The Mechanisms of Reputation in Extralegal Enforcement
Greg Buchak
University of Chicago

Abstract
This paper studies the mechanisms by which reputation enables a community to enforce contracts against formal authority. The canonical examples of private ordering involve economically homogeneous communities with strong informal ties. This community raises the question: Are there ties necessary for successful private ordering? Drawing on a unique dataset of anonymous and unsecured online peer-to-peer loans, this paper shows that persistent online reputation mediates several theoretically distinct economic enforcement mechanisms: reputation is present. This commonality raises the question: Are these ties necessary for non-economic contexts solves the "cold start" problem for newcomers to the community? While it is possible to imagine examples of online community ties play an important role in mediating these mechanisms, this paper shows that private ordering can thrive so long as another mediator—here, online reputation—is present.

1. Background

1.1 Setting

The Mechanisms of Reputation

1.2 Motivation

Motivation and Setting


Even without formal enforceability, most loans are repaid with interest:

Even without formal enforceability, most loans are repaid with interest:

Repayment rates are fairly stable over time:

This paper: Use rich empirical setting to disentangle of competing economic accounts underlying the claim "reputation matters."

Objectives

1. Identify economic channel through which reputation operates:
   - Reputon is equilibrium outcome of repeated game?
   - Reputation signals value of non-social interactions?
   - Reputation provides information about persistent borrower qualities?

2. Explore counterfactuals:
   - Effect of better information environment?
   - Effect of repeat vs. non-repeat play?
   - Effect of improving formal institutions?

A Simple Model

- Unit of analysis: Lending decision.
- Lender more likely to lend if borrower more likely to repay.
- Borrowers repay if Can repay AND Choose to repay.

Lend_i ~ Can repay. + Chooses to repay. + ε_i

Breaking Apart the Repayment Decision

Chooses to repay. ~ μ + |{z}| + |{z}| + |{z}| + |{z}|

1. Equilibrium Mechanism

Importance of repeat play depends on value of future access v_i:

\[ v_i = \frac{1}{1 + e^{\lambda_i + x_i + \lambda_i + x_i}} \]

Identification though variation in λ_i, probability of subsequent request:
- ML algorithm on request text: "bills" or "gas" vs. "one-time."
- Train on testing set of requests that are filled and repaid.

2. Social/Non-Monetary Mechanism

Borrowers use site for non-loan purposes: Discussing news, hobbies, etc.

- On-site participation: Comment quantity, quality, account age.
- Cold Start—Borrowers need a way to show they aren’t frauds.
- Account creation is free but commenting/aging is costly.
- Social elite-decree-enforceable problem.
- Only necessary for first borrowing.

3. Learning Mechanism

- Borrowers differ in intrinsic willingness to repay.
- E.g., some are complete frauds and will never repay; others are honest.
- Past repayment predicts lending even conditioning on other mechanisms.
- Main assumption: Uncontrolled for/mis-measured mechanisms uncorrelated with past repayments. (Upper bound on "learning")

4. Formal Institutions

- Money typically transferred through Paypal or Western Union.
- Western Union: Defaults recoverable (bad institution).
- Defaults over Paypal may be recoverable (good institution):
   - Lending over Paypal violates terms of service; lender will be suspended if discovered.
   - BUT lenders can claim they paid for undelivered goods.
- This sometimes allows partial recovery of principal (not interest)

Hypotheses and Empirical Specification

1. Equilibrium Mechanism

- More likely to ask again → more likely to get loan.
- Effect bigger with good reputation: (Certification or leverage).

2. Social Mechanism

- More social ties → more lending regardless (Social capital)
- More social ties → more lending first time only. (Cold start)

3. Learning Mechanism

- Past repayments → more lending conditional on other mechanisms.

4. Formal Institutions

- Better formal institutions (Paypal) → more likely to lend, and reduce impact of reputation.

Conclusions

1. Some evidence for all mechanisms.
2. Learning and equilibrium most important.
3. Social ties help with cold start.
4. Reputation is a substitute for formal institutions.
5. Reputation complements the equilibrium mechanism.

References


Acknowledgements

I am indebted to Lisa Bernstein, William Hubbard for excellent guidance, and to Bill Wilhelm, participants from the 2017 Oxford Centre for Corporate Reputation Conference and the 2017 SOR for their helpful comments and questions.

Contact Information:
Booth School of Business
University of Chicago
Phone: (612) 764 9101
Email: gbuchak@chicagobooth.edu

Results

<table>
<thead>
<tr>
<th>Loan Mode</th>
<th>Cold Start</th>
<th>Nexus</th>
<th>(N = 7)</th>
<th>5.000</th>
<th>0.05</th>
<th>0.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Loan Mode</th>
<th>Cold Start</th>
<th>Nexus</th>
<th>(N = 7)</th>
<th>5.000</th>
<th>0.05</th>
<th>0.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Upshots

1. Past repayment → about 40% greater funding probability.
2. Equilibrium: Strong evidence that future needs predict current access and effect is stronger once certified by past repayment.
3. Social: Social ties only matter for first borrower—solves cold start problem, not "social capital" problem.
4. Learning: Past repayment predicts lending even conditioning on other mechanisms; Hal of conditional effect can be explained.
5. Institutions: Better formal institutions (Paypal) → more likely to lend, and reduce impact of reputation.

Notes:
- p < 0.1, * p < 0.05, ** p < 0.01

Observations, 54,267 boys, 4,474 girls

Time FE, N Y Y

Significance: χ² = 12.350, degree of freedom 3

Table 1. Results