Why Do Borrowers Default on Mortgages? A New Method for Causal Attribution

Peter Ganong and Pascal Noel

UChicago and NBER

November 20, 2020
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- Separate “strategic” defaults from “cash-flow” and “double-trigger” defaults

Two challenges

- Mortgage servicing data do not record adverse life events
  - Prior work: coarse measures such as regional unemployment
  - Ingredient #1: link default to contemporaneous bank account income for 3 million borrowers
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2 Empirics: main estimate

3 Empirics: internal and external validity

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Outline

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4. Comparison to model of mortgage default
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  - “Track a panel of several thousand mortgages from origination and gather detailed information whenever termination occurs”

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Mortgage servicing (standard)

- Default: three missed payments
- Loan-to-value ratio: $\frac{\text{total mortgage debt on home}}{\text{purchase price} \times \text{CoreLogic price index}}$
  - Robustness 1: Define abovewater as LTV < 60 (truly abovewater unless house price error of 3 standard deviations)
  - Robustness 2: Measurement error correction using two-sample IV with validation data

Linked bank account (novel)

- Balance: January 2007 to October 2015 (n = 5 million)
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“Only 3% of defaults are strategic; 97% are cash-flow or double-trigger”
Causal attribution formula (Details in paper)

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**Interpretation relative to prior evidence**

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1 Data

2 Empirics: main estimate

3 Empirics: internal and external validity

4 Comparison to model of mortgage default
Relax expositional assumption: LTV cutoff of 100
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3% of defaults finding: relaxing assumptions

- Already shown
  - Alternative LTV cutoffs
  - Entire distribution of change in income

- Further robustness
  - Account for LTV mismeasurement
  - Alternative numbers of missed payments
  - Bank account balance
  - Separate estimates by year from 2008 to 2014
  - Non-recourse states
  - Test for income manipulation
  - Investors
Common questions

Can the method ever detect *any* strategic default?

- Yes!
- Specification motivated by Mayer, Morrison, Piskorski, and Gupta (AER 2014)
- 14% strategic default in subsample with three consecutive missed payments

Are our results driven by peculiarities of data set, or definition of “strategic”?

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