

Are Mortgage Regulations Affecting Entrepreneurship?

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Are mortgage regulations affecting entrepreneurship?

- Residential mortgage credit important for early stage businesses.
- Business owners particularly affected by regulations targeting unaffordable (*high payment-to-income*) mortgages:
 - Restrictions on how business income is counted by lenders.
 - Payment-to-income limits make it difficult for lenders to take compensating factors (e.g. collateral) into account.

Questions

- How do verified payment-to-income restrictions affect self-employed credit access?
- Does this have broader effects?

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Reduces mortgage lending in high self-employment areas.

- Does this have broader effects?

Reduces self-employment and new small business employment.

Ability-to-Repay (ATR) rules implemented in US in 2014:

- **Verification:** Require banks to rigorously assess whether repayments are affordable given *verified* income.
- **Payment restriction:** less than 43% of verified income (with some exceptions).

Why is ATR a problem for the self-employed?

To count business income need:

- Two years of verified accounts.
- Focus is on the lower bound of recent income history.
- Tax 'optimization' → verifiable income may be lower.
- Less likely to qualify for classes of loans exempt from the rules (conforming, FHA).

Important exemptions from 43% PTI requirement

- Conforming loans.
- Government-insured loans.
- **Loans originated and held in portfolio by small lenders.**

Approach

Lenders exempt if sufficiently small:

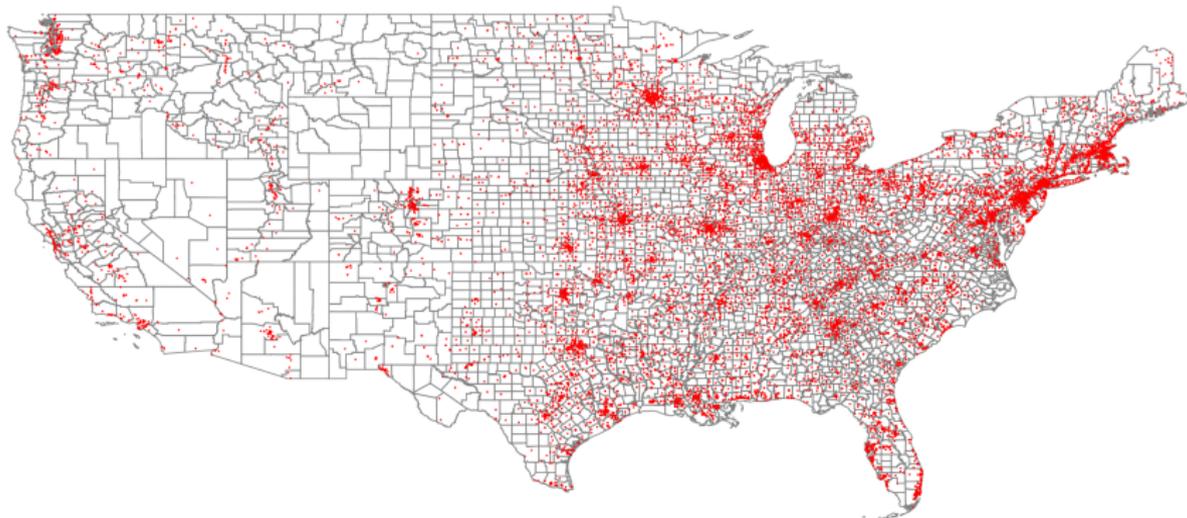
- Assets < \$2 billion, holding company loans < 500.
- Compare exempt bank lending with similar non-exempt banks (non-exempt because part of holding company).
- Look at effect of access to exempt banks on self-employment and new small business employment.



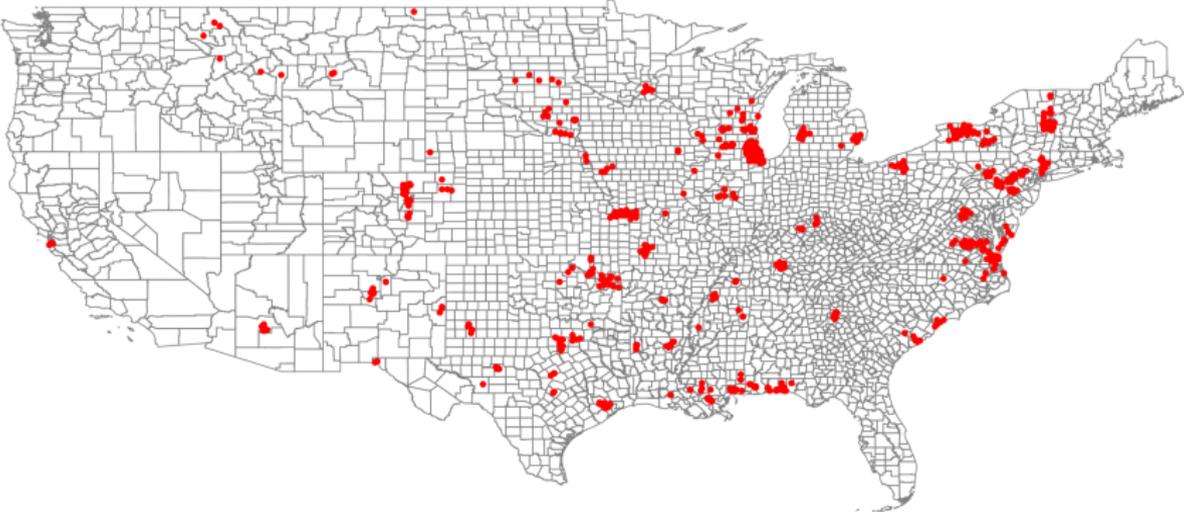
Data

- HMDA – Loan-level data covering most U.S. residential mortgages.
- ACS – Census tract self-employment share.
- BEA – Non-farm proprietors' employment.
- FDIC – Branch deposits and locations.
- LODES – Census tract employment.

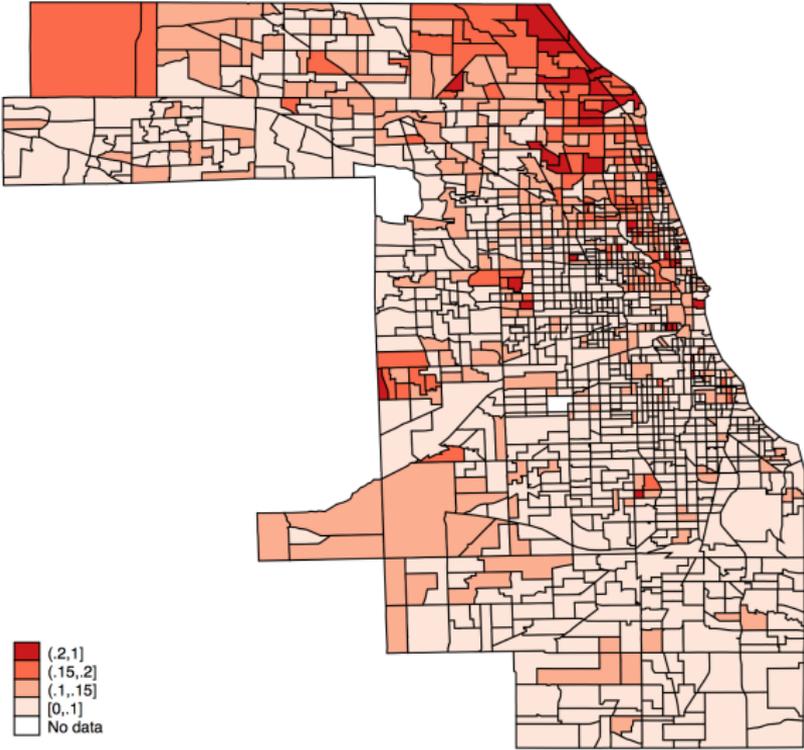
Locations of exempt banks



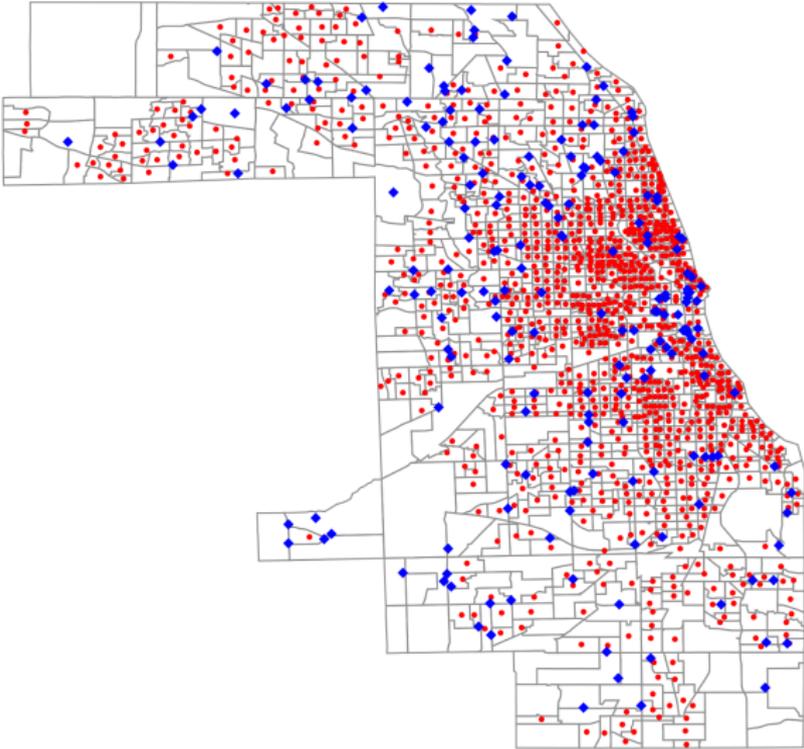
Locations of small non-exempt banks



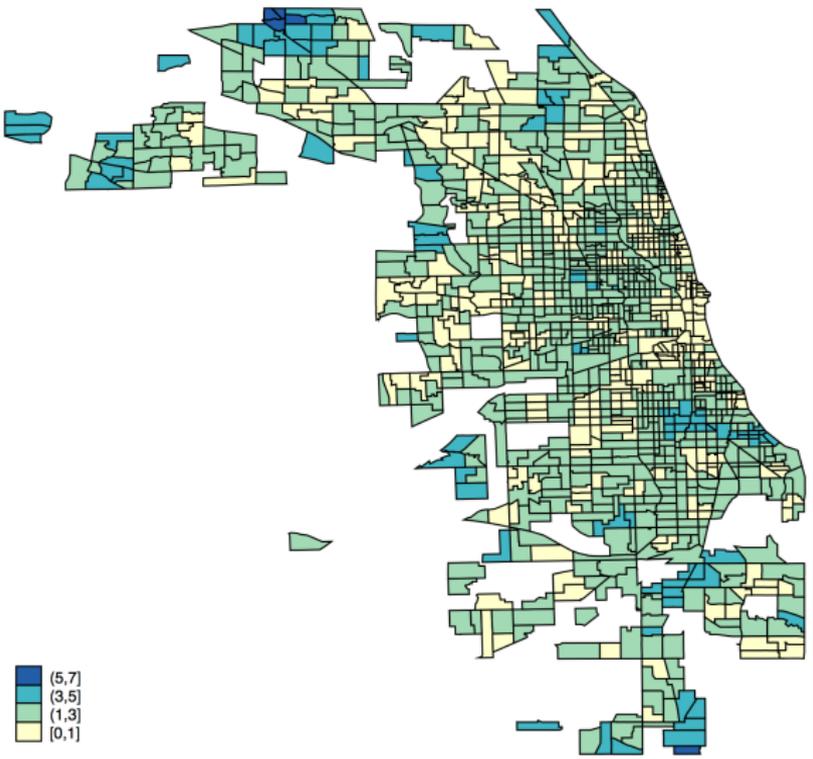
Households with self-employment income – Cook County, IL



Distance from exempt branches – Cook County, IL



Distance from exempt branches – Cook County, IL



Mortgage Credit

Are locations with high self-employment more affected?

Does relationship between census tract self-employment and credit growth change following policy?

$$\Delta \log(\text{Loans})_{c,y} = \gamma_{n,y} + \beta_{1,y} \text{SelfEmployment}_c + \beta_{2,y} X_c + \epsilon_{c,y}$$

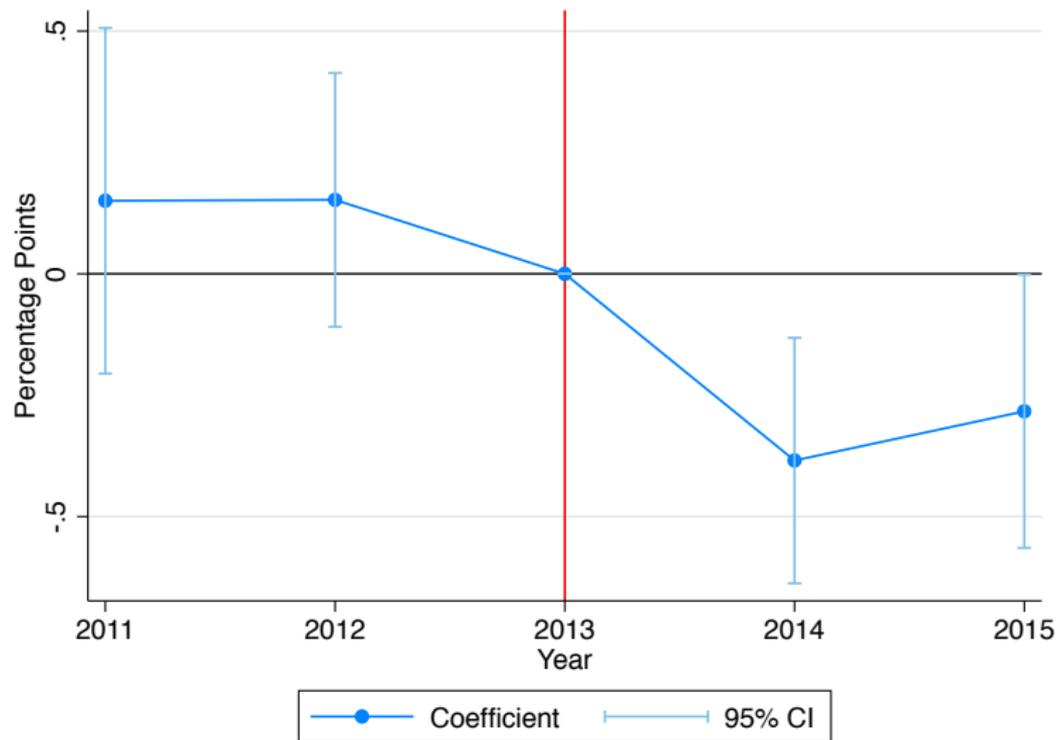
Are locations with high self-employment more affected?

Does market share of affected banks decline by more in high self-employment tracts?

$$M_{\text{NonExempt},c,y} = \gamma_c + \alpha_y + \beta_{1,y}\text{SelfEmployment}_c + \beta_{2,y}X_c + \epsilon_{c,y}$$

<i>Explanatory Variables</i>	% Loan Growth		Non-exempt Share	
	Coef.	SE	Coef.	SE
2011 × Self-emp.			0.151	(0.182)
2012 × Self-emp.	-0.064	(0.064)	0.152	(0.133)
2013 × Self-emp.	0.025	(0.077)		
2014 × Self-emp.	-0.307***	(0.049)	-0.385***	(0.129)
2015 × Self-emp.	-0.036	(0.045)	-0.283**	(0.144)
Number of Tracts	33,906		1,088	
Number of Counties	2,406		287	
Number of States	48		30	
Number of Observations	123,972		3,778	
County × Year FE	X			
Tract, Year FE			X	
Tract × Year controls	X		X	

Self-employment and Non-exempt Bank Share ($\beta_{1,y}$)

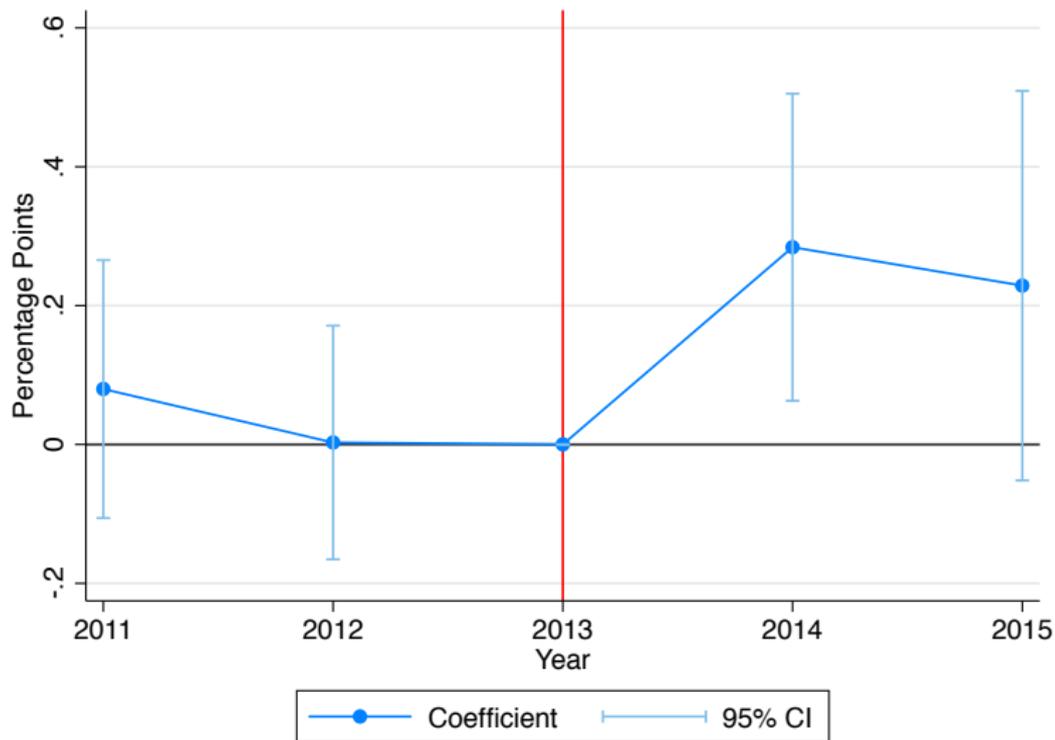


Employment

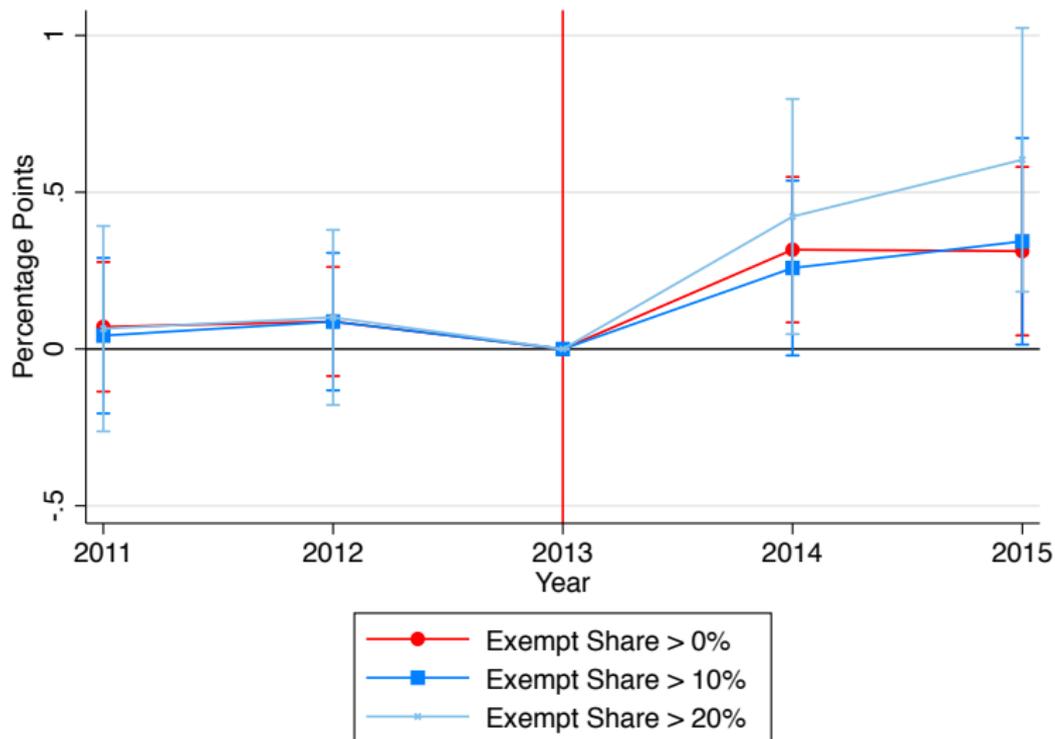
How does the policy affect self-employment?

$$\begin{aligned}\text{SelfEmployment}_{n,y} &= \gamma_n + \alpha_{s,y} \\ &+ \beta_{1,y} \times \text{ExemptDepositShare}_n \\ &+ \beta_{2,y} \times X_n + \epsilon_{n,y}\end{aligned}$$

Exempt Deposit Share and Self-employment ($\beta_{1,y}$)



Exempt Deposit Share and Self-employment ($\beta_{1,y}$)



How does the policy affect new small firm employment?

$$\frac{\text{New Small Firm Emp.}_{c,y}}{\text{Total Emp.}_{c,y}} = \gamma_c + \alpha_{n,y} + \beta_{1,y}d(\text{Nearest Exempt})_c \\ + \beta_{2,y}X_c + \epsilon_{c,y}$$

	(1)		(2)	
	New Business		Old Business	
	<i>New Small Firm Emp / Total Emp</i>			
	Coef./SE	p-value	Coef./SE	p-value
2012 × Distance (km)	0.0002 (0.0002)	0.213	0.0006 (0.0004)	0.117
2014 × Distance (km)	-0.0004*** (0.0001)	0.007	-0.0001 (0.0005)	0.884
Number of Observations	61,201		46,150	
County × Year FE	X		X	
Census Tract FE	X		X	

	(1)		(2)	
	New Business		Old Business	
	<i>log(New Small Firm Emp / Total Emp)</i>			
	Coef./SE	p-value	Coef./SE	p-value
2012 × Distance (km)	0.0037 (0.0055)	0.495	0.0014 (0.0021)	0.492
2014 × Distance (km)	-0.0098* (0.0052)	0.060	-0.0012 (0.0024)	0.623
Number of Observations	36,298		44,507	
County × Year FE	X		X	
Census Tract FE	X		X	

	(1)		(2)	
	New Business		Old Business	
	<i>log(New Small Firm Emp + 1 / Total Emp)</i>			
	Coef./SE	p-value	Coef./SE	p-value
2012 × Distance (km)	0.0017 (0.0035)	0.624	0.0000 (0.0019)	0.992
2014 × Distance (km)	-0.0078** (0.0037)	0.037	-0.0010 (0.0025)	0.699
Number of Observations	61,201		46,150	
County × Year FE	X		X	
Census Tract FE	X		X	

Summary of Results

- Ability-to-Repay rule reduces credit access for borrowers in high self-employment areas.
- Counties with a larger exempt bank presence have stronger growth in self-employment.
- Census tracts closer to exempt bank branches have stronger new small business employment outcomes.

- Non-pecuniary benefit from self-employment → welfare effects?
- Reduction in small firm entry:
 - Are affected (potential) firms less productive?
 - In general hard for most firms to access business loans, alternative funding initially.

Lending growth above and below 500 loan cutoff

