Unraveling Information Sharing in Consumer Credit Markets

Benedict Guttman-Kenney (JMP)[1] & Andrés Shahidinejad[2]

[1]Chicago Booth [2]Northeastern University

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TransUnion (the data provider) has the right to review the research before dissemination to ensure it accurately describes TransUnion data, does not disclose confidential information, and does not contain material it deems to be misleading or false regarding TransUnion, TransUnion's partners, affiliates or customer base, or the consumer lending industry. Calculated (or derived) based on credit data provided by TransUnion through a relationship with the Kilts Center for Marketing at The University of Chicago Booth School of Business. No individual firms are identified in these data.

Breakdown in information sharing

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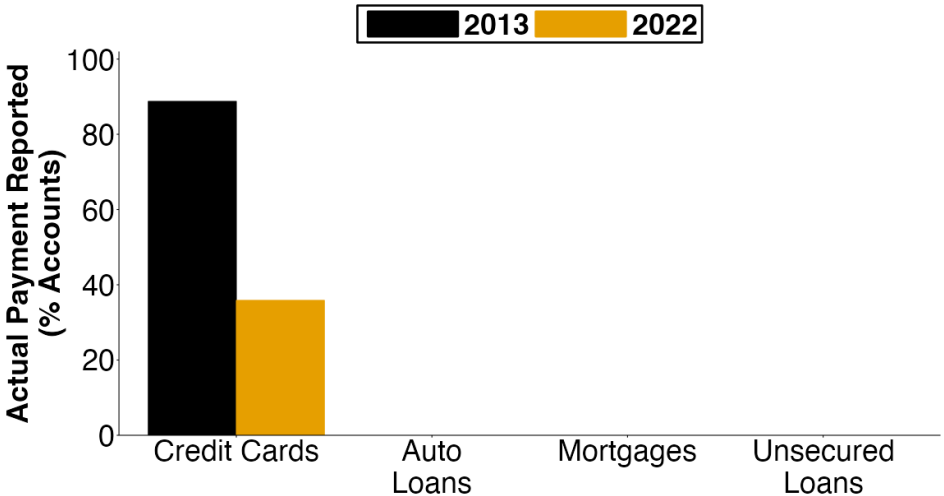
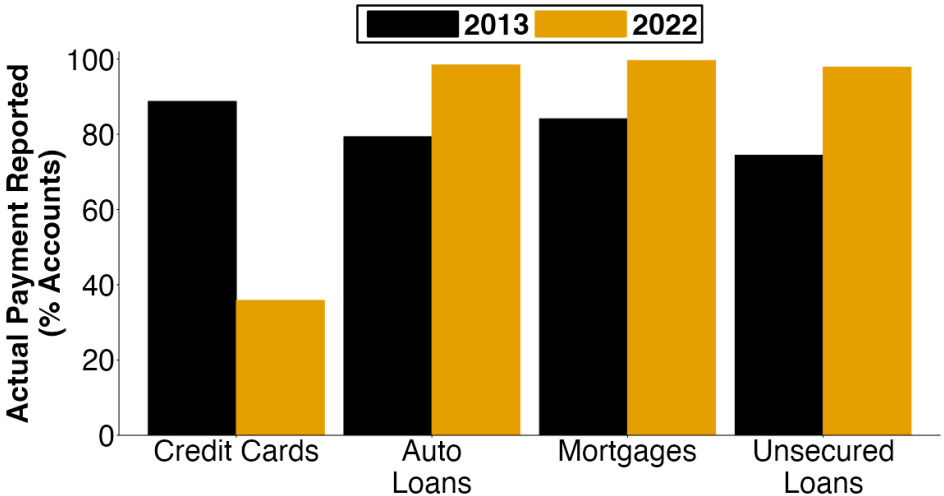


Breakdown in information sharing in credit cards but not in other credit products



Key Contributions

1. **Empirically document fragility of information sharing in highly developed market**
   - Breakdown an unintended response to an innovation enabling poaching
   (e.g., Diamond, 84; Ramakrishan & Thakor, 84; Pagano & Japelli, 93; Raith, 96; Bouckaert & Degryse, 06; Bergemann & Bonatti, 19; Jones & Tonetti, 20)

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3. **Inform policymaking by Consumer Financial Protection Bureau (CFPB)**
   - Research shows limits of voluntary information sharing and supports policy to mandate

Four Parts to Paper

1. **Unraveling Information Sharing**
2. **Consumer Credit Profitability**
3. **Selection in Credit Card Lenders Sharing Information**
4. **Effects of Mandating Information Sharing**

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Data: TransUnion US consumer credit reports.

What information is missing in YOUR credit report, why missing, and its implications?

Part 1. Unraveling Information Sharing

- Describe breakdown of sharing information on actual payments in US consumer credit markets
- Institutional details of innovation ("Trended Data")
  - *"The most important tool developed...since the credit score"*
  - Innovation harnesses actual payments for revealing profitable consumers to target marketing
  - Unraveling an unintended response to innovation
- Difference-in-differences: innovation $\rightarrow$ information sharing
  - $\downarrow$ 65 percentage point in information sharing for credit cards vs. auto loans
- Unraveling of market for sharing information

Part 2. Consumer Credit Profitability

- Framework for consumer credit profitability
- Measurement error by not observing actual payment data
  - 51% noise credit card spending
  - 6% noise revolving debt
- Predict profitability in credit cards, auto loans,& unsecured loans
  - Actual payments information ↑ predicting lifetime profits:
    +31% interchange net of rewards
    +4% financing charges (interest + fees) net of charge-offs

Part 3. Selection in Credit Card Lenders Sharing Information

- Higher profitability and higher spending explains differential decisions
  - $+31\%$ mean and 41% variance spending
- Only worst residual types remain sharing information (Akerlof-esque)
- Difference-in-differences: innovation $\rightarrow$ poaching
  - Heterogeneous exposure by % card balances with lenders sharing information
  - More exposed $\rightarrow$ more information revealed $\rightarrow$ $+13\%$ new credit cards openings

Part 4. Effects of Mandating Information Sharing

- Federal Trade Commission (FTC) mandating sharing information on credit card limits
- Heterogeneous exposure by institutional feature of utilization.
- $\uparrow$ 23 point credit score
- $\uparrow$ competition with substitution from inside to outside lenders

Roadmap

1. **Unraveling Information Sharing**
2. **Consumer Credit Profitability**
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Effects of Mandating Information Sharing: Evidence from Credit Card Limits

Policy

- 1990s most credit limit information not shared
  $\rightarrow$ Regulatory pressure and threats by agencies to restrict access
- 2000s most **but not all** lenders sharing credit limit information (Hunt, 05)
  $\rightarrow$ Federal Trade Commission (FTC) rules requiring sharing credit limit information
- By 2010s full coverage

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How credit limits matter

- 20% to 30% of credit score is credit utilization: $\frac{\text{statement balance}}{\text{credit limit}}$
- If no credit limit shared,: use highest historical account balance
  → Typically overstates utilization
  → Consumers appear riskier to outside lenders

Difference-in-Differences for Causal Effects of Mandating Information Sharing

Consumer-level exposure: Difference between the *revealed* credit limits ($r_i \equiv \sum_c r_{i,c}$) and credit limits that could be previously *inferred* ($h_i \equiv \sum_c h_{i,c}$)

$$EXPL_i = \frac{r_i - h_i}{r_i}$$

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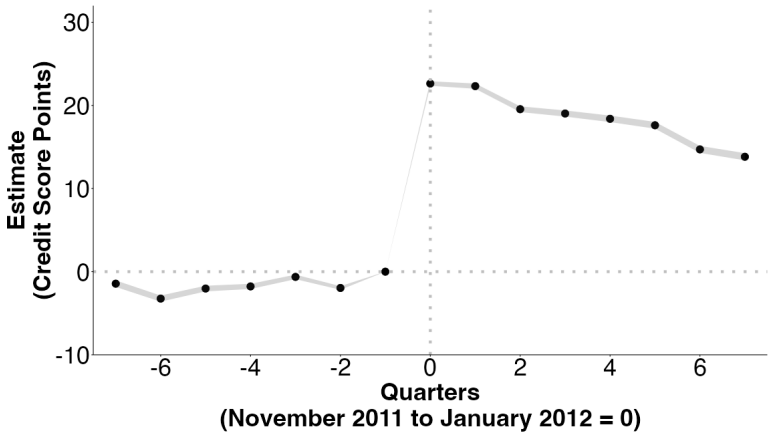
Difference-in-Differences with Varying Treatment Intensity

Balanced panel of 1.09 m consumers. Clustering at consumer-level.

$$Y_{i,t} = \sum_{\tau \neq -1} \delta_\tau \Big(D_\tau \times EXPL_i \Big) + \gamma_i + \gamma_t + \varepsilon_{i,t}$$

Information Revelation ↑ Credit Scores

Difference-in-Differences Estimate ↑ 22.6 [22.4, 22.9] on mean 776 (t-1)



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Outcomes by **inside** and **outside** lenders.

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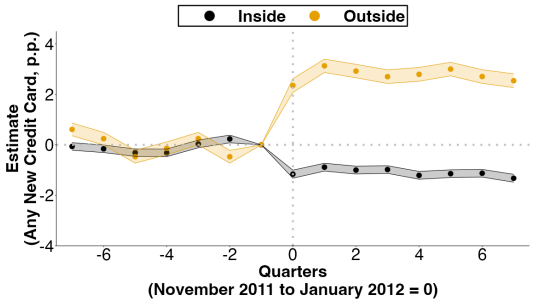
Any New Credit Cards Opened

-56% inside, +32% outside



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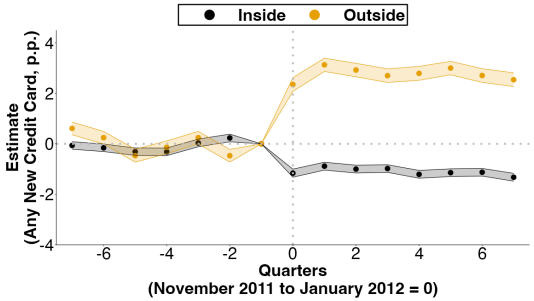
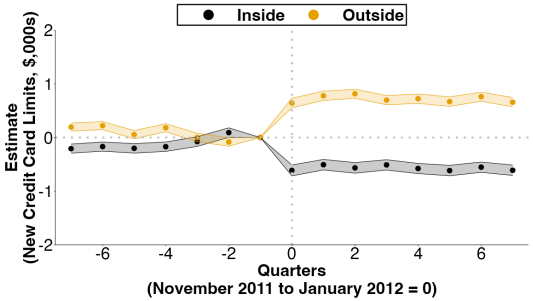


Credit Limits of New Credit Cards Opened

-90% inside, +48% outside



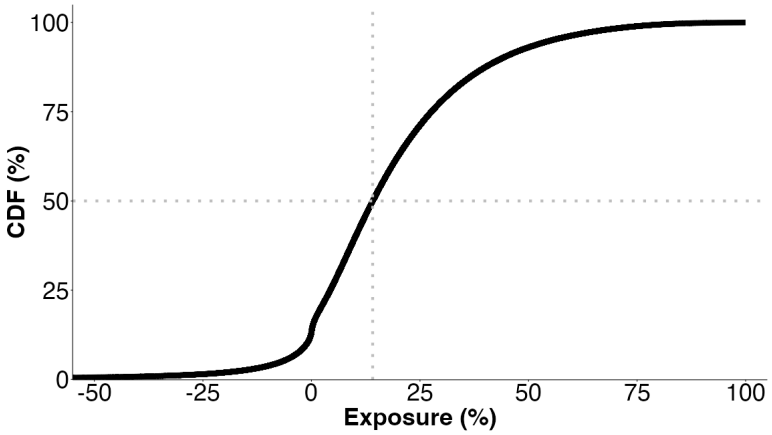
Thank you!


www.benedictgk.com


benedict@chicagobooth.edu


@gk_ben

CDF of Exposure Measure



Mean 17%, Median 14%