Presentation to:

The Group of Thirty

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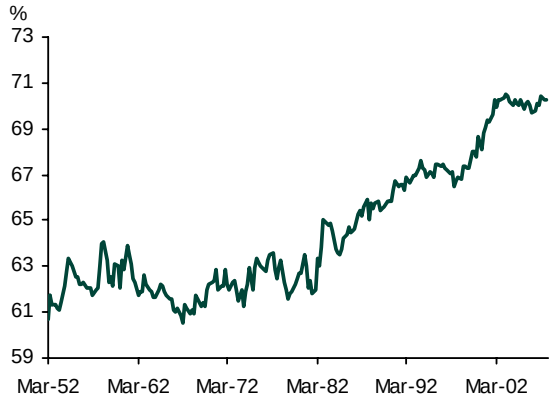
Thomas A. Russo
Vice Chairman and Chief Legal Officer
Lehman Brothers

Consumer spending as a share of GDP

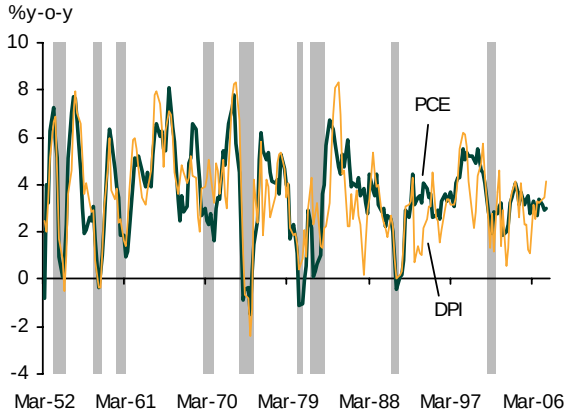


Source: Commerce Department; Data through 3Q07

Consumer spending is the main driver of US GDP

- Consumer spending has been a rising share of GDP, currently accounting for about 70%
- The health of the consumer is therefore a major driver of the overall economy
- US consumer spending is important to global growth. Exports to the US account for 25% of Canada's GDP, 22% of Mexico's and 8% of China's (see appendix, page 19)

Real personal consumption and disposable income

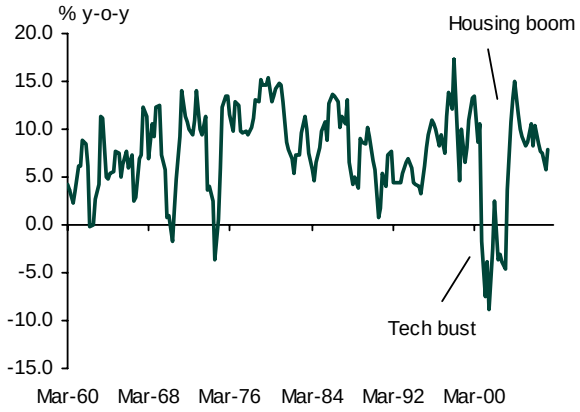


Source: Commerce Department; Data through 3Q07; Shaded bars denote recessions; Note: PCE = personal consumption expenditures and DPI = disposable personal income

Consumption is supported by income…

- The marginal propensity to spend out of a dollar of income is nearly 1, leaving the savings rate close to zero
- Consumer spending virtually never falls outside of recessions. Even in periods of weak income growth, consumers will continue to spend by drawing down their savings
- Even in recessions, spending on essentials such as medical and housing services virtually never turns negative
- Healthy income gains over the past few years have underpinned consumer spending

Household net worth

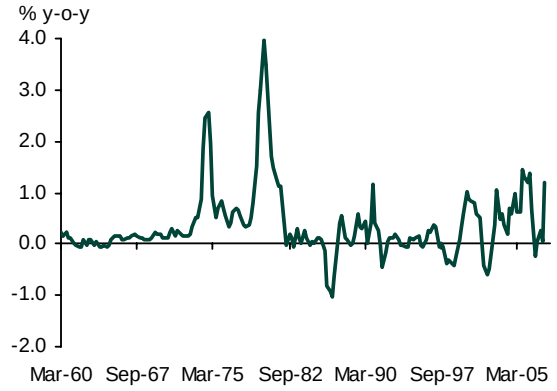


Source: Federal Reserve Flow of Funds; Data through 2Q07

….and wealth

- Consumers respond with long and variable lags to changes in wealth
- About 60% of households assets are financial, and roughly 30% are residential real estate
- However, changes in financial wealth only affect a portion of the population since the majority is held by the top tier of the income distribution
- In contrast, homeownership is spread more evenly across income levels
- Household net worth is still rising, but will likely go flat as home prices fall and stock prices fall

Energy "tax" on consumer spending

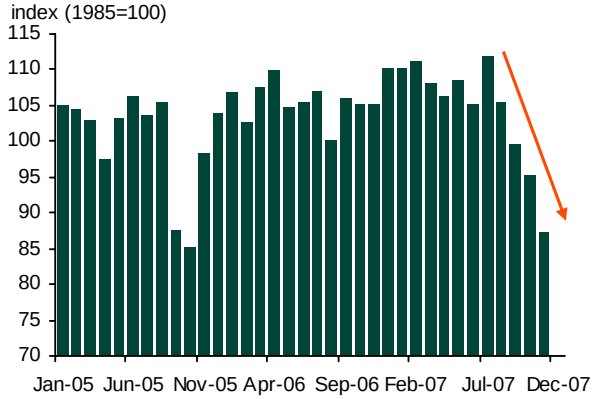


Source: Commerce Department; Lehman Brothers Economics; Data through 4Q07 (with estimates)

However, energy prices are hurting…

- About 6% of consumption is directed toward energy
- In periods of rising energy prices, a greater portion of consumer budgets must be used for energy consumption, causing consumers to cut back on discretionary spending
- This is an energy "tax," which equals change in energy prices weighted by the share of personal consumption
- The latest increase in energy prices amounts to a about 1% "tax" on income

Consumer confidence

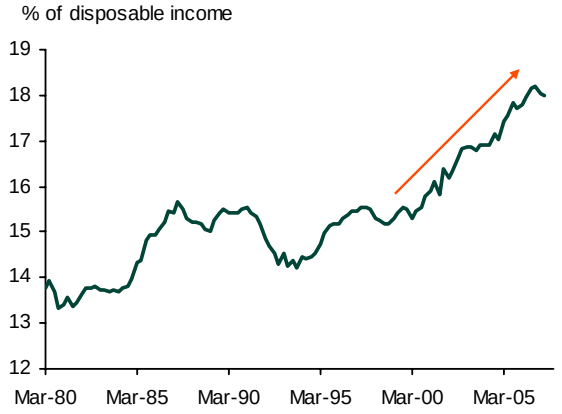


Source: Conference Board; Data through November 2007

…and consumer confidence is cooling

- Consumer expectations of future financial and economic conditions trend with personal consumption
- If consumers expect the economy to weaken, they may cut back spending and increase precautionary saving
- Consumer confidence has been steadily falling over the past few months amid concerns about housing weakness, turbulence in financial markets and rising energy prices

Household debt burden – financial obligations ratio

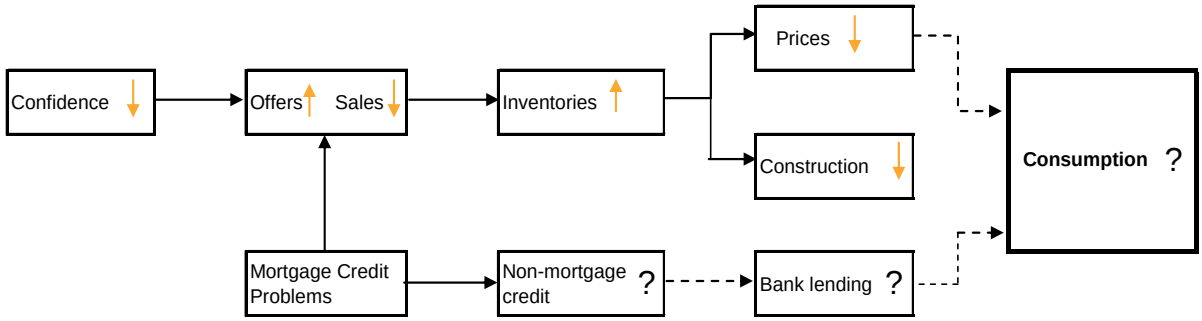


Source: Federal Reserve Flow of Funds; Data through 2Q07

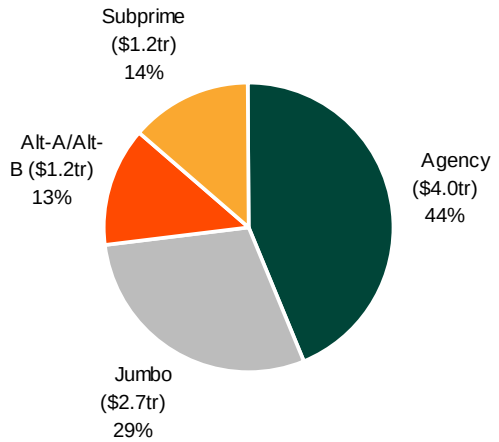
Meanwhile, the consumer is very levered

- Total household debt has grown rapidly over the past five years, largely due to a jump in mortgage debt
- The burden of servicing debt is at an all-time high
- The financial obligations ratio, which estimates required payments on outstanding debt (including mortgages, consumer loans and auto loans), has been rising as a share of disposable income

Mortgage market problems and the contagion into credit markets and banks pose an additional challenge to consumers



Mortgages outstanding

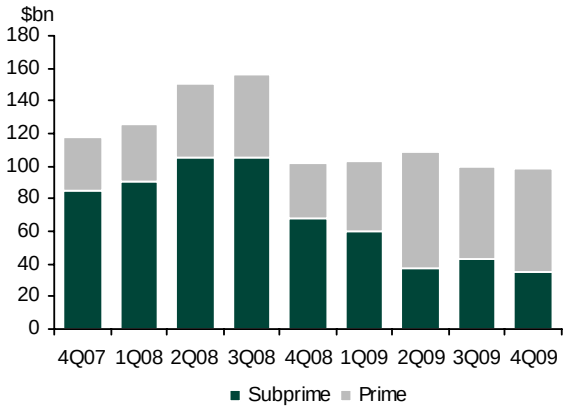


Source: Lehman Brothers Mortgage Strategy; LoanPerformance; Data through 3Q07

The housing boom, in its later stages, was supported by aggressive mortgage lending in an environment of lower underwriting standards

- Subprime mortgage origination surged in 2005 and 2006 in response to lower underwriting standards and higher home prices
- In 2006, subprime loans accounted for just over 20% of total origination, up from 8.6% in 2001
- Similarly, origination of Alt-A/Alt-B (near-prime) mortgages climbed

Non-agency mortgage resets

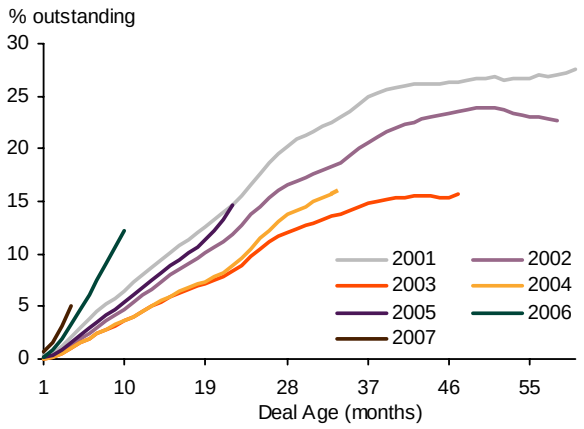


Source: Lehman Brothers Mortgage Strategy

Subprime ARMs originated in 2005-06 will reset to higher rates over the next several quarters

- About two-thirds of subprime mortgages outstanding have adjustable rates
- About $630bn or 3.2 - 3.5 million subprime loans will reset before 2009. More than 80% are subprime 2/28s originated in 2005-06
- On average, monthly payments will likely jump 25-30%, boosting average monthly payments by $350/month
- Given tight lending standards, weak demand and falling home prices, it will be difficult to refinance or make a sale. As such, many borrowers will be forced to default on their mortgages

Subprime mortgages 60-day delinquencies

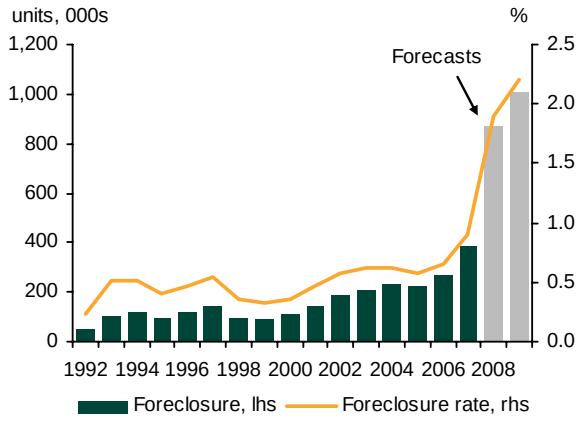


Source: Lehman Brothers Mortgage Strategy; LoanPerformance

The jump in subprime resets should add to already-high delinquency rates…

- Early performance of 2006 and 1H07 loans has shown more than double as many delinquencies as normal (e.g., 2002)
- Based on early performance, cumulative defaults of subprime loans originated in 2006 and 1H07 could be about 40%
- The 2005 subprime vintage has performed better, behaving similar to the 2001 vintage

Foreclosure forecasts



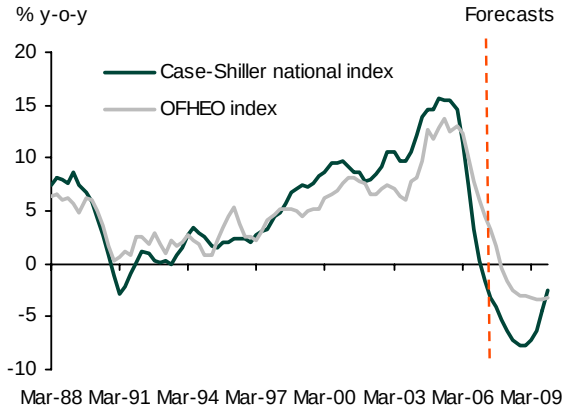
Source: Lehman Brothers Mortgage Strategy

…and ultimately to foreclosures given the weak housing market and reduced availability of mortgage credit

- Based on early performance and subprime resets, Lehman Brothers mortgage strategists estimate there will be a total of 2 million homes foreclosed over the next two years
- This is about 3 times the normal foreclosure rate
- Foreclosures will add to already-bloated inventory and sell at discounted prices, putting downward pressure on home prices

Note: the chart only measures foreclosures of single family existing home sales. With condos/coops, foreclosures would likely be about 20% higher

National home price inflation

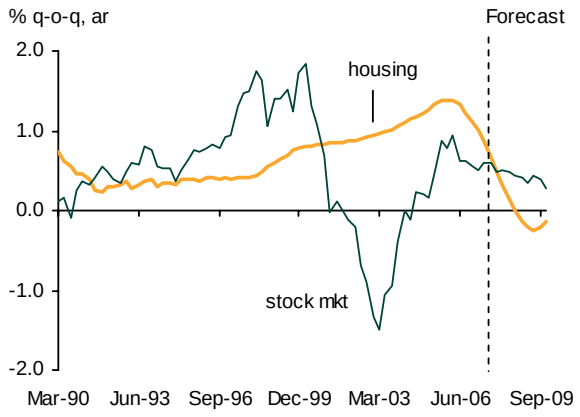


Source: OFHEO; S&P Case-Shiller; Lehman Brothers Economics; Forecasts as of 3Q07

Stress in the mortgage market has exacerbated the huge imbalance between housing demand and supply, further depressing home prices

- National home prices will most likely fall by the most since the Great Depression
- Expect the Case-Shiller index to fall 15% from peak to trough and OFHEO to fall 10%
- Case-Shiller is likely a better representation of actual home prices since it tracks homes with all types of mortgages, unlike OFHEO which is limited to agency (conforming)

Wealth effect on consumer spending growth

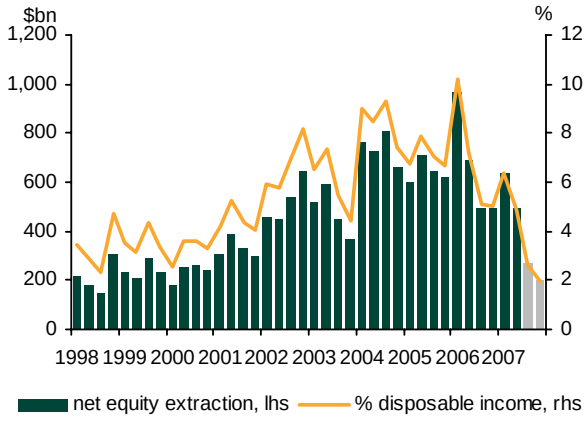


Source: Lehman Brothers Economics; Forecasts as of 3Q07

Falling home prices and tighter credit should restrain consumer spending

- The literature on the "wealth effect" suggests consumers boost spending anywhere from 2 to 8 cents on every dollar of perceived permanent gains in housing wealth
- Given easy credit and financial innovation, the upper end of this range probably applies
- Using a 6 cents wealth effect and assuming home prices fall 10% over the next 2 years, the housing wealth effect on consumption has swung from an estimated 1.4pp to -0.3pp by end of next year

Net mortgage equity extraction

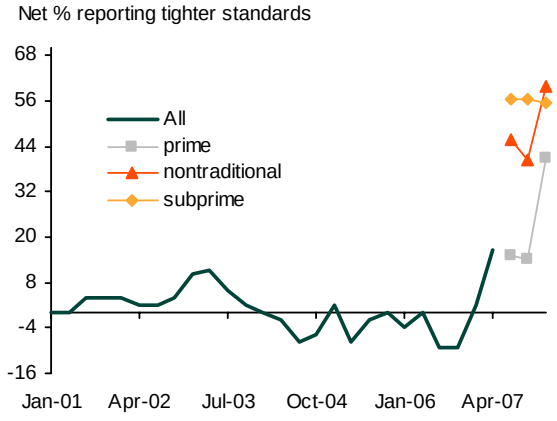


Source: James Kennedy, Federal Reserve Board; Lehman Brothers Economics; Forecasts for 3Q and 4Q 2007

One of the major channels to realize changes in housing wealth is mortgage equity extraction

- Mortgage equity extraction is one way to realize changes in housing wealth (in addition to changing savings patterns or other borrowing)
- Net equity extraction has tumbled from a peak of an annualized $969bn, or 10% of disposable income, in 1Q06 to $495bn in 2Q07
- There are likely lags between changes in equity extraction and consumption
- See appendix (page 20) for uses of cash-out refinancing

Mortgage lending standards

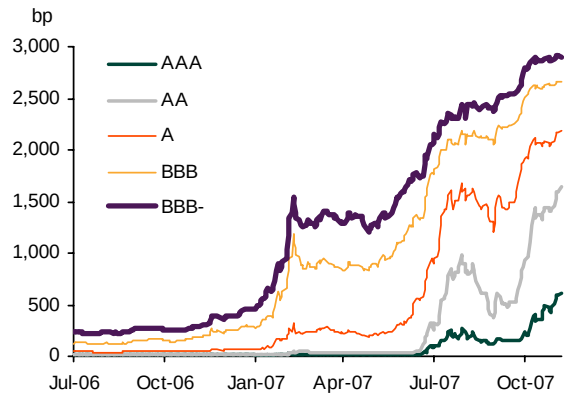


Source: Federal Reserve Senior Loan Officer Survey; Data through October 2007

In response to rising delinquencies and weak housing fundamentals, mortgage lenders have aggressively tightened lending standards

- Lending standards have tightened for all types of mortgages
- Lending standards for subprime loans started to tighten markedly in the beginning of the year, virtually eliminating the space
- In contrast, we have just started to witness tighter lending standards for prime mortgages, which is largely driven by jumbo loans

ABX.HE implied spreads over libor

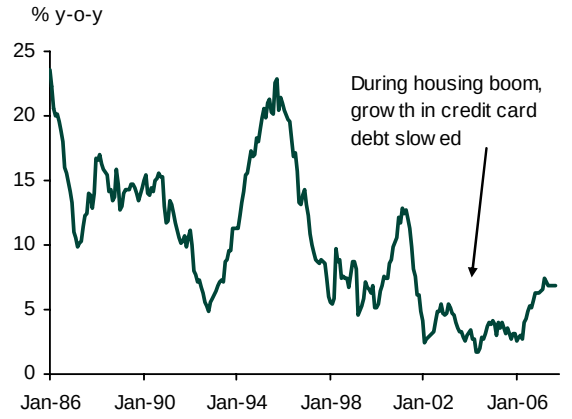


Source: Markit Partners; Data through November 26

Financial markets have responded in a similar fashion—demand for mortgage backed securities has plunged, pushing up spreads and dragging down prices

- ABX spreads have continued to climb
- We have recently witnessed a jump in highly rated subprime securities in response to both poor remittance performance and risk aversion
- The market is pricing about a 25% loss in pools of mortgages underlying subprime MBS
- 6 months ago, before the turmoil, the market was pricing about 8% - 9% losses, and 1 year ago it was pricing 4% - 5% losses

Credit card debt outstanding

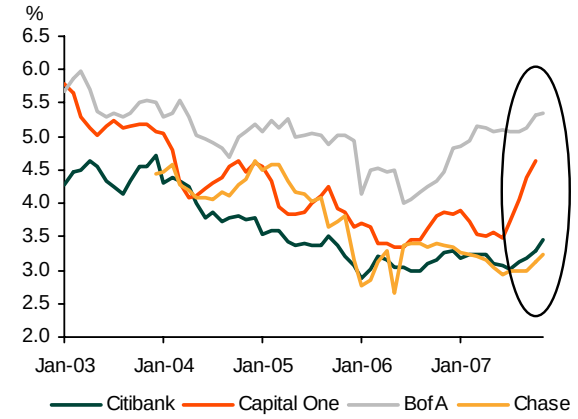


Source: Federal Reserve Board; Data through September 2007

The challenge to liquidate money from home equity has left consumers to finance spending through other sources (e.g., credit cards and anticipation of increased wages)

- During the housing boom consumers could clean up their credit card problems by taking money out of their homes
- Over the past year, credit card debt has been growing at a faster pace than it has in the previous 4 years
- However, y-o-y growth in credit card debt is still below the 10% average growth rate of the past decade

Credit card 30+-day delinquencies

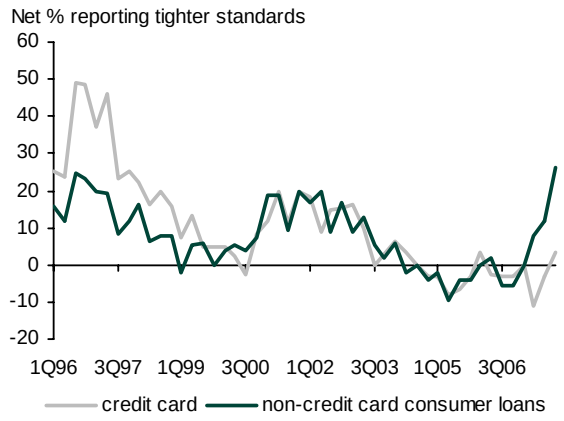


Source: Company 10D filings; Data through October 2007

There are only tentative hints of stress in the credit card sector

- Credit card delinquencies have already started to pick up for the major issuers, albeit only slightly
- However, it is likely that credit card delinquencies will pick up with a lag as consumer budgets become stretched and mortgage delinquencies continue to rise

Credit card and other consumer lending standards

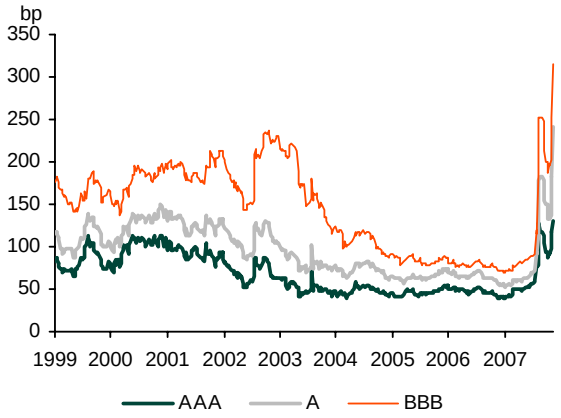


Source: Federal Reserve Senior Loan Officer Survey; Data through October 2007

Lenders are tightening standards for non-credit card debt, and further tightening in the coming quarters is expected

- Banks have started to tighten lending standards for consumer loans (such as auto and other big-ticket items) with the exception of credit cards
- Loose lending standards for credit cards suggests consumers can boost credit card borrowing to finance consumption
- However, anecdotal evidence suggests banks are starting to grow increasingly concerned, which will likely encourage banks to ultimately tighten lending standards

Credit card fixed-rate spreads over swap rates

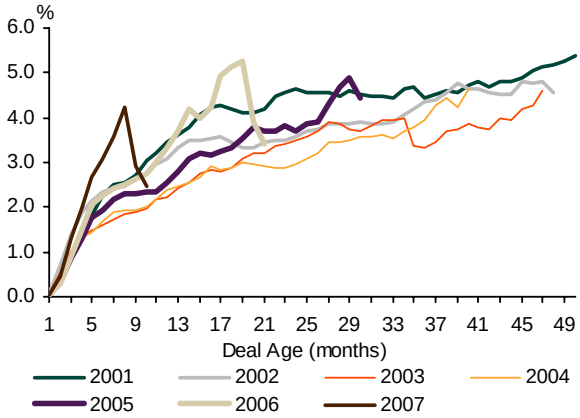


Source: LehmanLive; Data through November 15

The market is already anticipating credit problems

- A jump in spreads likely reflects both risk averse market sentiment and concern about credit card loan performance

Subprime Auto ABS 60-day delinquencies

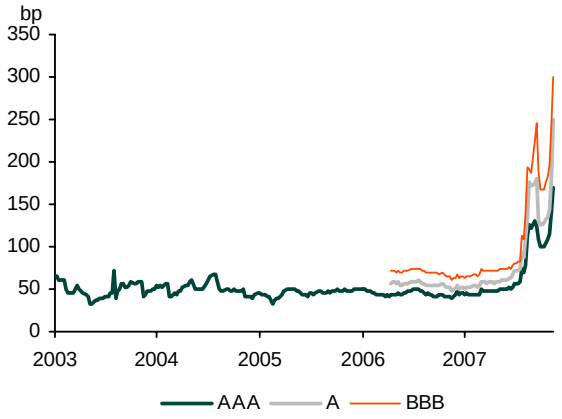


Source: LehmanLive

Early signs of credit problems in the auto loan market are starting to emerge...

- Delinquencies have started to pick up in the recent vintages, particularly 2007
- The weakness largely stems from the subprime market, which accounts for about 17% of total auto loans outstanding
- Performance of prime loans has witnessed marginal deterioration

Prime Auto fixed-rate spreads over swap rates



Source: LehmanLive; Data through November 15

…which are also seemingly priced into financial markets

- Rise in spreads reflects both increasing concerns about future performance and overall market sentiment

Securitization volume ($bn)

Asset Class	Value ($bn) 2004	2005	2006	2007 YTD
Autos				
Autos Total	**$73**	**$99**	**$85**	**$62**
Prime	29	58	54	38
Nonprime	34	28	25	18
Floorplan	10	13	6	5
Credit Cards				
Credit Cards Total	**$61**	**$72**	**$66**	**$86**
MBS				
MBS Total	**$744**	**$1,069**	**$1,059**	**$546**
Prime	396	590	580	352
Nonprime	348	479	479	194

Source: Intex; Lehman Brothers' Public and Private Issues ABS Database

Parts of the securitization markets are frozen, and parts are functioning well at higher spreads

- Mortgage issuance has fallen sharply
- Auto securitizations are down less than mortgages, and credit cards are actually up
- August was a very low issuance month because of the spread increase in securitized products and broader market volatility; therefore, there was built-up supply coming back in September/October
- Credit cards and to a lesser extent auto securitizations were the first to recover after August in terms of volume and spread levels
- July and August are usually slower months in terms of issuance, picking up after Labor Day

Much of the decline in mortgage issuance has been over the past few months. Credit card and autos has showed little change

	Credit Cards		Autos		Prime MBS		Subprime MBS	
	Value ($bn)	# of deals	Value ($bn)	# of deals	Value ($bn)	# of deals	Value ($bn)	# of deals
Jan-07	$5	9	$3	4	$45	56	$20	23
Feb-07	11	17	8	8	58	67	30	39
Mar-07	9	14	2	4	51	64	36	39
Apr-07	7	10	6	5	43	52	32	39
May-07	9	15	9	7	53	59	30	36
Jun-07	8	14	11	11	53	68	26	35
Jul-07	8	14	3	3	29	37	11	16
Aug-07	3	4	5	4	11	19	5	6
Sep-07	11	8	6	8	4	6	3	3
Oct-07	16	19	9	8	4	7	2	3

Source: Intex; Lehman Brothers' Public and Private Issues ABS Database

Credit card securitizations

Credit card securitizations are less likely to have the same performance deterioration as mortgages

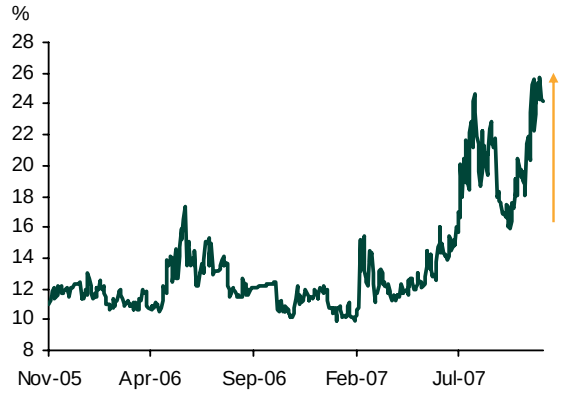
- Credit card securitizations use a revolving master trust that purchases new receivables monthly
- Credit card issuers can more easily alter the quality of the credit card receivables sitting in the trust
- However, those credit card issuers would have to warehouse higher credit risk receivables on their balance sheets
- Plus, spreads have widened, indicating nervousness
- In late November, spreads widened and all public issuances have been AAA

Auto securitizations

Auto securitizations also have some characteristics that may insulate the market relative to mortgages

- The payment size (approximately $300/month on average) is smaller, and since the loans are fixed rate, there is no reset/payment shock
- Auto loans are sensitive to unemployment levels which have remained historically low
- However, delinquencies are rising as consumers get stretched, which can restrain auto sales, ultimately lowering securitization volumes
- For domestic captive/quasi-captive issuers (Ford, GMAC, and Chrysler), this is important since securitization is core to their funding strategies
- In the past couple of weeks, spreads have widened (BBBs by about 200bps), and issuers are retaining lower rated assets as opposed to selling because spreads are too high
- Coming full circular, as ABS markets tighten, credit to consumers to purchase autos is restricted, further reducing auto sales, which further hurts the economy

S&P 500 3-month implied volatility

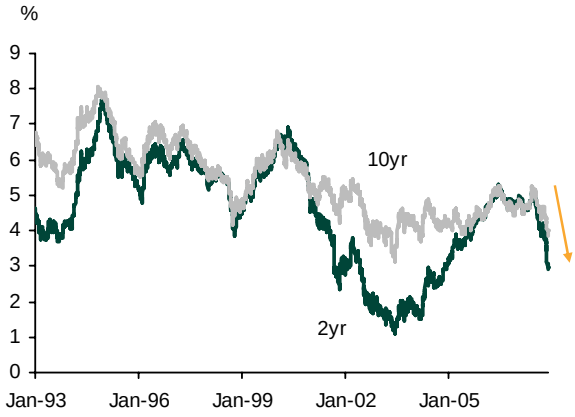


Source: Bloomberg; Data through November 26

The "fixed income infection" is now impacting the equity markets

- The S&P is about 6% off of its highs
- There are other factors such as expectations of future corporate profits; however, it all becomes somewhat circular in nature since credit impacts future profitability
- Nevertheless, volatility is rising, scaring "committers of capital" across asset classes

Treasury yields

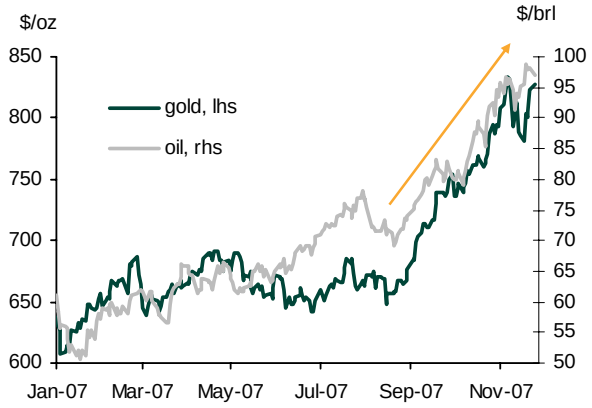


Source: Bloomberg; Data through November 26

This is creating a flight to quality and away from credit extension…

- Treasuries are rallying, while swap spreads are widening, reflecting a willingness to only hold the highest quality counterparty risk (i.e., not financial institution risk)
- Long-term US government bonds are relatively scarce as well; perhaps this is why US term rates appear to have lost their link with domestic economic fundamentals

Gold and oil prices



Source: Bloomberg; Data through November 26

…and the ultimate flight to quality and/or to hard assets (e.g., commodities)

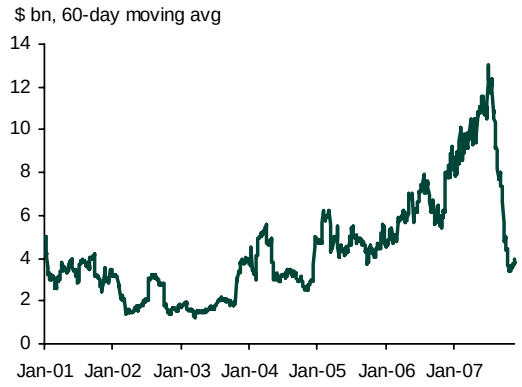
- Gold and oil prices have risen dramatically since the market troubles began
- Even fine art, an asset with a finite supply, has appreciated dramatically in the face of the global liquidity glut
- The rally in commodities reflects a safe-haven investment, but it also reflects excess global liquidity

How does global liquidity play into this?

Credit creation = LQ + Bc+ Lc, where LQ equals liquidity, Bc equals borrowers' confidence, and Lc equals lenders' confidence….So how does credit creation slow?

- Liquidity is driving technicals and perhaps even fundamentals, not the other way around
- Liquidity glut leads to artificially tight spreads and high valuations
- This sends incorrect signals to real economy operators
- In search of returns, lenders misprice risk
- Leads to too much debt creation with not enough collateral value
- Disequilibria and asset bubbles result

US M&A transaction value



Source: Bloomberg; Note: 60-day average of announced M&A deals (sum of mergers, acquisitions, divestitures, self-tenders and spinoffs)

Tighter spreads drove transaction volume to cyclical highs

- Like residential real estate, the M&A wave appears to have collapsed under its own weight
- In both cases, it was lenders' confidence that disappeared – not liquidity

The Fed's global reach

Country	Share of US Trade Deficit '07	Currency Regime	Share of Non-US Global GDP
China	31.4%	managed	7.5%
Nigeria	3.4%	managed	0.3%
Venezuela	3.2%	pegged	0.5%
Saudi Arabia	2.9%	pegged	1.0%
Malaysia	2.7%	managed	0.4%
Algeria	2.2%	managed	0.3%
Russia	1.6%	managed	2.8%
India	1.5%	managed	2.5%
Angola	1.5%	managed	0.1%
Israel	1.1%	managed	0.4%
	51.5%		16.0%

Note: Trade deficit through 2Q07; GDP as of 2006, current US$

Source: International Monetary Fund; International Trade Administration / Commerce Department

Today's discussions of the appropriateness of Fed policy do not reflect the Fed's global reach...The Fed sets monetary policy for much of the world by virtue of pervasive managed currency regimes

- Global GDP is about $48tr, and the US makes up about $13tr (27%)
- Together, the US and countries that "shadow" the dollar represent nearly 40% of global GDP
- While many countries are dramatically different than the US and need their own policy mechanisms, mercantilist proclivities leave them constrained by generic managed currency regimes
- All else being equal, rates are too low, and growth is too hot and not in equilibrium

US trade position with Europe, Canada, OPEC, China

	US Dollar	Trade Deficit
	% Sept 06/Sept 07	% Sept 06/Sept 07
$ / Euro	(12.60%)	(13.60%)
$ / Canada	(11.20%)	(18.30%)
$ / China	(5.04%)	14.60%
$ / OPEC	0.00%	1.60%

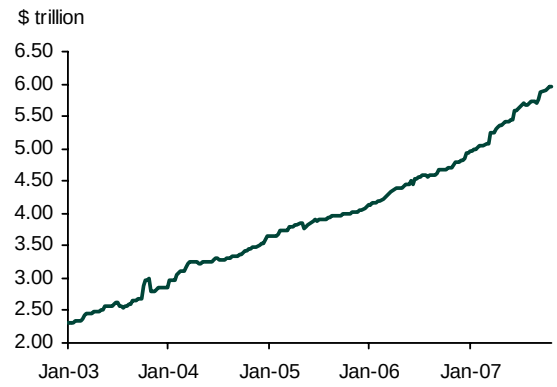
Note: Dollar change is September month-end; Trade deficit is 12 months ending September

Source: Commerce Department; Bloomberg

When markets are free to set policy based on fundamentals, things tend to balance

- The US trade position with Europe and Canada has improved as the dollar weakened, as one would expect
- However, when a currency is pegged to the dollar, trade balances are not allowed to correct and things can even get worse such as with China and OPEC

International reserve assets excluding gold (world)

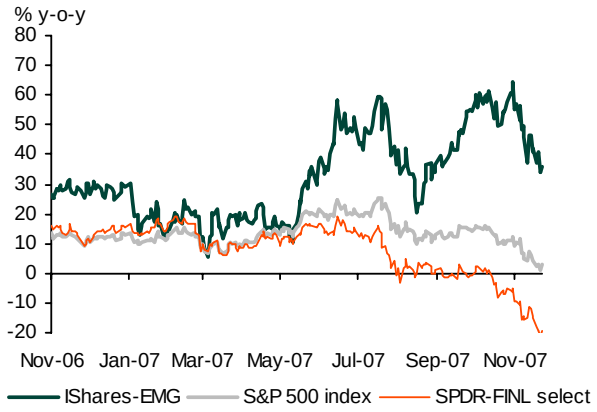


Source: Bloomberg

Large and growing capital flows to developing countries are largely the result of undervalued currencies

- Ongoing trade deficits that aren't allowed to self-correct lead to massive build-ups of official foreign currency reserves
- Global FX reserves have grown 157% since January 2003 compared to global GDP, which has grown by about 20% over the same time
- In addition, Sovereign Wealth Funds (SWF) are estimated to have about $2tr - $2.5tr in assets and are rapidly growing – assuming SWF assets get levered, it is clear SWFs will become very influential on markets (see appendix, page 20)

Comparative returns



Source: Bloomberg

When will it end?

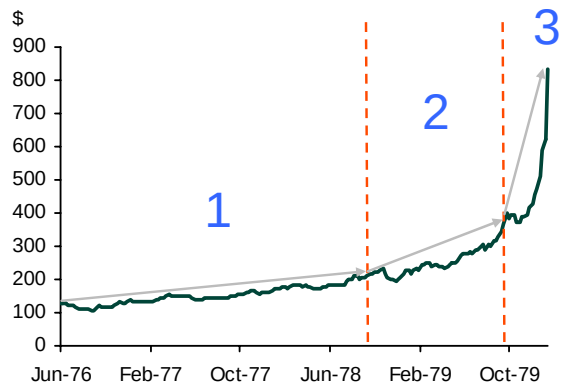
- So far, strong global growth, led by exploding liquidity has continued, while the US financial sector has tried to feel for a bottom
- Blue chip emerging market stocks (shown by IShares-EMG on the graph, ticker EEM) demonstrate this
- Ultimately, the question is whether the global liquidity dynamic is so great that the growing US financial "crisis" can unfold in a vacuum?

Note: EEM holds about 300 stocks from emerging market countries and seeks to provide results corresponding to the MSCI Emerging Markets Index

If history is any guide, the "liquidity bubble" has room to run…this may continue to underpin strong global asset markets as we enter 2008

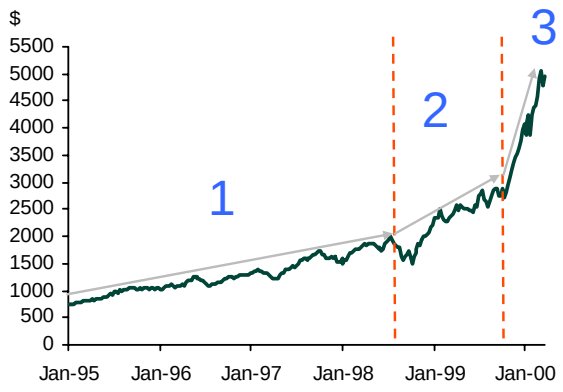
- Asset bubbles typically experience three stages: 1) denial, 2) conventional wisdom and 3) speculative frenzy
- Below (in quadrants #1 - #3) are three asset bubbles:
  - The gold bubble in the late 1970s in which prices rose about 6.5 times over 3.5 years
  - The tech bubble in the late 1990s in which prices rose about 6.5 times over 5 years
  - The recent housing bubble where major homebuilder stocks rose 7.8 times over 5.5 years
- Is excess global liquidity the next bubble?
  - Quadrant #4 shows an emerging market index (EEM) that is up about 4.5 times in about 4 years
  - EEM was a possible proxy for a liquidity bubble since it is liquid, big and popular, but one could also look at charts for fine art, gold and oil, which can also be driven by global liquidity

#1 Gold bubble (gold spot prices)



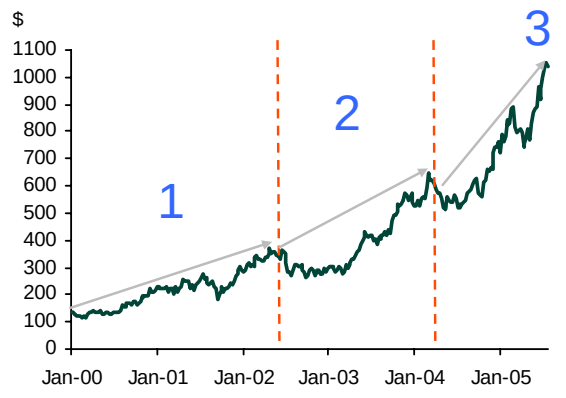
Source: Bloomberg

#2 Tech bubble (Nasdaq composite index - CCMP)



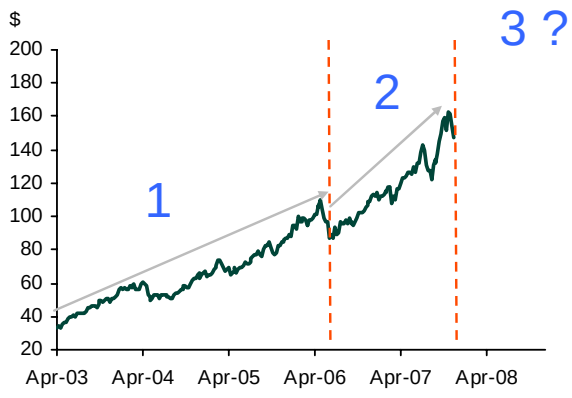
Source: Bloomberg

#3 Housing bubble (S&P super composite homebuilding index – S15Home)



Source: Bloomberg

#4 Global liquidity bubble? (iShares MSCI Emerging Market index - EEM)



Source: Bloomberg

Bank balance sheets

($bn)	Jun-07	+ / (-)	Mid Nov-07
Assets	$8,361	$205	$8,566
Equity	691	(41)	650
Equity/Assets Ratio	8.3%		7.6%
	Deterioration in Ratio		(0.7%)
Risk Weighted Assets	$5,863	$137	$6,000
Tier 1 Capital	486	(41)	445
Tier 1 Ratio	8.3%		7.4%
	Deterioration in Ratio		(0.9%)

Note: Based on top 30 commercial banks covered by Lehman Brothers Equity Research (represents approximately 80% of assets in all depository institutions)

Note: HY loans/bonds notional estimated using pipeline and league table share of U.S. banks in 2007. ABCP notional estimated from amount of decline in ABCP and US banks share of liquidity puts. Losses assumed at 5% of notional for High-yield and non-CDO ABCP. CDO losses and potential losses from mortgage assets from Lehman Brothers Mortgage Strategy group

Source: Lehman Brothers Equity Research and Lehman Brothers Fixed Income Research (*"Buyers of Last Resort: Do Banks Have Enough Balance Sheet?"* November 13, 2007)

Bank balance sheets are backing up with assets…

- As of mid November, Lehman Brothers estimated that $205bn in unanticipated assets ($120bn of HY Bonds/Loans and $85bn in ABCP Assets) had been brought onto bank balance sheets
- Risk-weighted assets were estimated to be $137bn
- In addition, losses were estimated at about $41bn ($6bn due to HY Bonds/Loans, $5bn in ABCP Assets, $15bn in ABS CDOs, and $15bn in mortgage losses)
- This significantly reduces banks' capital ratios relative to June-07 (prior to the market troubles)
- To the extent securitization markets are closed on or too pricey, banks will be forced to keep additional assets on balance sheet

Note: Unanticipated assets do not include SIVS. About half of the estimated losses have materialized since the report

Reduction in asset growth

Previously Forecast Asset Growth for 2008 ($bn)	$685
Reduction in Asset Growth Necessary to maintain 8% ratio ($bn)	434
Proportion of Projected Growth (%)	63%
Forecasted Asset Growth (%)	7.7%
Constrained Asset Growth (%)	2.8%
Reduction in Asset Growth (%)	4.9%

Source: Lehman Brothers Fixed Income and Equity Research; Flow of Funds

…which could lead to a reduction in credit creation further pinching the consumer

- Prior to recent events, Lehman Brothers Equity Research forecast asset growth of about $685bn
- If banks want to bring Tier-1 capital ratios back to 8% in a year, they would need to reduce asset growth by nearly $434bn
- Banks have other options such as reducing buybacks and dividends, or raising fresh capital (into a difficult market) as Citi has just done, which could mitigate the slowdown in asset growth to $250bn
- In either event, asset growth could slow between $250bn - $450bn, compared with overall credit growth of $2tr for the economy
- Stress on bank balance sheets not only affects consumers, but it also impacts lending to foreign banks who depend on dollar lending

Conclusion

In the next year or two:

- Pressure on the consumer grows as:
  - Home prices fall, reducing the wealth effect
  - Energy tax weighs heavily
  - Credit conditions tighten
- Consumers need their incomes to grow or to seek additional sources of credit to consume, or otherwise slow consumption
  - Problems in one market can spread to other markets, further damaging access to credit
  - Rising delinquencies from levered consumers, exacerbate the credit problem
  - This is causing pressure on asset-backed securities and indices…
  - Resulting in pressure on balance sheets and funding vehicles…
  - SIVs that can't finance themselves will sell the assets
  - Mortgage and bond insurers own these assets. Their balance sheets deteriorate
  - This creates pressure on what they guarantee
  - Counterparty risk of these institutions grows…Liquidity continues to dry up in the mortgage space
  - Capital needs to be raised, but the market is concerned about the underlying assets…Consequently, the cost to raise capital becomes high and for some prohibitive
  - Some bleed into other consumer credit assets creates more fear
  - Hence, the willingness to lend, become extraordinarily constrained
  - All of this lowers consumption, unless incomes rise to make up for it
  - If consumer spending falls, it can lead to falling corporate profits, which leads to falling equity markets, which reduces wealth, and leads to falling consumption, etc…
- Liquidity in general will continue to grow in countries through reserves and sovereign wealth funds
  - This will lead to increased prices where investor confidence is present, particularly for assets with finite supplies
  - A weakened dollar will lead to more investment in the US, but only in areas with a perception of value and investor confidence
  - This liquidity could find its way into mortgage markets once there is an understanding of the value proposition – at that point the short side will add upward pressure as it unwinds

However, in the long run:

- Lower home prices spur sales recovery
- Securitization returns for less exotic products
- A broader array of mortgage credit returns
- Liquidity growth rates through reserves will slow since countries with pegged currencies will need to use monetary policy to be able to manage growth and fight inflation

Recommendations

Something needs to be done

- The market in November '07 was, in many respects, worse than it was in August
  - The lack of confidence in pricing has led most buyers away from mortgage products, and there are few buyers in the market with both the balance sheet and expertise to understand any "bargains"
  - Such players are presently dealing with the less risky assets in the mortgage asset class (particularly agencies)
  - Directed liquidity is needed to restore confidence

Some things that might be done are:

1. We need legal clarity that the fundamental policy for dealing with the subprime issue should involve broad brush approaches rather than traditional loan-by-loan analyses
   - Servicers should be able to freeze present rates with no escalation for certain borrowers who have demonstrated an ability to repay before an ARM reset, but are now in default
   - Absent this clarity, servicers are reluctant to implement innovative loan modification protocols because of perceived litigation exposure
   - Regulators and legislators alike should consider granting servicers comfort if they act in "good faith" based on homeowner payment history
   - These approaches would exclude investors/speculators
   - While broad brush approaches could potentially lead to abuses where people might go delinquent solely to get the benefit of the policy, on balance they will prevent the escalation of the problem
2. Develop and expand the reach of programs to keep at-risk borrowers in their homes. HUD and FHA have shown great leadership, and we need to consider ways of developing new programs and scaling programs like FHA Secure
   - Programs should be targeted to homeowners (not investors) with ARMs who are or will become delinquent as a result of resets and are unable to refinance because of credit issues or property value declines

For example:

- Loan servicers could offer a new FHA-insured fixed-rate amortizing loan at 90% of the current appraised value of the home
- The insuring agency would receive a percentage (e.g., 75%) of the home appreciation between the new and old loan balances to compensate for its guarantee
- Combination of reduced LTV and the appreciation share enables more affordable loan terms for borrowers to keep them in their homes
- Agency insurance would enable securitization and enhanced liquidity for the program to enable it to reach more at-risk borrowers
- If the new cash payment is lower than the original, a floor could be created at the original cash payment to prevent a windfall
- Congress has appropriated funds to be made available through HUD to non-profits to help homeowners modify or refinance their mortgages. Conceivably, some of such money might be used as seed money for the development of such programs

3. Broaden access to the discount window for financial institutions that are significant players in this market
   - The assumption would be that the utilization of the discount window would be for purposes of adding liquidity to the mortgage market
   - The vehicles for this could be the primary bond dealers or depository institutions owned by them
   - Consideration should also be given to lowering the discount rate to coincide with the federal funds rate
   - These measures could be done on a temporary basis

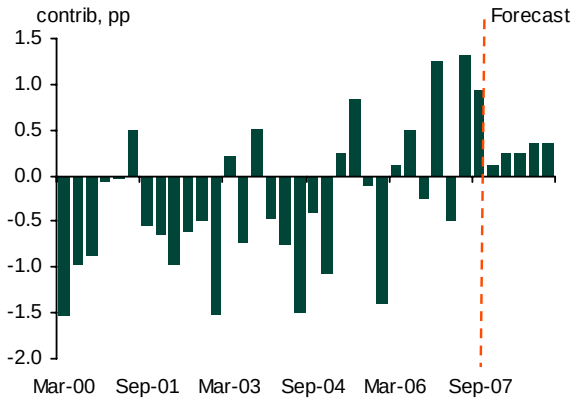
Recommendations Continued

4. Expand volume caps of various state housing authorities to issue loans to first-time buyers and expand the limitation on such loans to cover refinancing for such buyers
    - This will enable the utilization of the tax exempt market to help, in particular, the refinancing of first-time buyers
    - Such loans would be under the same credit limitations that currently exist but with expanded volume caps
5. Efforts to spur private initiatives such as the SIV effort are important and should continue
6. Sharply lower the federal funds rate
    - This could negatively affect the dollar and inflation, but must be considered given the high possibility that markets will get worse and could dramatically affect the economy as a whole
    - Measures 1- 4 are more surgical in nature

A lot is at stake for the economy, and all actions that add liquidity or help prevent distressed sales that exacerbate the problem, are worthy of consideration (even if they are somewhat "out of the box"). Emphasis should be placed on developing a portfolio of actions, some of which could be temporary in nature, rather than finding a magic bullet!

APPENDIX:

Contribution to GDP growth from net exports



Source: Commerce Department, Lehman Brothers Economics

- Trade has been a positive contribution to growth this year for the first time in nearly a decade
- Exports have been underpinned by a weaker US$. From its peak in 2002, the US$ has fallen roughly 36% from the Federal Reserve's major basket of currencies
- In addition, buoyant growth in the Euro Area, Canada, Mexico and Emerging Asia has led to healthy demand for US exports
- Net exports are expected to improve further in 2008 in response to both stronger exports and weaker imports

GDP share of exports to US

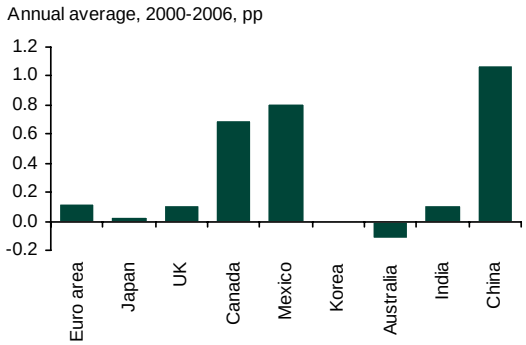
% of GDP	1980	1990	2000	2006
Euro Area	1	1	2	2
Japan	3	3	3	3
UK	2	2	3	2
Canada	15	16	33	25
Mexico	5	7	25	22
Korea	7	7	7	5
Australia	2	1	2	1
India	1	1	2	3
China	1	1	4	8
G10 ex-US	**2**	**3**	**5**	**5**

Source: OECD; Datastream; Lehman Brothers Economics

- Those countries closest to the US and which are members of NAFTA, namely Canada and Mexico, have the highest share of exports to US
- But in a number of other economies outside of NAFTA, notably China, their shares have been growing
- The rising share of exports to the US in economies' GDP means that integration with the US has been increasing. It also suggests that exports to the US may have been making an important contribution to growth in these economies in recent years

Source: "Global Decoupling," Lehman Brothers Economics, July 2007

Share of growth due to exports to US



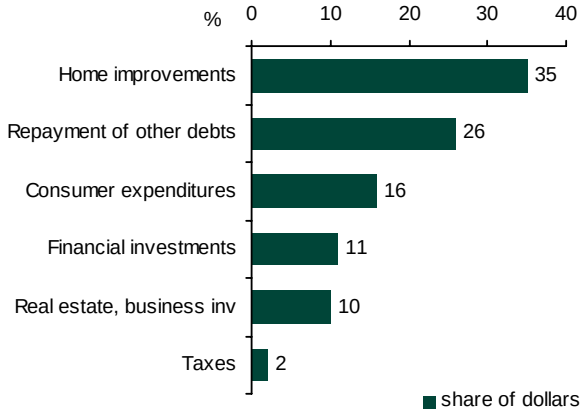
**Lehman Brothers calculations; change in nominal trade balance with the US as a percentage of the previous year's GDP.*

Source: OECD; Datastream; Lehman Brothers Economics

- Three economies stand out as having benefited from US demand: Canada, Mexico and China
- The former two are easily explained by these countries' proximity to the US and, perhaps, from an effect from NAFTA membership.
- China's contribution probably reflects its export-led growth strategy, epitomised by its managed exchange rate policy against the dollar
- There are also linkages between countries, which adds to the impact from US growth

Source: "Global Decoupling," Lehman Brothers Economics, July 2007

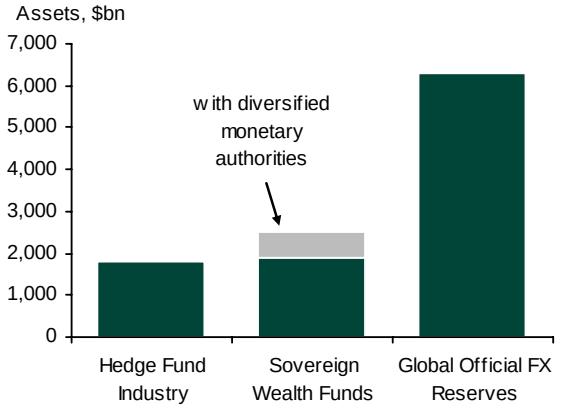
Uses of cash-out refinancing



- Consumers use the equity extracted in a variety of ways. The majority is spent to repay other debts and home improvement
- Some of the money is spent on consumer expenditures including vehicles, education, medical expenses, living expenses and consumer purchases

Source: Federal Reserve Survey of Consumers

Size of sovereign wealth fund market



- Accurate information regarding the size of some Sovereign Wealth Funds (SWFs) is hard to obtain
- $1.9tr is a conservative estimate excluding diversified monetary authorities
- $2.5tr estimate includes estimated excess reserves of diversified monetary authorities

Note: Diversified monetary authorities are select central banks/monetary authorities that have significantly diversified their assets and investment objectives beyond traditional reserve management, but not exclusively through a separate SWF entity

Source: Central Banking Publications; Lehman Brothers; IMF data and CIA data