
Foreclosure's Wake

The Credit Experiences of Individuals Following Foreclosure

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The Impact of Workout Options on Borrowers' Credit Reports and Scores

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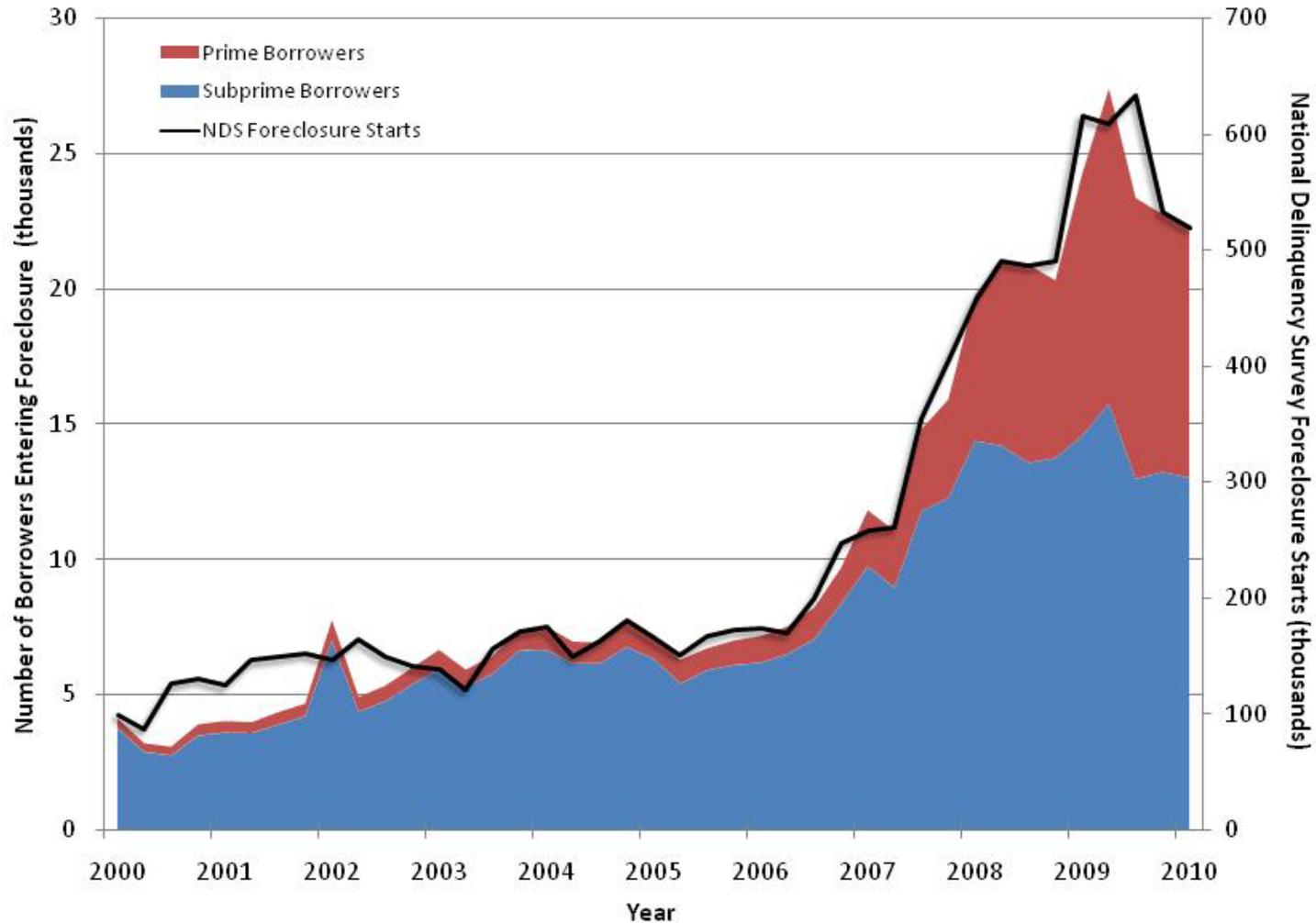
Research Focus

- Foreclosures lower credit scores and consequently reduce future access to credit
- Very little is known about the size of these declines or how long they last
- We examine the impact that foreclosure has on credit scores and how long it takes individuals to recover
 - Also examine how individuals perform on their credit obligations before and after foreclosure

Data – Foreclosure Sample

- Anonymous credit records from Equifax
 - Observed quarterly from 1999Q1 – 2010Q1
- 345,360 individuals whose mortgage entered foreclosure during 2000-2009
- Definitions:
 - “Foreclosure Period” – quarter in which mortgage enters foreclosure
 - “Pre-delinquency Period” – quarter before foreclosure when record last free of mortgage delinquency

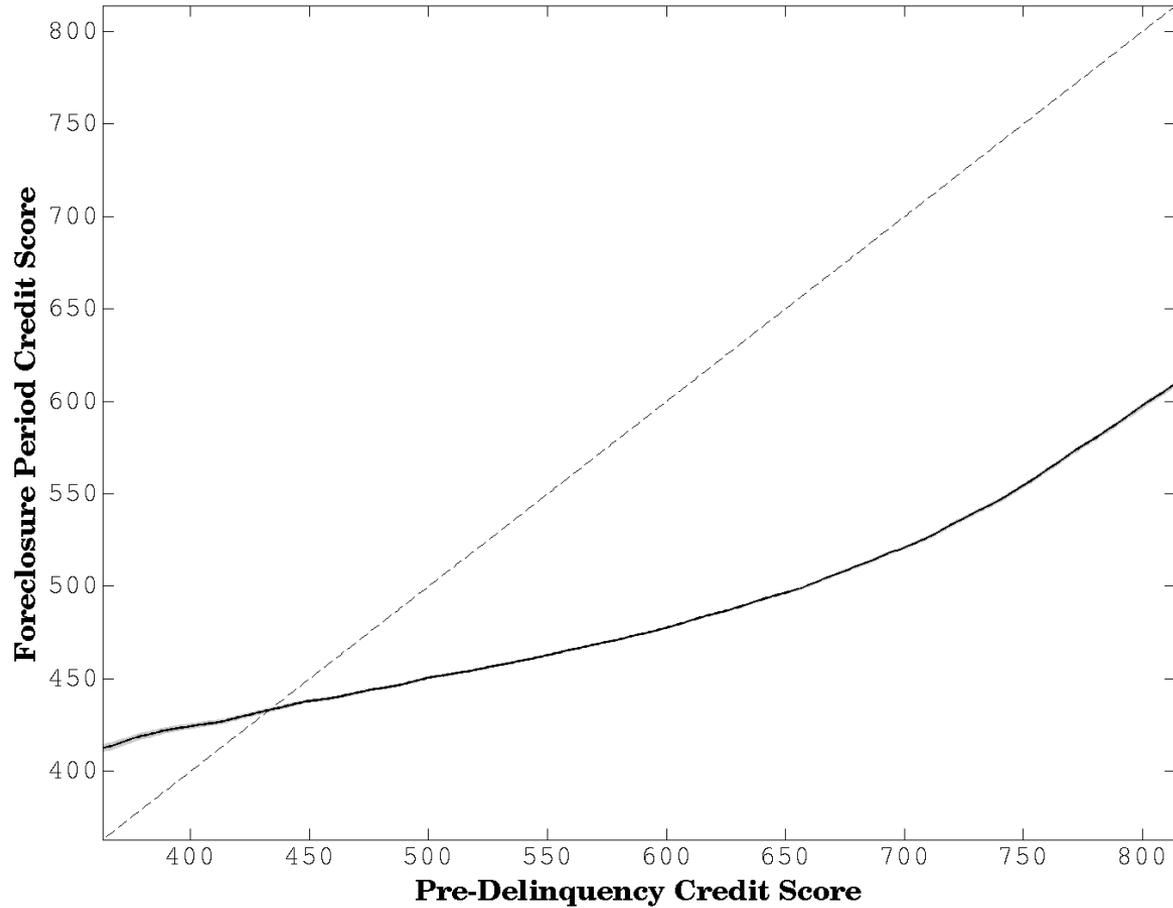
Foreclosure Starts by Quarter



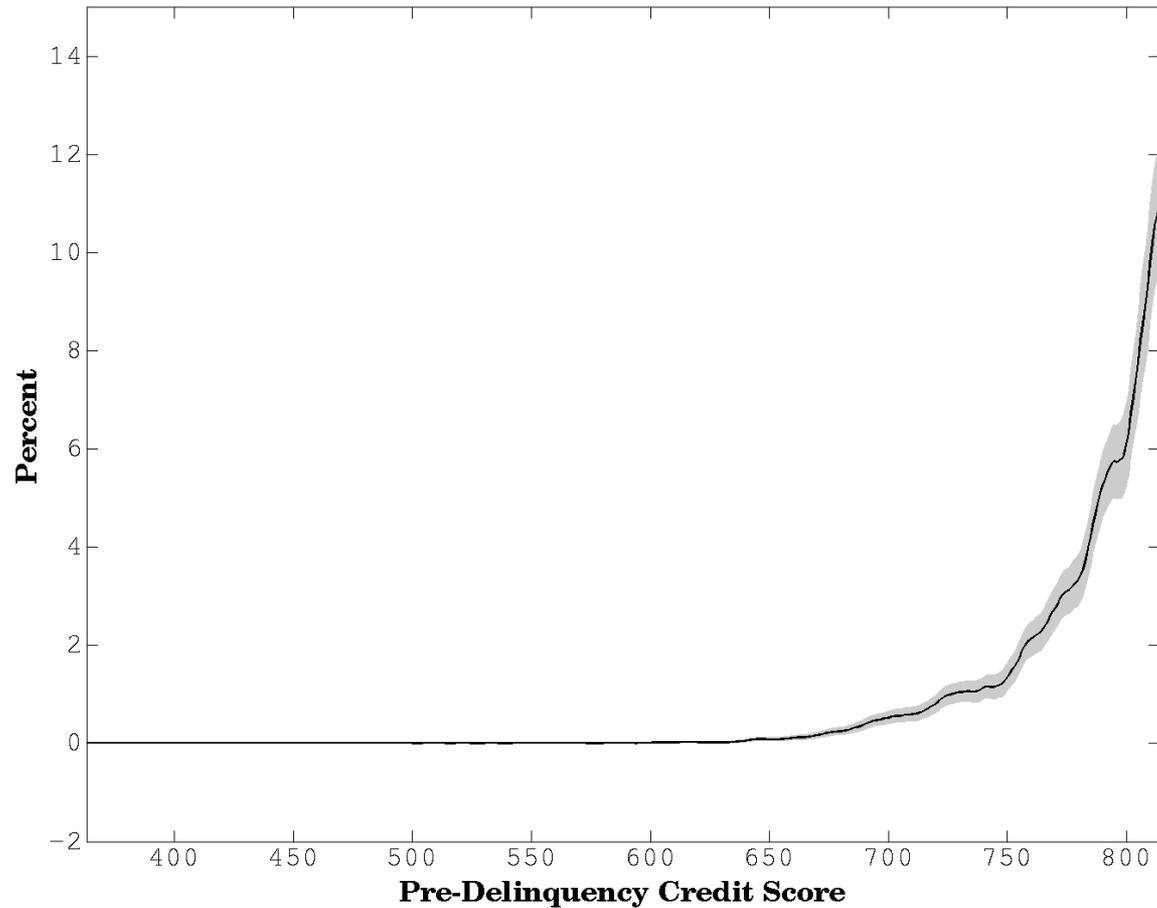
Credit Score Declines Accompanying Foreclosure

- Little is known about the size of declines
 - Models are proprietary
- FICO information suggests scores fall
 - 85 points for borrower with score of 680
 - 160 points for borrower with score of 780
- Simulated score changes based on adding foreclosure in isolation

Score Changes Around Foreclosure



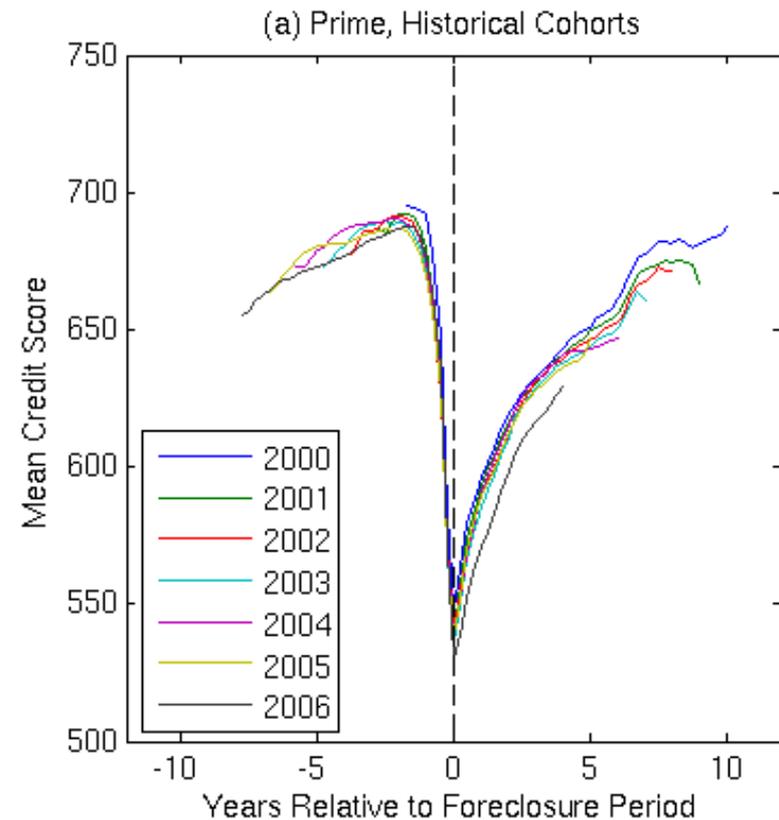
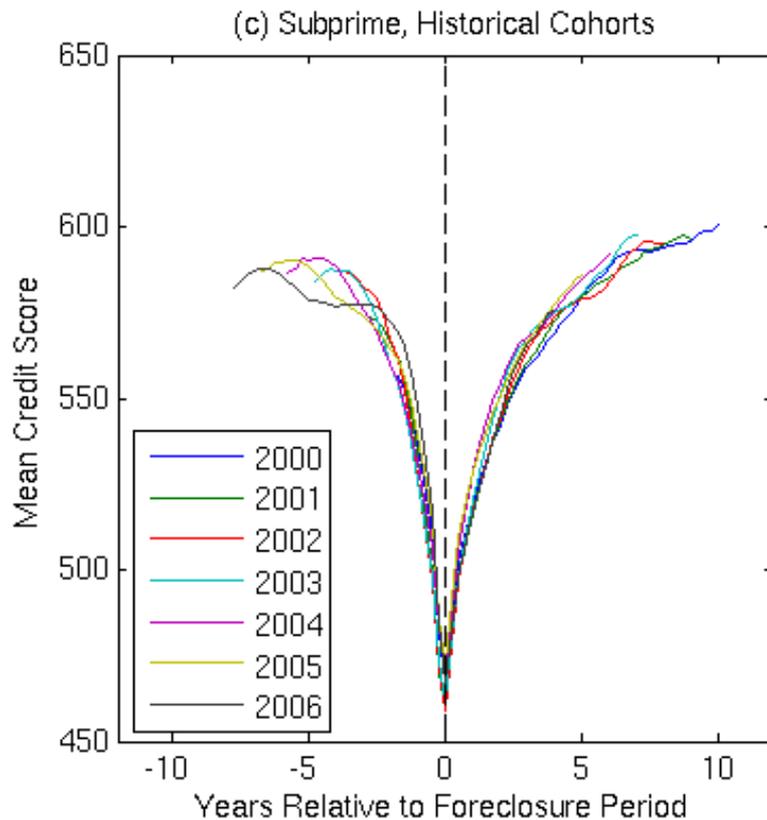
Share With Prime Credit Scores in Foreclosure Period



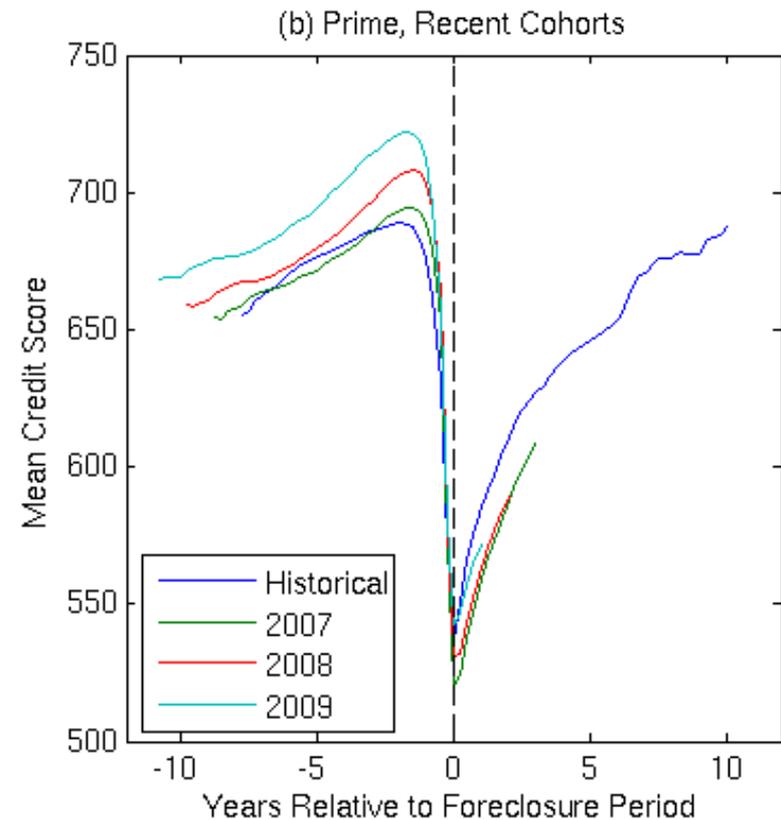
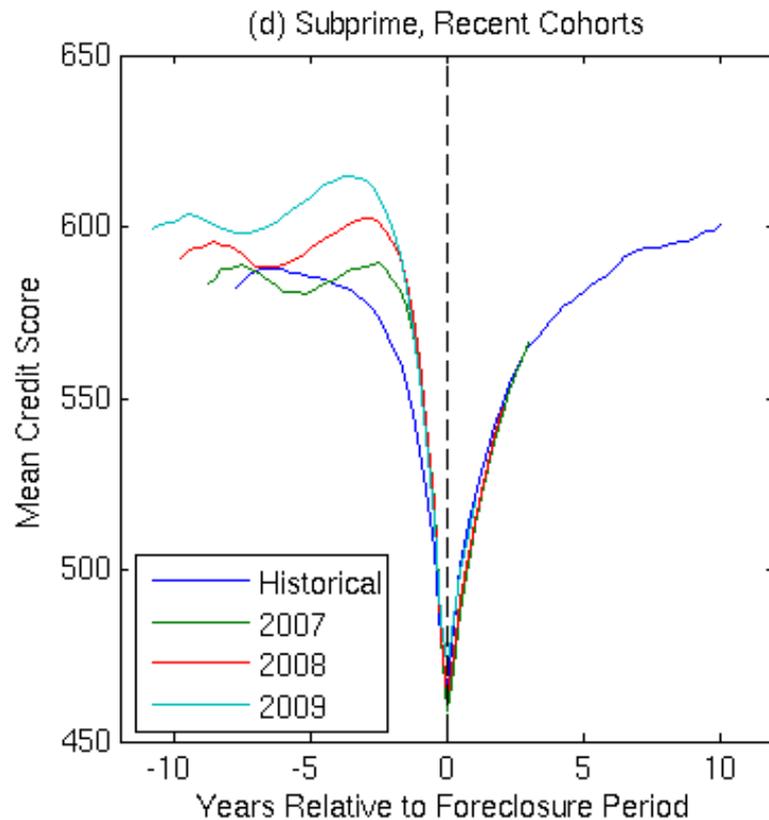
Credit Score Recovery

- Lower credit scores accompanying foreclosure will reduce access to credit
- How long do these reductions last? Possibly not long:
 - FICO suggests scores may recover after 2 years
 - VantageScore simulations indicate recovery may take as few as 9 months
 - Information about foreclosure removed from credit record after 7 years

Mean Credit Scores, Historical Cohorts



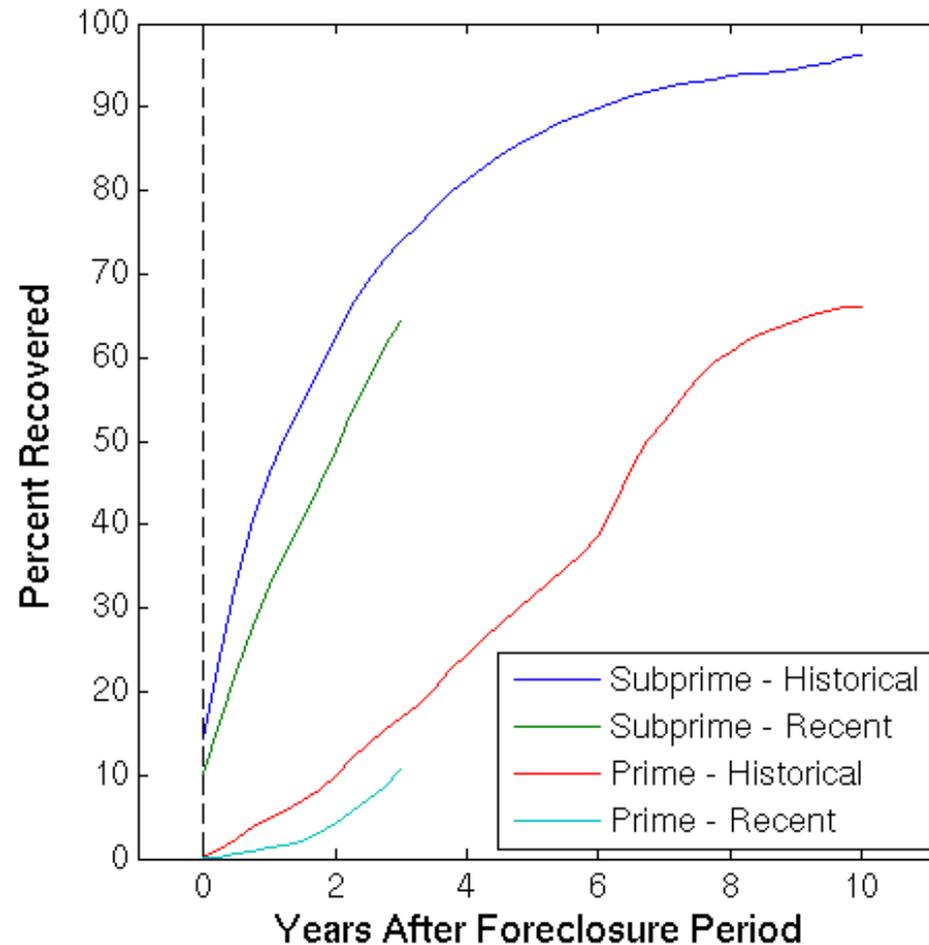
Mean Credit Scores, Recent Cohorts



A More Focused Definition

- A credit score “recovers” when it returns to its pre-delinquency level
- Once a credit score returns to its pre-delinquency level, it is assumed to remain recovered in all subsequent periods

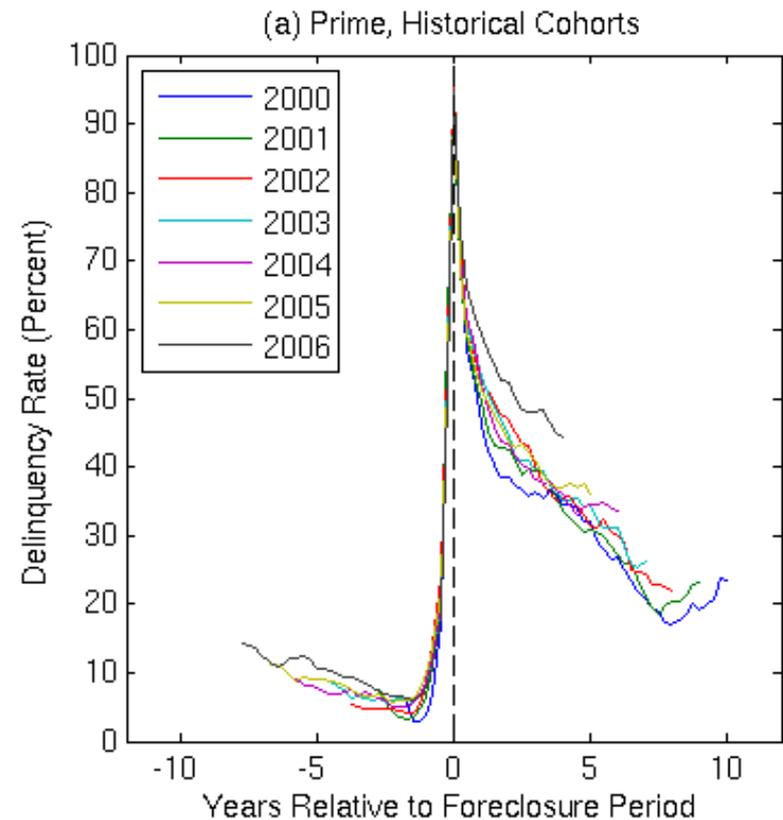
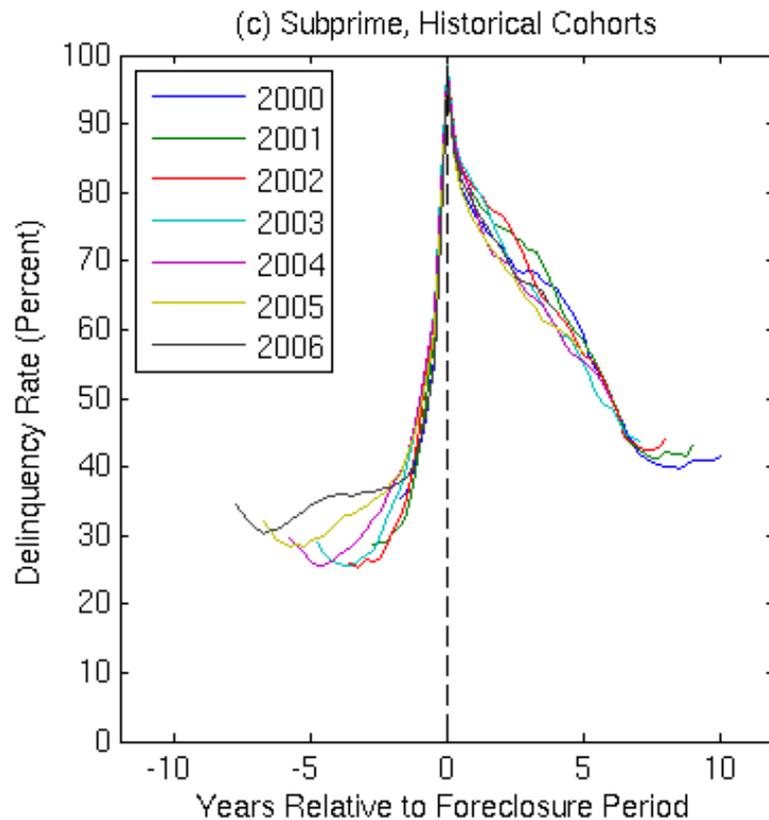
Share with Recovered Credit Score



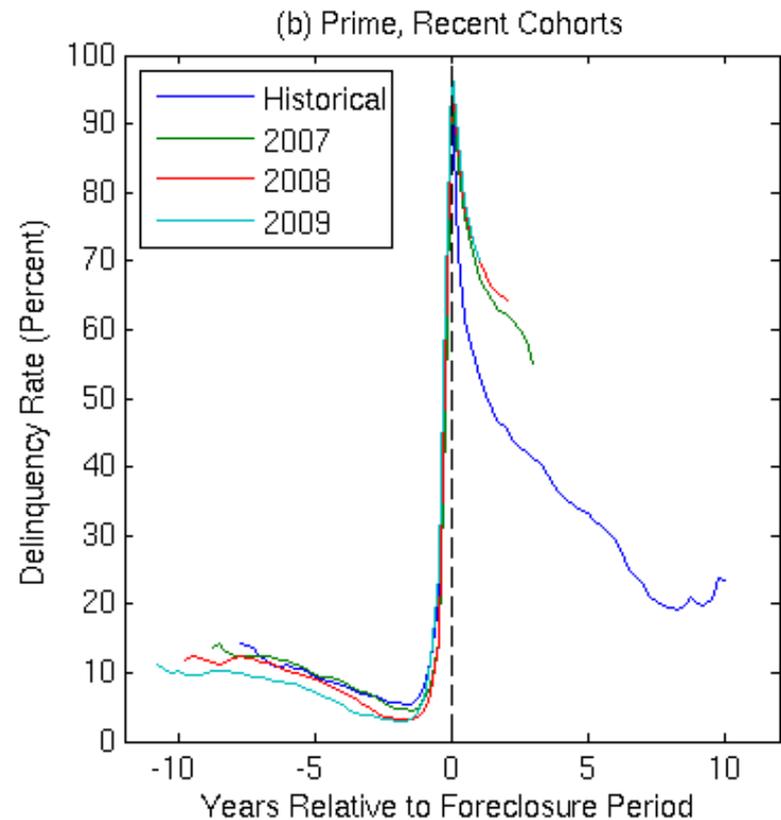
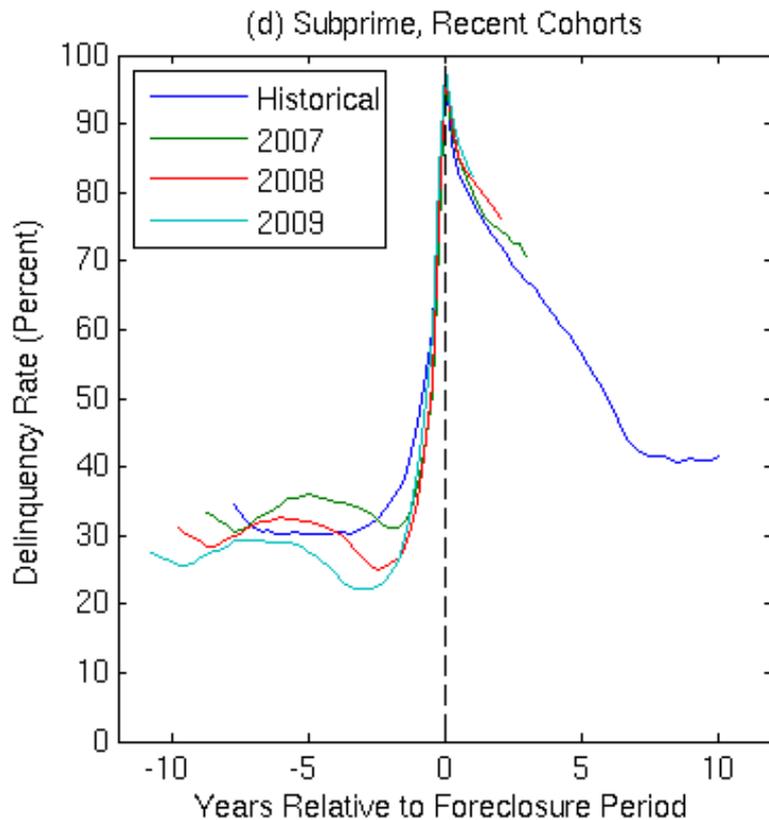
Why Are Scores Persistently Low?

- Reason is unknown
- Cannot be directly attributed to foreclosure after 7 years
- Most likely candidate explanation is payment delinquency
 - Generally most important explanatory variables in credit bureau based models
- Look at share of borrowers who are 90 days past due or worse

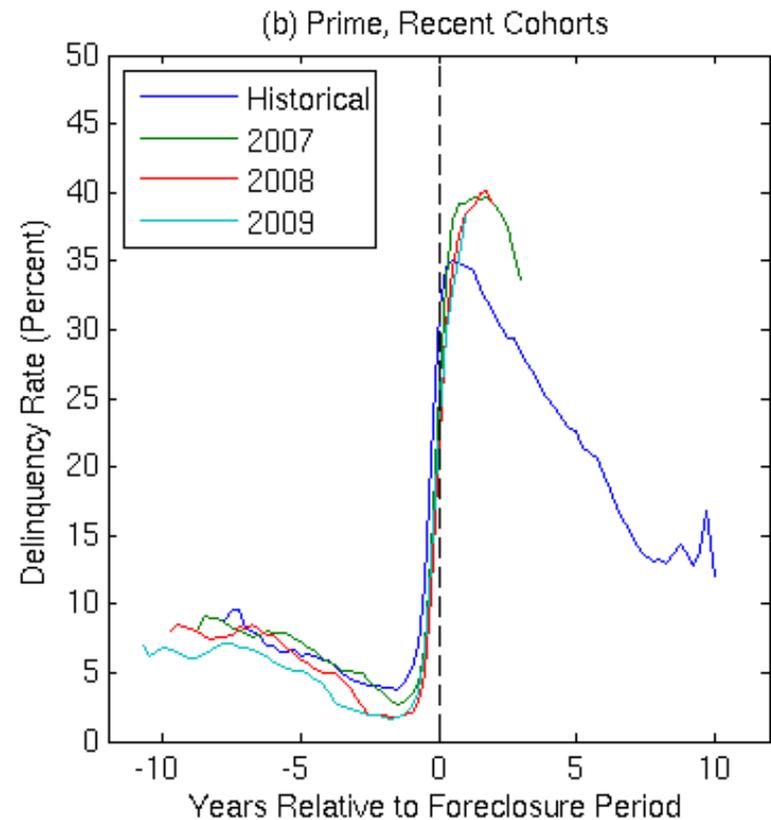
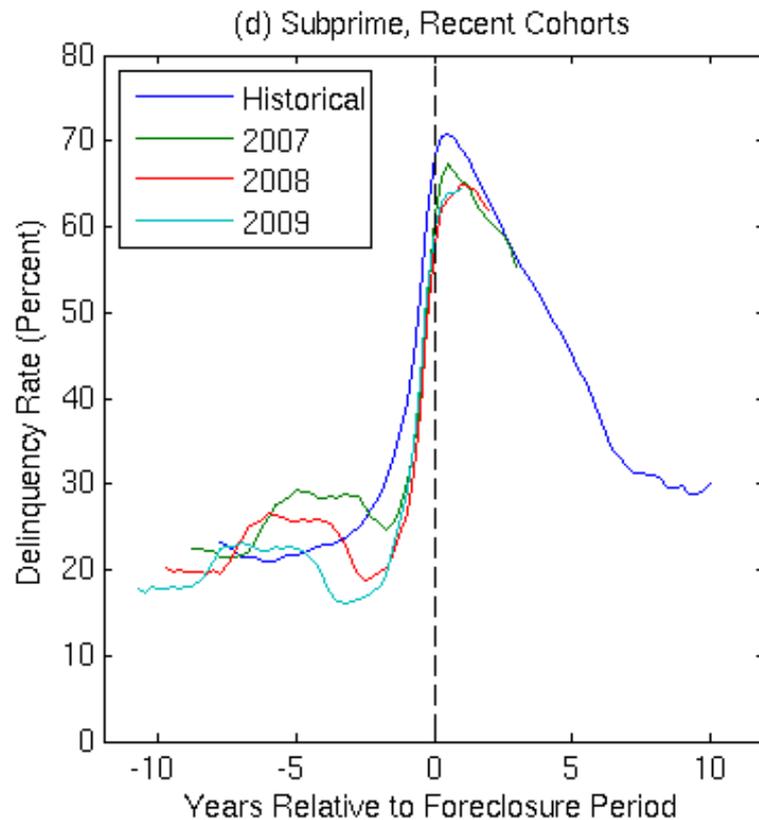
Delinquency Rate on All Credit, Historical Cohorts



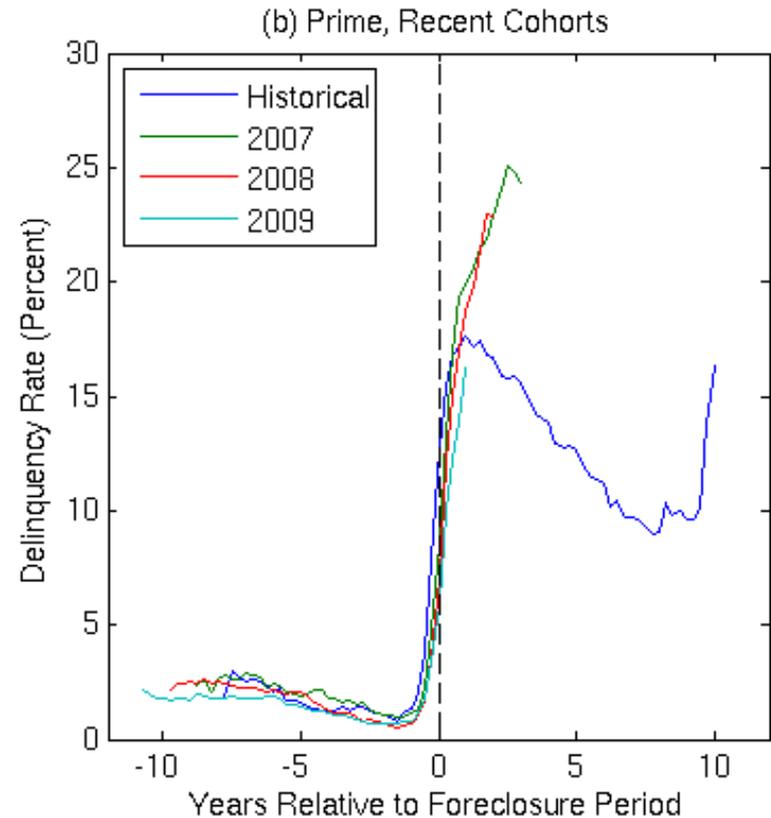
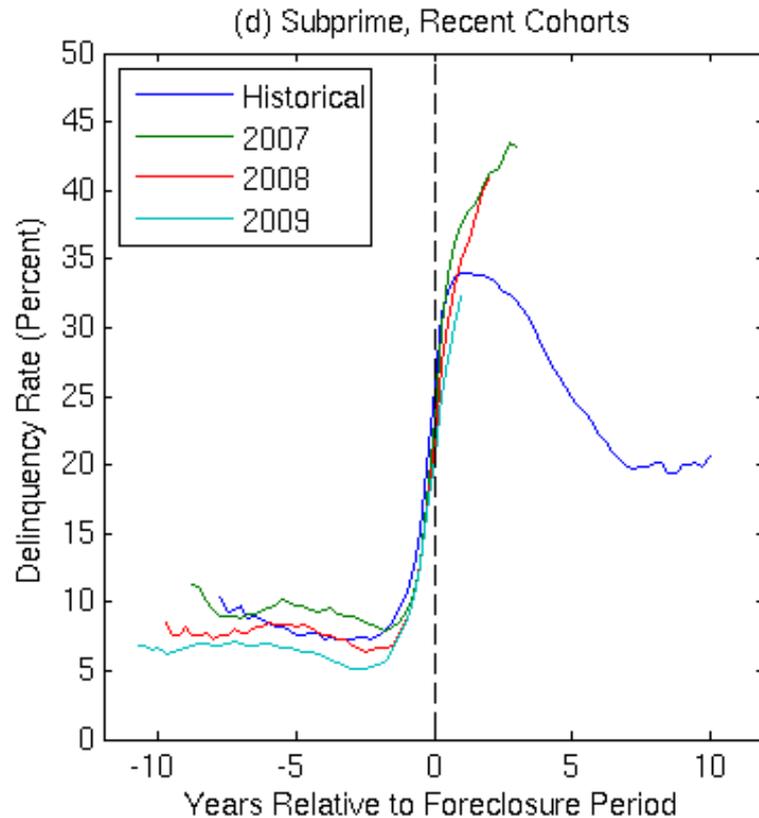
Delinquency Rate on All Credit, Recent Cohorts



Credit Card Delinquency Rates



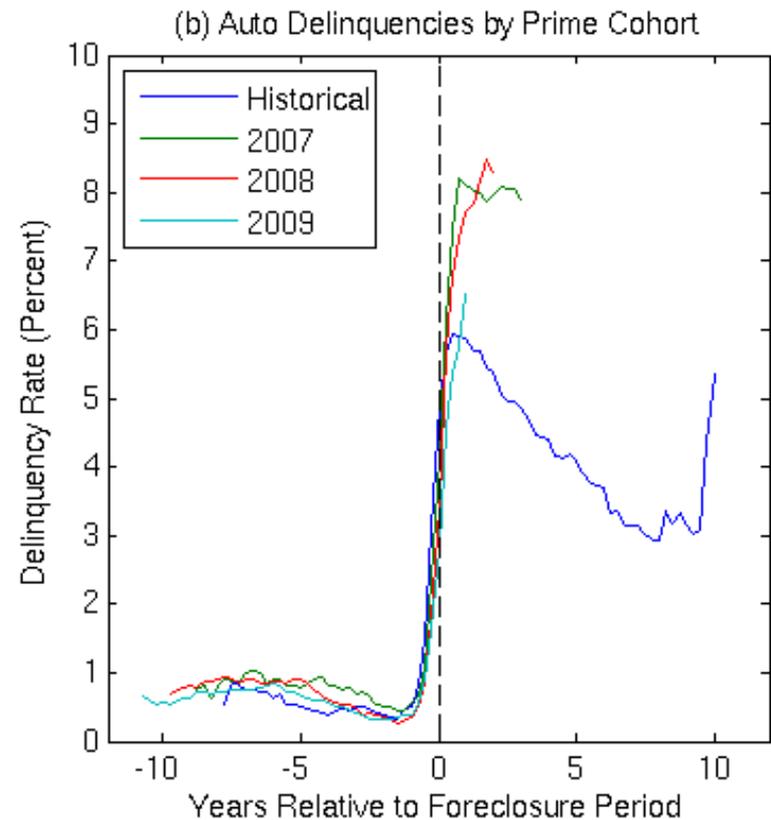
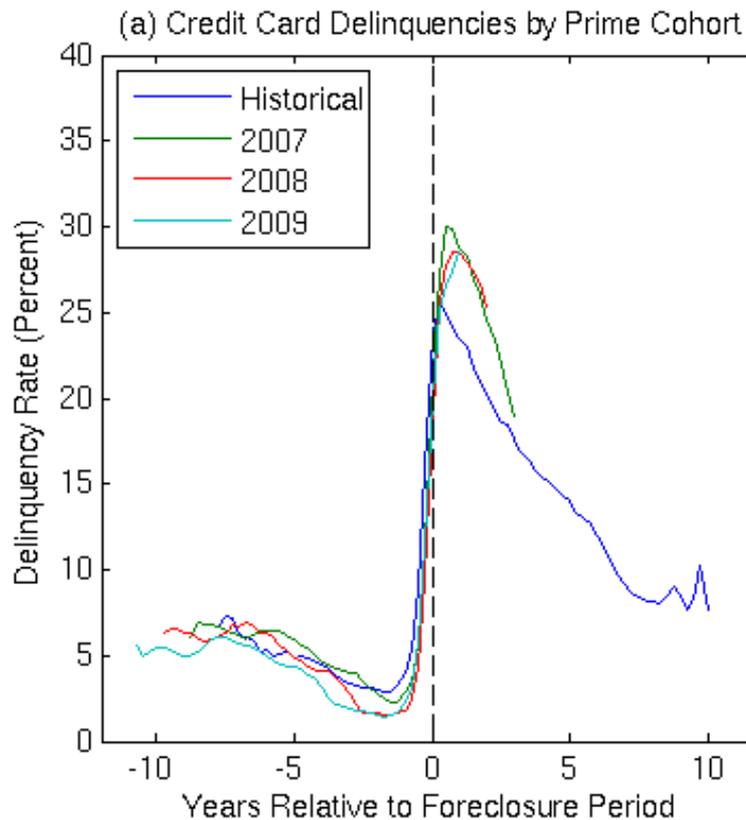
Auto Loan Delinquency Rates



Individual-Based Delinquency Rates

- Delinquency rates on previous slides have been borrower based
 - Individuals without credit in period t are excluded
- Possible that increase in delinquency reflects high-quality borrowers abstaining for credit use
- Instead look at share of individuals who are delinquent
 - Treat people without credit like people with credit who are not delinquent

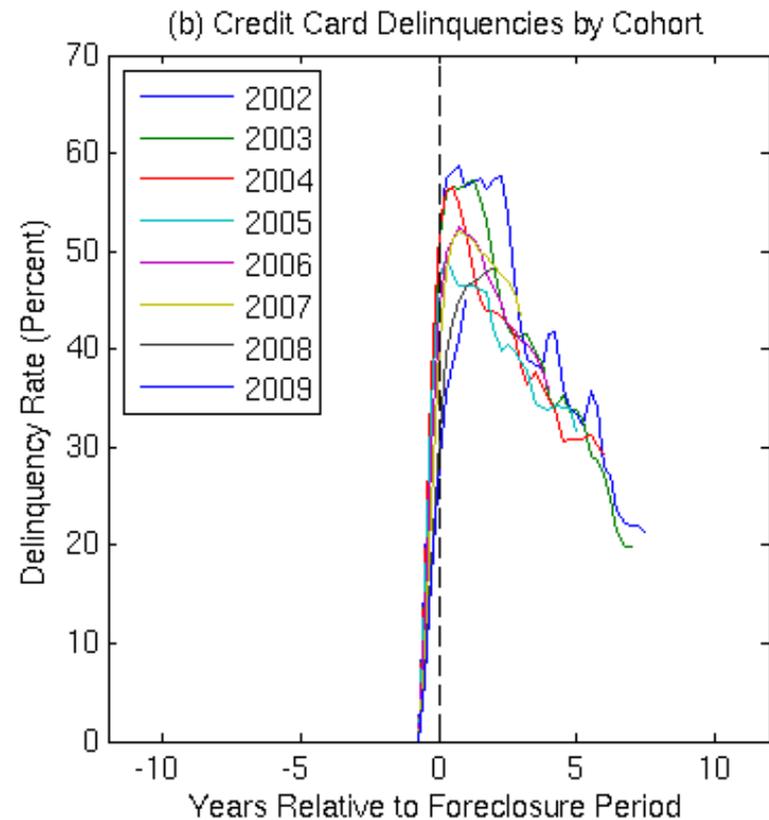
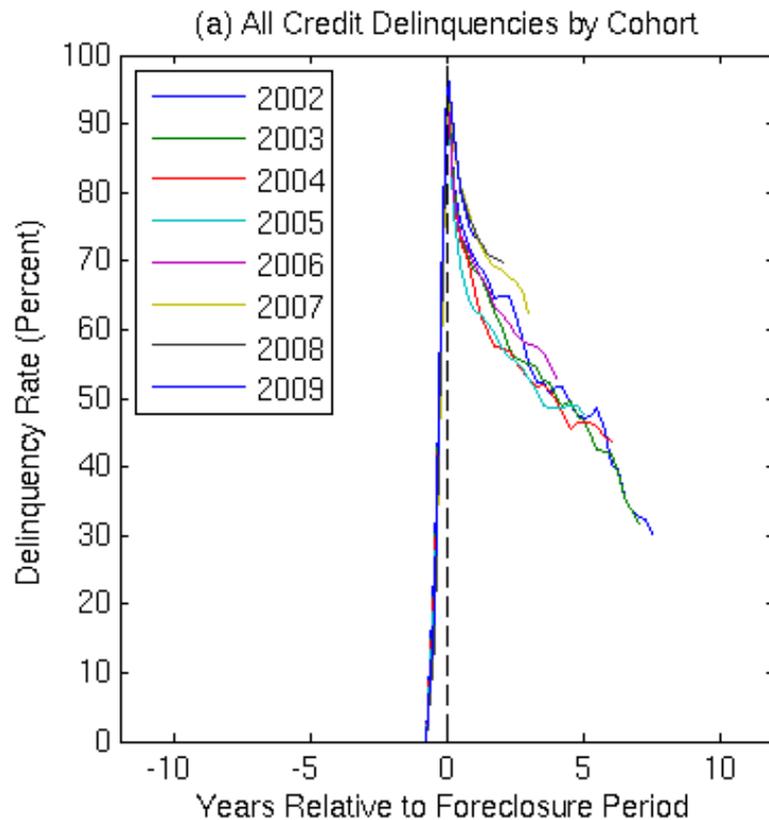
Individual-Based Delinquency



Flawless Payment Sample

- Increase in delinquency may reflect gradual change where borrowers just becoming delinquent more frequently
- Identify subset of the populations with a flawless payment history before foreclosure
 - No evidence of missed payments more than 6 months before foreclosure period
 - At least 3 years (12 quarters) of payments made

Delinquency for Flawless Payment Sample



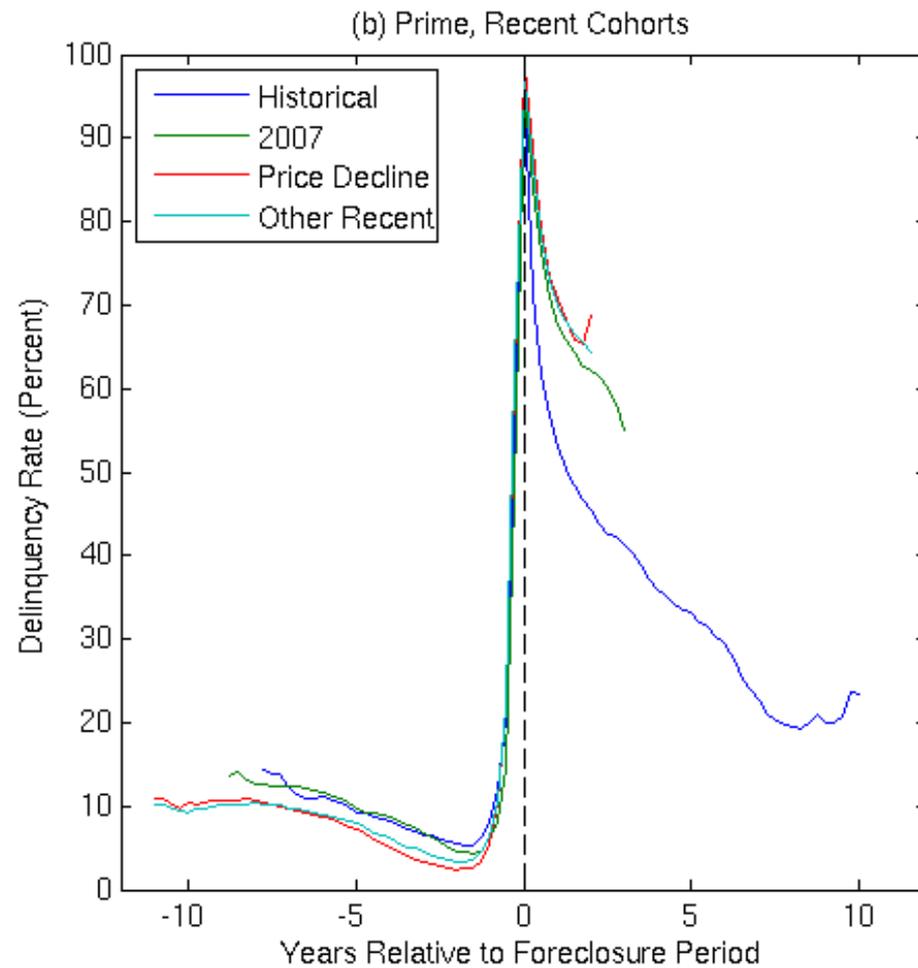
Recent Cohorts and Strategic Default

- Recent cohorts following similar pattern to historical cohorts, though post-foreclosure experience somewhat worse
 - Robust to controlling for credit score and economic conditions (unemployment)
- Somewhat surprising given the attention given to strategic default in recent foreclosures

Strategic Defaulters

- Difficult to identify strategic defaulters in credit bureau data
 - No information about LTVs
- Instead, we isolate subset of population that is more likely to contain strategic defaulters
 - Calculate decline in FHFA HPI between quarter in which mortgage opened and foreclosure period
 - “Price decline” cohort – individuals for whom HPI decline was at least 20 percent

Price Decline Cohort



Comparison with Major Derogatory Population

- Performance of foreclosure population can be compared to performance of major derogatory population
- Not intended to measure “treatment effect” of foreclosure
 - Could help rule out foreclosure treatment effect if two groups exhibit similar performance

Table 7: Logit Estimations of Borrower Delinquency on All Types of Credit with Derogatory Effect

Initial Score Range:	760 and over		660 to 759		560 to 659		Below 560	
Dependent Variable:	All Credit Delinquency							
	(1)		(2)		(3)		(4)	
Initial Score		-0.018***		-0.018***		-0.013***		-0.006***
Average Weekly Wage		-0.122		-0.390***		-0.395***		-0.370***
Unemployment Rate		0.006		0.019***		0.018***		0.017***
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<i>Foreclosure/Derogatory Effects</i>								
<i>(Indicator variables):</i>	<u>All Cohorts</u>	<u>Derog Sample Deviation</u>						
2 years before	0.629***	-0.004	0.425***	-0.072**	0.240***	-0.027*	0.057***	0.080***
1 year before	1.433***	-0.383***	1.100***	-0.302***	0.798***	-0.193***	0.442***	-0.037*
Foreclosure or Derogatory period	6.065***	-2.221***	5.593***	-2.066***	5.027***	-1.823***	4.305***	-1.599***
1 year after	2.964***	-1.011***	2.747***	-1.002***	2.414***	-0.867***	1.891***	-0.685***
2 years after	2.450***	-0.862***	2.325***	-0.891***	2.110***	-0.791***	1.699***	-0.645***
3 years after	2.179***	-0.811***	2.025***	-0.806***	1.887***	-0.725***	1.575***	-0.599***
4 years after	1.959***	-0.836***	1.766***	-0.744***	1.718***	-0.657***	1.449***	-0.505***
5 years after	1.619***	-0.852***	1.481***	-0.623***	1.544***	-0.569***	1.318***	-0.405***
6 years after	1.187***	-0.499***	1.155***	-0.558***	1.292***	-0.469***	1.149***	-0.327***
7 or more years after	0.422***	-0.334	0.546***	-0.398***	0.936***	-0.326***	0.984***	-0.212***
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Number of Observations	2,939,015		7,024,594		9,124,529		5,085,261	
Pseudo R-squared	0.142		0.167		0.118		0.085	

Conclusions

- Credit scores decline into subprime ranges as mortgage enters foreclosure
- Credit score recovery takes many years, if it comes at all
- Lack of recovery appears to reflect changes in borrower behavior in the form of higher delinquency

Limitations

- Cannot identify the reasons for this change in behavior
- Three candidate sources
 - Foreclosure may alter borrowers' financial circumstances in manner that makes future delinquencies more likely
 - Lower credit scores or destroyed wealth
 - Event that triggered foreclosure may have persistent effects that alter borrowers' financial circumstances
 - Borrower preferences may change after foreclosure
 - Lower stigma associated with delinquency

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