Open Banking: Credit Market Competition When Borrowers Own the Data

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Open Banking

Open bank data upon customer's consent

Data sharing in banking industry today

With the open banking environment

At the customers' discretion, financial institutions process the costumer's personal and transactional data held by another financial institution.

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- EU, UK, Brazil: government-led; mandate banks to enable data sharing with opt-in/opt-out feature
    - Brazil to be completed by Sept 2022
- U.S., market driven: UltraFICO, Capital One and Plaid, Stripe "Financial Connections"

Open Banking

A Survey done by Deloitte Insight, April 2019

"Imagine you want to use a financial product offered by an organization other than your bank....it needs information from your bank, such as the amount of money coming in and going out of your accounts.... You then instruct your bank to share this information with this other institution or app. Should you wish to stop using this product, you can instruct your bank to stop sharing your data at any given point in time, with no strings attached. This concept is called ***open banking****."*

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Welfare implications on borrowers

- "Voluntary" feature, opt-in/opt-out feature

This Paper: Welfare Implications

Credit market competition (Broecker 90; Hauswald and Marquez 03)

- Lenders with asymmetric screening abilities, that could be affected by borrowers' data sharing

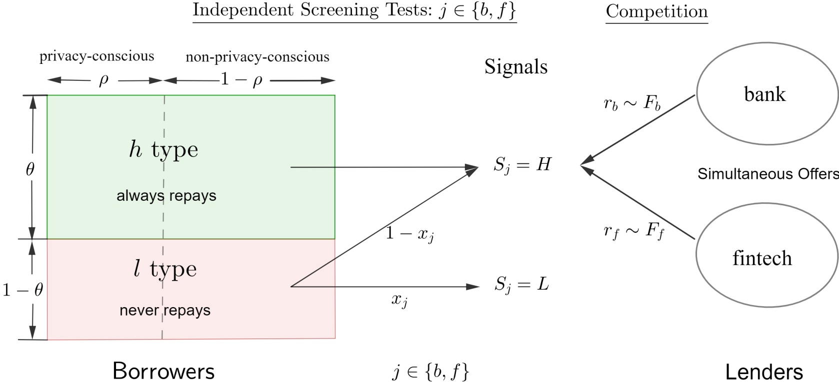
Open banking: Transaction data sharing

- Enables better borrower screening by fintech
- Disruption to the banking industry, potential benefit to challenger fintech and customers

But, all borrowers could be worse off despite voluntary sign-up

- Equilibrium credit quality inference; opt-out $\neq$ no open banking (Milgrom 81)
- Conditions for perverse effect; Robustness on fintech affinities, multiple fintechs, market-led approach

Model Scheme

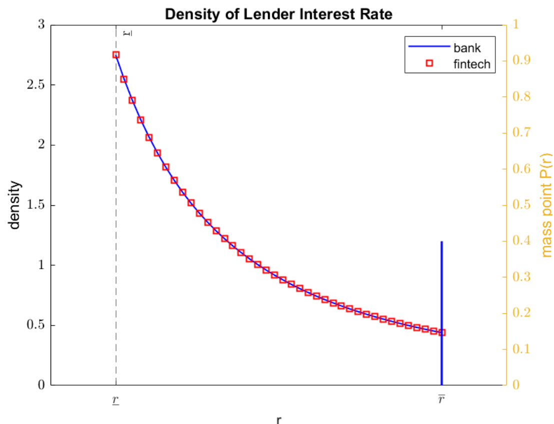


Before open banking: $x_f < x_b$

After open banking, on a borrower who signs up: $x'_f > x_b$

Baseline Equilibrium

- **Winner's curse**. Mixed-strategy eqm.



- Weak lender (fintech) randomly withdraws upon good signal H

The Impact of Open Banking

Open banking

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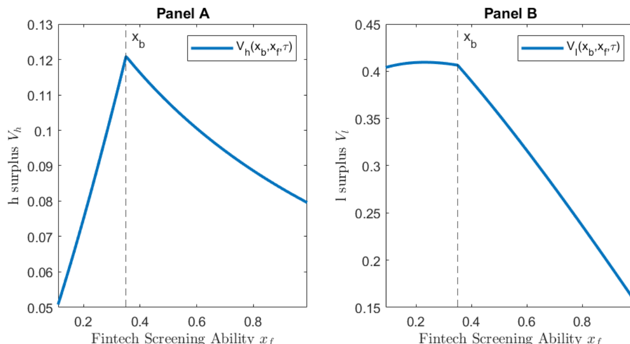
Mandatory sign-up benchmark: borrower surplus



- Informational effect: *Base* $\min\{x_b, x_f\} \uparrow \Rightarrow V_h \uparrow$ while $V_l \downarrow$
- Strategic effect: *Gap* $|x_b - x_f| \uparrow$, stronger winner's curse & less competition $\Rightarrow V_h \downarrow$ and $V_l \downarrow$

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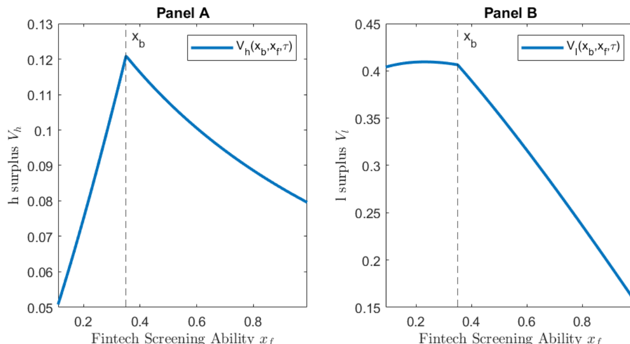

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Proposition: Mandatory sign-up, all borrowers hurt with sufficiently large x'_f

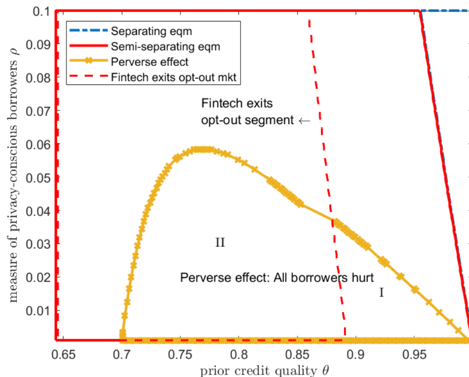
Voluntary Sign-up Equilibrium

Voluntary opt-in/opt-out does not solve the problem

Voluntary sign-up equilibrium

- Trivial equilibrium: nobody signs up
- **Proposition:** Unique non-trivial equilibrium. All non-privacy-consciousness h-type sign up
  - h-type have stronger incentive to sign up than l-type
  - Equilibrium credit quality inference
- All borrowers could become strictly worse off (*vs.* no open banking)
  - Opt-out $\neq$ no open-banking: unfavorable inference
  - Opt-in: softened competition

When does Perverse Effect Arise?



Parameters: $x_b = 0.4, x_f = 0.35, x_{f'} = 0.8, \bar{r} = 0.36.$

- **Perverse effect** may arise when equilibrium is semi-separating (some l-type opt in)
  - Small ρ (privacy-cons.): SMB loans
  - θ (quality): II, fintech rejects a borrower who opts out
- Privacy-conscious borrowers always suffer

Fintech Affinity

Consumer "affinity/preference" toward fintech loans

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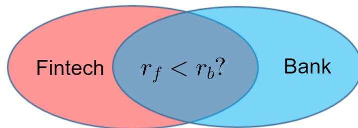
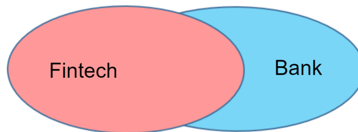
Here, ex post preference shock

Baseline: Prob. $1 - \xi$



Fintech affinity event: Prob. ξ



Perverse effect is more likely: affinity complements screening

Multiple Fintechs

Number of lenders per se less relevant

- In models like ours, only two lenders are active

Key: gap of active lenders

- Say one bank, two fintech lenders
- Big-tech and fintech startup: Perverse effect
- Similar fintechs: customers gain from competition. (Most favorable for regulator)

Short-run vs Long-run

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- Fintech lender's leapfrog more likely in the short run
  - Algorithm, existing alternative data
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- Long run: banks catching up in technology.
  - Bank IT investment: Stulz (2022), He, Jiang, Xu, and Yin (2021)
  - Acquisition: Carlini, Del Gaudio, Porzio, and Previtali (2022)
- Our paper: regulatory oversight to watch out for fintech profit margin

Laissez-Faire Approach to Open Banking

- Bank "sells" customers' transactions data to fintech
  - Timing: bank charges fintech a fee (take-it-or-leave-it offer)$\rightarrow$screening$\rightarrow$competition

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- Bank willing to sell exactly when widened asymmetry ($\Delta' > \Delta$) after selling the data
  - Extract fintech profit via data fee
- Even more widened asymmetry if data sale needs customer consent
  - Harder to profit from a better quality pool (winner's curse$\downarrow$, competition $\uparrow$)

Perverse effect is more likely (than government-led OB)!

Conclusion and Future Work

- Voluntary data sharing of open banking is not a silver bullet for consumer protection
  - Fostered competition benefits Fintech typically, though **borrowers can be all strictly worse off despite voluntary sign-up**
  - Rich forms of information externality with profound welfare implications
- Leveling the play field. Policy design to fine tune data sharing
- Fintech in E-Commerce platforms and traditional banks
  - "Open platform" to level the playing field?