

**BBVA** USA

150  
years

# Subprime Mortgage Market Turmoil

**Executive Committee  
BBVA USA**

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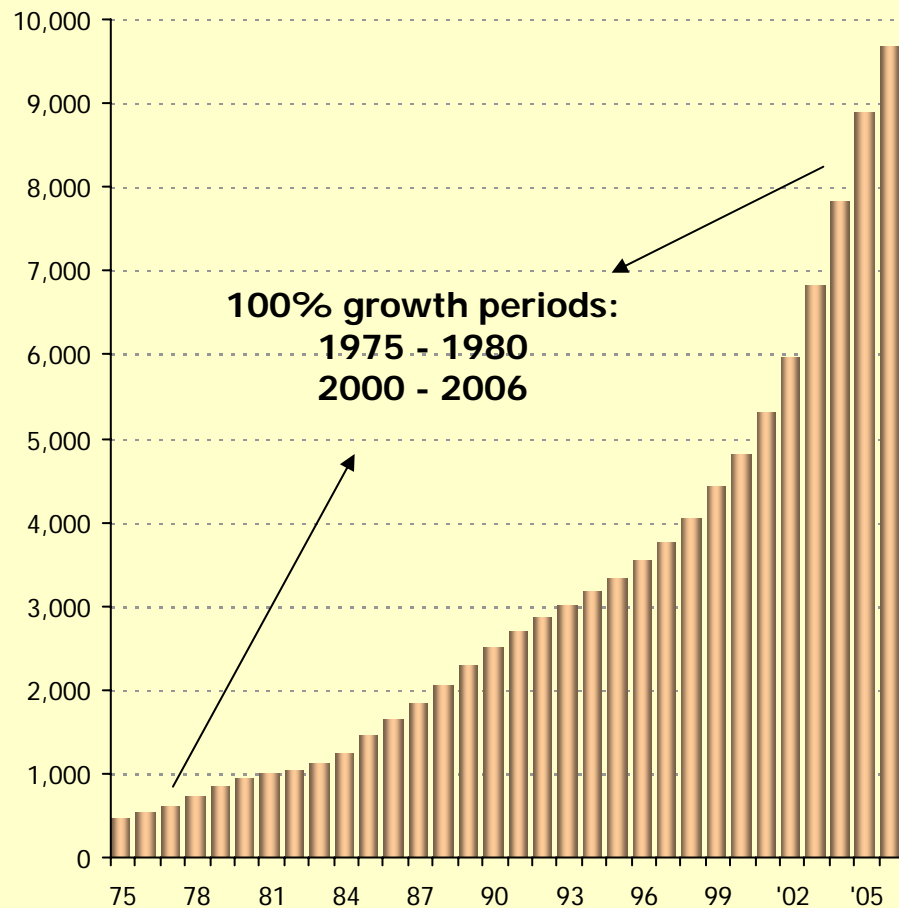
BBVA USA Economic Research Department

April 2007

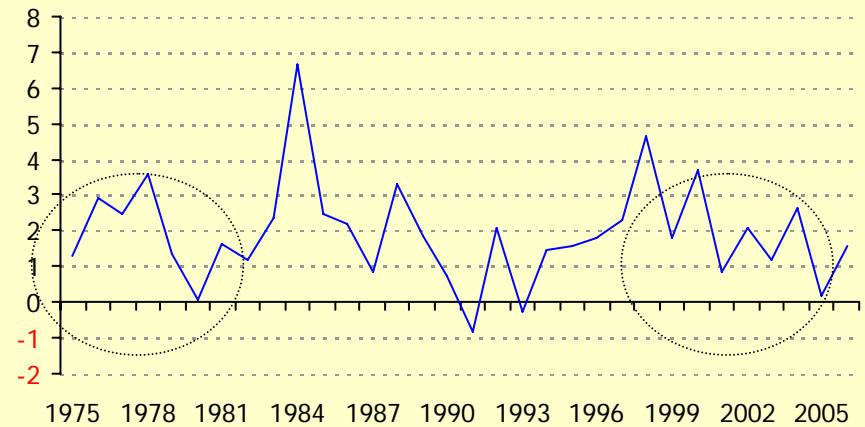
# The rapid growth in mortgage debt rests on solid fundamentals



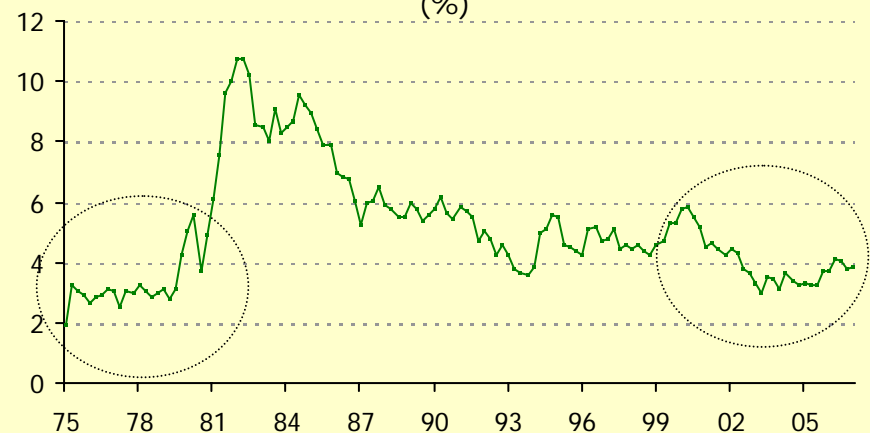
## Home mortgages debt outstanding (\$bn)



## Real personal income growth (%)



## Real 30-year fixed mortgage interest rate (%)



However, a portion is under significant distress



- **A large share derived from loose financing standards**
- **... boosted by the seek for higher returns**
- **Innovative and complex financial products allowed riskier investors to participate in this market**
- **Fast price appreciation attracted more borrowers who in many cases acted as investors**
- **Regulation was slow to react to these rapid changes, while home ownership growth is politically and socially desirable**

# Growth in subprime and Alt-A derived from aggressive lending practices



## Example 1

No Hassle Funding for No Doc, Stated Income, Self-Employed, and Super Jumbo Loans

We focus on helping those who cannot prove employment or income in the traditional sense, those looking for 100% financing and borrowers in need of "super jumbo loans". We do residential mortgage loans for people who are self-employed, sole-proprietor business owners, unemployed, straight commissioned or anyone else that has trouble documenting their income.

**We have aggressive no doc, stated income, no ratio and no income verification mortgages (all with an interest only option) and we also have excellent 100% "full doc" financing and a few select "super jumbo" loan programs to \$6,000,000 for those that want to provide income documentation.** Higher loan amounts are also available on an exception basis. We can help you buy or refinance a home without the usual hassles many of us have unfortunately experienced when applying for a mortgage loan.

All of our programs require good credit with 620 or better middle credit scores and we have numerous variations depending on the loan. We offer everything from REAL no doc loans with no income, no assets and no employment verification to traditional FULL doc loans.

## Example 2

Countrywide is now offering 100% home financing also with a no income documentation option.

**Our 80/20 no down payment loan allows qualified borrowers with excellent credit to get an 80% first mortgage and a 20% Home Equity Line of Credit to equal 100% financing on their home, not counting closing costs. And with the 80/20 Stated Program, qualified borrowers don't even need to provide W-2's, tax returns, or any documentation of income. Simple.**

Our 80/20 Program features:

100% financing up to \$1,250,000 (80% 1st up to \$1,000,000 and 20% 2nd up to \$250,000) with full income documentation.

100% financing up to \$815,000 (80% 1st up to \$650,000 and 20% 2nd up to \$165,000) with no income documentation.

No mortgage insurance (PMI) required.

Loan types include Fixed Rate, Fixed ARMS, and Interest Only Products.

Whether you're a first time homebuyer, want to buy more home, or you simply want the peace of mind that can come from knowing you have greater financial flexibility, our 80/20 loan programs may be the right loan for you.

The exponential growth to less credit worthy individuals generated concerns which date back several years. In fact, in 2005 Greenspan highlighted the risks



As I noted earlier, we can have little doubt that the exceptionally low level of home mortgage interest rates has been a major driver of the recent surge of homebuilding and home turnover and the steep climb in home prices.

**The dramatic increase in the prevalence of interest-only loans, as well as the introduction of other, more-exotic forms of adjustable-rate mortgages, are developments that bear close scrutiny. To be sure, these financing vehicles have their appropriate uses. But to the extent that some households may be employing these instruments to purchase a home that would otherwise be unaffordable, their use is adding to the pressures in the marketplace.**

Over the past few years, a great deal of attention has focused on the growing range of loan choices available to mortgage borrowers. The menu, as you know, now features a long list of novel mortgage products, not only interest-only mortgages but also mortgages with forty-year amortization schedules and option ARMs, which allow for a limited amount of negative amortization. **These products could be cause for some concern both because they expose borrowers to more interest-rate and house-price risk than the standard thirty-year, fixed-rate mortgage and because they are seen as vehicles that enable marginally qualified, highly leveraged borrowers to purchase homes at inflated prices. In the event of widespread cooling in house prices, these borrowers, and the institutions that service them, could be exposed to significant losses**

In summary, it is encouraging to find that, despite the rapid growth of mortgage debt, only a small fraction of households across the country have loan-to-value ratios greater than 90 percent. Thus, the vast majority of homeowners have a sizable equity cushion with which to absorb a potential decline in house prices. In addition, the LTVs for recent homebuyers appear to be lower in those states that have experienced the most explosive run-up in house prices and that, conceivably, could be at risk for the largest price reversal.

# 1. Aside from high concentration in some small metro areas, risks seem well spread



## Subprime mortgages as % of total

Top 12 MSA's	%
<b>McAllen-Edinburg-Mission, TX</b>	25.96
Memphis, TN, AK	24.00
Sharon, PA	23.08
Miami, FL	22.96
Richmond-Petersburg, VA	22.28
<b>Brownsville-Harlingen-San Benito, TX</b>	21.64
Merced, CA	21.56
Sumter, SC	20.69
Bakersfield, Ca	20.23
Jackson, TN	20.16
<b>Riverside-San Bernardino, CA</b>	19.91
Pueblo, CO	19.87
Stockton-Lodi, CA	19.78
<b>Laredo, TX</b>	19.69



# Fears of the subprime meltdown



Increased exposure of overextended borrowers



1. Rising defaults
2. Tighter lending standards
3. Seizing up of the securitization market
4. Jumps in credit spreads and mortgage interest rates
5. Lower house values



Pressures on other borrowers?

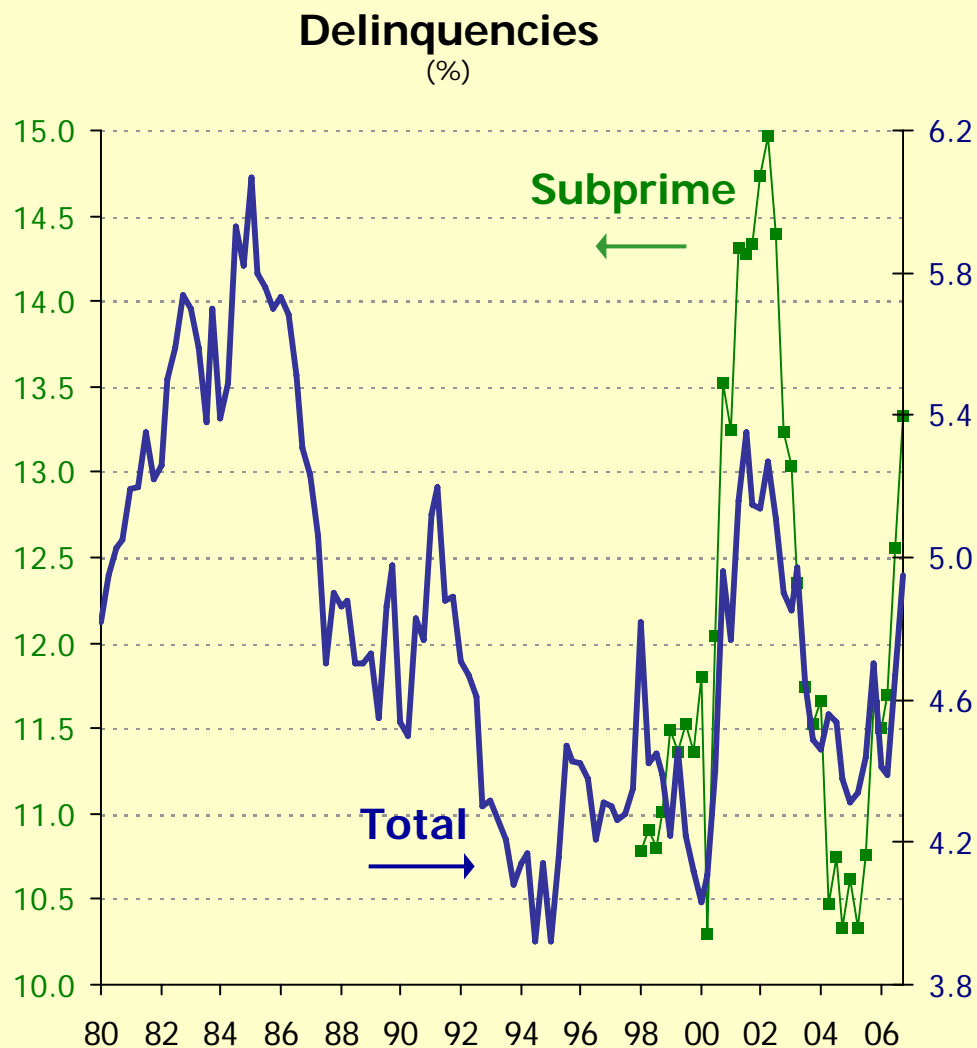


Wave of bank and thrift failures?  
Further adjustment of housing demand and residential investment?  
Steeper household wealth adjustment?



Sharper economic moderation and ultimately a widespread recession?

# 1. Higher delinquencies are the main direct effect of the subprime turmoil



Rising interest rates and lower house price appreciation have put pressure on credit quality

Delinquencies are rising and thus, underwriting standards have tightened

Originations will continue declining

Less credit worthy borrowers will not be able to refinance

Losses are likely to increase well into 2008

"As we had expected, in the fourth quarter, delinquency rates again increased across the board. Increases in delinquency and foreclosure rates were noticeably larger for subprime loans. Subprime borrowers are more likely to be susceptible to the cumulative increases in interest rates that we have experienced and the resultant nationwide slowing of home price appreciation including outright declines in some markets."

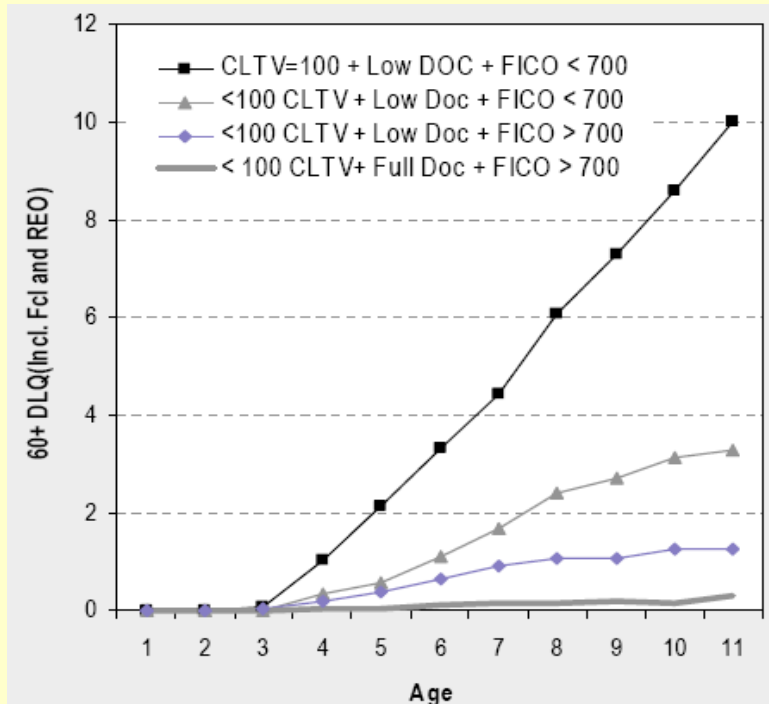
MBA's National Delinquency Survey



# 1. This trend should be seen as an expected outcome from riskier borrowers

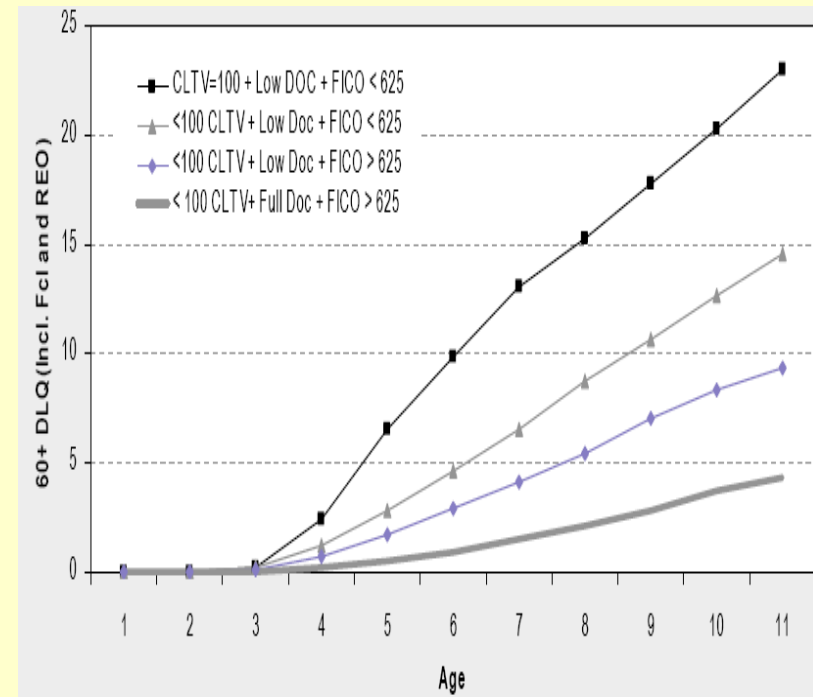


### 2006 Alt-A Hybrid 60+ Delinquency Curves (%)



In the Alt-A market, 35% of high-risk loans account for 63% of delinquencies: loans with FICO below 700 + 80/20 stated income

### 2006 Subprime 60+ Delinquency Curves (%)



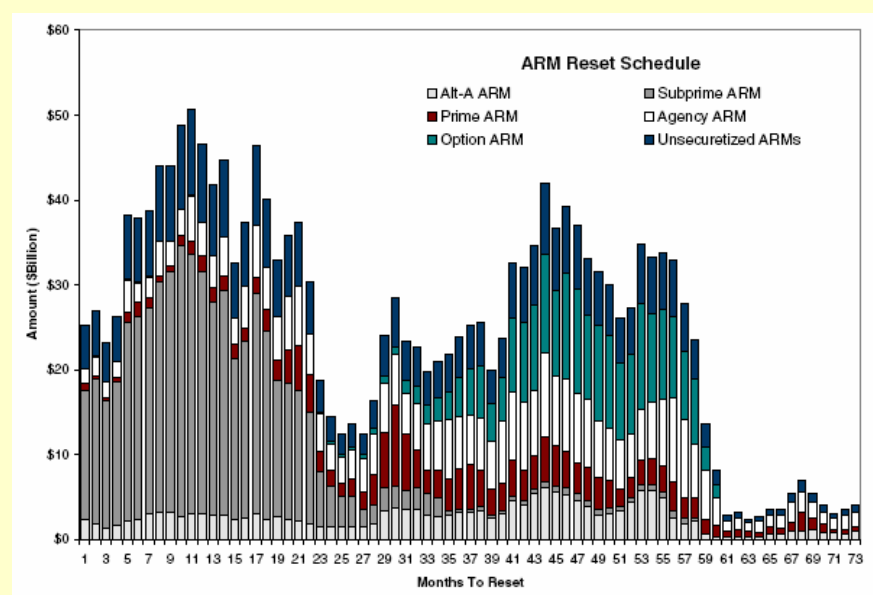
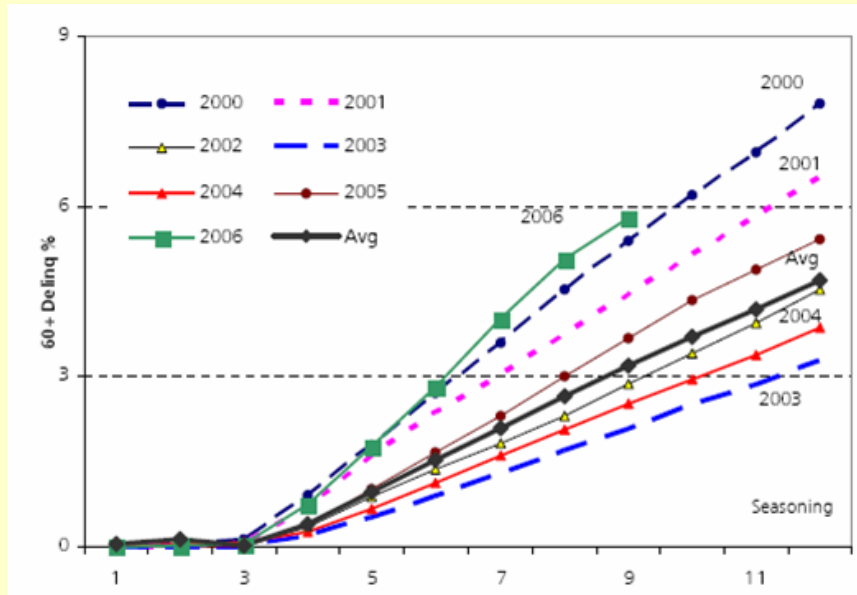
Risk in the subprime market is more dispersed with greater concerns on loans with FICO < 625 + LTV=100 + Low Doc

# 1. Delinquencies will rise significantly throughout 2007-2008



**Subprime delinquency by seasoning**  
(UBS)

**ARM reset schedule**  
January 2007, CSFB

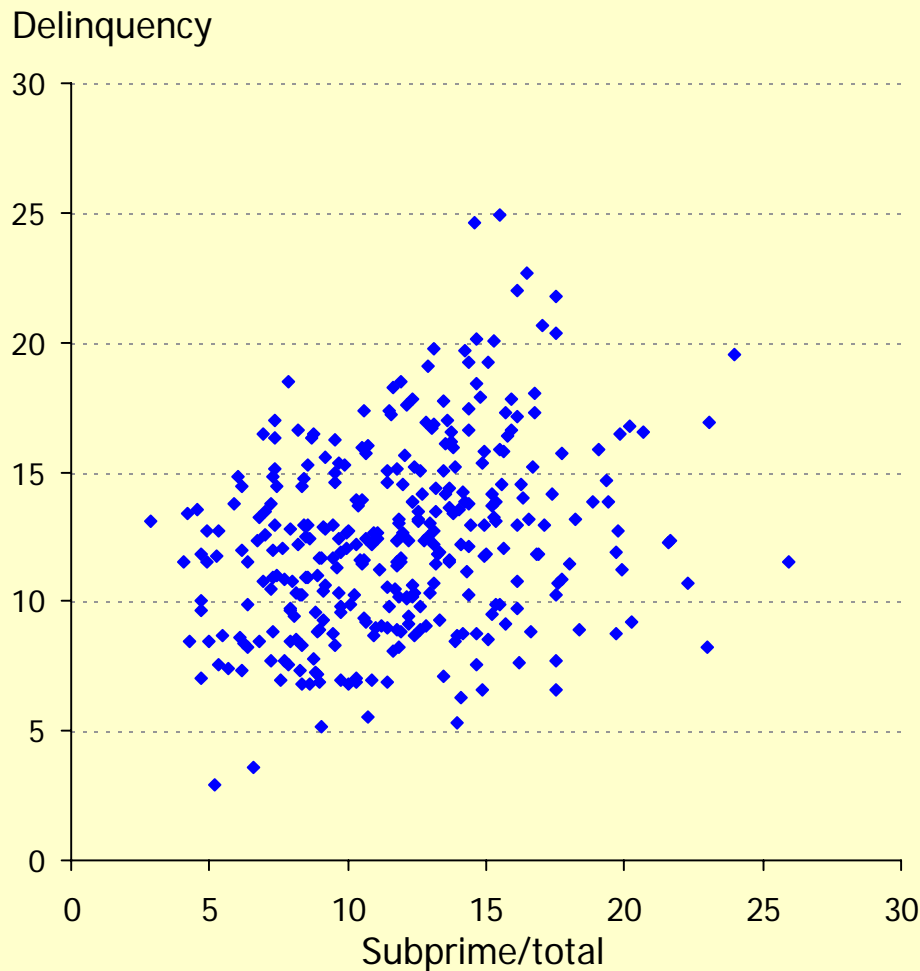


- 2006 vintage is the worst performing as house prices moderated and economic conditions worsened. The situation will probably get worse as resets kick-in and house prices decline
- The 3/27s done in 2004 and 2/28s from 2005 will all reset in 2007
- Effect of resets: at an original rate of 6%, the payment on a \$200,000 home was \$1,200 a month. Upon reset, at 10%, that monthly payment jumps to \$1,755, a \$555 increase, or 46.3%
- If monthly payment was 30% of income, it jumps to 44%

# 1. ... in areas with high supprime share but mostly in those with weaker fundamentals



Subprime share & delinquency (%)



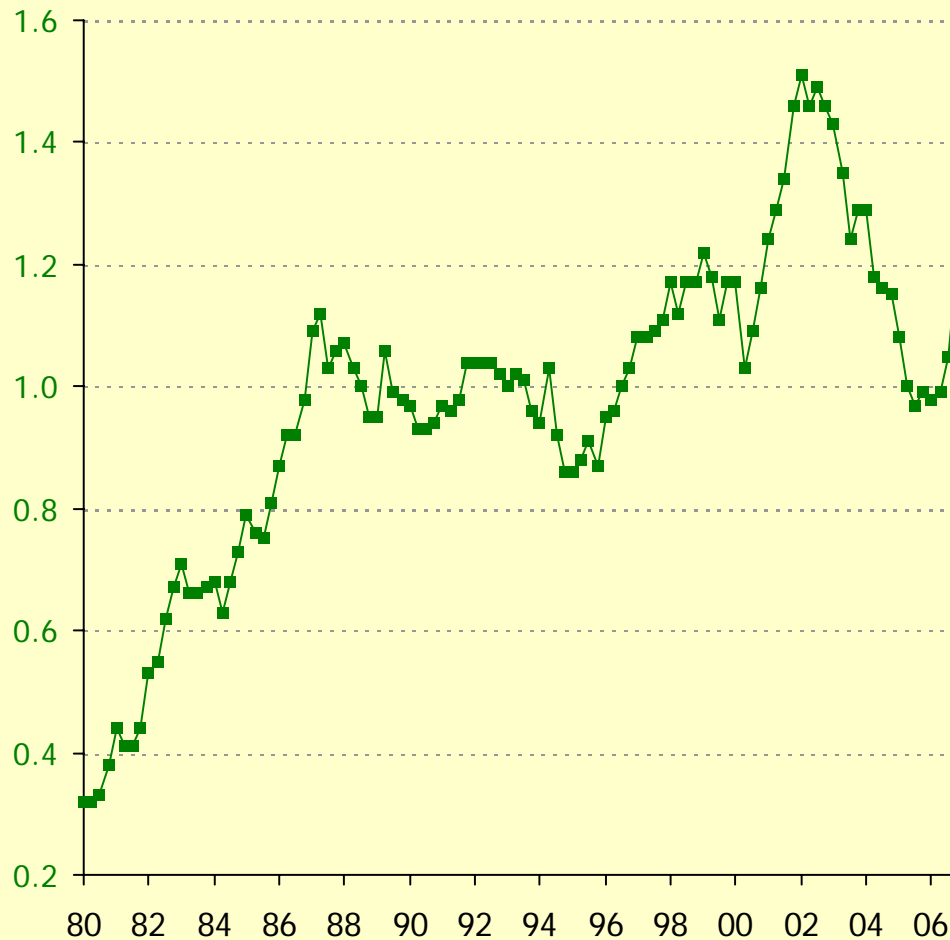
Top 10 subprime delinquency markets & unemployment rate

Metro	State	Delinquency %	U-rate %
Cleveland	OH	24.9	6.0
Detroit	MI	24.6	8.0
Jackson	MS	22.7	5.3
Jackson	MI	22.0	7.8
Youngstown	OH	21.8	7.2
Flint	MI	20.7	8.9
South Bend	IN	20.3	6.1
New Orleans	LA	20.1	4.5
Kankakee	IL	20.1	7.0
Akron	OH	19.7	5.9
<b>US average</b>		<b>13.3</b>	<b>4.5</b>

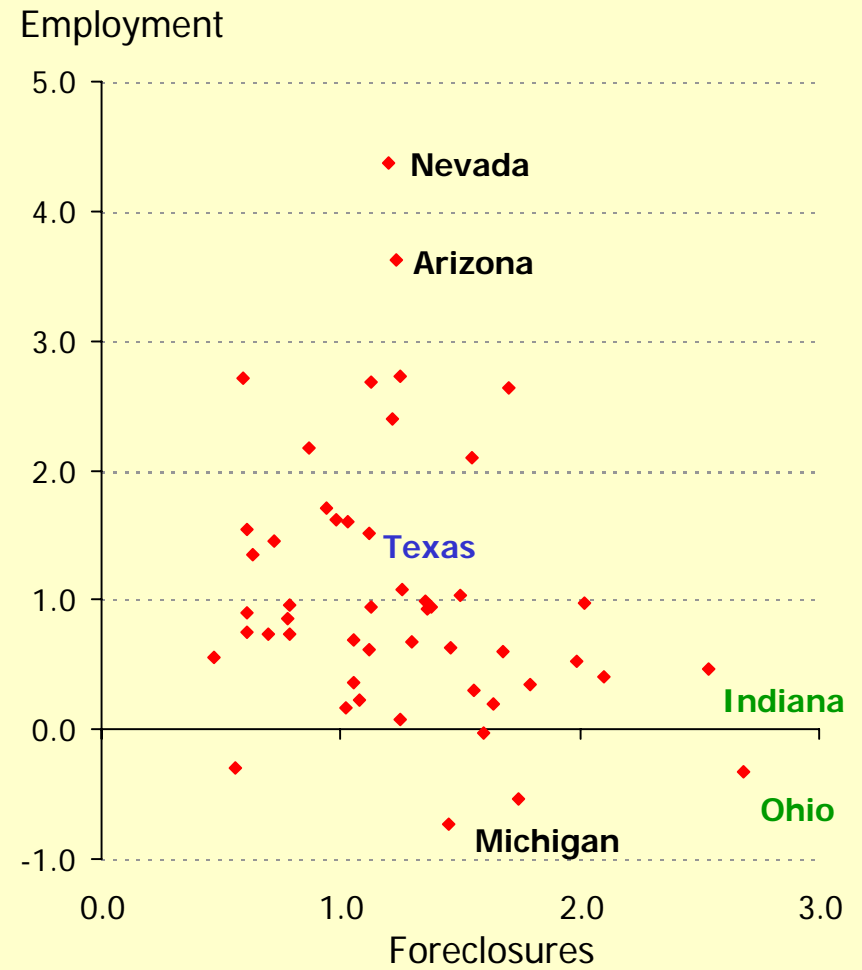
# 1. Foreclosures are also likely to continue rising and could be worrisome in some states



**Foreclosure rate**  
(%)



**Foreclosures & employment growth**  
(5yr avg & 5yr CAGR, %)



# 1. In fact, increased government intervention is highly likely



Median home prices decline by 0.9% with one foreclosure within a 1/8 mile radius

Metro	Foreclosure rate %
1 Detroit-Livonia-Dearborn	4.9
2 Atlanta-Sandy	4.4
3 Indianapolis	4.3
4 Denver-Aurora	4.2
5 Dallas-Plano-Irving	3.9
6 Fort Worth-Arlington	3.7
13 Riverside-San Bernardino-Ontario	2.6
16 Austin-Round Rock,	2.3
18 Houston-Sugar	2.6
Average 50 MSA	2.1
USA	1.2

Testimony to the Joint Economic Committee by Chairman Sen. Charles E. Schumer (D-NY)

April 2007

Varying local economies, housing markets and state regulatory regimes mean that some local areas are getting hit by the subprime foreclosure crisis much harder than others and deserve immediate attention.

It pays to prevent foreclosures in these high-risk cities – every new home foreclosure can cost stakeholders up to \$80,000, when you add up the costs to homeowners, loan services, lenders, neighbors, and local governments.

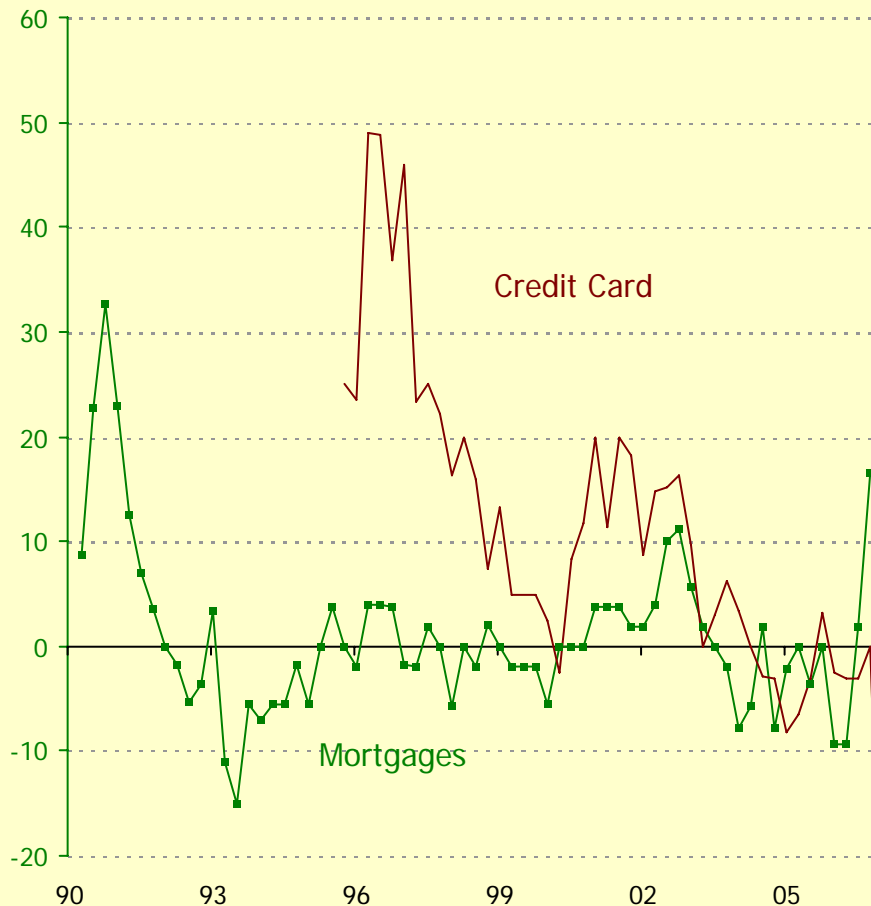
Policy responses to the subprime crisis should be designed to address the local foreclosure phenomenon and include both foreclosure prevention strategies and improved mortgage lending regulations

## 2. The effects of the subprime turmoil on credit standards and bank loans have been contained

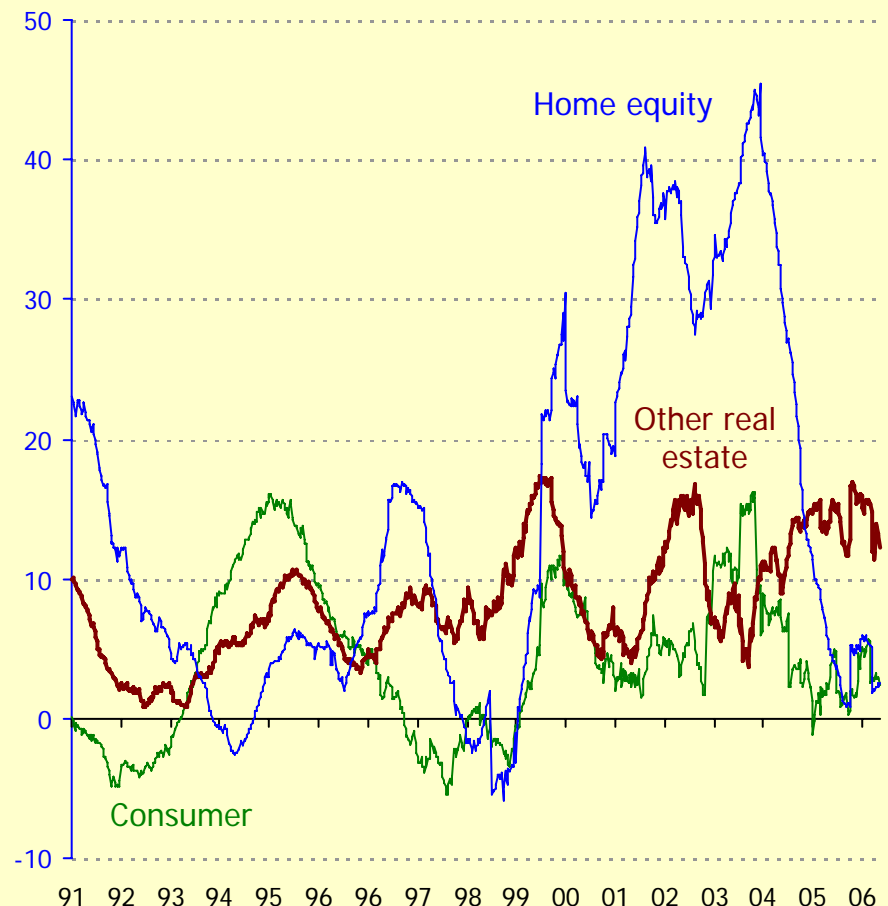


### Credit standards

Net Percentage of Domestic Respondents Tightening Standards for Mortgages and credit card loans to Individuals



YoY % change of commercial bank loans



## 2. The effects of the subprime turmoil on credit standards and bank loans have been contained



### Fed's Senior Loan Officer Opinion Survey

**Question 9:** Over the past three months, how have your bank's credit standards for approving applications from individuals for mortgage loans to purchase homes changed?

	Prime	Nontraditional	Subprime
Tightened considerably	0.0%	11.4%	31.3%
Tightened somewhat	15.1%	34.1%	25.0%
Remained basically unchanged	84.9%	54.5%	43.8%
Eased somewhat	0.0%	0.0%	0.0%
Eased considerably	0.0%	0.0%	0.0%
<b>Banks surveyed</b>	53	44	16

According to the survey, of the nine institutions that reported having tightened standards on subprime residential mortgages, only one indicated that it had also tightened standards on prime residential mortgages.

On net, about one-fifth of domestic institutions indicated that they had seen weaker demand for each of the three categories of residential mortgages—prime, nontraditional, and subprime—over the past three months

### 3. The impact on securitizations is likely to be significant mainly through an increase in funding costs



- Some analysts claim that if CDO pulls out from junior tranches there could be a shortage of funds to the home mortgage market
  - FDIC reports that 81% of the \$249bn of CDO collateral pools issued in 2005 was made up of REMIC
  - Moody's reports that 70-75% of RMBS in CDO are below AAA-rated
  - To estimate lower-tranche RMBS in CDO
    - $\$249 \times 0.81 = \$202$
    - $\$202 \times 0.70 = \$141$
- Assuming a 10% subordination level, CDO supports about \$1,400bn (actual issuance was \$1,326bn)
- If CDO exit they will leave a hole in the market of lower-tranche RMBS and cost of funding could increase significantly
- However, there are other options for funding which could include different investors: REITs, Foreigners, Mutual Funds, Hedge funds, etc., or different funding strategies: capital, purchase of PMI, cross hedge, etc.
- In addition, the use of derivatives could help to achieve a higher rating

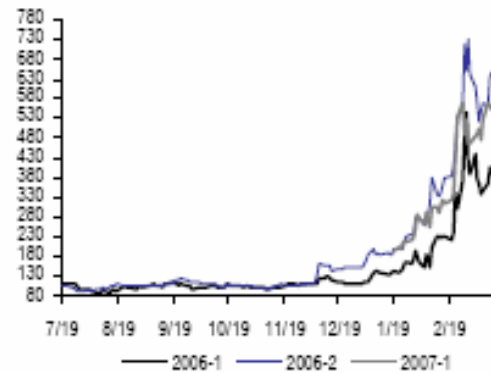


# 4. Recent trends in spreads of ABX.HE confirm our perspective that the initial market reaction was overblown

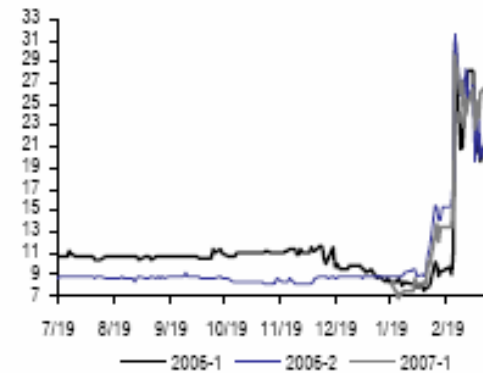


## ABX.HE Spread Performance

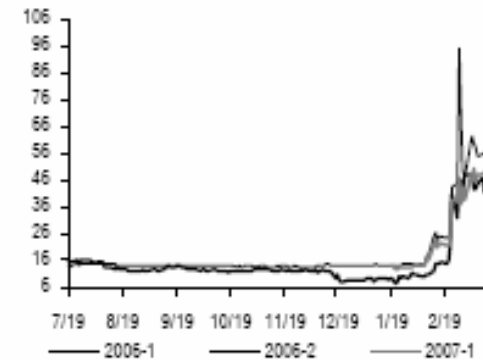
BBB- minus BBB spread differentials  
bp



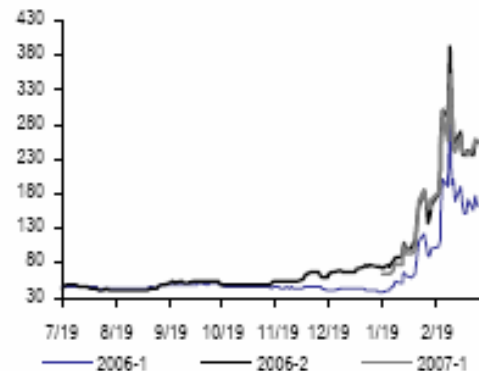
AAA ABX.HE mid-spread  
bp



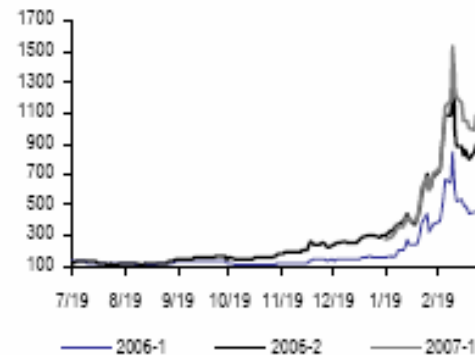
AA ABX.HE mid-spread  
bp



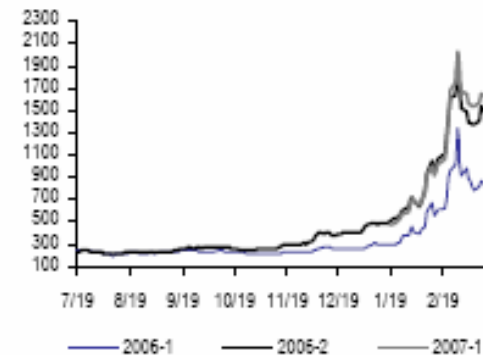
A ABX.HE mid-spread  
bp



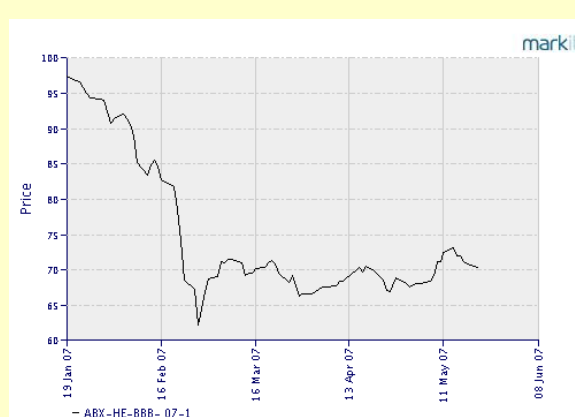
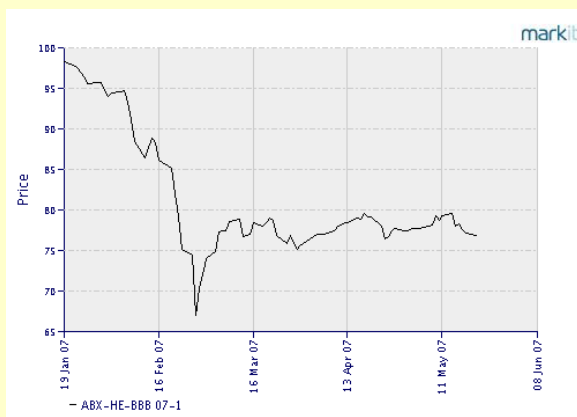
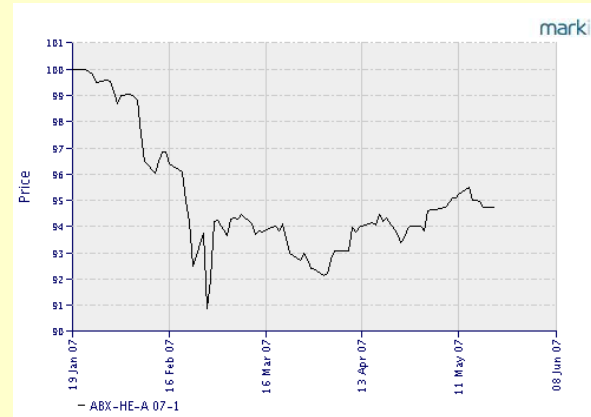
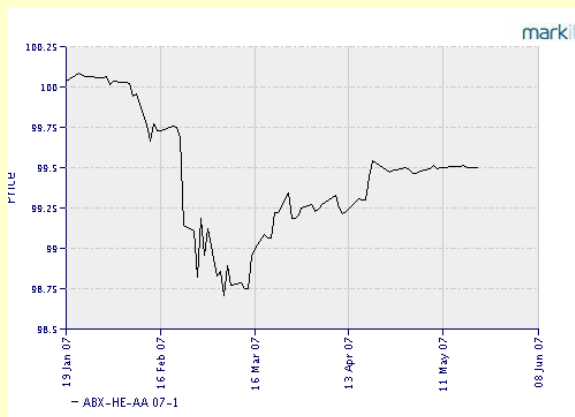
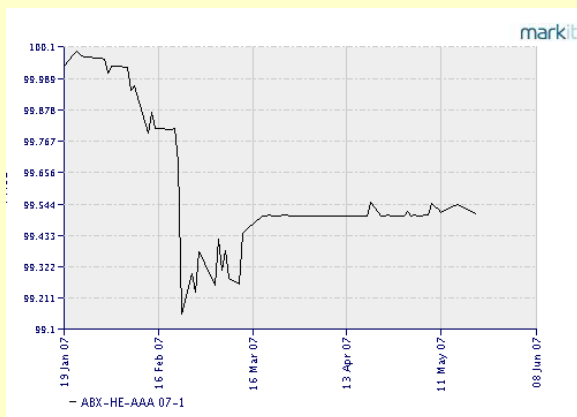
BBB ABX.HE mid-spread  
bp



BBB- ABX.HE mid-spread  
bp



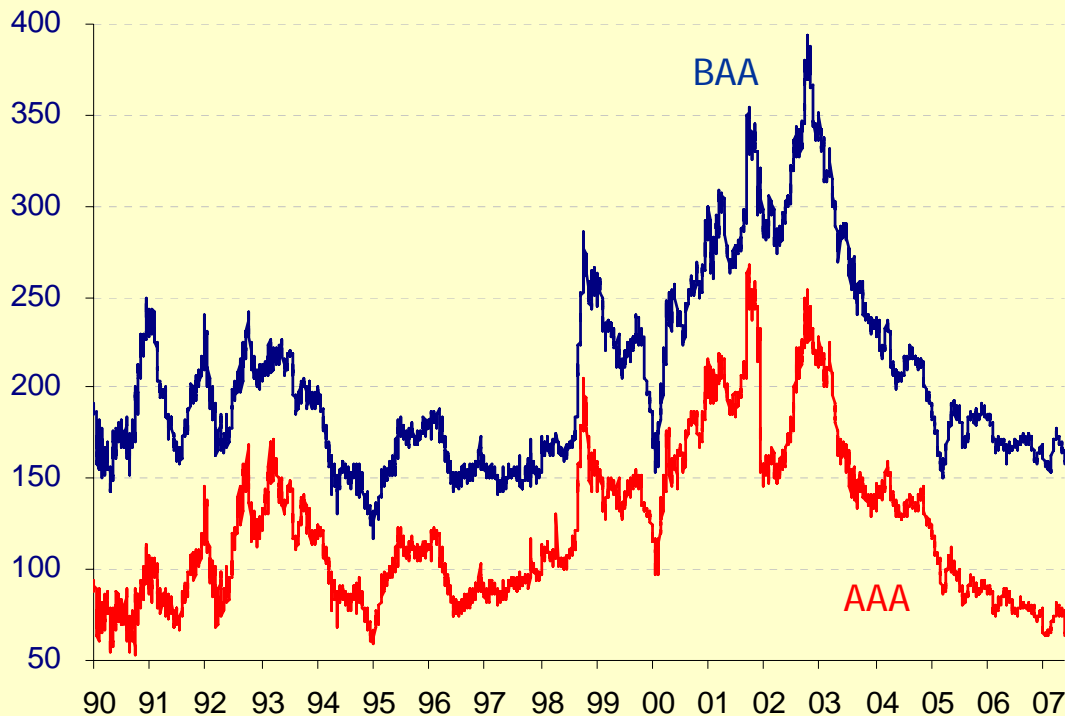
## 4. Recent trends in spreads of ABX.HE confirm our perspective that the initial market reaction was overblown



## 4. Contagion to other sectors has been limited and credit spreads remain low



Corporate spreads BAA & AAA, bp



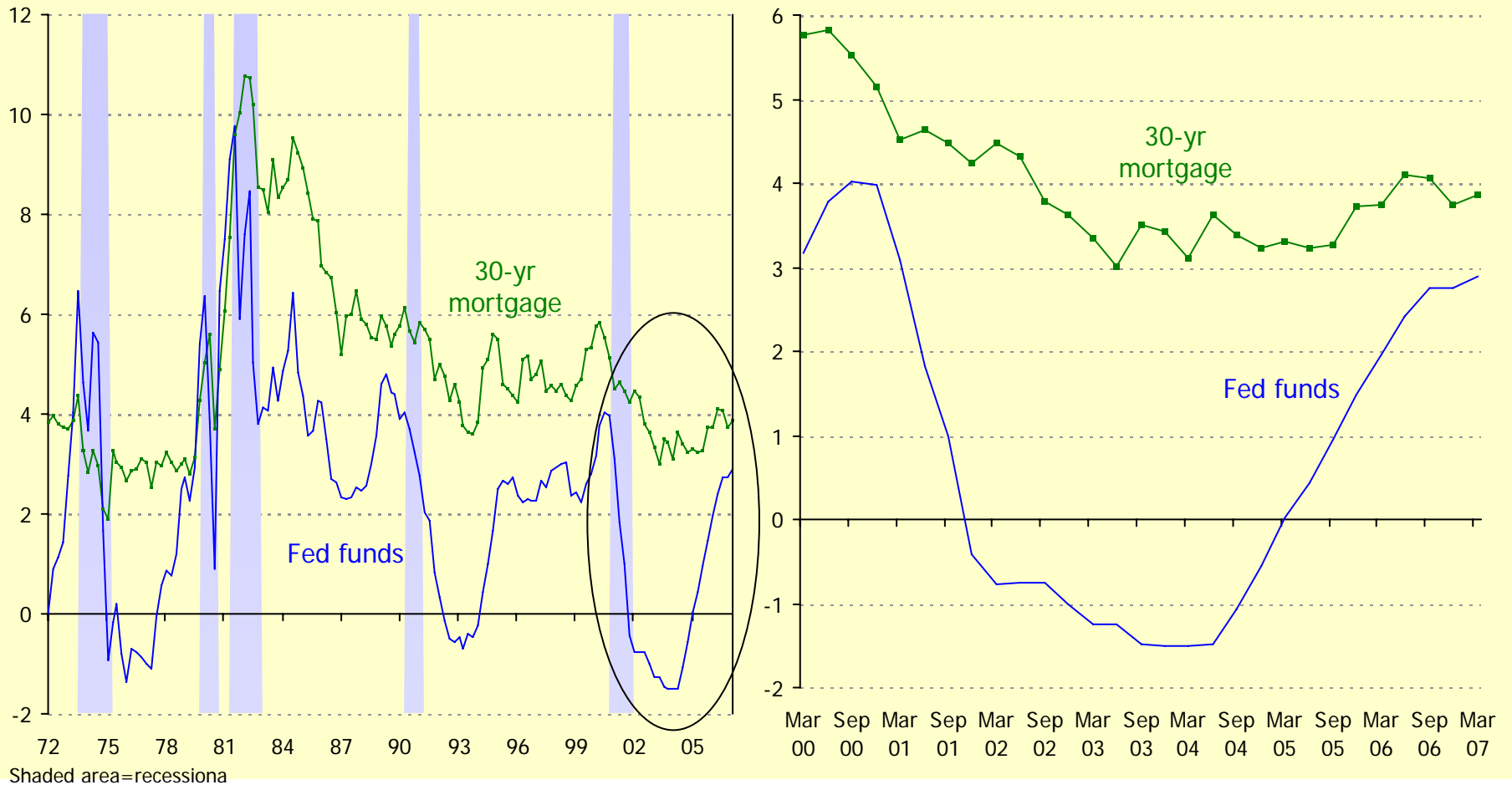
Spreads	BAA	AAA
Last	174	81
Average 90-07	206	123
Max 90-07	394	268
Min 90-07	117	53
<b>Bp change to peak</b>		
1998	112	93
2001	77	73
2002	116	94
2007	20	13

1998: Aug 20<sup>th</sup> – Oct 15<sup>th</sup>  
 2001: Aug 7<sup>th</sup> – Sep 21<sup>st</sup>  
 2002: Apr 22<sup>nd</sup> – Oct 9<sup>th</sup>  
 2007: Feb 23<sup>rd</sup> – Apr 5<sup>th</sup>

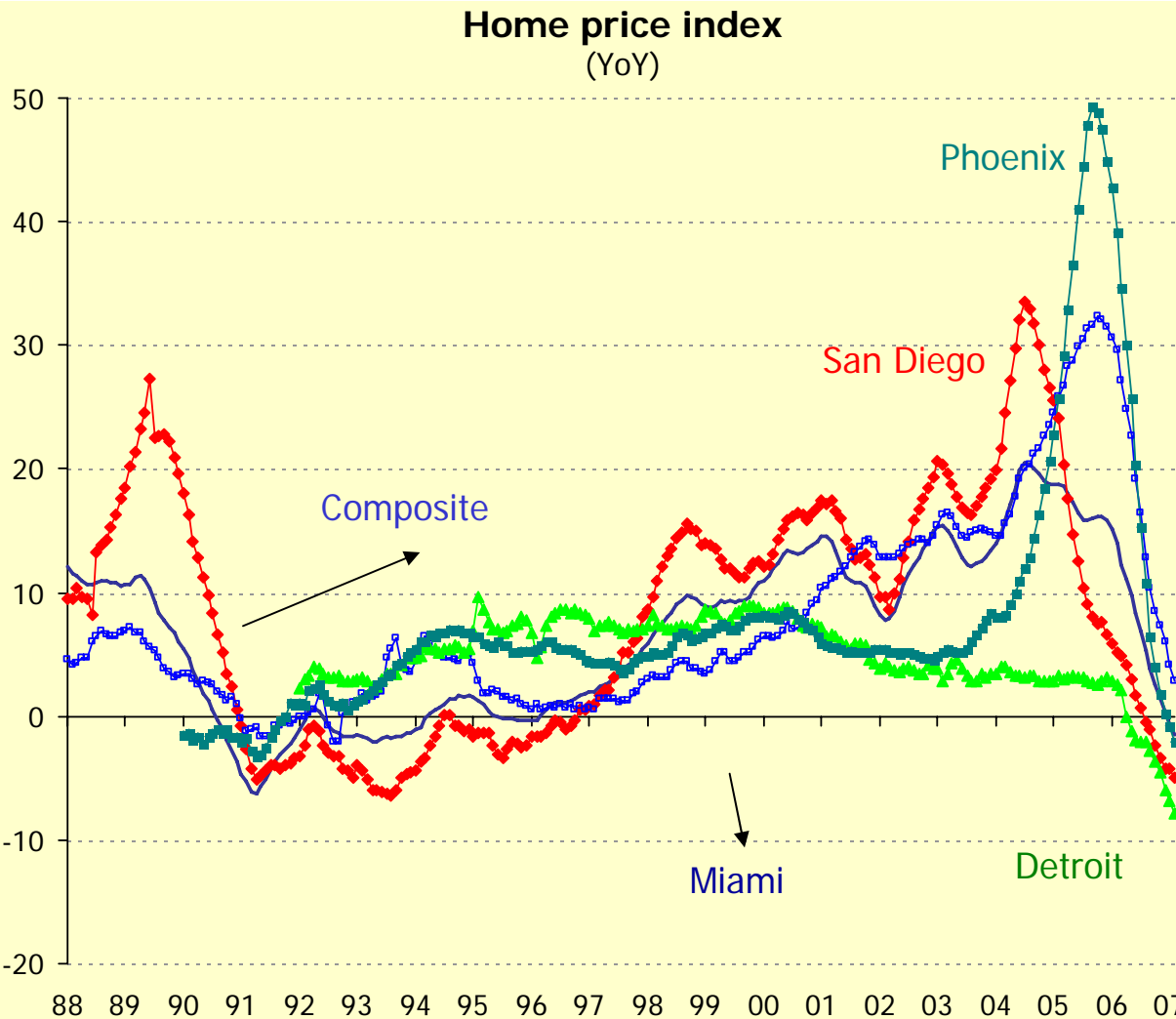
4. Likewise, interest rates remain low. In fact real 30-year fix mortgage interest rates are just 100 bp higher from their historical lows, even after a 400+ increase in the real Fed funds rate



**Real interest rates**  
(Deflated with long-term inflation expectations, %)



5. Even before the subprime market turmoil, house prices were adjusting, mainly on those markets with higher increases and/or weaker fundamentals



### YoY % change

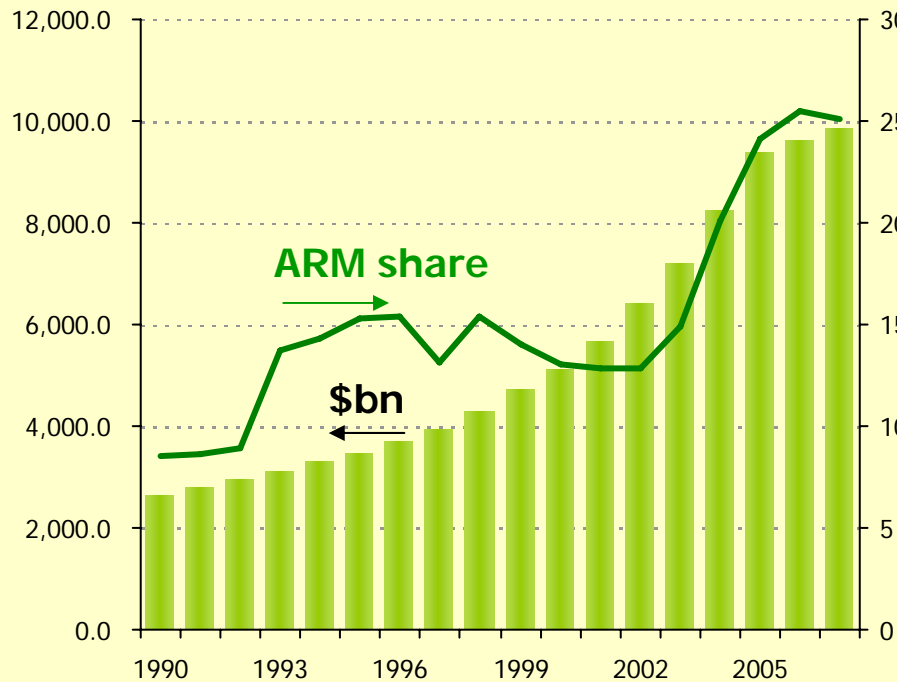
Index	Jan 07	Jan 06
Seattle - WA	11.1	18.1
Portland - OR	8.7	22.1
Charlotte - NC	7.9	5.0
Miami	4.2	30.6
Atlanta - GA	2.3	5.5
Chicago	2.2	9.5
Los Angeles	1.0	21.2
Dallas - TX	0.5	4.9
Las Vegas	0.0	11.2
Tampa - FL	-0.1	29.3
Composite-20	-0.2	14.7
Phoenix - AZ	-0.7	42.7
Composite	-0.7	15.1
Minneapolis - MN	-0.9	5.3
New York	-0.9	14.1
Denver	-1.1	3.8
San Francisco	-1.4	13.4
Cleveland - OH	-2.7	1.7
Washington	-3.9	18.7
San Diego	-4.2	5.9
Boston	-5.6	2.7
Detroit - MI	-6.9	2.9

We estimate that the impulse not justified by fundamentals is around 3% of mortgage debt, which could lower home ownership by 4%



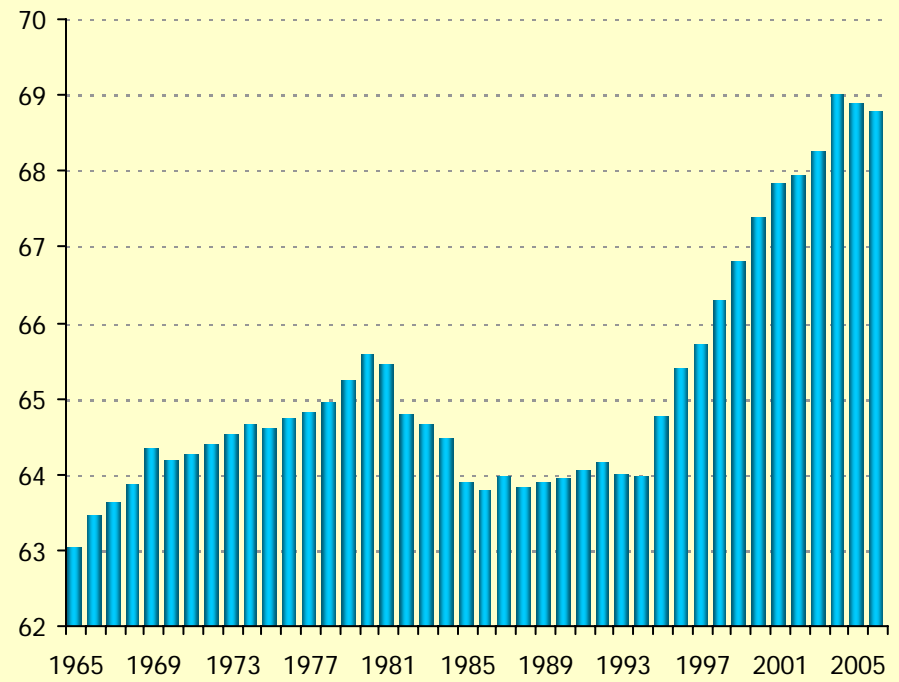
### Single-family mortgages outstanding

(Total billions and share of ARM)



### Home ownership

(%)



Assuming ARM share of 25% could decline to around 14%, the portion at risk is 3%

$$(25-14=11 * 25\%=3\%)$$

Home ownership, currently at 69%, could decline 4% if it scales back to its long-term average of 65%

# Other estimates indicate that loans at risk make up 3.6% of the mortgage market

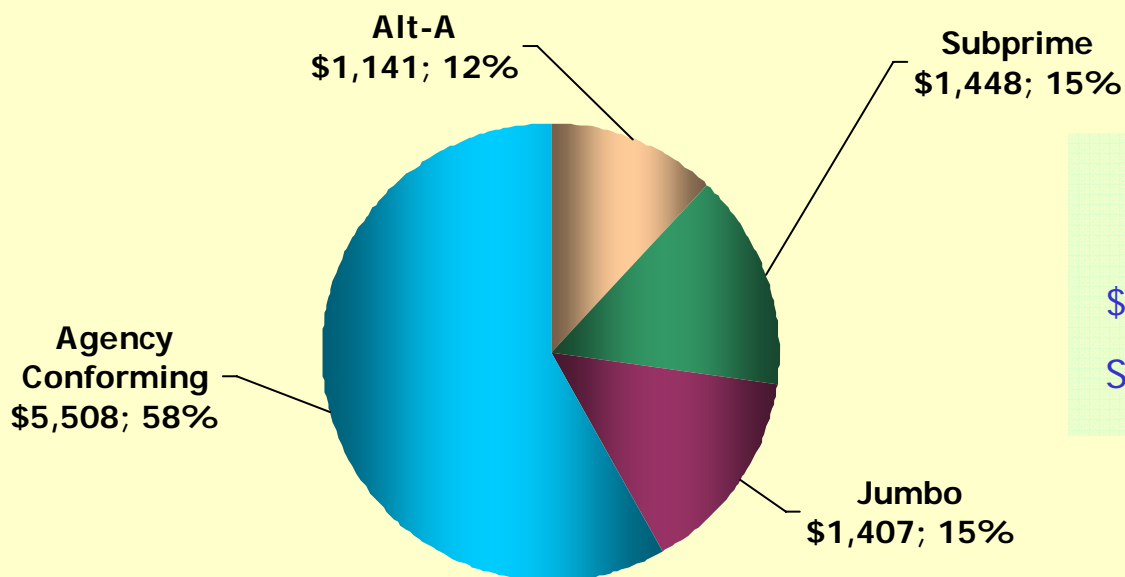


Alt A 2006 Outstanding=\$380bn

Subprime 2006 Outstanding=\$540bn

Total	\$1,141	
At risk	\$380	
Low risk	\$245	65%
High risk		
100CLTV	\$72	19%
90+Lim Doc	\$63	17%

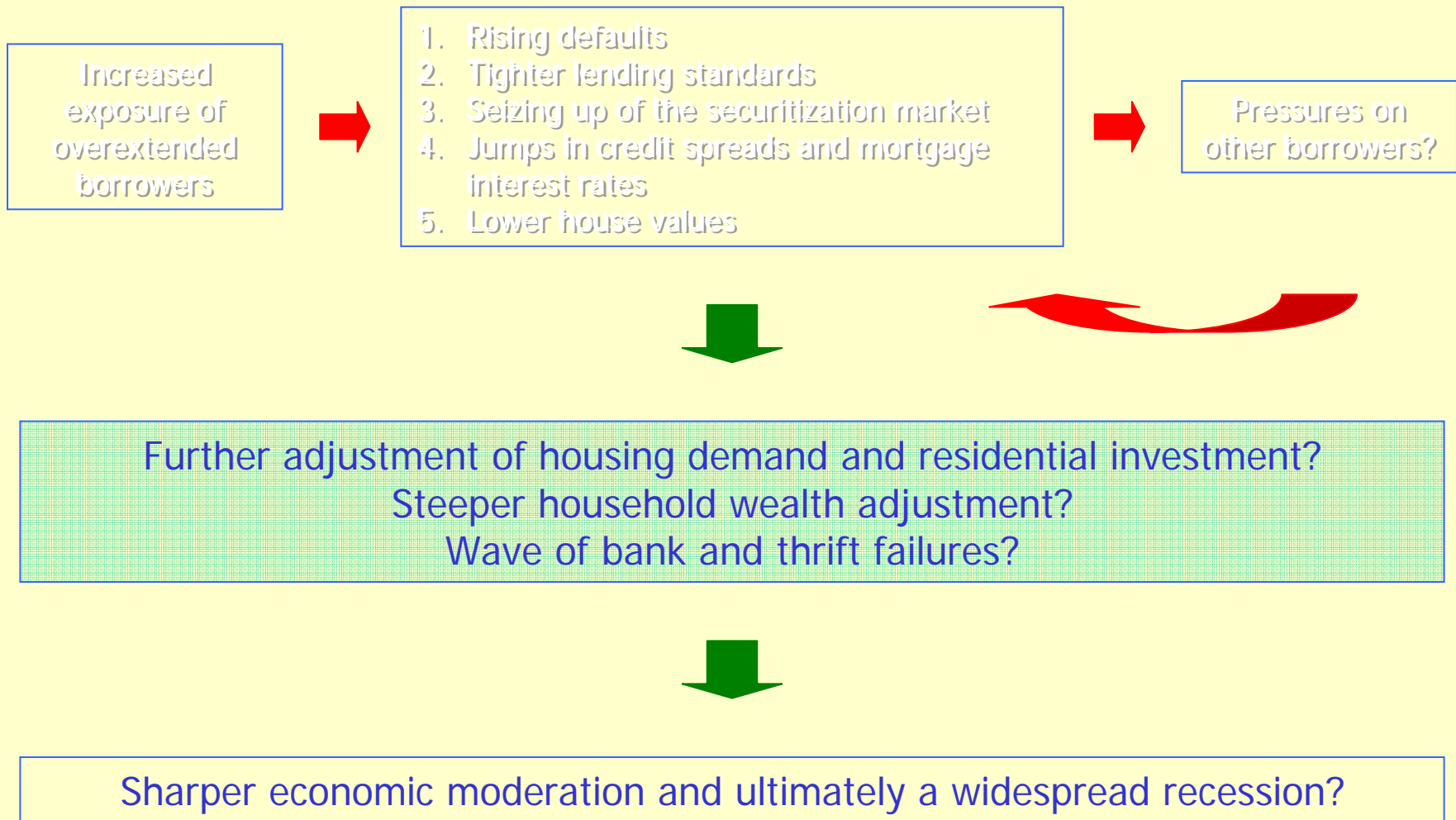
Total	\$1,448	
At risk	\$540	
Low risk	\$332	62%
High risk		
100CLTV	\$160	30%
90+Lim Doc	\$48	9%



	Total outstanding	High risk
\$trillion	9.5	0.34
Share	100%	3.6%

Estimate published by Bear Stearns

# Subprime market turmoil



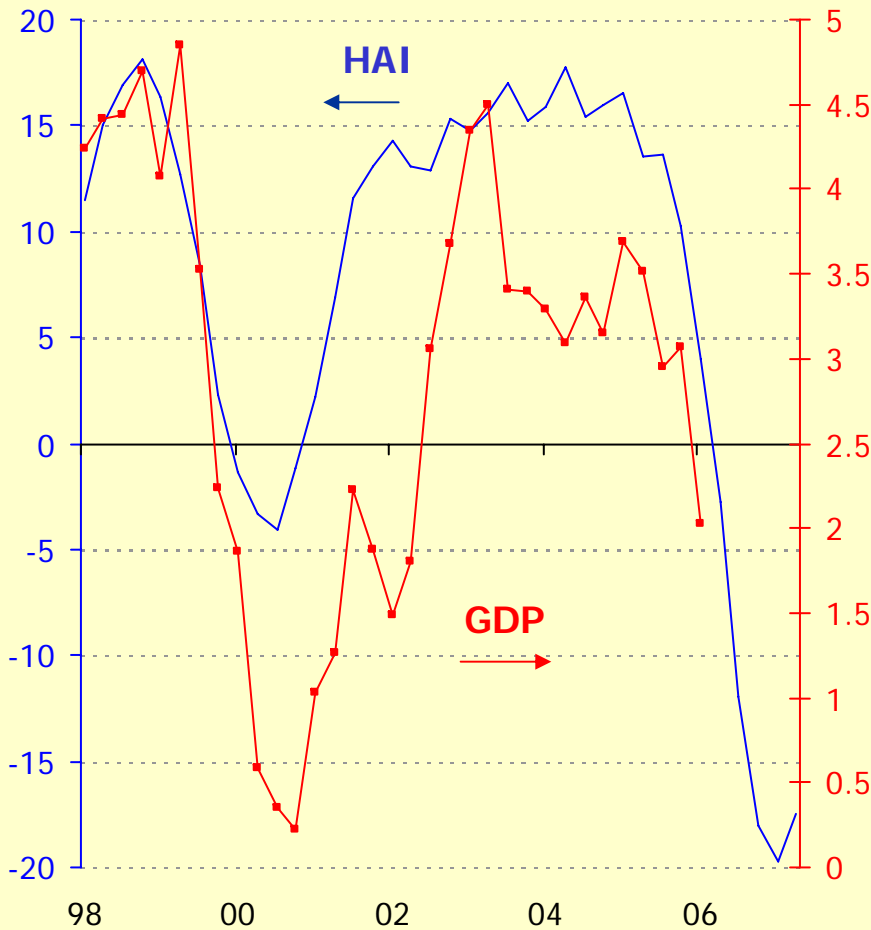


# Despite limited effects, further adjustments in the housing sector are likely to continue

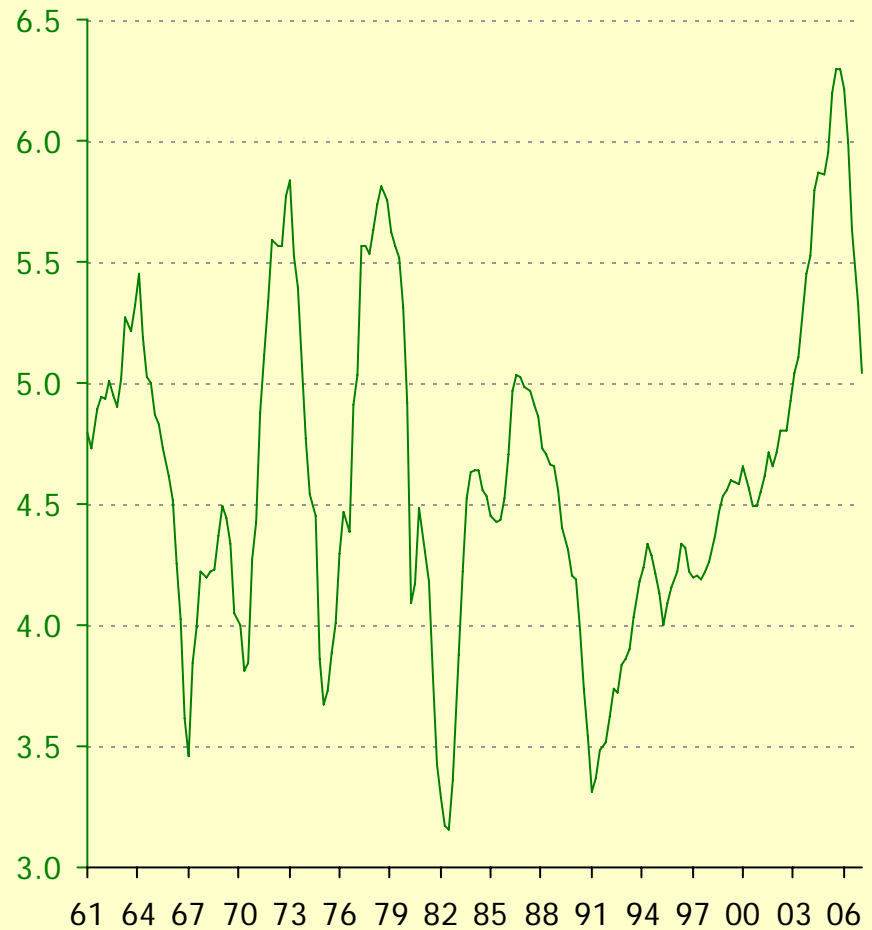


## BBVA USA Housing Activity Index and GDP

(Quarterly, YoY % change)



## Residential investment as % of GDP

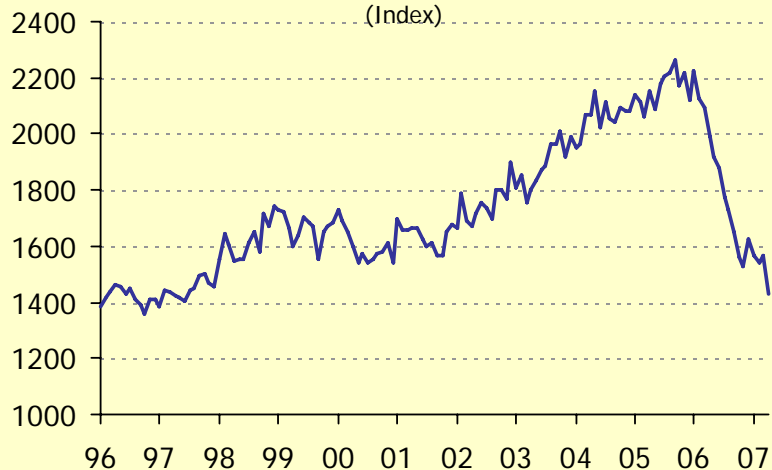


# Forward looking indicators confirm this perspective



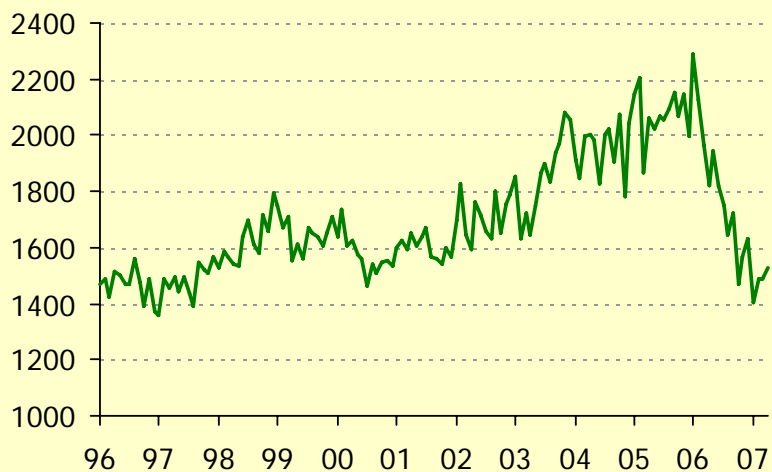
**Building permits**

(Index)



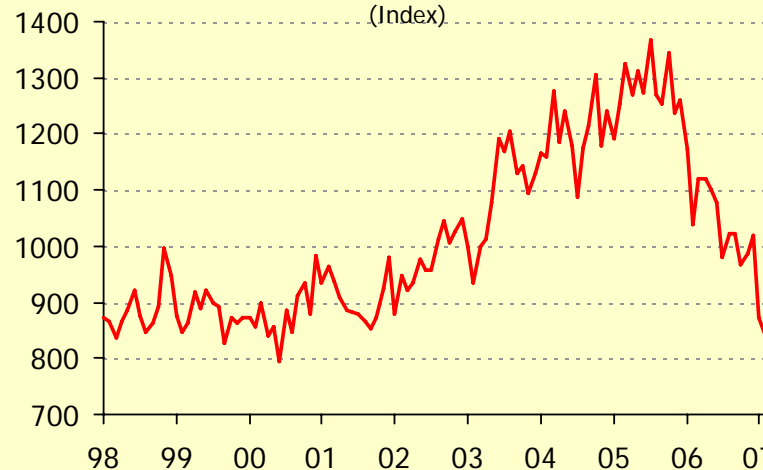
**Housing starts**

(dpe)



**New home sales**

(Index)



**Existing home sales**

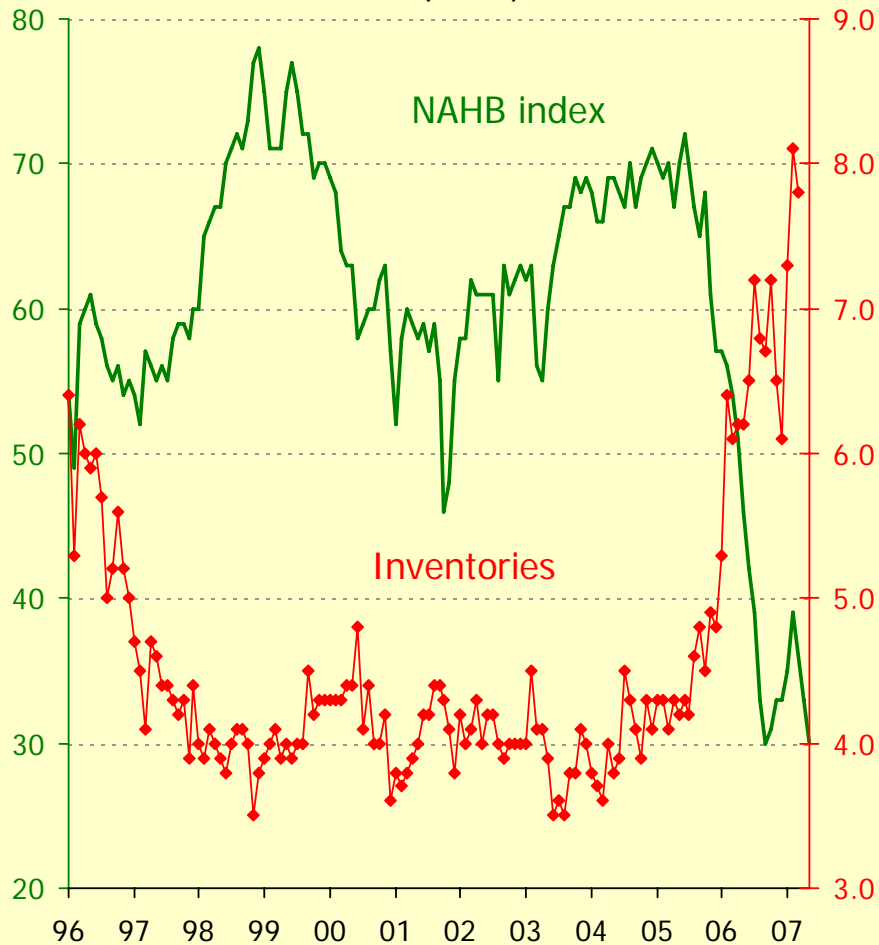
(dpe)



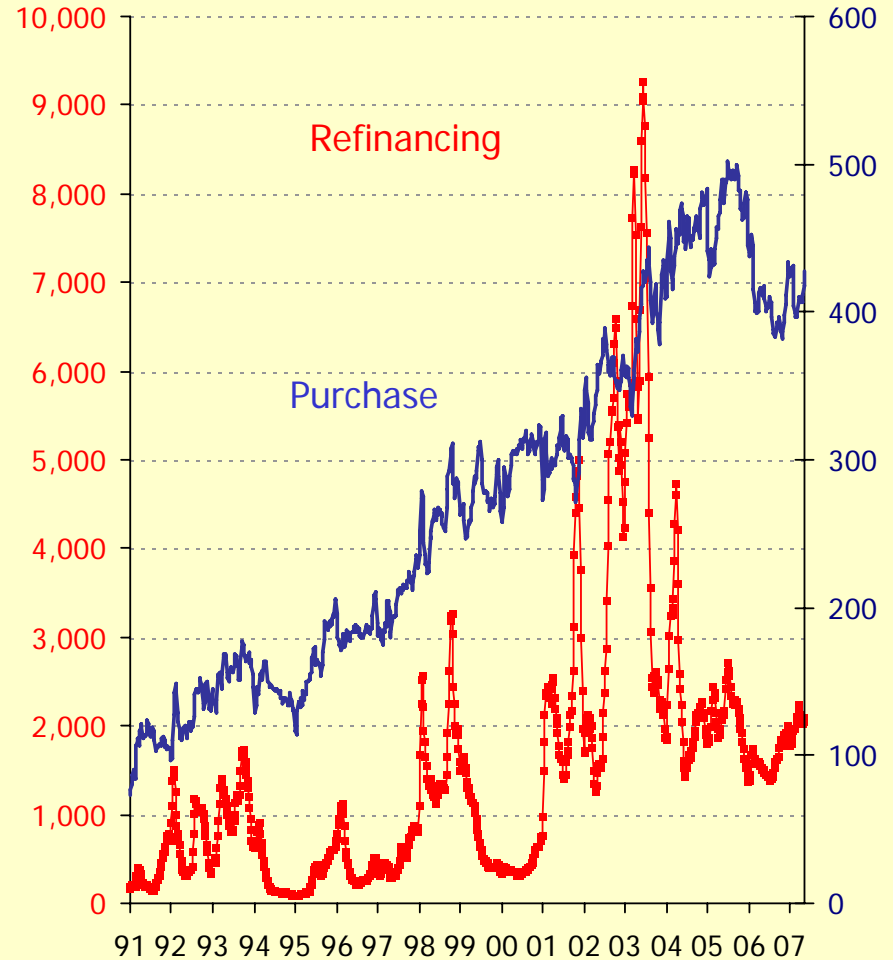
# Builders confidence remains low. However, mortgage applications have stopped declining



### Builders confidence & inventories (Index)



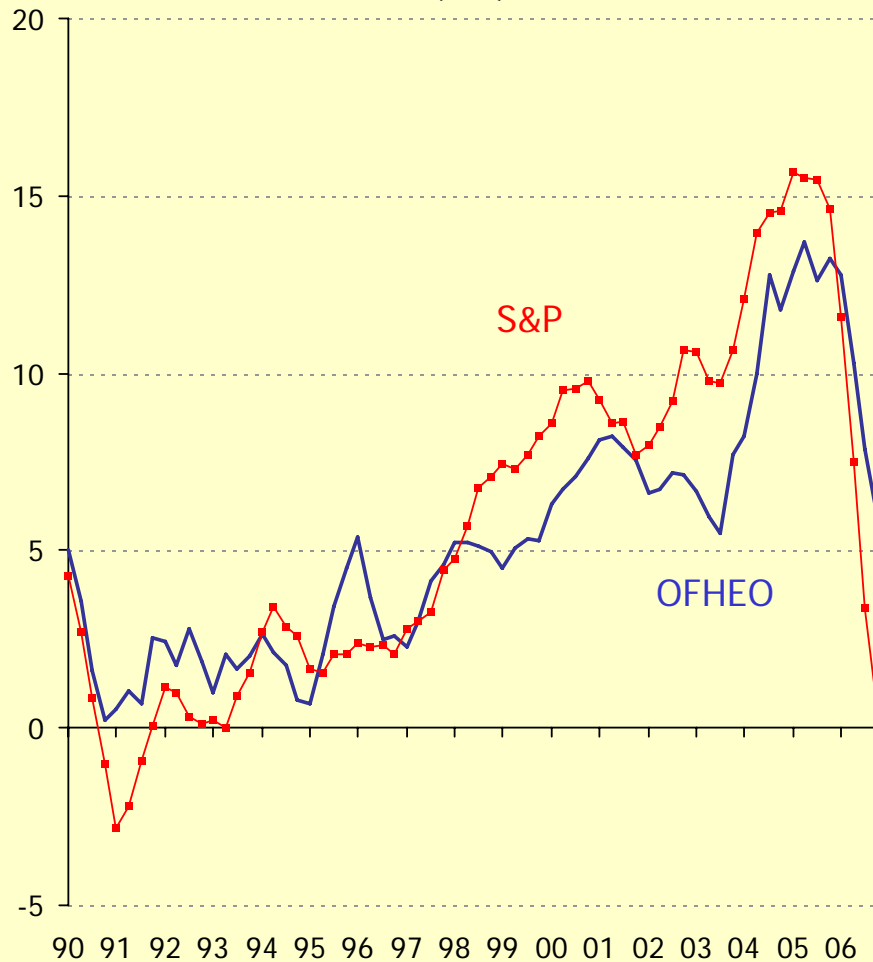
### Mortgage applications (YoY)



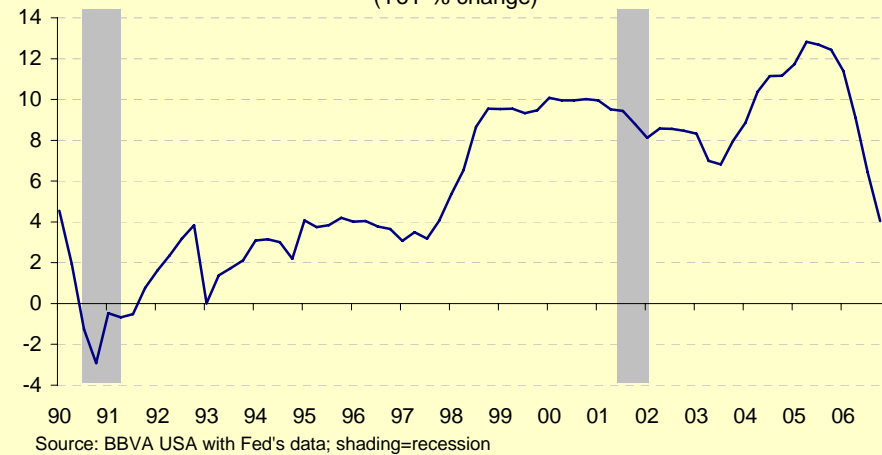
# The biggest risk continues to be lower house prices and its effect on household wealth and mortgage equity withdrawal



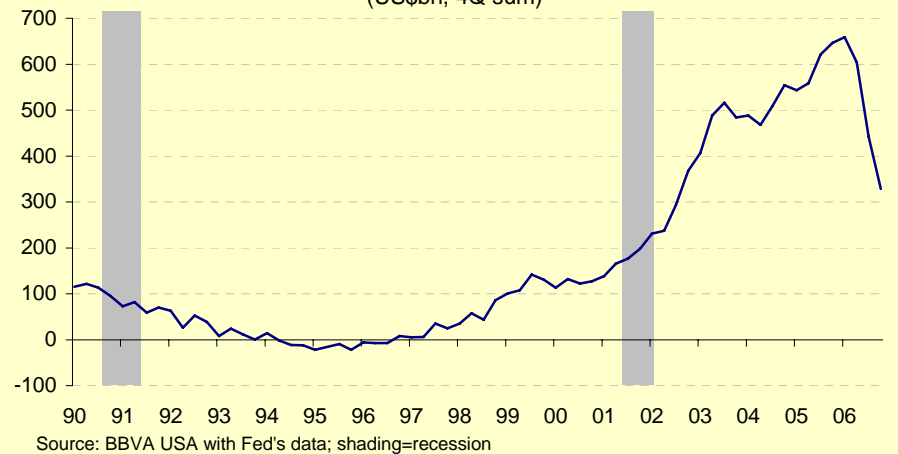
**Home price index (YoY)**



**Owners' Equity in Household Real Estate (YoY % change)**



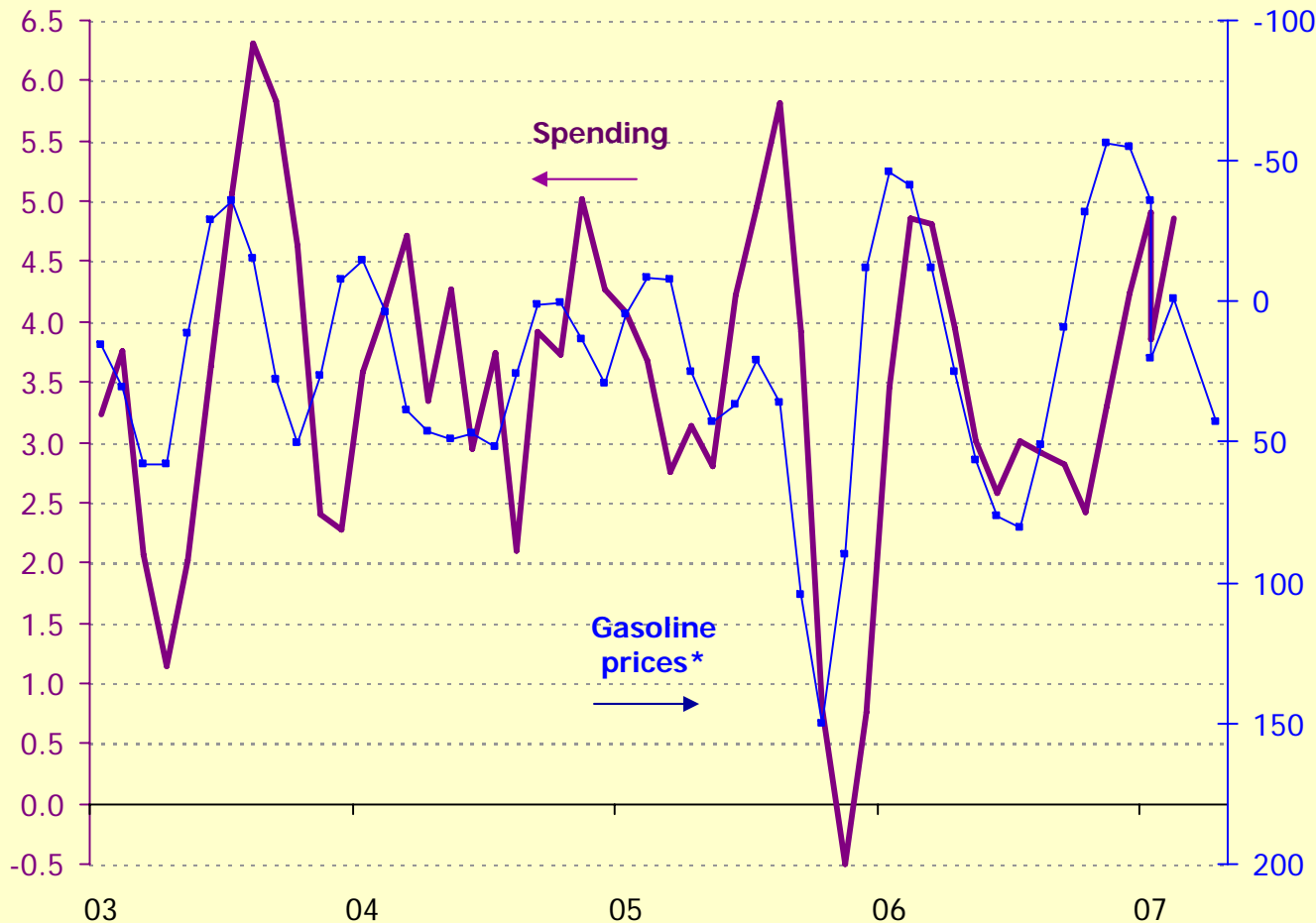
**Mortgage Equity Withdrawal (US\$bn, 4Q sum)**



# In addition to lower MEW, higher gasoline prices could dampen personal spending in coming months



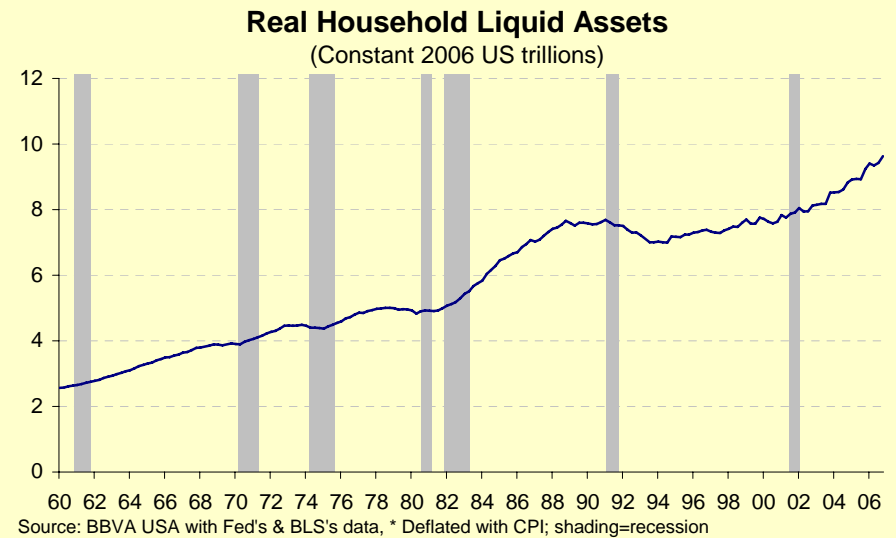
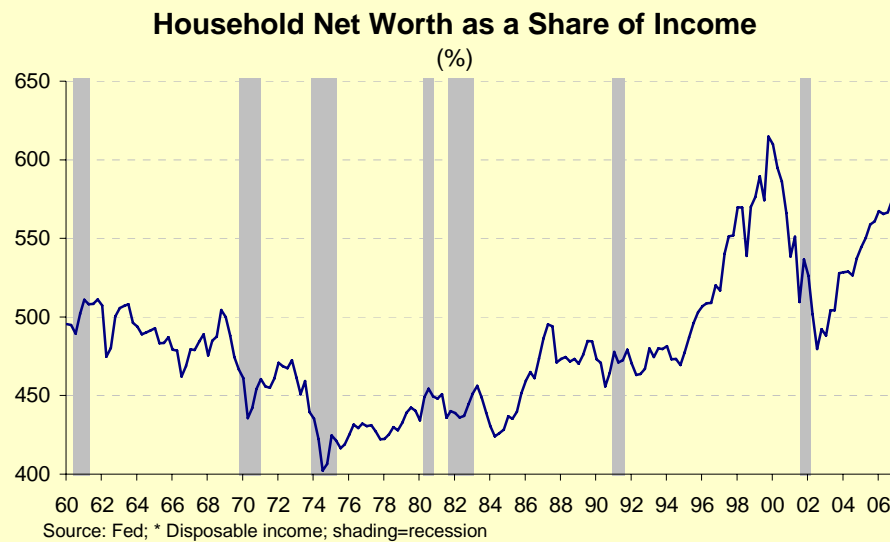
**Real Personal Consumption & CPI Gasoline prices**  
 (% change, saar, 3m/3m)



\* Inverted scale

**Gasoline prices have risen nearly 8% since April and could dampen real consumer spending growth over the next months**

# However, we maintain our base scenario given households' strong financial situation



## A. Greenspan

September 2005

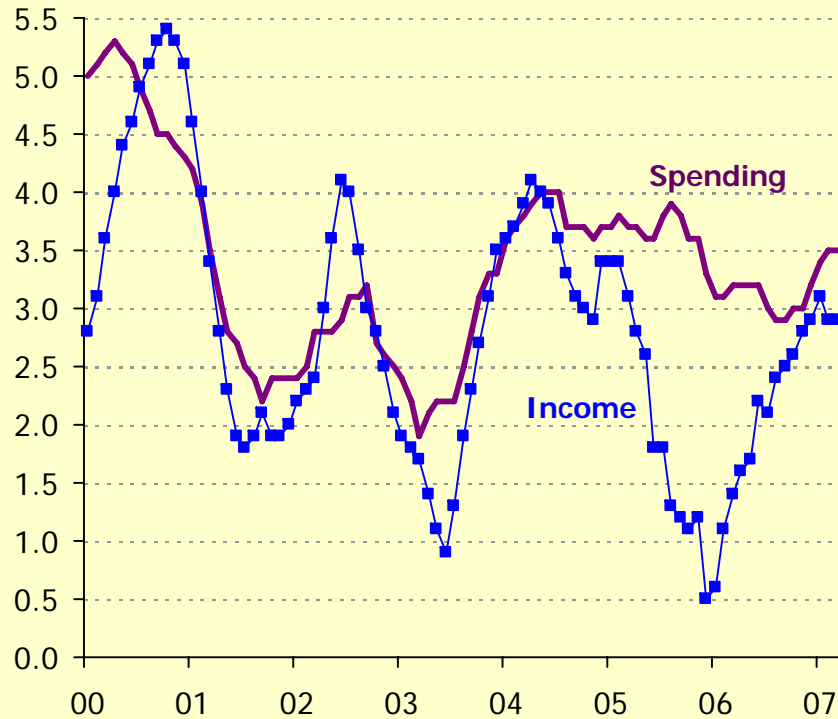
... it is encouraging to find that, despite the rapid growth of mortgage debt, only a small fraction of households across the country have loan-to-value ratios greater than 90 percent. Thus, **the vast majority of homeowners have a sizable equity cushion with which to absorb a potential decline in house prices.** In addition, the LTVs for recent homebuyers appear to be lower in those states that have experienced the most explosive run-up in house prices and that, conceivably, could be at risk for the largest price reversal.

... while strong personal income gains and a steady rate of job creation will continue supporting personal consumption



**Real Personal Income & Spending**

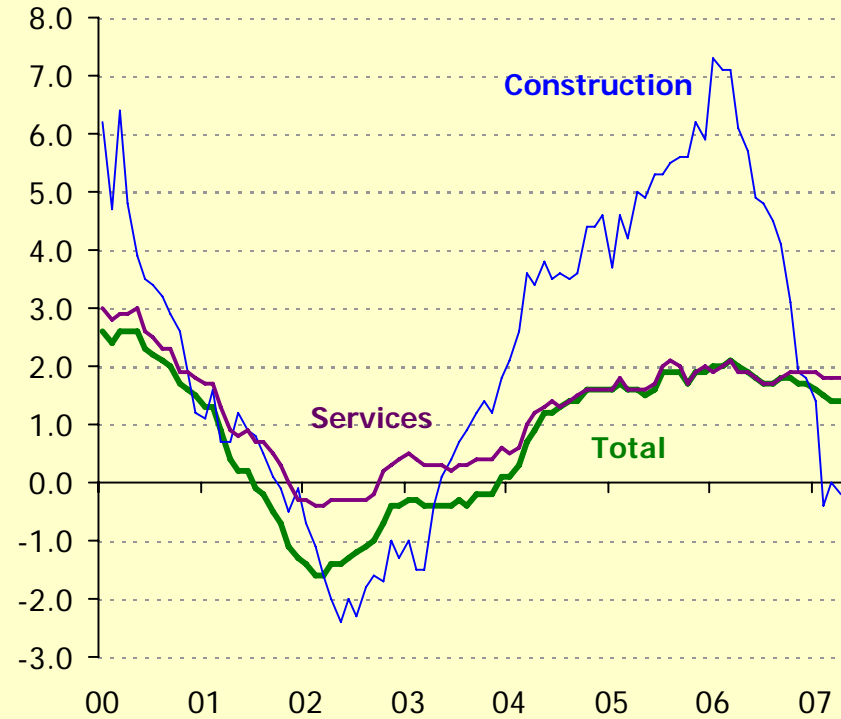
(YoY % change, 6mma)



**Income growth has bounced back strongly since early 2006 and will likely to grow steadily as labor market tightness is benefiting wage growth**

**Nonfarm Payroll**

(YoY % change)



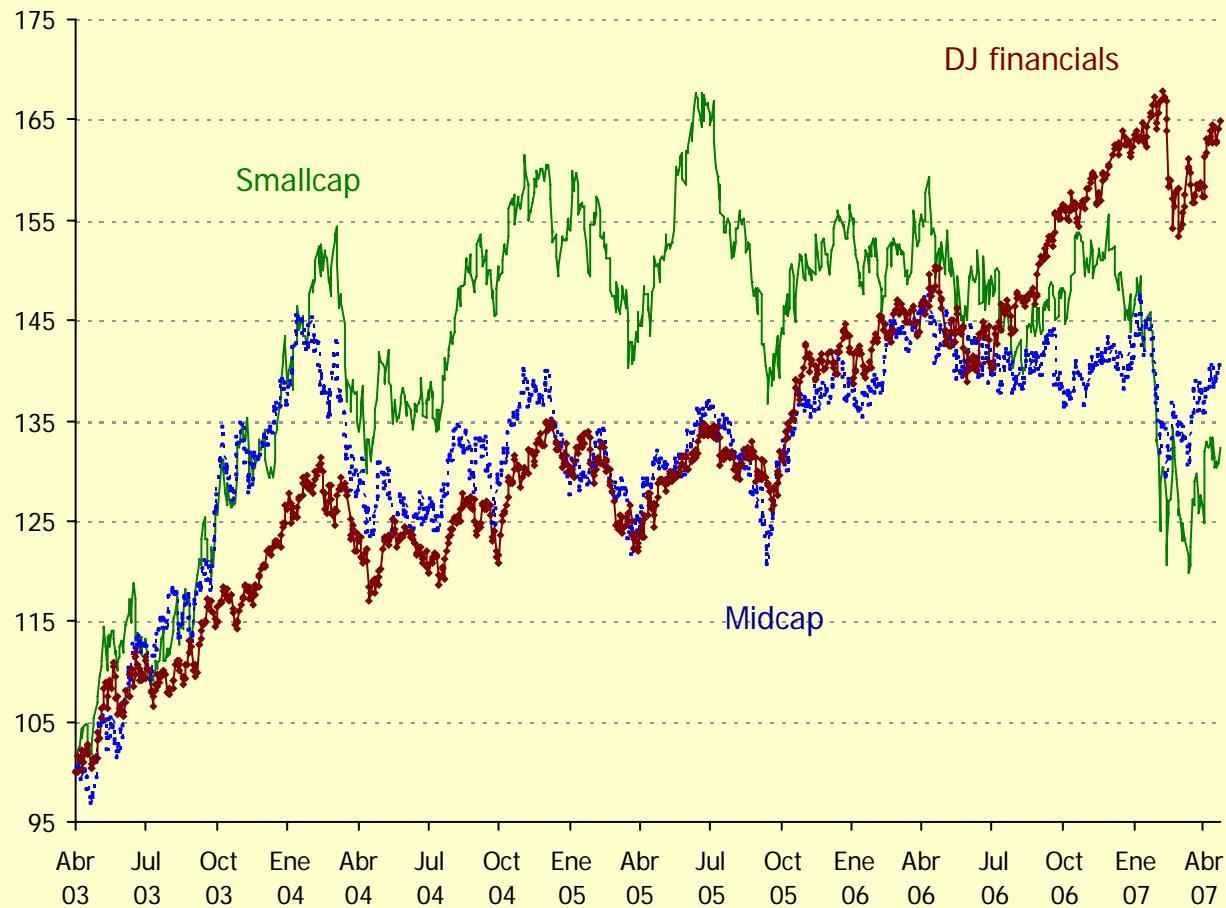
**The housing adjustment has resulted in a sharp moderation in job creation in construction; yet, employment growth in the services sector remains solid**

# A wave of bank failures is highly unlikely



## Stock market

(Indexes of mortgage and thrift companies & Dow Jones Financials 4/30/03=100)



% change to 3/13/07 from 2/20/07

Small cap	-17.3
Mid cap	-10.1
Financials	-8.6

% change to 5/21/07 from 4/13/07

Small cap	7.9
Mid cap	8.3
Financials	7.4

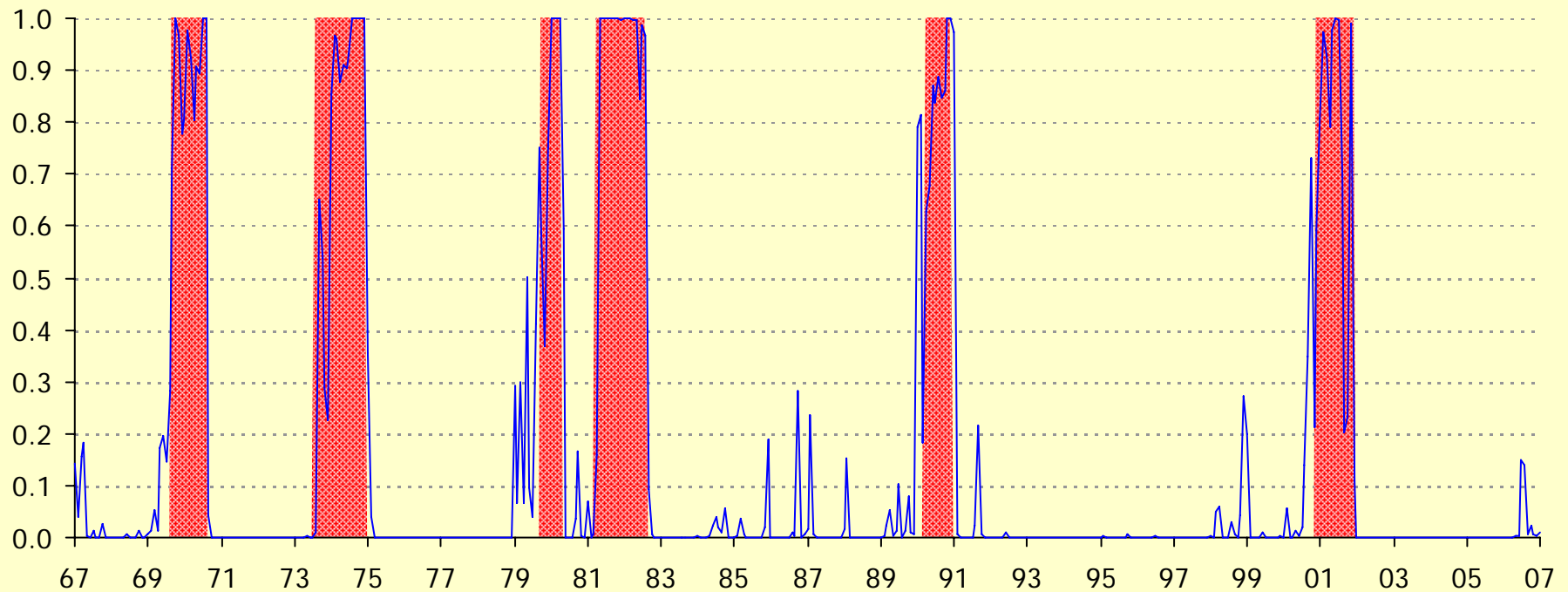


Therefore, the risk of recession is extremely low



### BBVA USA recession-probit model

(% probability; shaded area= recession)



Based on our recession-probit model, the probability of an economic recession in the coming quarters continues to decline and currently stands at just 1%

# Summing up on the subprime market



- Our current base scenario assumes that a large proportion of the already seen housing adjustment reflects subprime weakness
- An alternative scenario considers that further but limited adjustments will follow (50%)
  - The effects will be contained: smaller players and losses will be absorbed
  - Reduction of aggressive products and practices
  - Delinquencies and foreclosures will continue to rise
  - Originations of Alt-A and subprime will decline sharply
  - The drag on the economy could be around 0.1% to 0.2% on GDP growth
- Other alternative scenarios carry lower probabilities
  - Probability of 5% to severe credit tightening and contagion to other borrowers
  - Probability of 1% to spillover effects on consumption and employment and thus economic recession

**BBVA** USA

150  
years

# Subprime Mortgage Market Turmoil

**Executive Committee  
BBVA USA**

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