Reference Points in Refinancing Decisions

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Motivation

- Borrowers forgo billions by not refinancing their mortgage
- **Why** are borrowers leaving money on the table?
  Andersen et al. (2020); Johnson et al. (2019); Maturana and Nickerson (2018)
- **This paper:**
  - behavioral explanation: forgoing a saving not seen as an actual loss
  - exploits a quirk of mortgages in the UK
  - shows that borrowers base refi decisions on past uninformative rates
UK Mortgage Design

Initial Fixed Period

2-5 years

Reset Date
UK Mortgage Design

Reversion Rate (SVR)

Initial Fixed Period

Automatic Reset

Reset Date
UK Mortgage Design

- High prepayment penalties
- Initial Fixed Period
- No prepayment penalties
- Reversion Rate (SVR)
- Refinance to current rates
- Reset Date
UK Mortgage Design

Initial Fixed Period

Reversion Rate (SVR)

Refinance to current rates

Reset Date
Reversion Rate (SVR)

Initial Fixed Period

Refinance to current rates

Reset Date
The Refinancing Problem

Initial Fixed Period

Reset Date

Reversion Rate (SVR)

Cost of refinancing

Refinance to current rates
The Refinancing Problem

Reversion Rate (SVR)

Initial Fixed Period

Refinance to current rates

NPV

Reset Date
The Refinancing Problem

Initial Fixed Period

Reversion Rate (SVR)

Refinance to current rates

NPV

Reset Date
Incentives to Refinance

Source: Bank of England Interactive Database
Identification Challenges

1. Estimates unaffected by controls for age and income (proxies for financial literacy)
2. Longer fixation alone does not predict less refinancing
Data and Variables

- Loan-level panel data from the European DataWarehouse
  - Securitized residential mortgages
  - Approx. 80,000 reset events between 2013 and 2017
  - Excludes loans in arrears, default and LTV > 90

- Main explanatory variable

  Relative Gain $\equiv$ expired rate $-$ reversion rate

- LHS variable (baseline)

  $refi = 1$ (Refinanced within 6 months from reset)

- Reference dependence hypothesis:

  Relative Gain $\uparrow$ $refi \downarrow$
### Regression Results with 3-way Fixed Effects

<table>
<thead>
<tr>
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<th>(5)</th>
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<tbody>
<tr>
<td><strong>Relative Gain</strong></td>
<td>-0.066***</td>
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<tr>
<td></td>
<td>(-5.771)</td>
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<td>(-9.736)</td>
<td>(-10.346)</td>
</tr>
<tr>
<td>Loan-level controls</td>
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</tr>
<tr>
<td>Borrower-level controls</td>
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</tr>
<tr>
<td>Mortgage Type Dummies</td>
<td>✓</td>
<td></td>
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<tr>
<td>Month * Lender * LTV bin FE</td>
<td>✓</td>
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</tr>
<tr>
<td>Observations</td>
<td>79,468</td>
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<td>R-squared</td>
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<td>0.148</td>
<td>0.151</td>
<td>0.162</td>
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Loan-level controls: remaining balance (log), cumulative LTV, years to maturity; Borrower-level controls: household income (log), age; Mortgage type: interest-only mortgage, first-time borrower, low-documentation loan

- 1.25% (1-sd of Relative Gain) × -0.066 ($\hat{\beta}$) = -0.08
- roughly 14% of unconditional refi probability (59%)
\[ ref_i = \sum_{k=a}^{b} \beta_k D_i^k + \gamma' W_i + \alpha_{LTV,l,\tau} + \alpha_n + \varepsilon_i \]
\[ \text{refi}_i = \sum_{k=a}^{b} \beta_k D_i^k + \gamma' W_i + \alpha_{\text{LTV}, i, \tau} + \alpha_n + \varepsilon_i \]
Don’t fall victim to your lenders’ standard variable rate

The trap awaiting borrowers when fixed-rate mortgage deals end

So there’s more motive for people to remortgage?

Precisely. Fixed-term and tracker rates have come down in the past two years to record lows: the average rate on a two-year fix was 2.3 per cent at the end of last month, according to Moneyfacts. This was down from 2.6 per cent a year earlier.

The market appears to be responding: remortgaging approvals have risen from £7.6bn in October to £8.1bn in January, according to seasonally adjusted figures from the Bank of England.
Addressing Identification Concerns

Controlling for the fixation choice

- Before: rely on CS variation in reference points
- Alternative: Exploit TS variation and control for current level of i.r.
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| Controls                  | ✓         | ✓         | ✓          | ✓          |
| Lender FE                 | ✓         | ✓         | ✓          | ✓          |
| LTV Bucket FE             | ✓         | ✓         | ✓          | ✓          |
| Observations              | 79,468    | 79,468    | 55,339     | 24,129     |
| R-squared                 | 0.124     | 0.129     | 0.119      | 0.111      |
Conclusions

- HH decisions to refinance are affected by the past rate on their expired mortgage, consistent with reference dependence

- Evidence of reference points from
  - important financial decision and stakes are high
  - timing of the decision is pre-determined
  - no bargaining (zero-sum game) where anchoring avoids making someone worse off
Thank you