

Default Data Manipulation in Marketplace Lending

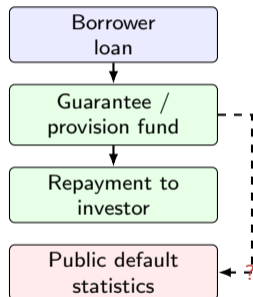
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Motivation

- **The P2P Low Default Rate Paradox:** Persistently low reported default rates despite lending to unbanked/high-risk segments.
 - *Example:* Zopa (0.5%) vs. UK Banks (2%+).
 - Platforms act as "Information Gatekeepers," strategically choosing which defaults to reveal.
- **Broader digitalization of financial services:** investors increasingly rely on platform-reported data, while complex digital structures can make risk harder to verify.
- **Opaque credit enhancement is popular in fintech lending:** guarantees, provision funds, and partner backstops support repayment, but can make bad loans less visible.
- **Regulatory concern over platform transparency.**

Credit enhancement and disclosure



If covered defaults are not fully reported, credit enhancement becomes **opaque**.

Research Questions

Questions

- How does **opaque credit enhancement** affect market efficiency and market stability?
- What disclosure rule is optimal when credit enhancement can hide defaults?

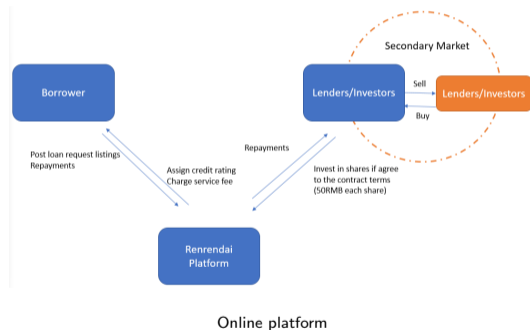
Approach: Combine P2P loan-level evidence with a disclosure model to study efficiency, stability, and optimal transparency.

We use data from a leading Chinese P2P lending platform

- Offline branch rollout introduces credit-enhanced loans with no default disclosure.
- Staggered branch openings provide city-time variation.
- Loan-level data link defaults, prices, investors, and market stress.

Institutional Setting: A Leading Chinese Marketplace Lending Platform

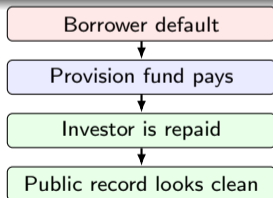
- Investors fund loans online and observe platform-published performance data.
- In late 2012, the platform integrates offline loan applications from its sister firm's offline branches.
- Offline loans are labeled **"Field"** loans and are backed by a risk-provision arrangement, and no default disclosure



How Defaults Are Hidden: Disclosure Wedge

How

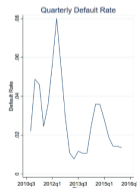
- An offline-originated borrower defaults.
- The provision fund repays investors before the default appears in platform records.
- Investors observe smooth performance data and infer that the claim is safer.



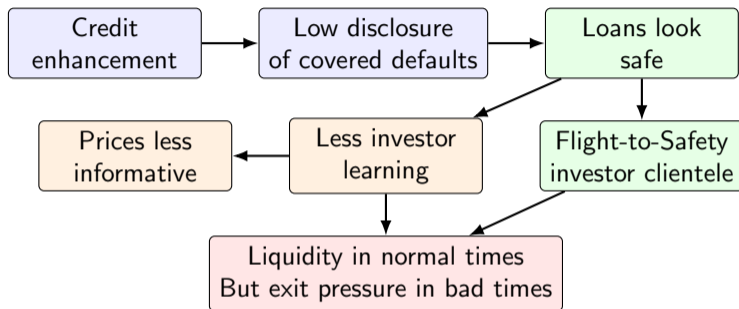
This is **insurance plus opaqueness**: credit enhancement changes what default information reaches investors.

Evidence

- After introducing offline loans, reported defaults fall sharply.
- “Field” loan default rates are close to zero.
- Court documents and online-loan comparisons indicate underlying defaults.



Conceptual Mechanism



- Opaque enhancement creates an relatively **information-insensitive** market in normal times.
- The same design makes the market facing fragile investor run when a bad shock arrives.
- Channels: investor clientele, and investor learning.
- The platform values opacity because fee revenue rises with funded volume.

Model: Claim Design and Investor Learning

- Claim design: $C = (R, g, \ell)$.
- Borrowers: type $\theta \in \{G, B\}$ with $q_G > q_B$; each application needs one unit of funding.
- Investors: sophisticated investors can learn type; yield-seeking investors cannot learn and fund only if the claim looks safe.
- g : credit-enhancement coverage.
- ℓ : disclosure intensity for covered defaults (0: opaque; 1: full disclosure).
- A true default contributes to public default statistics:

$$d^{pub}(g, \ell) = [1 - (1 - \ell)g] (1 - \bar{q})$$

$\bar{q} = xq_G + (1 - x)q_B$: true average repayment probability in the applicant pool.

Comparative Statics

- Higher g and lower ℓ make claims look safer.
- Flight-to-Safety participation rises; sophisticated learning falls.
- Volume rises when investor participation is binding.
- Fragility rises after bad public news.

Empirical Test Setup: Stacked Branch-Opening DID

Data: 1,033,465 Renrendai P2P loan applications, Oct. 2010–Jan. 2017; investor bids and monthly repayment performance observed.

Identification

- Ucredit opens offline branches across cities at different dates.
- For each branch opening j , keep loans in a 6-month window before and after the opening.
- Treated: borrowers in the branch city. Controls: borrowers in same-province cities without an offline branch in that window.
- Stack all branch-opening windows and compare changes in reported defaults.

Regression

$$Y_{ij} = \alpha + \beta \text{Treat}_{ij} \times \text{Post}_{ij} \\ + \gamma \text{Treat}_{ij} + \delta \text{Post}_{ij} + X_{ij}'\theta + \varepsilon_{ij}$$

- $\text{Post}_{ij} = 1$ after branch j opens.
- X_{ij} : borrower and loan controls; time/event controls in robustness.
- Y_{ij} : default rate, market outcomes, investor characteristics, etc.

Underreporting Magnitude

Branch openings imply at least **3.66 pp** monthly default-rate underreporting on average.

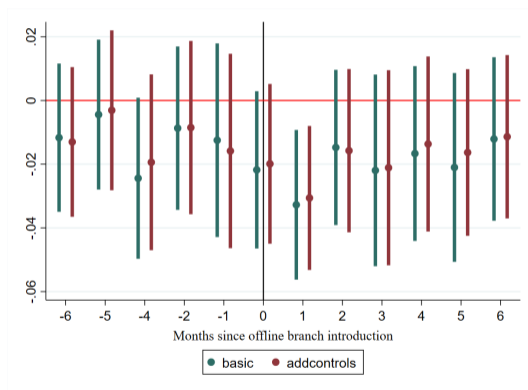
Result: Prices Become Less Informative

Test Specification

Stacked 6-month branch-opening windows

$$\begin{aligned} \text{Default}_{it} = & \beta_0 r_i^* + \sum_m \beta_m (1\{\text{RelMth} = m\} \times \text{Treat}_i \times r_i^*) \\ & + \sum_m \phi_m (1\{\text{RelMth} = m\} \times r_i^*) + \psi(\text{Treat}_i \times r_i^*) \\ & + FE_i^{\text{rating}} + FE_j^{\text{stack}} + FE_i^{\text{city}} + X'_{it} \delta + \varepsilon_{it}. \end{aligned}$$

- r_i^* : LGD-adjusted interest rate.
- Efficiency benchmark: default risk should be priced into interest rates.
- Plot shows β_m around branch openings.
- Negative post-opening β_m : prices become less informative about default risk.



Market efficiency test: dynamic coefficients around branch openings

Result: Opaque Enhancement Attracts Liquidity

- Offline branches introduce credit-enhanced loans with weak default disclosure.
- Funding volume rises after branch openings.
- Treated markets attract about **1.7 times as much bidding volume** after branch openings.
- The liquidity gain comes with less price informativeness and weaker investor learning.

Offline Branches and Funding Liquidity

Dependent variables from the branch-opening DID

	Log total bid amount
Treat \times Post	0.533*** (0.162)
Observations	4,247
R^2	0.690

Standard errors in parentheses. Log outcome: $\exp(0.533) \approx 1.70$. * $p < 0.10$,
** $p < 0.05$, *** $p < 0.01$.

Result: Flight-to-Safety Investor Clientele and Less Investor Learning

- Opaque enhancement attracts capital that is sensitive to perceived safety but less attentive to borrower-level risk.
- Existing investors invest less actively and rely more on automated bidding.
- After offline branch openings, investor activity falls in treated cities.
- Investor clientele: [safety-looking claims draw Flight-to-Safety funding and discourage investor learning.](#)

Offline Branches and Investor Characteristics

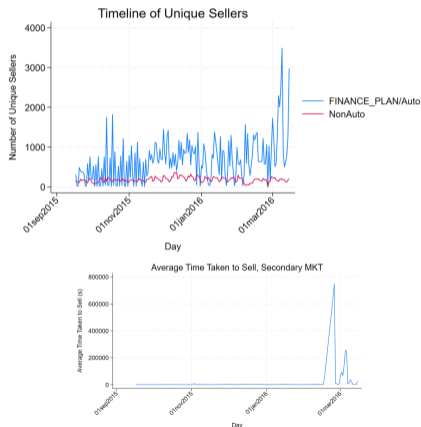
Dependent variables measured at the investor-month level

	Inv. frequency	Avg. monthly investment	Normal bid share
Treat \times Post	-4.301*** (1.619)	-0.275*** (0.077)	-0.025* (0.014)
Observations	4,898	4,898	4,898
R^2	0.101	0.169	0.111

Controls: borrower and loan characteristics, relative month. Robust standard errors in parentheses.

Big Negative Industry Shock: Ezubao Shock

- Shock date: Dec. 16, 2015.
- Ezubao was a major Chinese P2P platform exposed as a Ponzi scheme, triggering an industry-wide loss of confidence.
- The Ezubao scandal makes investors re-evaluate opaque P2P claims.
- Investors try to exit through Renrendai's secondary market.
- The number of sellers rises sharply, and time taken to sell jumps.
- Flight-to-safety investors more likely to sell.
- Interpretation: good-time liquidity becomes exit pressure after bad news.



Event study "Ezubao": sellers and time to sell in Renrendai secondary market, Sep. 2015–Mar. 2016

Optimal Disclosure: Platform Discloses Too Little

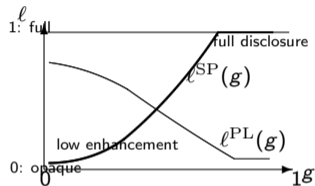
Given coverage g , choose disclosure ℓ . $\ell = 0$:

opaque/masked covered defaults; $\ell = 1$: full disclosure.

- The planner uses disclosure to preserve screening and market stability.
- The platform earns fees from funded volume and does not fully internalize weaker screening or run risk.
- Lower disclosure makes covered defaults less visible and attracts passive funding.

$$\ell^{\text{PL}}(g) < \ell^{\text{SP}}(g)$$

Privately chosen disclosure is below the social optimum.



Higher g makes weak reporting hide more borrower-performance information; the planner raises disclosure, while the platform uses opacity to expand passive funding.

Takeaways

- Opaque credit enhancement reduces market efficiency by weakening the link between prices and default risk.
- It attracts a less sophisticated, passive, Flight-to-Safety investor clientele.
- It can improve liquidity in good times, but hidden risk can turn liquidity into exit pressure after bad news.
- After negative news, the market can move from information-insensitive funding to runs and secondary-market stress.
- Platform-chosen disclosure is below the socially optimal level.

Thank you!
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