

Spillover Effect of Neighborhood Subprime Lending

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Impact of Subprime Lending on Prime Borrower Behavior

(Possible Channels)

- Spillover effect of second-lien subprime mortgages
- Reduced property values because of neighboring subprime foreclosures
- Economic downturn because of rising subprime foreclosures and falling house prices
- Lack of access to prime credit because of the crowding out effect of subprime lending

Data

- **Community Advantage Program (CAP)**
 - Partnership of Self-Help, Fannie Mae, Ford Foundation
 - Started from 1998, over 50,000 loans
 - Secondary market outlet for CRA-type loans
 - Prime mortgage products serving borrowers with
 - Low- to moderate- income
 - Weak credit history and/or low down-payments
 - A sample of 6,879 CAP loans originated during 2004-2006
- **HMDA**
 - Treat HUD defined “high-cost” mortgages as subprime
 - Share of subprime loans in census tract, county, MSA
 - Treat subprime purchase and refinance activities separately



Borrower and Loan Characteristics

Variable	Percent	Mean
No Credit Score or missing	1.60%	
CScore < 620	15.60%	
CScore 620-659	23.50%	
CScore 660-719	31.60%	
CScore >=720	27.70%	
Credit Score		672
LTV		96.90%
Backend Ratio		38.40%
Frontend Ratio		27.90%
Origination Amount		\$101,747
Minority Borrower	34.10%	
African-American Borrower	14.70%	
Hispanic Borrower	8.70%	
Income at Origination		\$35,695
Geography		
OH	23.70%	
NC	16.30%	
IL	13.80%	
GA	11.80%	
MI	5.70%	
Other States	28.70%	
Origination Year (# of loans)		
2004	2,884	
2005	2,271	
2006	1,724	
Total	6,879	



Methodology

- Research Question
 - Are prime borrowers in neighborhoods with higher level of subprime activities more likely to default/prepay?
- Model Specification
 - Multinomial logit regressions
 - Model prepayment and default as competing risks
 - Default measures: 90-day delinquency; foreclosure and returned loans because of non-performing
 - Controls include credit score, put/call option, loan age, loan size, borrower race, household income, tract relative income, tract share of black, unemployment rate, and time dummies.



Empirical Results (I)

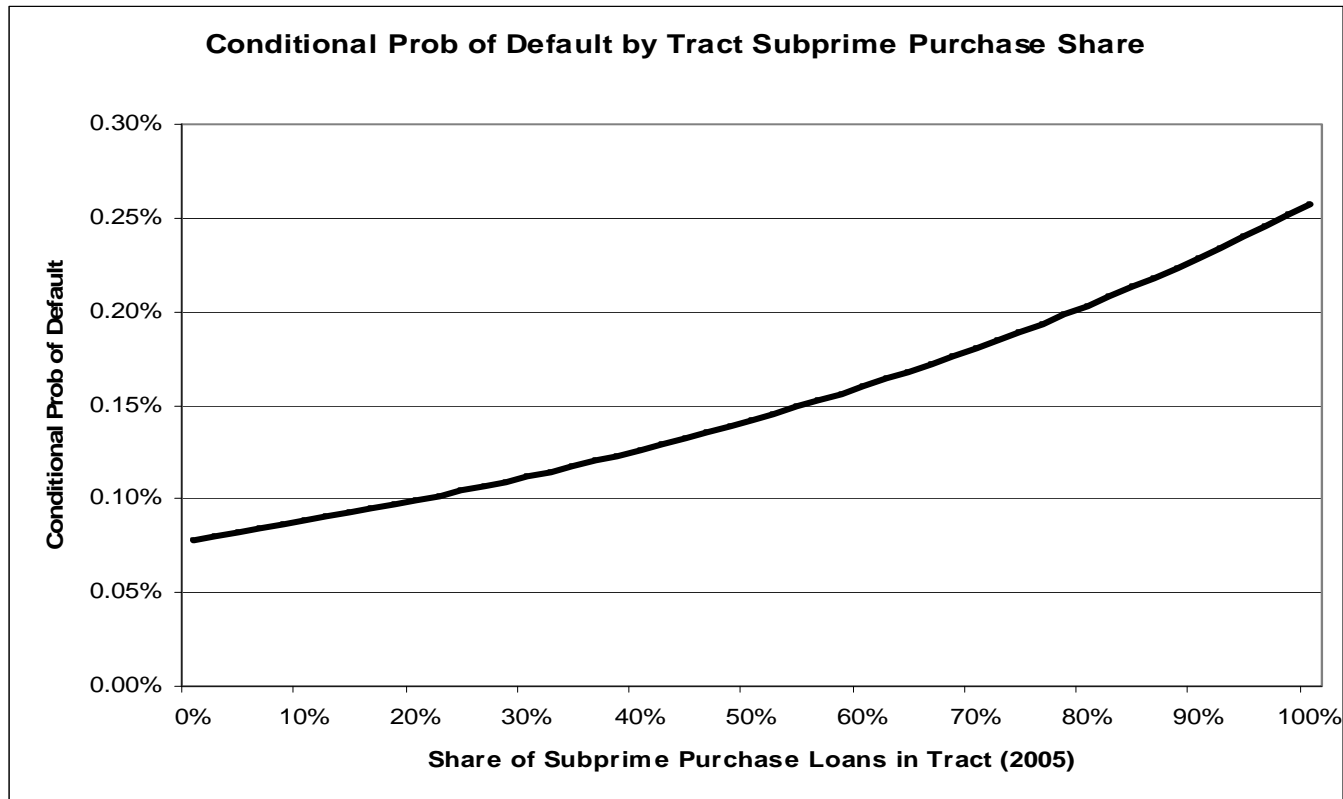
Variable	Model 1		Model 2	
	90-day Coef.	Prepay Coef.	Default Coef.	Prepay Coef.
CScore<620	2.060***	0.109	1.683***	0.094
CScore 620-659	1.430***	0.214***	1.237***	0.212**
CScore 660-719	0.658***	0.218***	0.463	0.215***
call option	0.040***	0.06***	0.029*	0.057***
put option	0.017**	-0.022***	0.059***	-0.023***
af_american	0.132	-0.401***	-0.648**	-0.395***
hispanic	0.106	-0.048	0.321	-0.058
log of unpaid balance	-0.007	0.153	0.200	0.146
log of loan age (months)	1.107***	0.407***	1.714***	0.381***
bo_inc<60% AMI	0.352**	-0.287***	0.303	-0.276***
bo_inc 60-80% AMI	-0.022	-0.21**	0.059	-0.196**
Tract MI <80% AMI	0.217	-0.155	0.257	-0.181
Tract MI 80-120% AMI	0.304**	-0.011	0.486*	-0.016
Track Black 15-30%	-0.135	-0.260**	-0.608*	-0.274**
Track Black>30%	-0.131	0.000	0.211	0.008
unemp_rate	0.155**	-0.137***	0.088***	-0.121***
tra_sub_p	0.633**	-0.416*	1.190**	-0.401*
y2004	-0.781***	0.677***	-0.133	0.651***
y2005	-0.390***	0.558***	0.107	0.526***
constant	-10.813***	-8.147***	-15.913***	-8.060***

Note: based on multinomial logit regression. N=6,879. *** significant at 0.01 level; ** significant at 0.05 level; * significant at 0.1 level. Share of tract subprime purchase loans (tra_sub_p) is constructed based on 2005 HMDA data.



Empirical Results (II)

Impact of Neighborhood Subprime Purchase Lending on Default

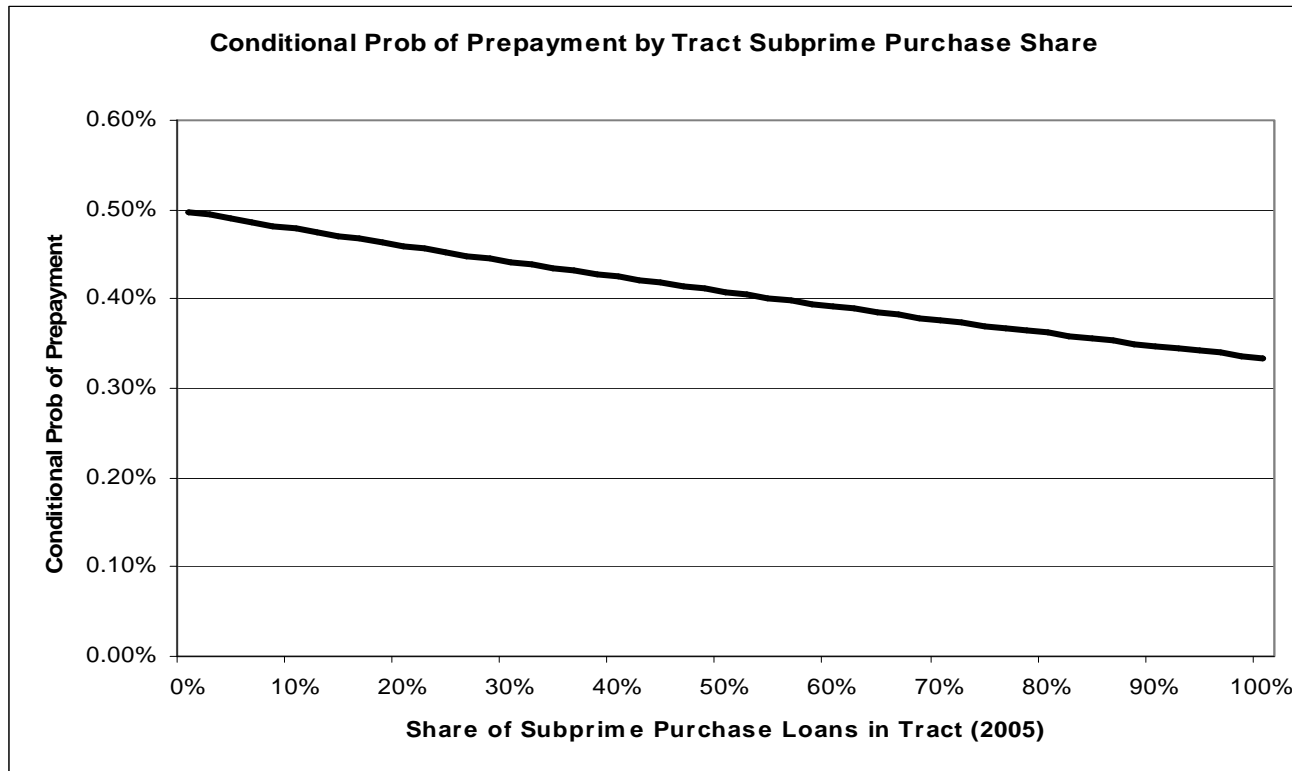


Note: Conditional probability is as of 24 month after origination. Projection is for a white borrower holding a mortgage originated in 2005, with the mean value of other regressors.



Empirical Results (III)

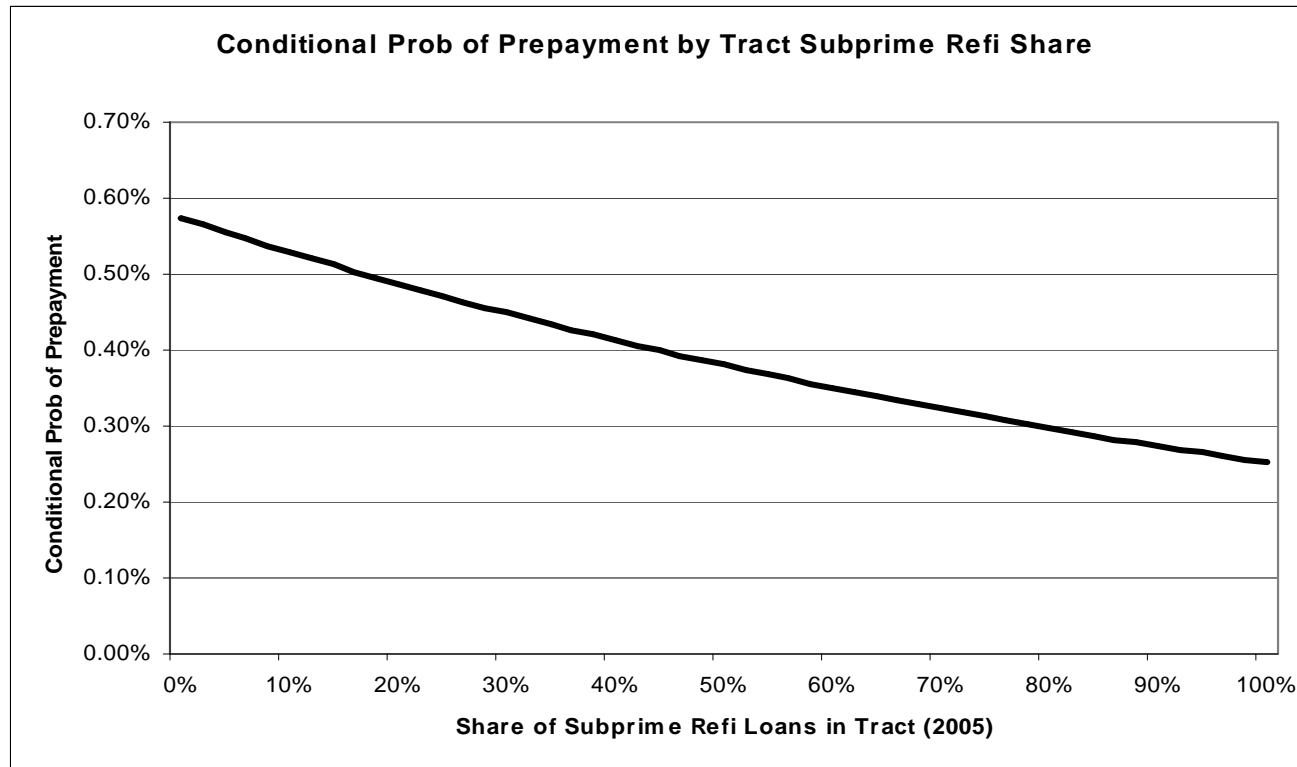
Impact of Neighborhood Subprime Purchase Lending on Prepayment



Note: Conditional probability is as of 24 month after origination. Projection is for a white borrower holding a mortgage originated in 2005, with the mean value of other regressors.



Empirical Results (IV) Impact of Neighborhood Subprime Refinance Lending



Note: Conditional probability is as of 24 month after origination. Projection is for a white borrower holding a mortgage originated in 2005, with the mean value of other regressors.

Conclusions and Discussion

- The results suggest a negative spillover effect on prime loan performance from the concentration of subprime lending.
- The level of subprime activities may serve as an excellent neighborhood risk indicator.
- Spatial concentration of risky loan products should be monitored more closely and be prevented before it is too late.