Comments on "Stochastic House Appreciation and Optimal Mortgage Lending"

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*The views expressed herein are mine alone and do not necessarily reflect the views of the Board of Governors, its members, or its staff.

Discussion

- Very nice, careful paper!

- Characterize the optimal mortgage contract
  - Risky borrowers
  - Costly foreclosure
  - Stochastic house price appreciation
    - Housing boom: home prices rise
    - Housing slump: home prices fall

Discussion

- Optimal mortgage contract
  - Resembles a home equity line of credit (HELOC)
  - Borrower pays the lender (no minimum payment)
  - Borrower can sell or default
  - Specifies conditions for foreclosure
  - Includes a mortgage modification plan (insurance)
  - Contract mortgage rate
    - Teasers for least creditworthy borrowers!
    - Insurance for more creditworthy borrowers

Discussion

- Housing boom
  - Home prices rise
  - Contract mortgage rate rise
  - Credit line increases
  - Lenders find it profitable to extend credit to less creditworthy borrowers
  - Borrowers can sell

Discussion

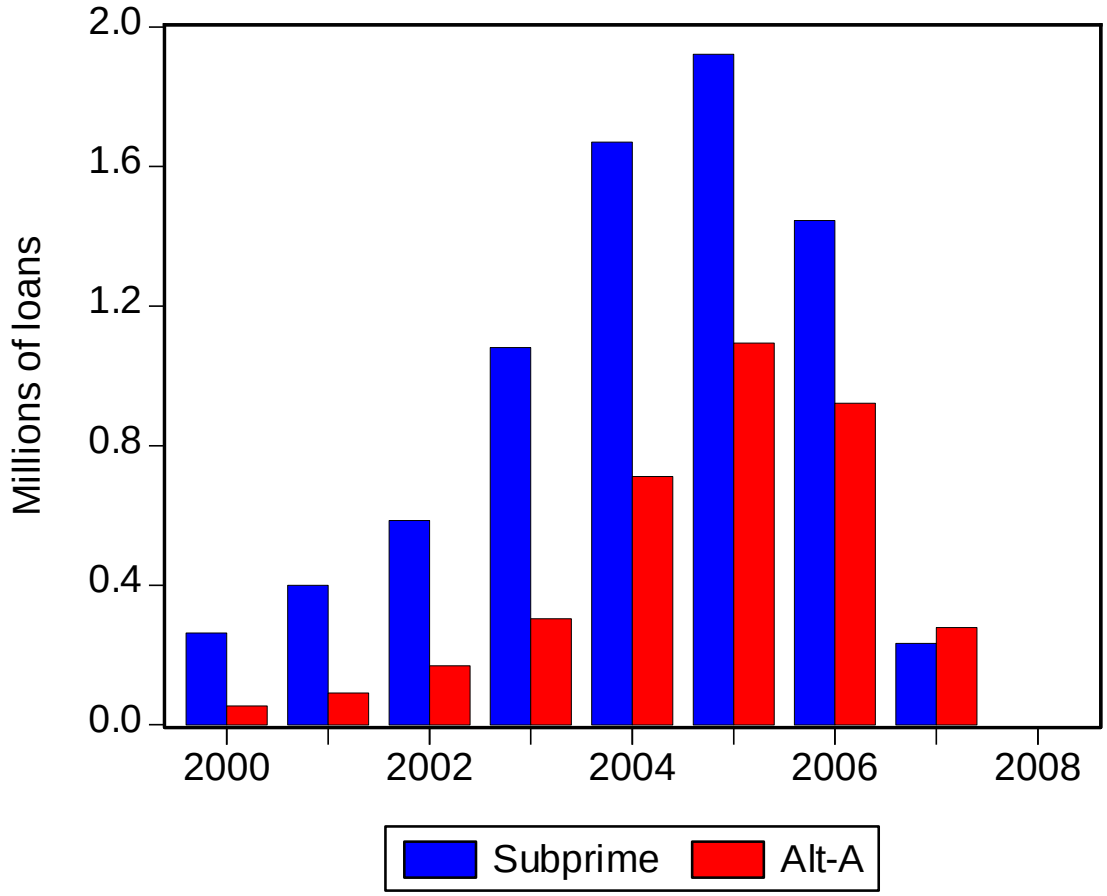
- Housing slump
  - Home prices fall
  - Contract mortgage rate fixed
  - Credit line fixed

- Default
  - Borrowers substantially over new, lower credit limit default
  - Borrowers a little above get help through balance and interest rate reductions

Comments

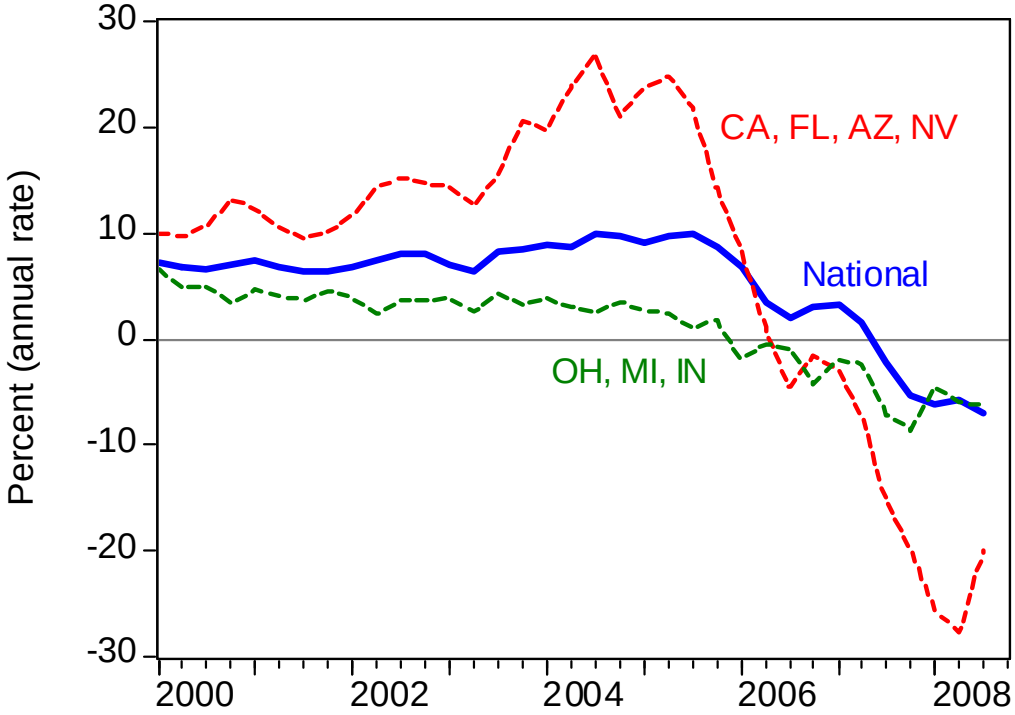
- Feedback of lending on house prices
- Importance of prepayment (refinance) option, especially around rate reset
- Empirically, subprime or Alt-A?
- Bubble or no bubble?

Subprime and Alt-A Lending
2000-2008



Source: First American LoanPerformance data on Subprime and Alt-A pools, Mayer, Pence, and Sherlund 2008.

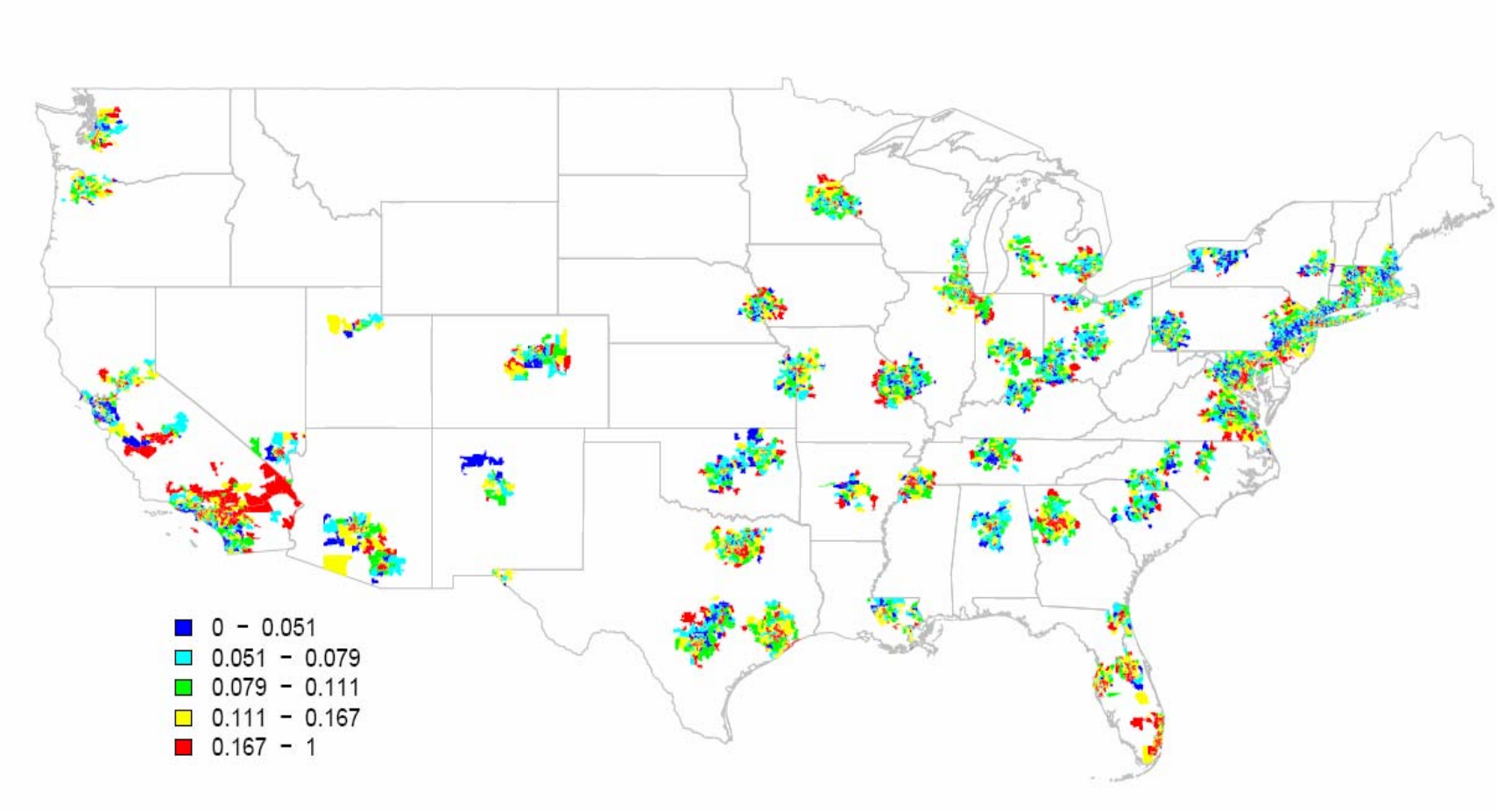
House Price Appreciation
2000-2008



Source: FHFA House Price Index.

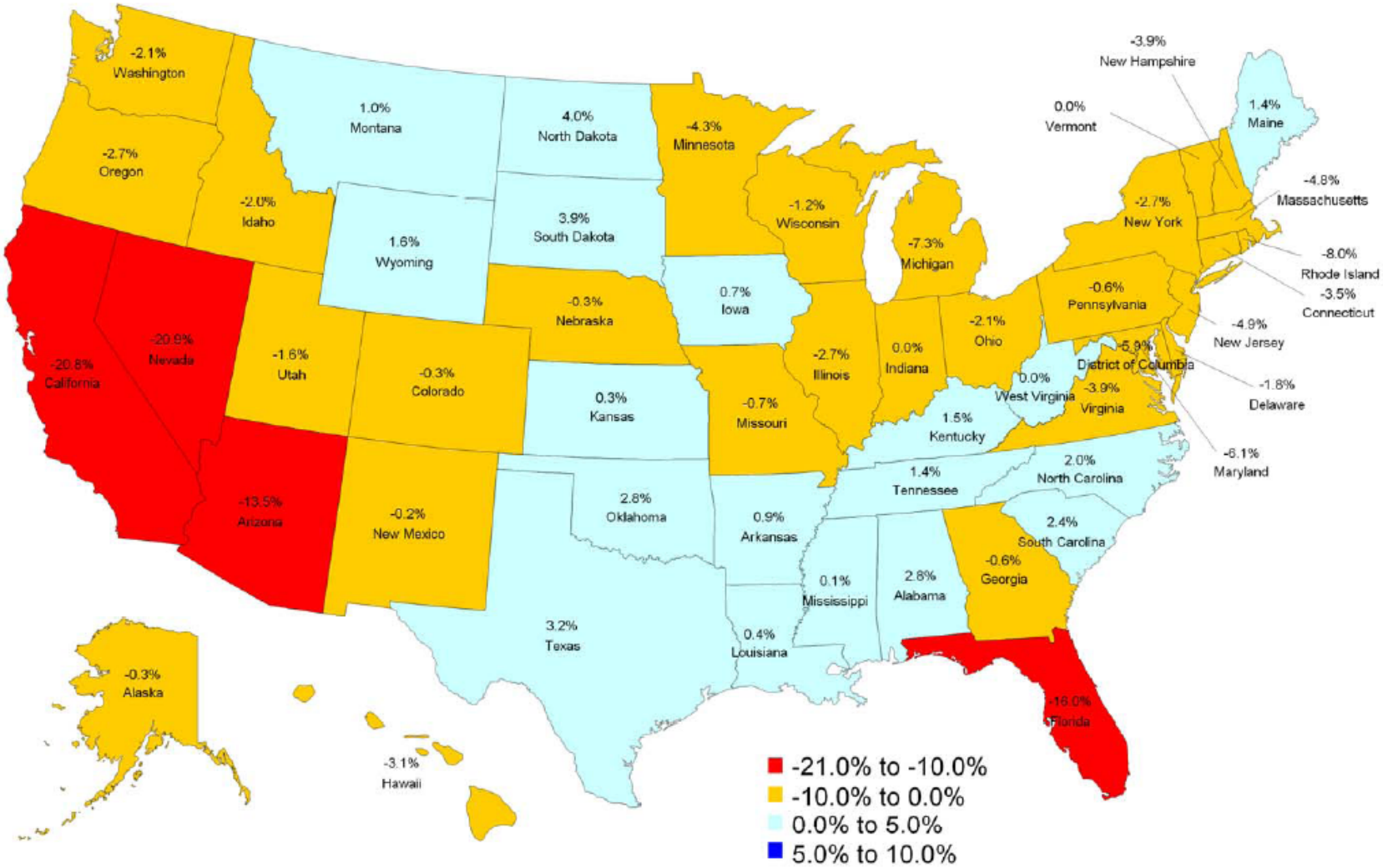
2/28 & 3/27 Mortgages as Percentage of Housing Units for Top-108 MSAs

2005



Source: LoanPerformance data on Subprime and Alt-A pools, Mayer and Pence 2007.

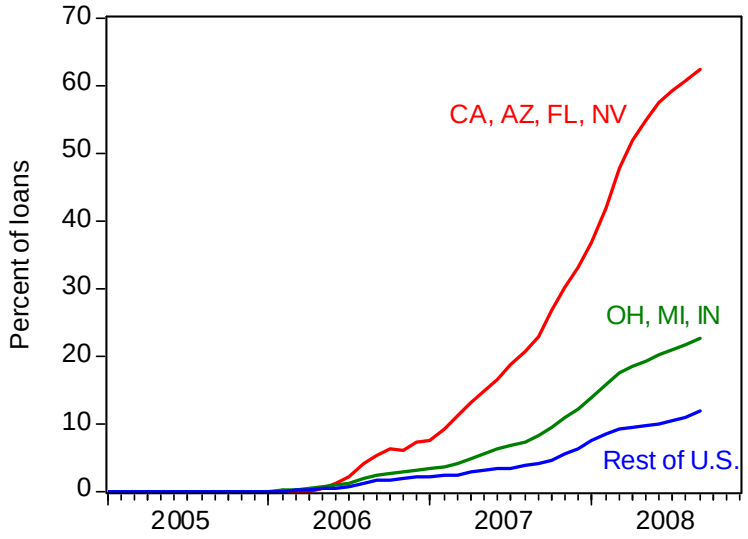
Four-Quarter Price Change by State
2007:Q3-2008:Q3



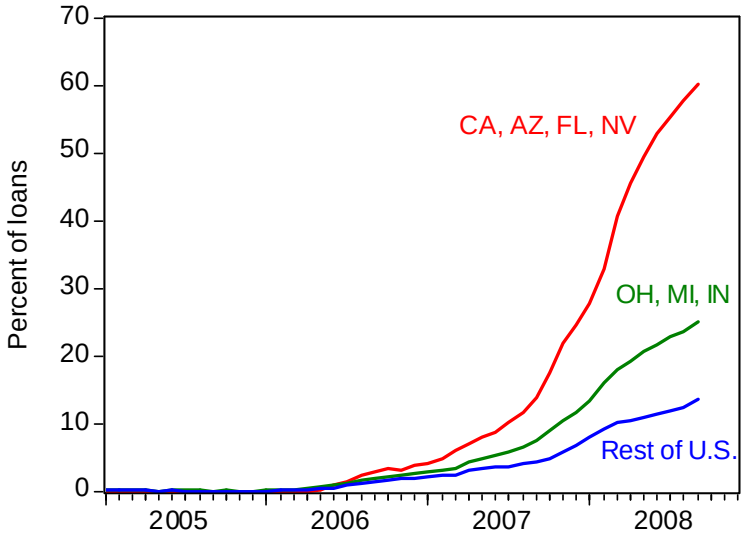
Source: FHFA House Price Index.

Percent of Mortgages with Negative Equity by State 2005-2008

Subprime

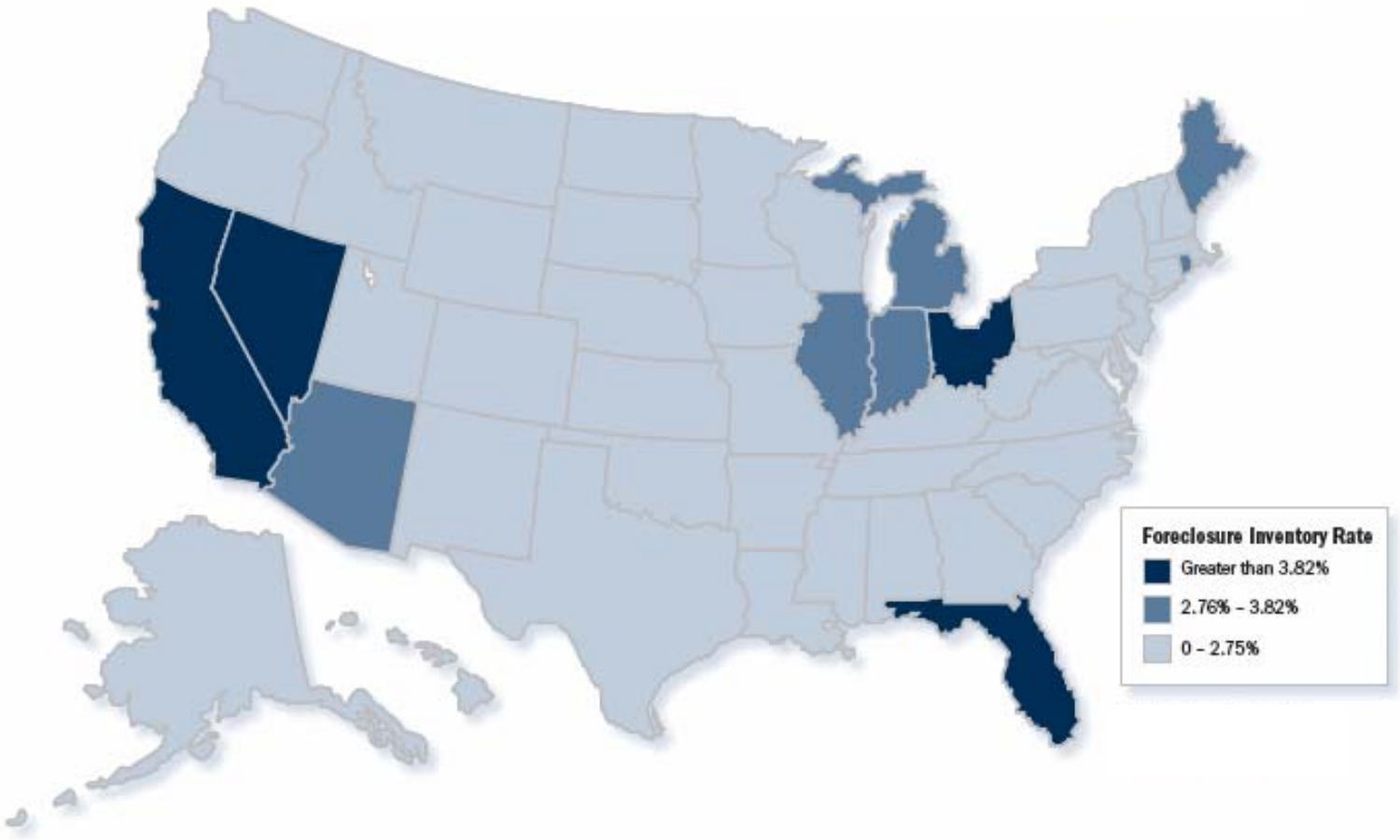


Alt-A



Source: Calculations from First American LoanPerformance, FHFA and S&P/Case-Shiller house price data.

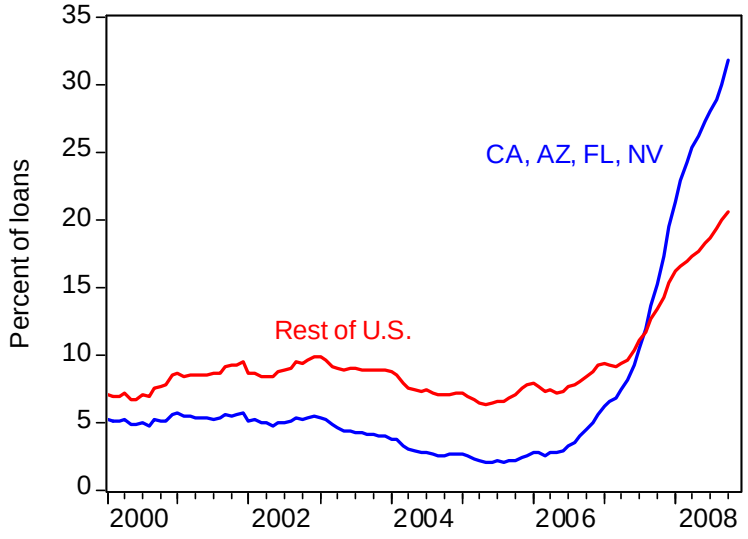
Foreclosure Inventory Rate by State
2008:Q2



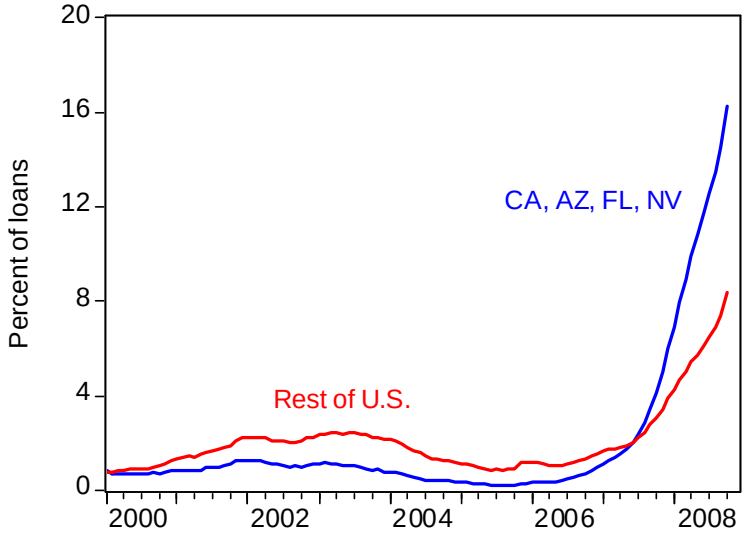
Source: MBA National Delinquency Survey.

Serious Delinquency Rates by State
2000-2008

Subprime

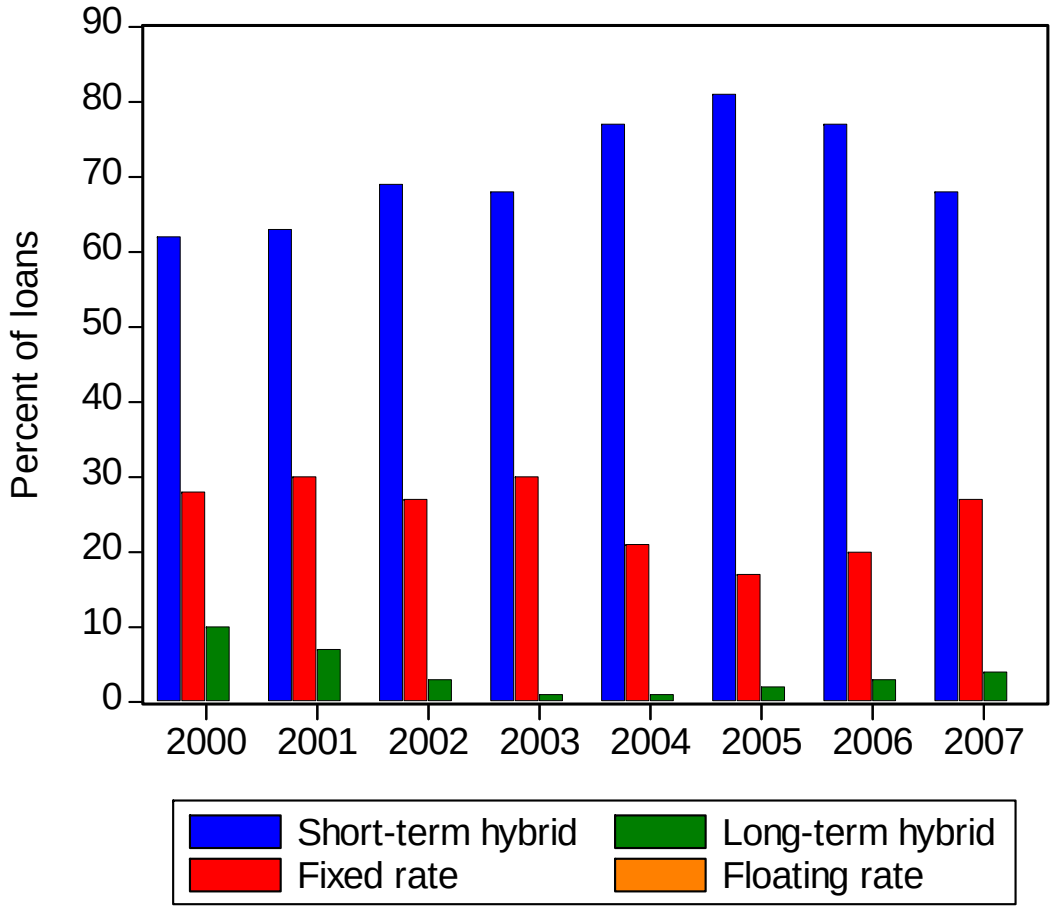


Alt-A



Source: First American LoanPerformance.

Subprime Lending
2000-2007

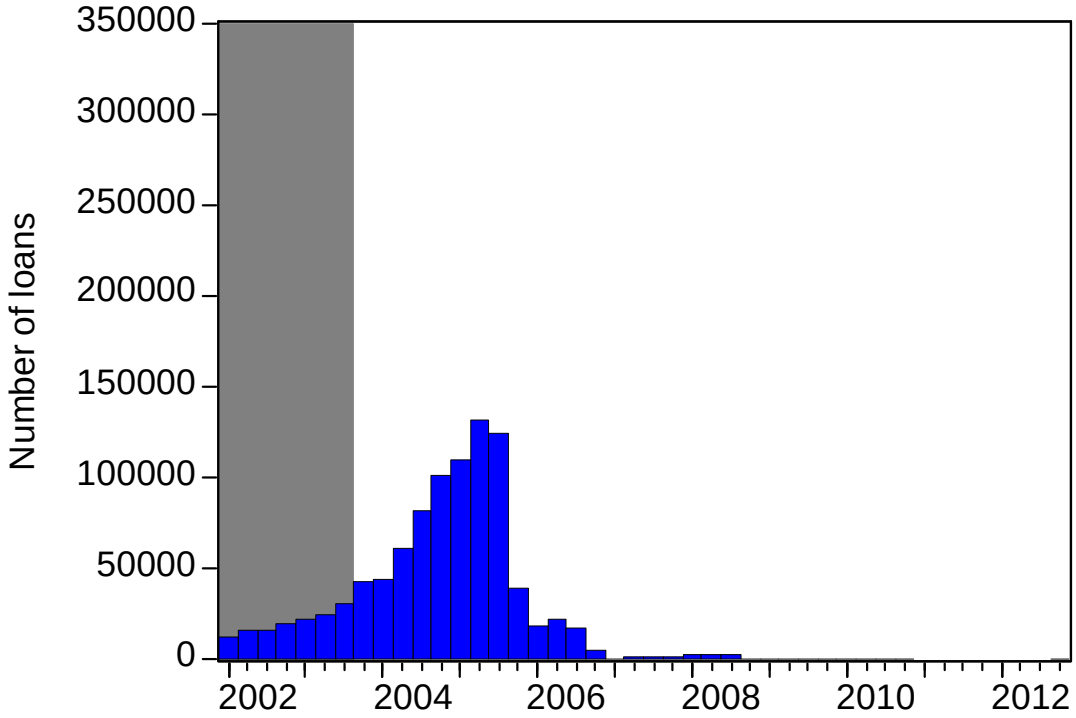


Source: First American LoanPerformance data on Subprime and Alt-A pools, Mayer, Pence, and Sherlund 2008.

Subprime 2/28s and Prepayment

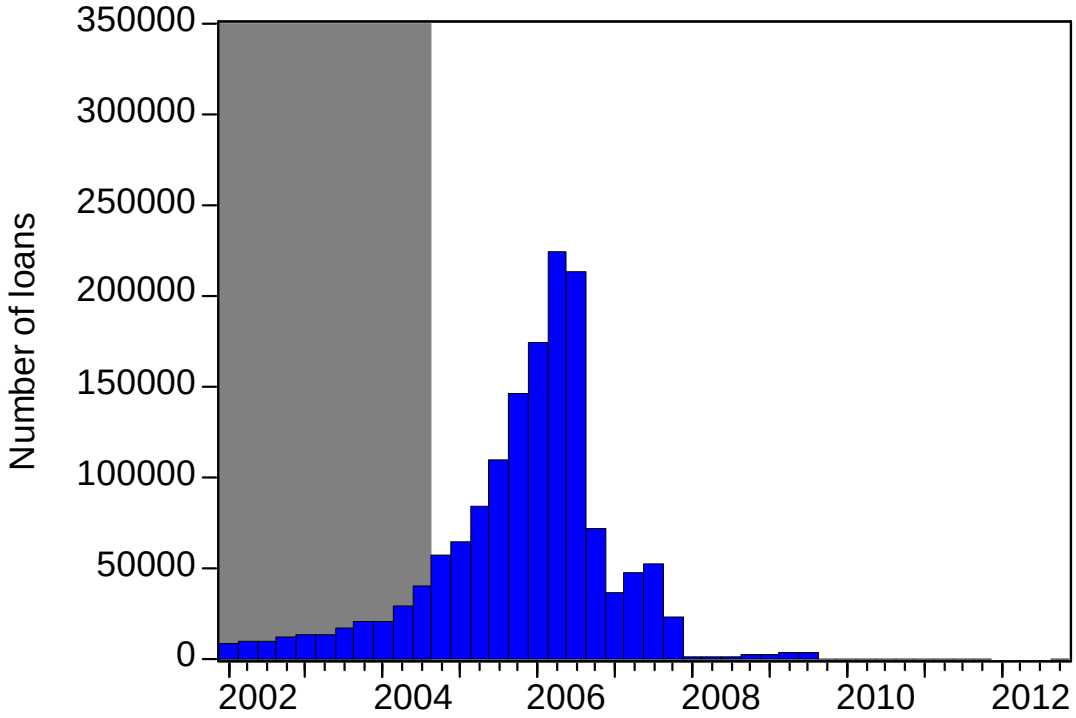
- Housing affordability
  - Relatively low initial payments
  - Little or no downpayment
  - Move forward timing of homeownership
- Credit repair mortgage
  - Low initial payments for two years; refinance
- Take a bet on housing
  - Gain housing equity; refinance

Subprime Mortgage Rate Resets
September 2003



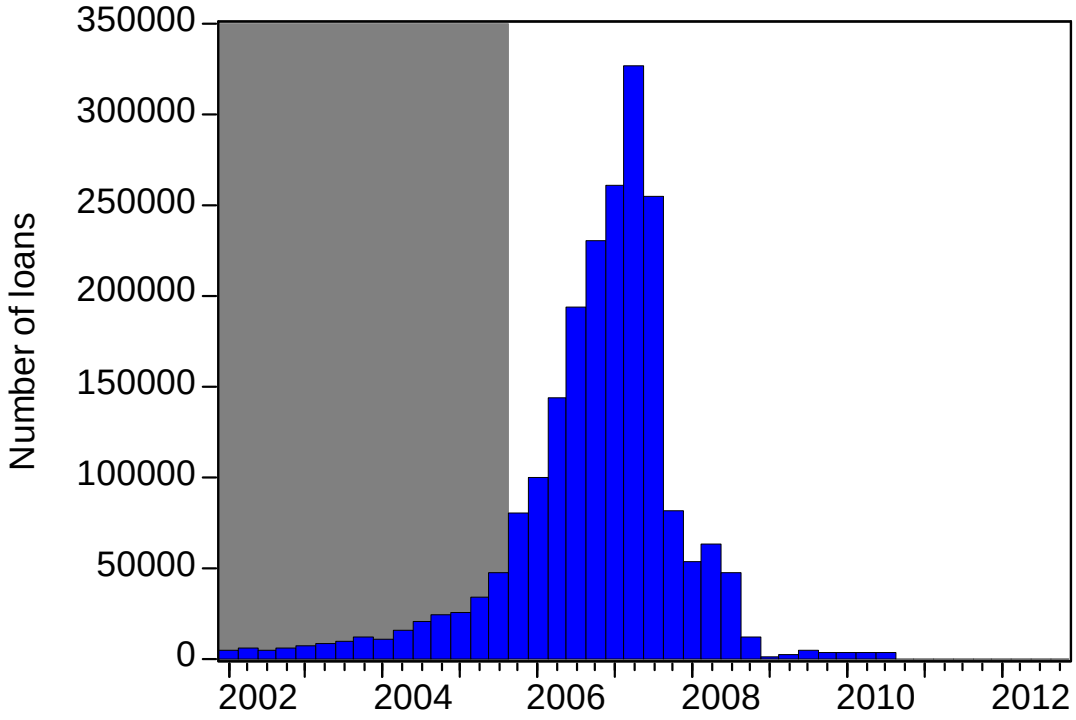
Source: First American LoanPerformance.

Subprime Mortgage Rate Resets
September 2004



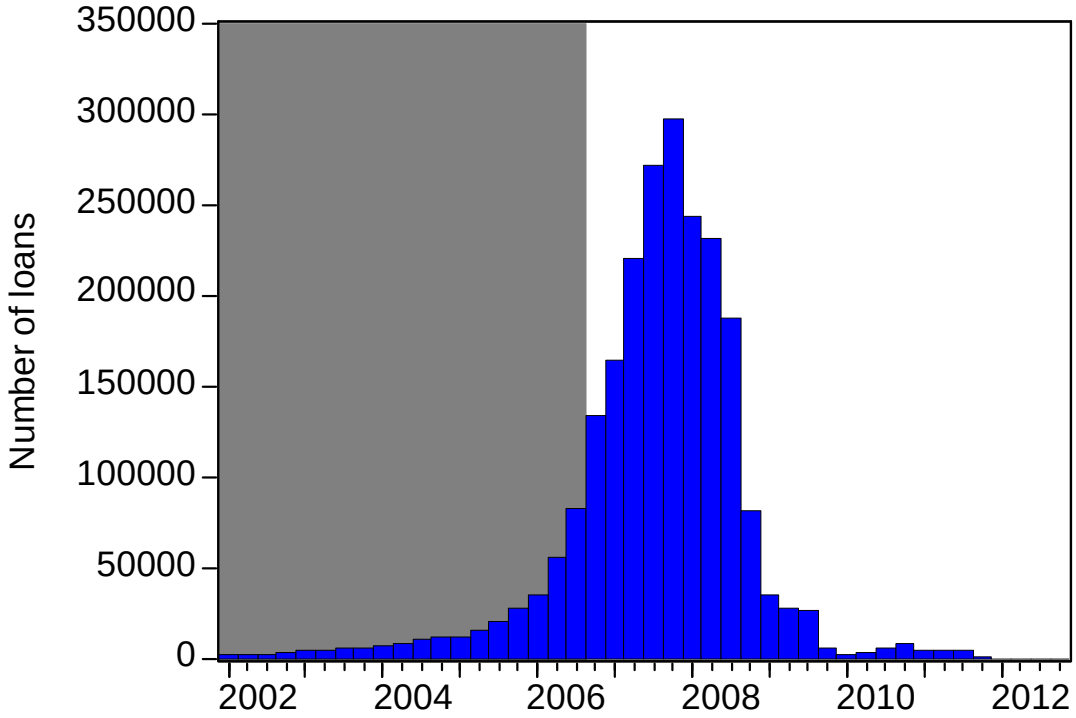
Source: First American LoanPerformance.

Subprime Mortgage Rate Resets
September 2005



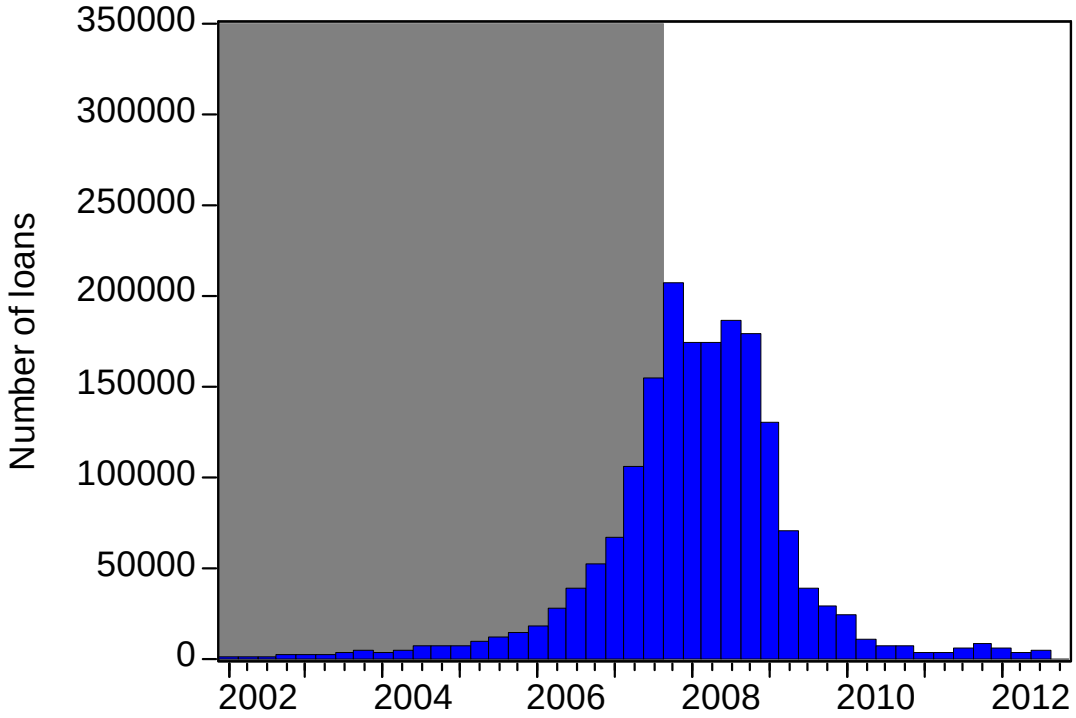
Source: First American LoanPerformance.

Subprime Mortgage Rate Resets
September 2006



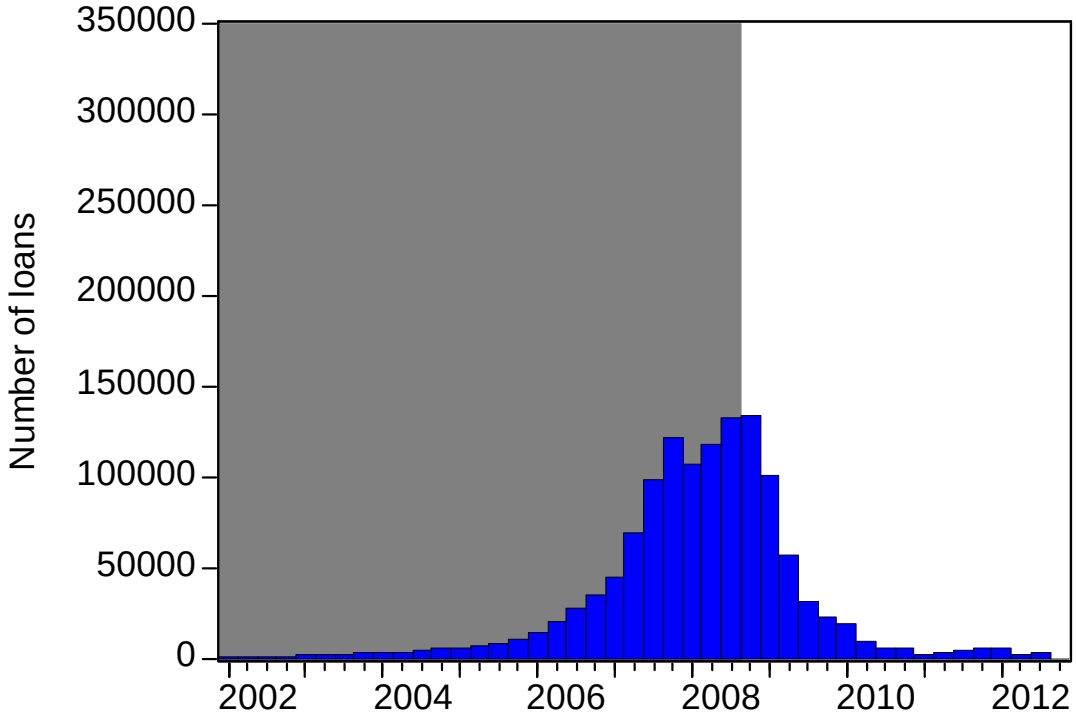
Source: First American LoanPerformance.

Subprime Mortgage Rate Resets
September 2007



Source: First American LoanPerformance.

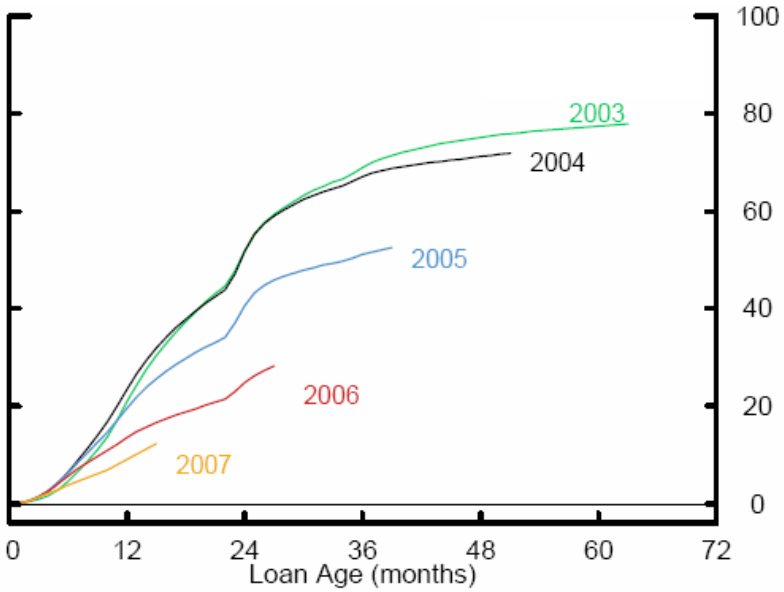
Subprime Mortgage Rate Resets
September 2008



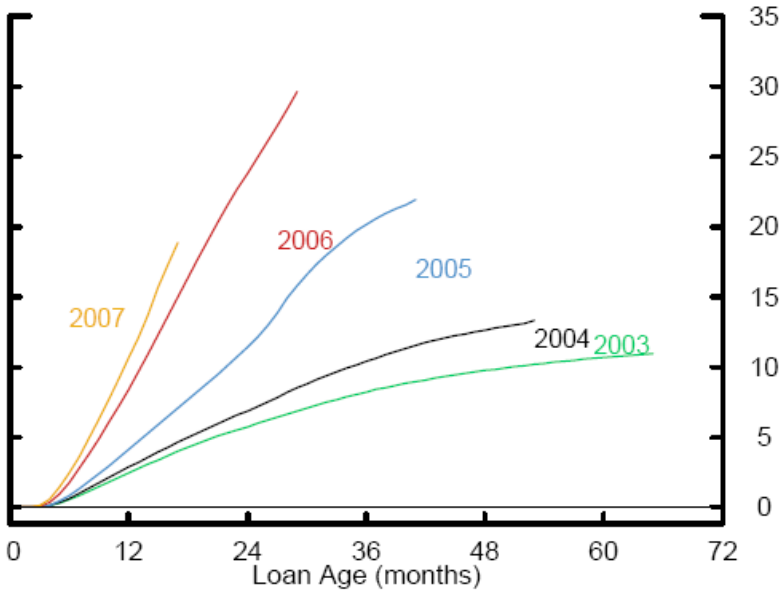
Source: First American LoanPerformance.

Cumulative Prepayment and Default Curves
August 2008

Cumulative Prepayments



Cumulative Defaults



Source: Calculations from First American LoanPerformance.

Negative Amortization: Subprime or Alt-A?

	Collateral type	2003	2004	2005	2006	2007 (Jan–June)	All
% purchase loans	Subprime	30	36	40	42	31	37
	Alt-A	46	54	52	49	37	50
% piggyback loans	Subprime	7	15	24	28	15	19
	Alt-A	12	27	35	42	33	33
Median FICO credit score	Subprime	615	615	618	616	613	616
	Alt-A	710	706	708	701	707	706
% originated on investor property	Subprime	8	8	7	7	8	7
	Alt-A	27	23	22	21	22	22
% with low or no documentation	Subprime	32	34	36	38	34	35
	Alt-A	63	62	69	80	81	71
% with amortization > 30 years	Subprime	0	0	4	23	26	7
	Alt-A	0	0	0	1	1	0
% requiring interest payments only (in early years of mortgage)	Subprime	2	11	21	13	11	13
	Alt-A	16	37	40	44	52	39
% allowing negative amortization	Subprime	0	0	0	0	0	0
	Alt-A	2	16	24	26	30	21

Source: Calculations from First American LoanPerformance, Mayer, Pence, and Sherlund 2008.

Conclusions

- Optimal mortgage contract resembles subprime lending in some respects, not others
  - Low initial interest rates
  - Adjustable interest rates after some time
  - Negative amortization

- Might actually resemble Alt-A lending more
  - Not as risky in the LTV sense
  - More risky in the documentation sense
    - Low- and no-doc loans

Caveats

- Optimal mortgage contract for lender and borrower may not be optimal at the aggregate level
- No refinancing!
  - But perhaps borrowers mimicked negative amortization features via cash-out refinancing
- Rational borrowers and lenders – No bubble
- House prices exogenous

Policy Implications

- Bailing out the least creditworthy borrowers not incentive compatible
  - Encourages risk taking during housing boom
- Helping borrowers who were in good standing before the slump makes sense
  - Lower mortgage balances; principal writedowns
  - Lower contract mortgage rates