | -16.1 | -17.8 | -16.0 | -9.8 |
| - Home assets | 1.0 | 0.4 | -2.5 | -4.9 | -5.9 | -6.8 | -5.9 | -2.5 |
| - Home liabilities | 7.1 | 6.6 | 5.4 | 4.4 | 3.4 | 2.6 | 2.4 | 3.1 |
| Impact | 0.4 | 0.2 | 0.1 | 0 | -0.2 | -0.3 | -0.4 | -0.6 |
| Total impact | 2.0 | 1.8 | 1.7 | 1.4 | 1.0 | 0.8 | 0.6 | 0.4 |

Note: The impact of wealth effects works gradually and with long lags. Hence 'impact' will be smoother than variation in asset prices. Q2-Q4 '09 denotes the average over that period.

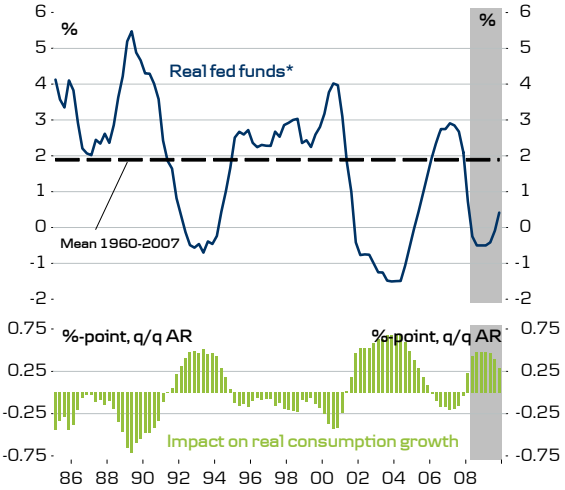
Given these scenarios the total wealth effect will remain in slightly positive territory. While the negative impact from house prices intensifies, equities will be relatively neutral, and non-equity financial assets will add a continued positive contribution.

### *A helping hand from the Fed*

In addition to effects arising from changes in asset prices, Fed behaviour is empirically found to have a significant impact on personal consumption via the level of the *real fed funds rate*. Hence, the recent very aggressive easing is likely to have a positive impact on personal spending, as it did when the Fed eased aggressively back in 2001 to counter the stock market crash.

The chart below displays the impact on personal consumption from changes in the real fed funds rate implied by our consumer spending model (see appendix). With the Federal Reserve easing the monetary policy target to 2% by the June meeting, the real fed funds rate will reach -½%. At this level Bernanke will manage to boost personal consumption by around ½pp per year directly through lower short real rates.

*A helping hand from the Fed*



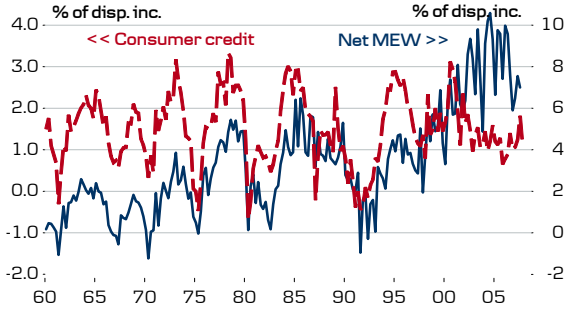

Note: Shaded area is DB forecast. Real fed funds = fed funds minus long-term inflation forecast (survey of professional forecasters)

### *Tighter credit- the known unknown*

Since the eruption of the financial crisis household – and particularly mortgage – credit has been tightened (see *Flash Comment - US: Credit is becoming increasingly tight*). The probably biggest unknown for the outlook is currently how severe the impact of this credit tightening is.

Before assessing the impact from credit tightening, it is important to note that consumer credit is not the only source of financing for households. An increasing share of the credit expansion is arriving through net mortgage equity withdrawal (MEW), as it for many households constitutes a cheaper source of financing.

*A different credit cycle...*

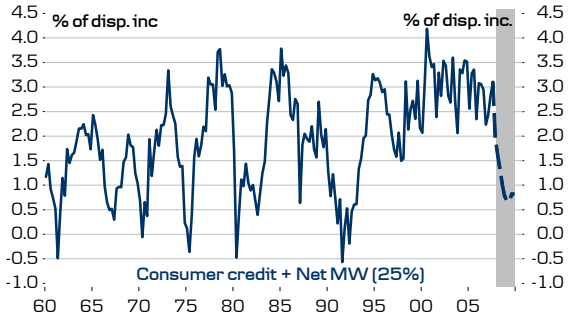



Particularly in this expansion traditional consumer credit has been substituted increasingly by MEW, which is evident from the chart above. With the lar-

ger share of mortgage-related credit in this cycle, the slowing housing market and the problems in the mortgage bond market might have a stronger-than usual impact on consumers, as it could bring MEW to a halt.

Importantly, only around 25-30% of net MEW goes to personal consumption according to Greenspan and Kennedy (*2005* and *2007*). When taking this into account, it is possible to construct a measure of the 'effective rate of credit expansion' defined as traditional consumer credit growth plus 25% of net MEW.

*... although not that different*




Note: Grey shaded area is baseline assumption

Interestingly *the level* of the effective rate of credit expansion has been quite normal compared to previous cycles. The unusual part is *the length* of the credit expansion. Roughly speaking, consumer credit has seen a continued expansion since the early 90s.

With the process of credit tightening already in train, there is little doubt that consumers will find credit increasingly scarce in the coming quarters. The crucial question is how severe an impact this will have on consumer spending.

Usually, macroeconomic theory leaves little room for an independent role of credit considering it merely the residual of consumption-smoothing-behaviour of households. However, empirically this might be different. If only a share of households have perfect access to credit, changes in this share over time are likely to affect aggregate consumption growth. In the current situation – with credit being tightened – it means that more households are becoming credit restricted.

At an empirical level it might involve problems as well leaving an individual role for credit as it is usually considered an endogenous driven variable. Keeping these problems in mind, we have tested the credit impact empirically by adding changes in effective credit growth, to our consumption model (see appendix). We find that a slowdown in effective consumer credit growth by 1pp generates a downshift in the level of consumption by a little more than 1pp (ie, a one-time impact on consumption growth of 1pp).

Going forward, we expect credit tightening to continue for yet some quarters. With the ongoing correction in the housing market and continued problems in the mortgage and credit market we have pencilled in a moderate credit slowdown. Of course this assumption is surrounded by high uncertainty and one might argue for other scenarios.
In this scenario MEW is assumed to almost stall during the next year, while traditional consumer credit will experience a softer slowdown. The table below illustrates our assumption and the impact on consumer spending.

**Credit**

| | 2007 | | 2008 | | | | 2009 | |
|---|---|---|---|---|---|---|---|---|
| | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2-Q4 |
| Consumer credit* | 1.8 | 1.1 | 1.0 | 0.8 | 0.7 | 0.6 | 0.5 | 0.5 |
| Net MEW* | 4.3 | 3.4 | 2.7 | 2.0 | 1.3 | 0.7 | 0.8 | 1.2 |
| Effective credit* | 2.9 | 2.0 | 1.6 | 1.3 | 1.0 | 0.8 | 0.7 | 0.8 |
| Impact** | 0.0 | -1.4 | -0.8 | -0.9 | -1.0 | -1.0 | -0.9 | -0.6 |

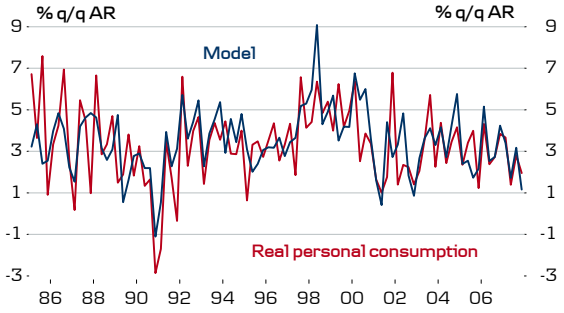
(*) % disp. Inc, AR (**) Percentage point impact on real consumption, AR

Note: Effective credit expansion is quarterly consumer credit growth AR plus annual change in 4-quarters smoothed net MEW. Q2-Q4 '09 denotes the average over that period.

***Adding the pieces together***

To add the pieces together we apply a fed-type model for consumer spending, which is described in more detail in the appendix. The model, which takes into account all the factors described above, has performed quite well recently, cf. the chart below. Further, there are no signs of the model performing particularly bad during slowdowns – or during the credit crunch in the early 90s.

*A model for consumer spending*



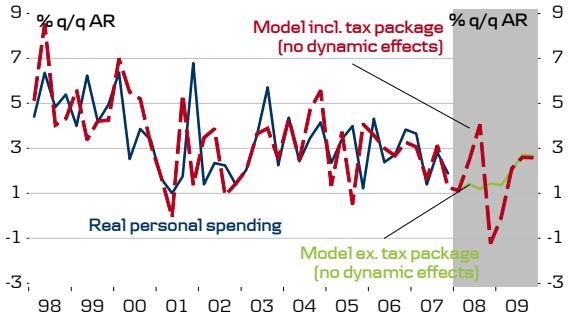

Note: The model is estimated from 1960 to 2007 cf. the appendix

Running the assumptions as presented above through the model reveals two important conclusions:

1) The underlying pace of consumption has slowed to 1-2%, ie, notably below trend.
2) The tax rebate will create a boom-bust scenario for consumers.

Hence, the tax rebates will manage to prevent a sustained slowing in personal spending in the next couple of quarters with personal spending most likely accelerating.

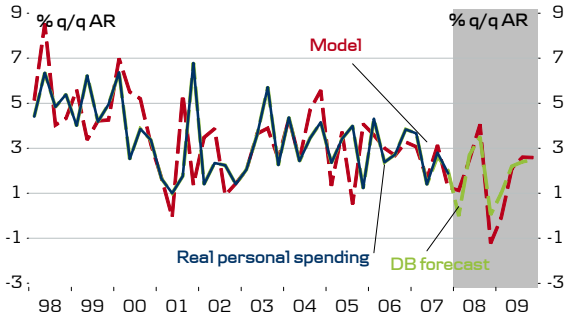
*Forecasting with the model*




But as the underlying fundamentals for spending will remain soft, when the tax rebates lapse, the most likely case is that there will be renewed weakness in consumer spending around the New Year (barring any further fiscal stimulus). Finally, it is worth noting that the model simulations above imply that around 30% of the rebates are spent in 2008 and 10% in 2009.

As the model probably tends to exaggerate the oscillation from the tax package and does not take into account dynamic effects, we have smoothed our forecast profile a bit, as the chart below indicates.

*Danske Bank forecast vs model*




The biggest downside risks to this forecast profile would be a more protracted slowing in the labour market, a sharp decline in asset prices or a sharper credit slowdown.

Appendix: Model documentation

The model for consumer spending which has been applied through this piece of research is an error correction model. Similar models are used by the Federal Reserve staff (see Morris Davis and Michael Palumbo, "A primer on the Economics and Time Series Econometrics of Wealth Effects." Federal Reserve FEDS paper 2001-9). The model is a two-step error correction model consisting of a long-run and a short-run equation.

The long run equation determines the ratio between the desired long-term target for outlays ($C^{TARGET}$) and incomes (Y)based. This equation is based on the permanent income hypothesis that households perfectly smooth consumption over time in accordance with asset wealth and human wealth (or total future income). The equation is specified using separate propensities to consume out of net housing wealth ($NW^{HOUSE}$) and net financial wealth ($NW^{FIN}$). Further transfer income (TR) is included to capture structural changes in the population, ie, changes in the active labour force relative to the total population. The idea is that the person who is not in the labour market (unemployed, young people under education, old-agers) tends to save less.

Around the long-run equation a short-run equation is modelled. This relates changes in the consumption ratio (ΔC/Y) to

- Lagged change in the consumption ratio, ΔC/Y(t-1)
- The deviation from the target spending , $\{C^{TARGET}/Y(t-1) - C/Y(t-1)\}$
- A measure of the change in credit growth, CREDIT(t)
- Changes in the unemployment rate, ΔU(t
- The real fed funds interest rate, RFF(t). This is specified as nominal fed funds minus long-run inflation expectations from Survey of Professional Forecasters
- Nominal disposable income growth, Y(t)/ Y(t-1)
- Headline PCE inflation, π(t)

Long-run equation: $C^{TARGET}/Y = 0.65 + 0.05*NW^{FIN}/Y + 0.07*NW^{HOUSE}/Y + 0.35*TR/Y$

Short-run equation: $\Delta\{C/Y\}(t) = 0.86 - 0.13*\Delta\{C/Y\}(t-1) - 0.15*\{C^{TARGET}/Y(t-1) - C/Y(t-1)\} + 1.08*CREDIT(t) - 0.41*\Delta U(t) - 0.05*RFF(t) - 0.68*\{Y(t)/Y(t-1)\} + 0.51*\pi(t)$

$CREDIT(t) = \Delta\{\Delta ConsumerCredit/Y\}(t) + 0.25*[\{NetMEW^{avg4}/Y\}(t) - \{NetMEW^{avg4}/Y\}(t-4)]/4$

$NetMEW^{avg4}(t) = [\{NetMEW^{avg4}/Y\}(t) + \{NetMEW^{avg4}/Y\}(t-1) + \{NetMEW^{avg4}/Y\}(t-2) + \{NetMEW^{avg4}/Y\}(t-3)]/4$

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