The Anatomy of the Transmission of Macroprudential Policies

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Macroprudential Regulation and Mortgage Lending

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- Idea: by limiting household leverage and debt/income,
  - reduce speculative purchases,
  - lower risk exposure of banks,
  - prevent another boom-bust cycle

This Paper

- Mortgage regulation in Ireland in 2015
  - restricts banks' new lending to ≤ 3.5 LTI, $\leq 80\%$ LTV
  - "allowances" for 15-20% fraction on non-conforming loans

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   - No reduction in mortgage lending
   - Substitution to less constrained borrowers
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   - Curbed house price growth in fastest-growing areas ✓
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3. Unintended consequences?
   - Benefits high-income at expense of low-income households
   - More business lending
   - Unclear effect on housing affordability in most expensive areas

Effect on Lending by Mortgage Type

▶ Strong reallocation to conforming mortgages

Total Mortgage Issuance

Conforming/Non-Conforming Issuance
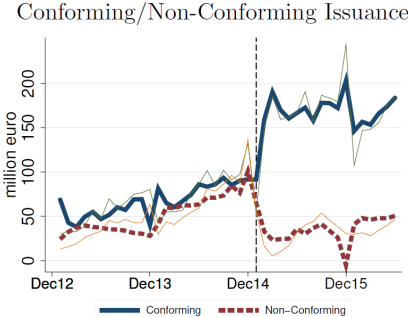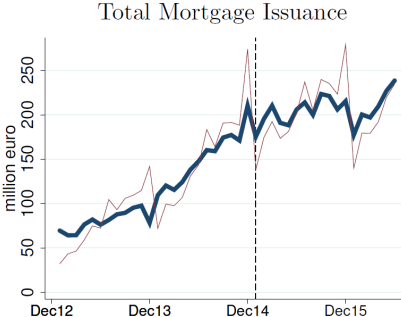
Effect on Lending by Borrower Type

- ▶ More lending to high-income in "high-distance" counties
- ▶ Surprising: large high-income market in Western Ireland?

Top Income Quintile

High Distance Counties · · · Low Distance Counties
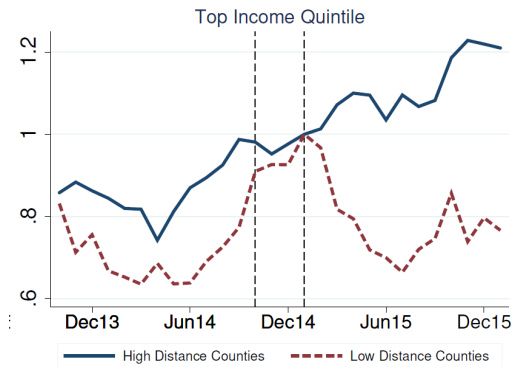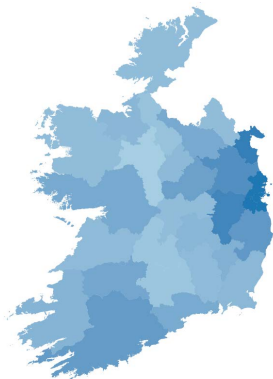
Effect on House Prices

- Dramatic turn-around in HPG in fast-growing areas
- Leveling off also in unconstrained (high-distance) areas that see increase in lending?
- Policy seems to have achieved one of its main goals
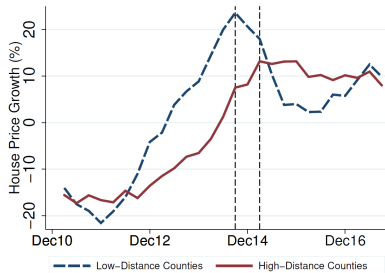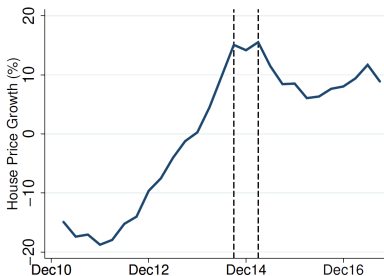
What to Expect for Bank Risk Taking?

- ▶ Think of bank problem as risky portfolio choice with many assets by risk-averse investor (leverage constraint, equity-related frictions)
    - ▶ Initial choice yields optimal PF with risk-return profile $\frac{\mu_P}{\sigma_P}$
    - ▶ Now impose some additional PF constraints
    - ▶ If set of assets rich enough, would expect new optimal PF to have similar risk-return profile $\frac{\hat{\mu}_P}{\hat{\sigma}_P} \leq \frac{\mu_P}{\sigma_P}$

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  - ▶ new mortgages are riskier despite lower LTV, LTI (?!)
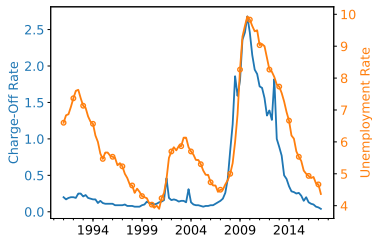
How Can New Mortgages Be Riskier?
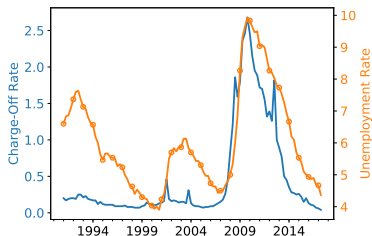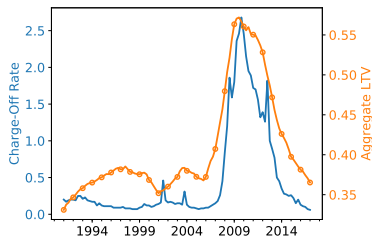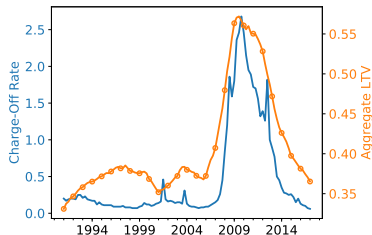

(a) Charge-Offs vs. Unemp. (b) Charge-Offs vs. LTV

▶ Strong empirical evidence: main drivers of mortgage default
  ▶ Negative home equity ($\rightarrow$ "strategic" default)
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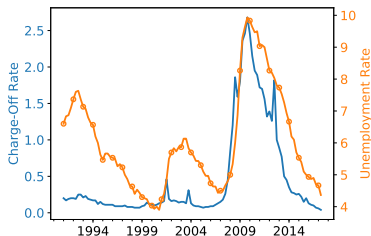
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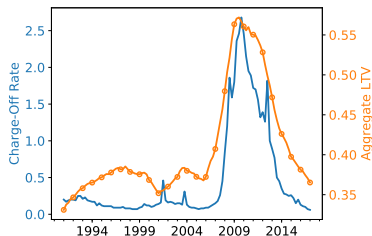

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- ▶ Why might this **not** work? Banks substitute to mortgages that are riskier in other dimensions
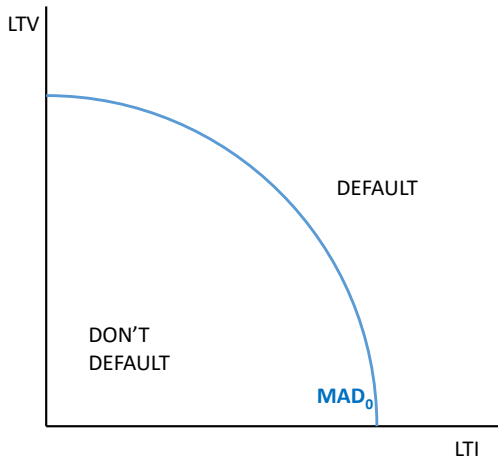
How could bank lending become riskier?
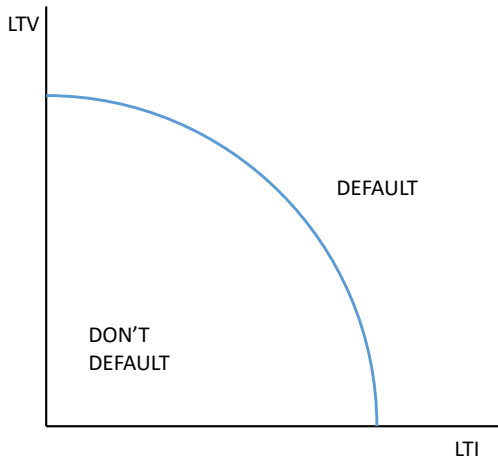
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- ▶ Maybe "triple trigger" with moral aversion to default (MAD)?
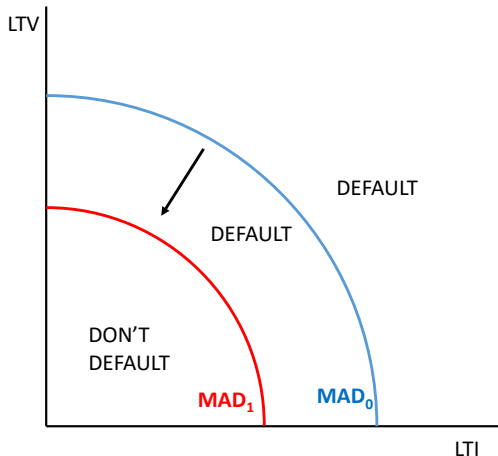
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- ▶ "Double trigger" theory of mortgage default
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- ▶ Riskier loans despite reduction in LTV, LTI by lending to population with $MAD_1 < MAD_0$

Default Probability Prediction Model

- Paper uses ML technique to predict PD for new loans
  - Model trained on Irish data from housing boom-bust
  - During 2007-09 bust, Irish banks had biggest losses from high-income borrowers
  - Since new loans to high-income borrowers, model predicts greater PD

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- ▶ Potential issues
  - ▶ Extrapolating from 2007-09 bust to current period
  - ▶ Was large drop in house prices necessary to trigger defaults?
  - ▶ Not sure if model controls for house price and income changes
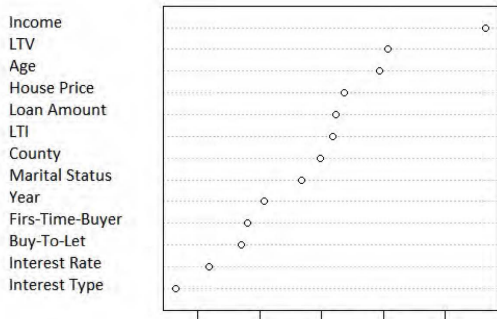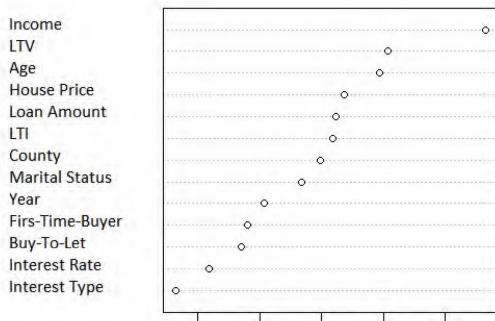
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- ▶ Would be nice to also see logit for comparison and "coefficients"

Other Aspects of Bank Risk Taking

- Banks also increase comm. loans, high-yield securities

Assets	Liabilities
Securities	Wholesale debt
Commercial loans	Deposits
Mortgages	
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- ▶ Effect on bank profitability?

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Distributional Effects and Housing Affordability

- Policy seems to
  - reallocate credit from constrained to unconstrained
  - and tilt relative prices in favor of high-income borrowers

Panel A	Pre	Post	Difference
Q1	4.12	3.84	-0.28
Q2	4.24	3.85	-0.39
Q3	4.21	3.81	-0.40
Q4	4.21	3.80	-0.41
Q5	4.24	3.78	-0.46

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- Short-term effect on affordability most likely negative

- But: lower price growth $\Rightarrow$ better affordability in long-term

- Hard to say something about welfare without model

Summary

- Excellent empirical paper on important policy change

- Effects in line with predictions of standard theories
    - Tighter credit constraints $\Rightarrow$ lower house prices
    - Banks reoptimize after imposition of portfolio constraints

- Dig deeper for results on bank risk taking
    - More complete accounting of changes to bank balance sheets
    - Include additional vars in default prediction model

- Next paper: evaluate long-term effect on affordability