
Comments on “Understanding the Subprime Mortgage Crisis”

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Discussion

- Summarize results and provide commentary
 - Evidence on correlated risks
 - Theory: why did this market develop?
 - Evidence on geographic concentration of subprime lending
 - Economic incidence: prices and new construction
 - Policy issues
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Very nice paper with careful analysis!

- Examine cohorts of loans in subprime pools
 - Delinquency rates increasing rapidly for ARMs, but also growing for FRMs
 - 2006/2007 vintages are worse for all loan types. WHY?
 - Logit model of 1 mm loans from 2001-2006
 - Calculate mean residual (actual-predicted) for CLTV category and year
 - Residual on CLTV is much bigger for $CLTV > 80\%$
 - Residual grows over time, especially for $CLTV's > 80\%$
 - Spread between subprime and prime mortgages has grown as loan quality/underwriting criteria deteriorated
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Comments

- **Changes in rate spreads over time are interesting and new—riskier loans did get at least some higher interest rates**
 - Difference between teaser rate & fully indexed rate
 - Subprime (and Alt-A) pools are heterogeneous
 - Why run regressions on a common pool of loans?
 - Sample is based on when loans are originated
 - Loan risks may be correlated
 - Why run separate regressions for ARM vs. FRM in spreads, but not delinquencies?
 - Need to think more about why loan terms vary
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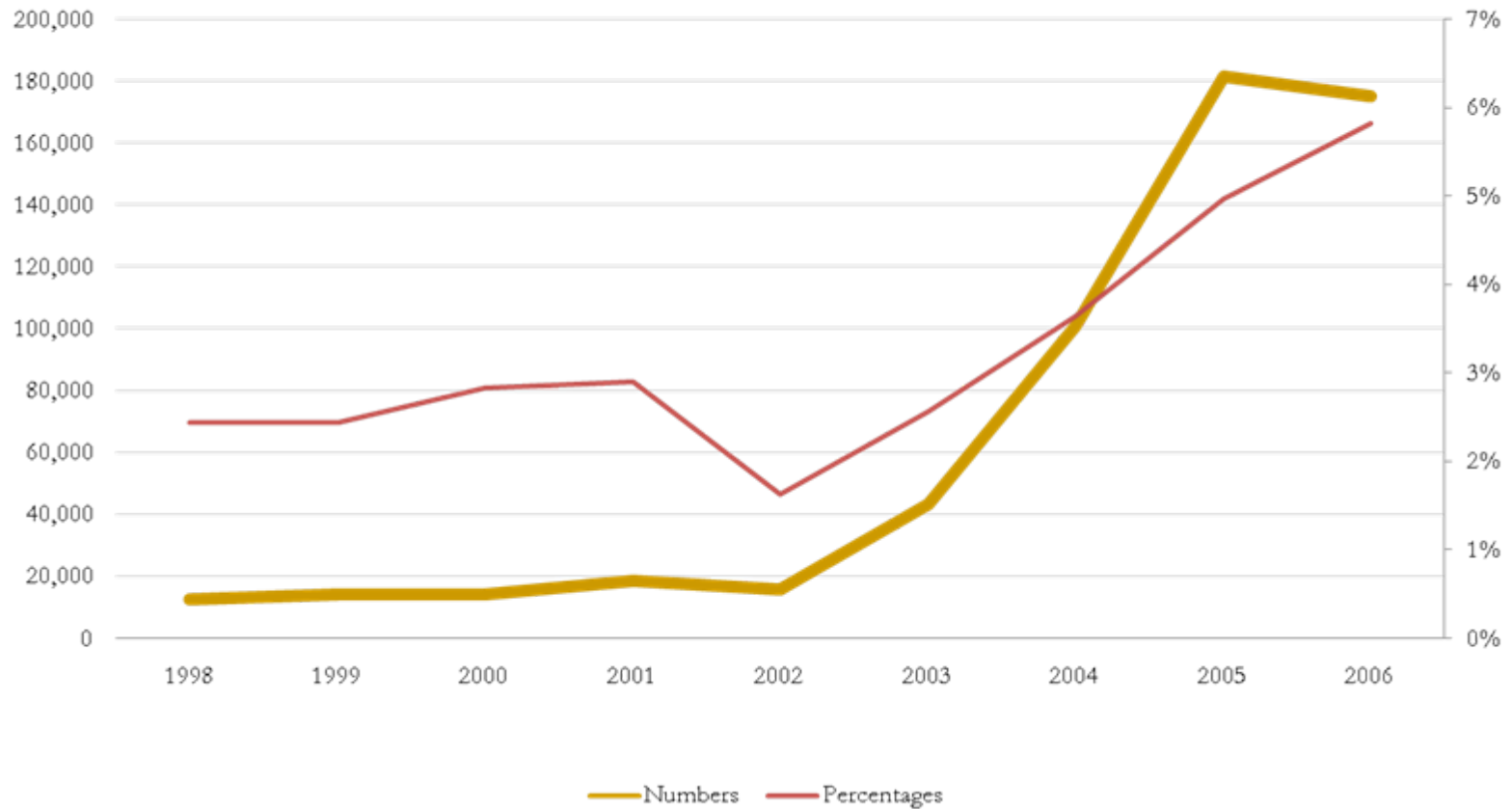
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“Risk Layering”

Alt-A and Subprime pools

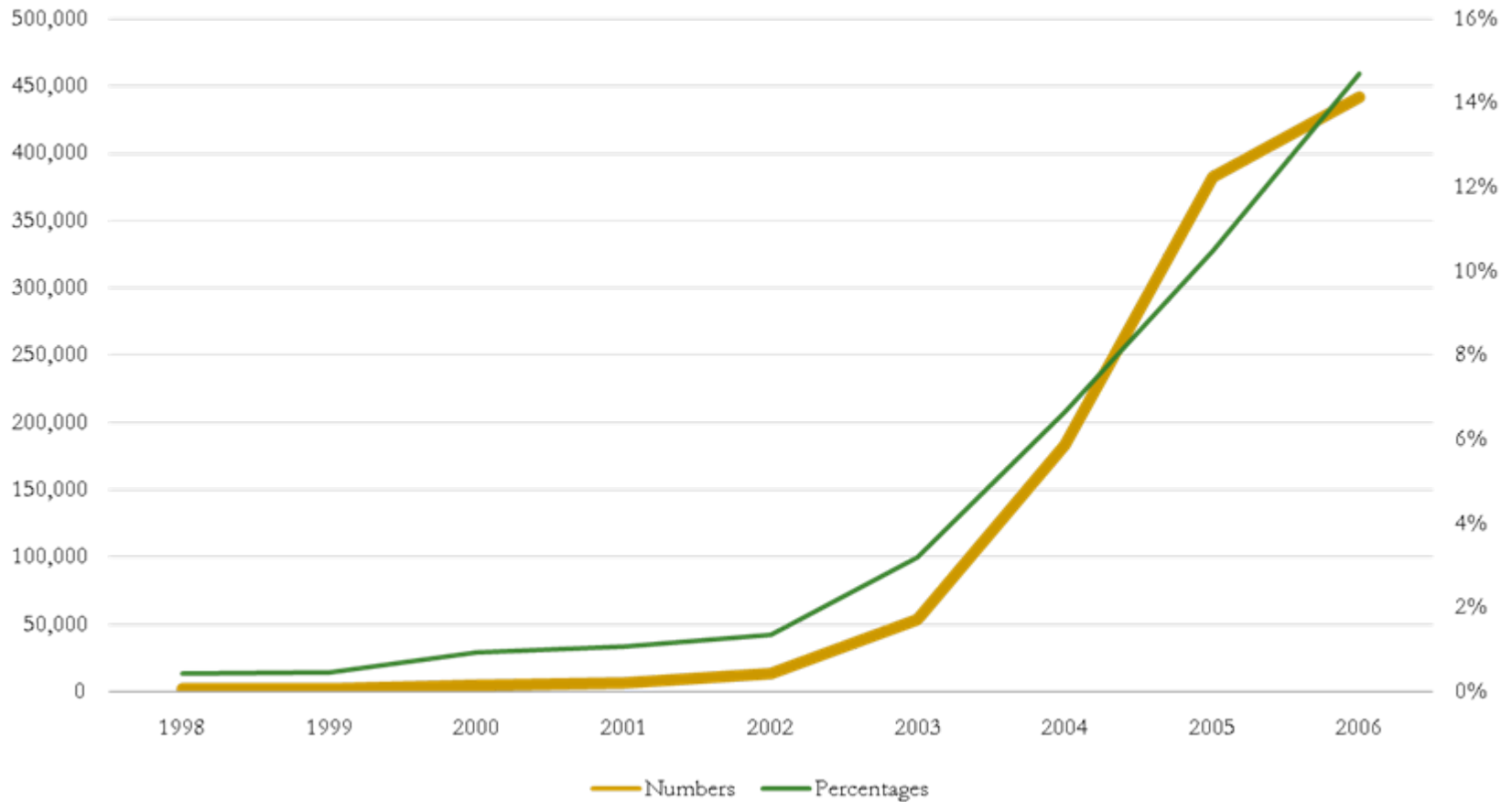
Mortgages with FICO < 620, CLTV >95%



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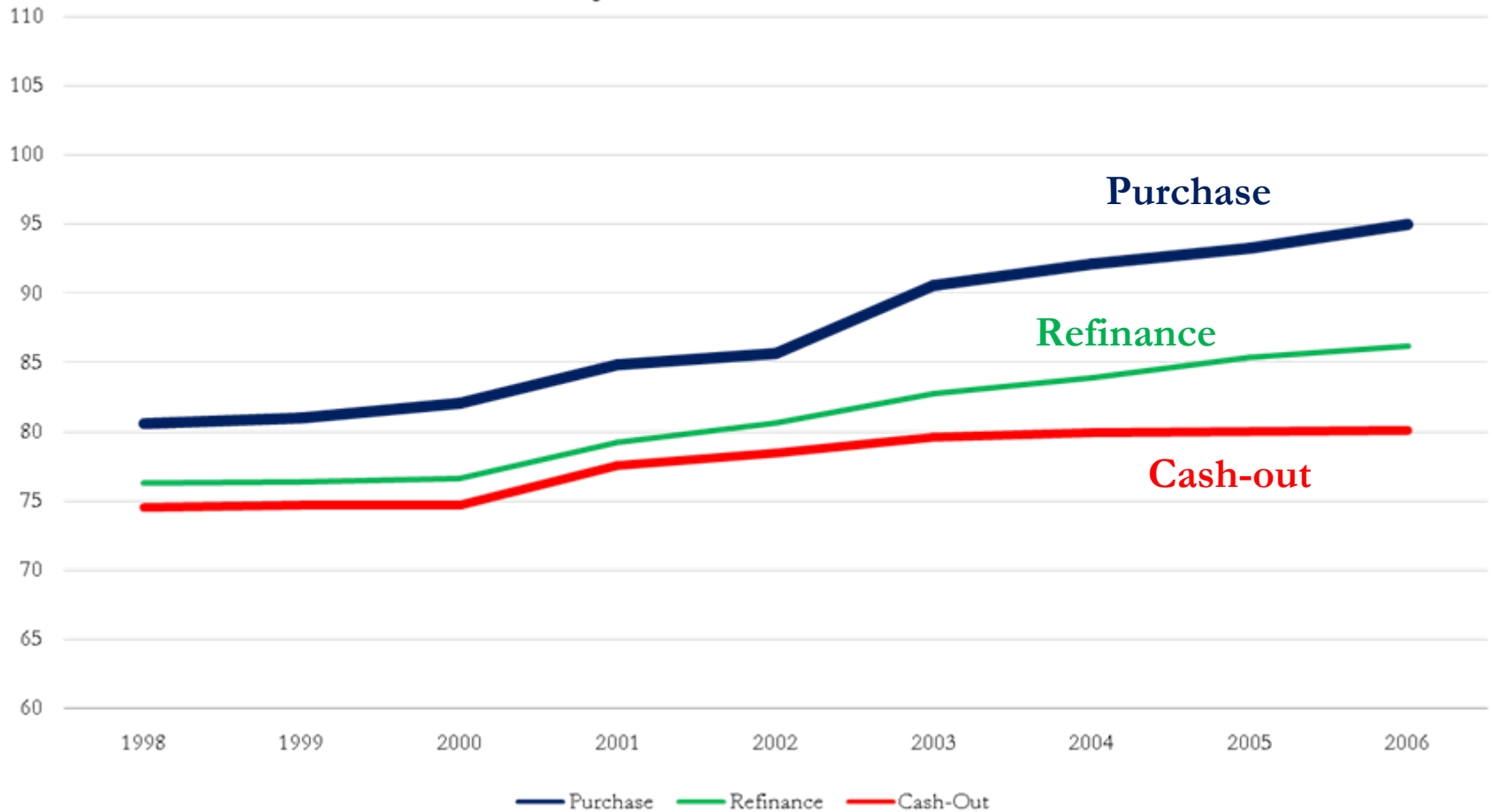
Mortgages with “low-doc” or “no-doc” & CLTV >95%



Purchase loans became much riskier

Alt-A and Subprime pools

CLTV by Use of Proceeds and Year



Comments

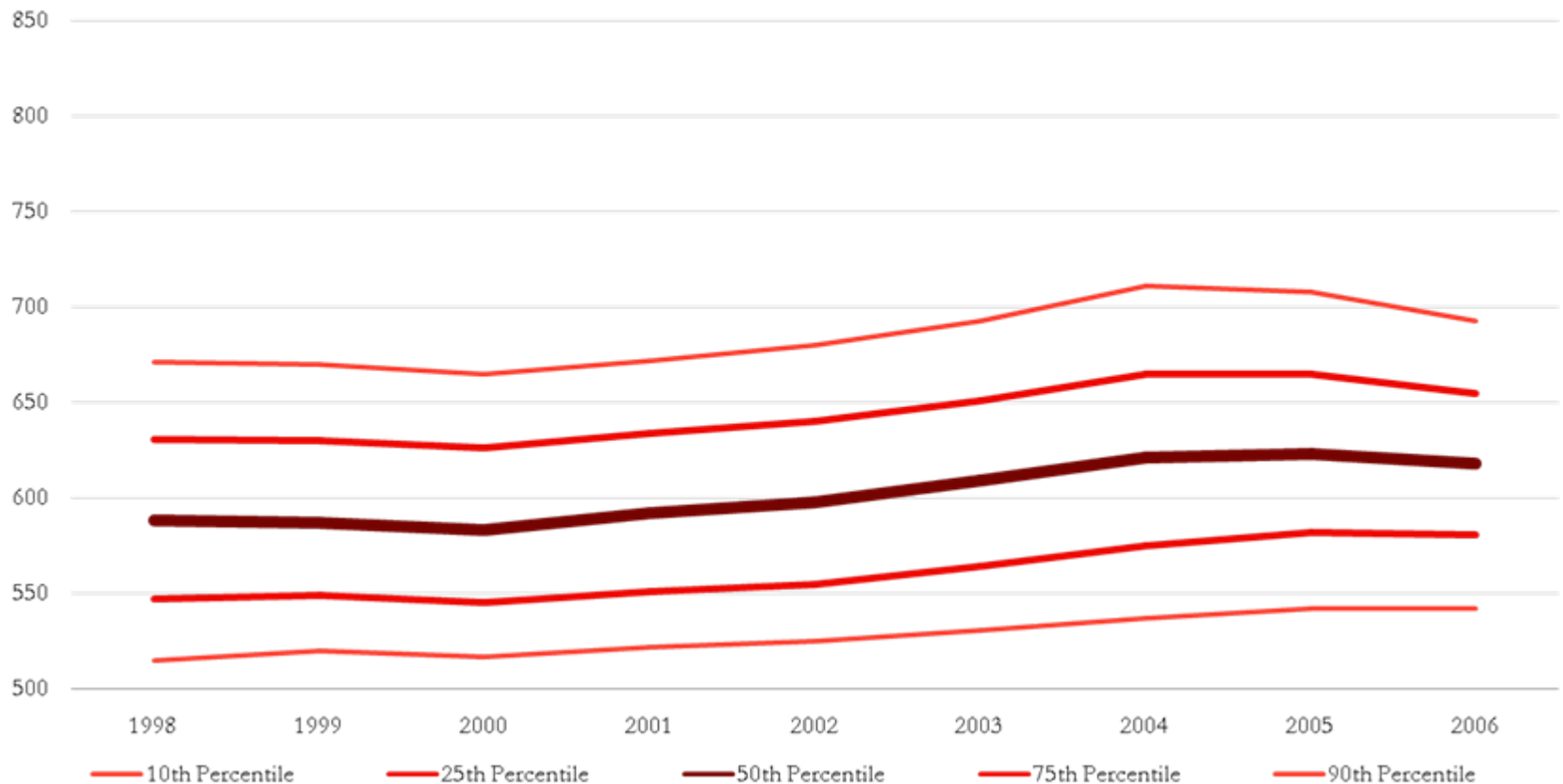
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Why did 2-28, 3-27 ARMs develop?

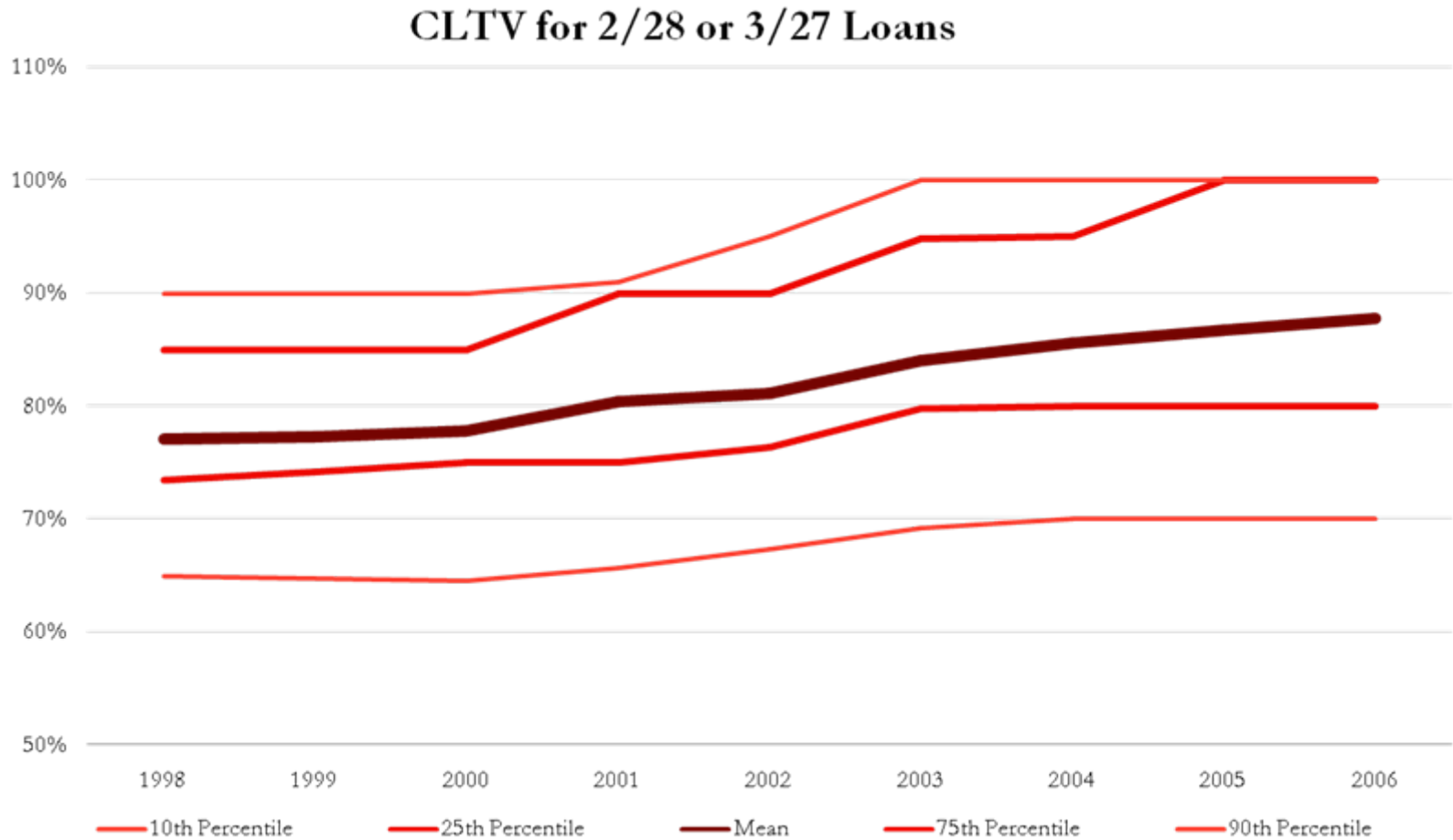
- Risky borrowers looking for a second chance (or investors looking for a free option)
 - Low initial payments (around 7%) to allow borrowers to clean up credit and/or gain housing equity
 - As borrowers prepay, remaining borrowers become ever more risky, so
 - Rate adjustment compensates lenders for the reclassification risk
 - Prepayment penalties early in loan ensure that loss of good borrowers in the pool does not happen too quickly
 - Tomasz Piskorski & Alexei Tchisty are developing such a model
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ARMs deteriorate more than FRMs: FICO scores peak in 2004

FICO Scores for 2/28 and 3/27 Loans



ARMs deteriorate more than FRMs: CLTV rises rapidly over the whole period

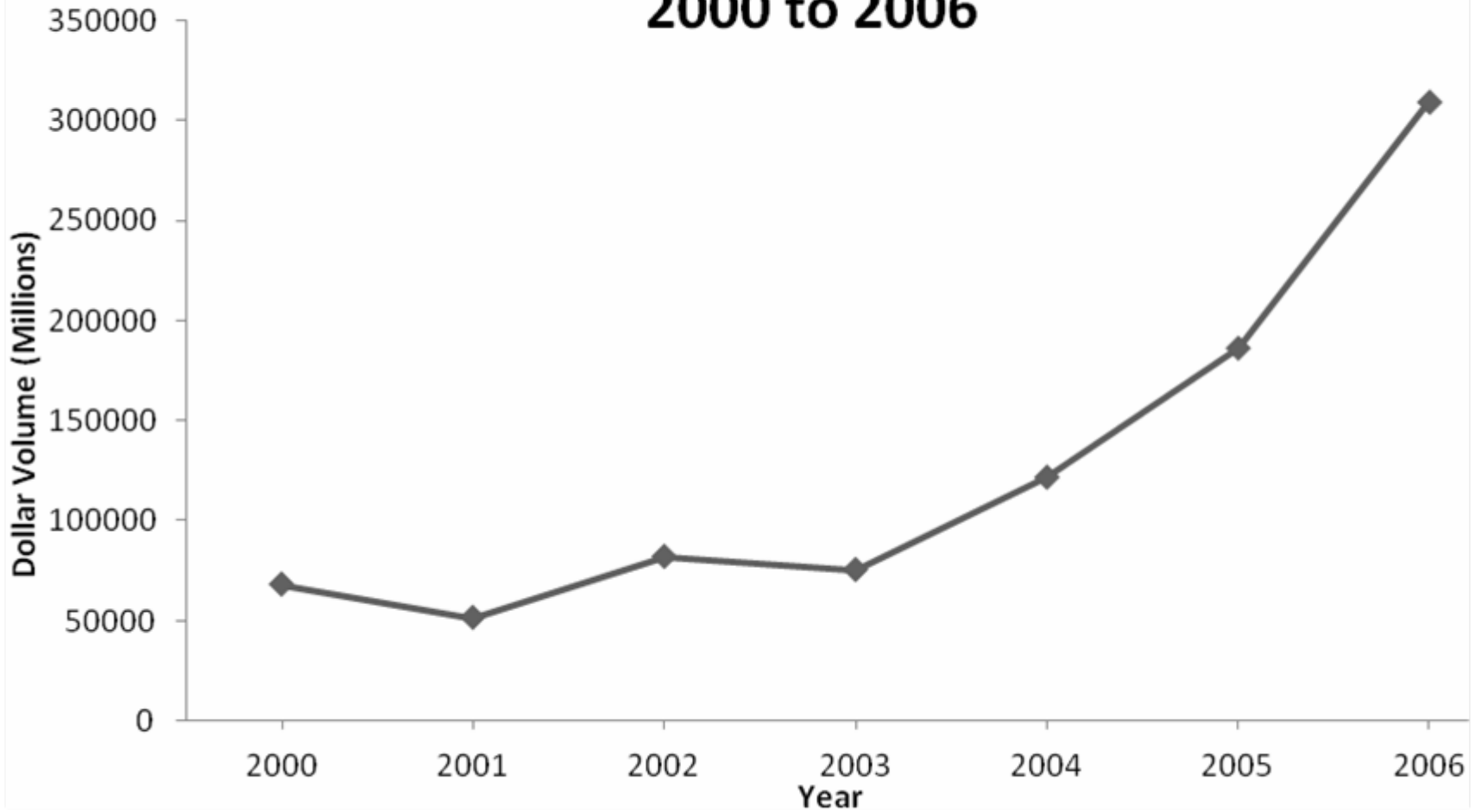


Comments

- Need to be careful about claims vs evidence

“...the rise and fall of the subprime market resembles a classic lending boom-bust scenario, in which unsustainable growth leads to the collapse of the market. We show that the problems in the subprime market were imminent long before the crisis in 2007, securitizers were to some extent aware of it, but a high house price appreciation in 2003-2005 masked the true riskiness of subprime mortgages.”

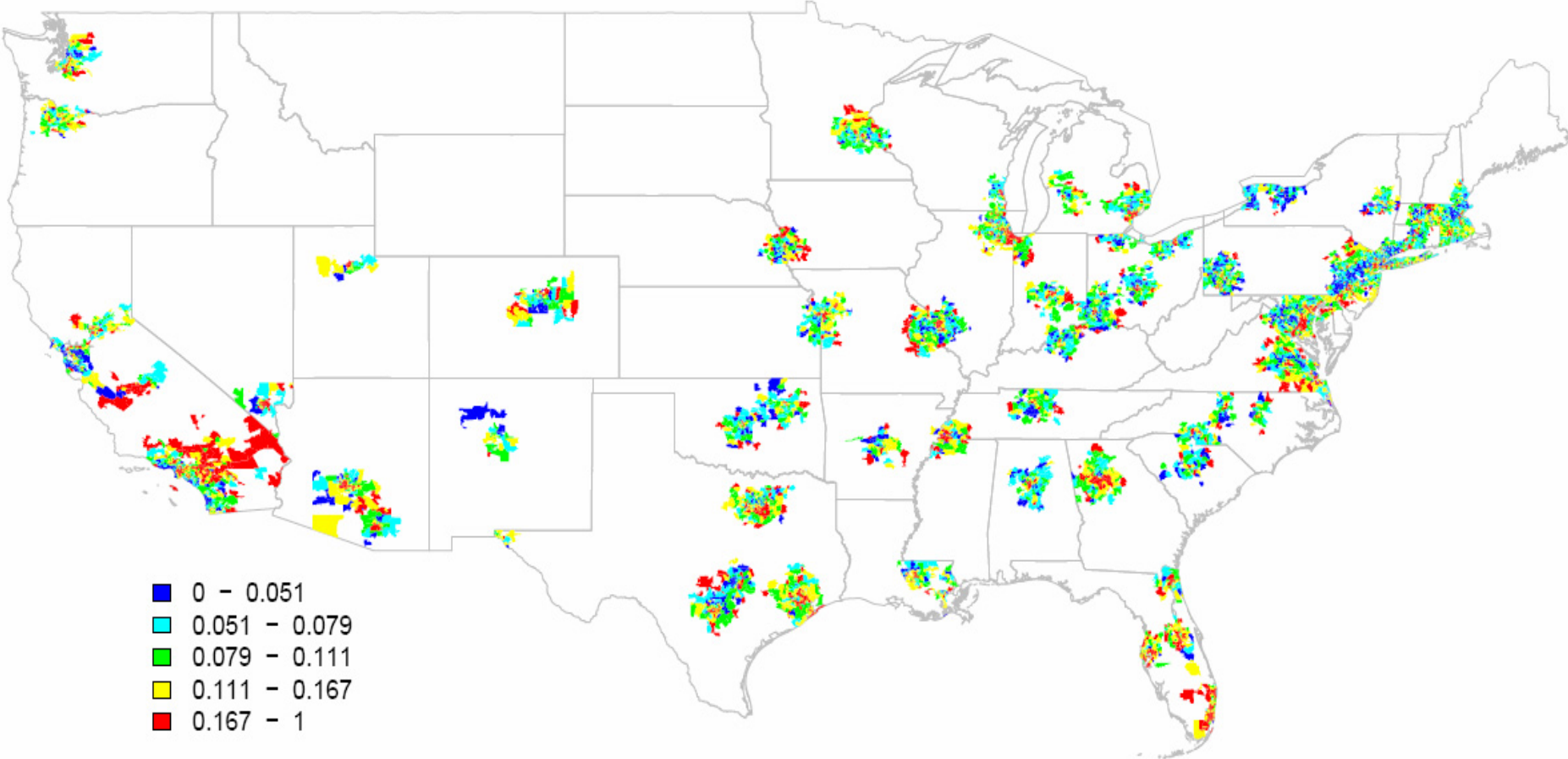
CDO Issuance as Rated by S&P 2000 to 2006



Source: S&P Ratings Direct. Issuance year is based on the year that S&P issued its first rating. This is an incomplete measure of CDOs as it does not include securities that were rated exclusively by other rating agencies.

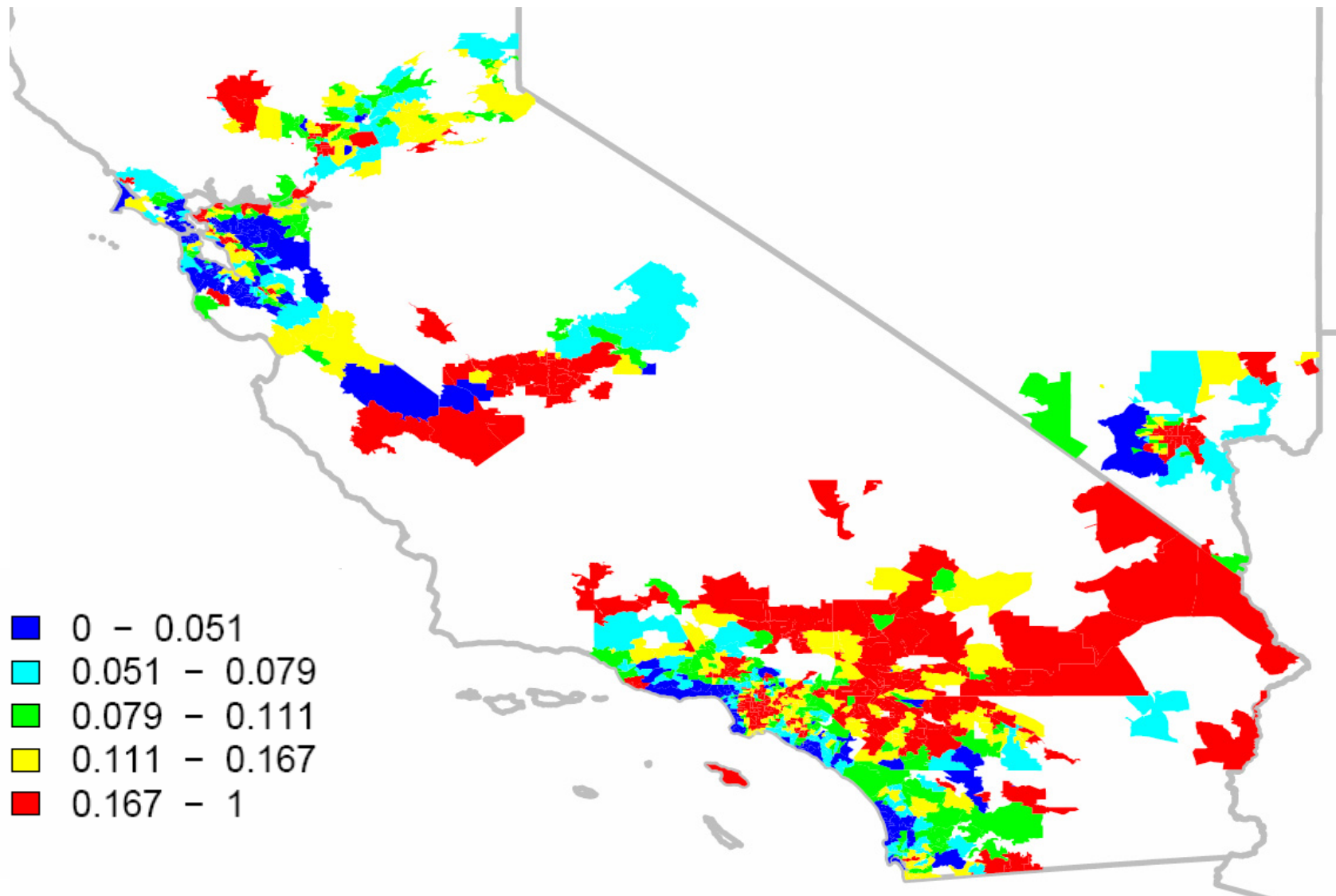
2/28, 3/27 mortgages as % of housing units for top-108 MSA's

2005



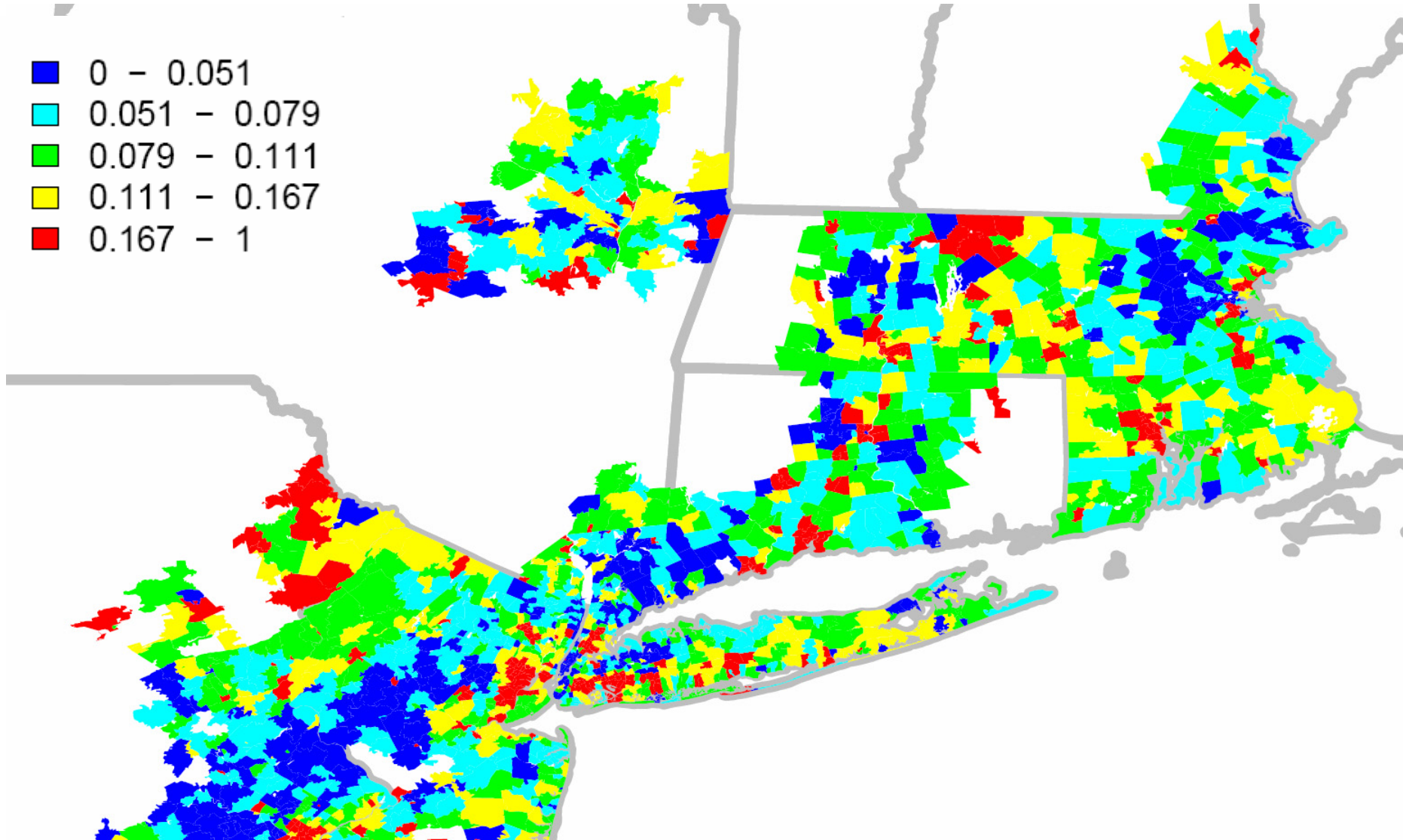
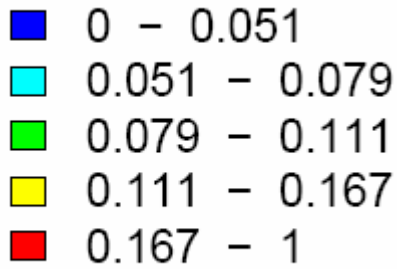
Source: Calculations from LoanPerformance data on subprime and Als-A pools by Chris Mayer & Karen Pence (forthcoming 2008 as part of the conference volume from the Lincoln Land Institute Conference held in Honor of Karl Case)

2/28, 3/27 mortgages as % of housing units for CA, NV 2005



Source: Calculations from LoanPerformance data on subprime and Als-A pools by Chris Mayer & Karen Pence (forthcoming 2008 as part of the conference volume from the Lincoln Land Institute Conference held in Honor of Karl Case)

2/28, 3/27 mortgages as % of housing units for Northeast 2005



Source: Calculations from LoanPerformance data on subprime and Als-A pools by Chris Mayer & Karen Pence (forthcoming 2008 as part of the conference volume from the Lincoln Land Institute Conference held in Honor of Karl Case)

Results from a simple regression of ARM purchases and refinances as a proportion of total housing units, zip-code level

	ARM Purchases / # Units		ARM Refinances / # Units	
(Per Capita Income / 1000)	-0.03**	-0.05**	-0.05**	-0.06**
	(-12.26)	(-21.86)	(-21.96)	(-31.32)
(Per Capita Income / 1000)²	0.00010**	0.00032**	0.00022**	0.00040**
	(3.52)	(11.99)	(8.44)	(17.24)
% Black (2000)	1.94**	2.05**	2.28**	2.63**
	(42.87)	(44.59)	(56.18)	(65.95)
% Hispanic (2000)	2.80**	2.44**	2.31**	2.79**
	(55.81)	(36.17)	(51.27)	(47.65)
%Ownership (2000)	0.81**	0.65**	1.45**	1.33**
	(15.04)	(12.76)	(30.01)	(29.84)
%Unemployed (2005)	0.62		2.04**	
	(0.70)		(2.54)	
%Change in HPI (2000 - 2005)	5.74**		9.66**	
	(51.39)		(96.49)	
City Core	-0.03*	-0.19**	0.15**	-0.07**
	(-1.65)	(-12.47)	(10.32)	(-5.04)
MSA Fixed effects	no	yes	no	yes
MEAN		1.2687		1.4024

* Year Fixed Effects included for 2004, 2005. N= 48272

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Conclusions

- Subprime ARM's are substantially more prevalent in high minority counties
 - Subprime purchase ARM's are much more prevalent at the edge of MSAs
 - Subprime cash-out ARM's are somewhat more likely at the edge of MSAs and in high unemployment MSAs
 - House price appreciation is more heavily correlated with cash-out refis than purchases
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House Price Appreciation, Housing Construction and Subprime Lending 2004-2006

Dependent Variable	% Change in House Prices		Permits as % of Total Units	
	(1)	(2)	(3)	(4)
Lagged (ARM Purchase Loans/ Total Purchase Loans)	5.4** (6.22)	6.2** (12.06)	7.0** (26.04)	0.89** (7.30)
Lagged (% Change House Prices)		0.85** (75.96)		
Lagged (Permits as % of Total Units)				0.88** (119.86)
# Obs.	1081	1081	1073	1073
	Avg.= 7.2%		Avg.= 2.4%	

(t statistics in parentheses)

* p < 0.10, ** p < .05

Conclusions

- Both new construction and house price appreciation are positively correlated with the percentage of non-prime, but the construction effect is much larger
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Policy issues

- Do we ban terms associated with subprime ARMs?
 - Why do we allow prepayment anyway?
 - Complicated to require underwriting on fully-adjusted rate
 - How can we harness the good parts of this market without reducing credit for the most vulnerable? (my sister-in-law)
 - What can the government do to enhance credit in the interim? (rely more heavily on the FHA!!!)
 - Securitization and origination markets require fundamental reforms, which will happen no matter what
 - How do we get banks back in the business of writing mortgages?
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