Customer Data Access and Fintech Entry: Early Evidence from Open Banking

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Customer data are key to finance

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- Transaction/repayment/income histories (personal accounts)
- Business sales (payment processing)
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Evident in uneven fintech growth
- Success information insensitive segments: GSE mortgages, PPP
- Less success in information sensitive segments: Jumbo mortgages
- Exceptions that prove the rule: Ant Group; Square
Moving Data Ownership from Banks to Customers

**Open Banking (OB):**
- Allows competing banks and fintechs to access to bank customer data
- Adopted by $\sim 40$ countries since 2016
- E.g., UK Open Banking Initiative (2017)
- E.g., Brazil Joint Resolution CMN-BCB No. 1/20 (2020)
- E.g., US: Dodd-Frank Section 1033 (Ongoing!)
Moving Data Ownership from Banks to Customers

- Consumer applies for loan from Monevo
- Consumer consents to data sharing using Santander app
- Consumer reauthenticates using Santander app
- Santander shares bank data with Monevo

Source: Monevo.co.uk, Scott Logic
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What happens when you break relationship banks’ data monopolies?
Results

Part I. New Data: Open banking policies around the world

- Detailed database covering largest 168 countries
- Adopted by 40 countries since 2016 + 40 more in process
- Significant heterogeneity in implementation
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   Open banking policies → more fintech VC investment
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Part III. Model: General-purpose IO-style quantitative model
   Benefit: Less adverse selection, “better products” $\rightarrow$ more entry/competition
   Cost: Broken pooling ("bad types" hurt) & less ex-ante data production
   (Typically) positive welfare effects
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   (Typically) positive welfare effects
   Model highlights critical policy question: how is the data used?
I. Institutional background—data collection

**Approach:**

- Hand-collect regulatory details for 168 countries (99% of GDP)
- Official documents > law firm documents > news/industry reports
- Cross-check versus mechanized Google search & third-party database
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Collect and standardize information on:

Regulator type; OB mandate (innovation; competition; inclusion)
Implementation dates / current status
Requirements (e.g., who must share data; API standardization)
Scope (e.g., covered products; includes payment initiation)
I. Institutional background—global adoption

Open banking status as of October 2021
I. Institutional background—global adoption over time

*Major OB policy passage*
II. Does open banking “cause’ financial innovation’?

Panel event study:

\[ FintechVC_{it} = \sum_{k \neq 0} \beta_k \times OBLag(k)_{ikt} + Country_i + Region_{rt} + \epsilon_{it} \]

Panel regression:

\[ FintechVC_{it} = \beta \times OB_{it} + Country_i + Region_{rt} + \epsilon_{it} \]

- \textit{FintechVC}_{it}: Log fintech deals + 1; possibly in a subcategory (e.g., loans)
- \textit{OBLag}(k)_{ikt}: OB implemented \(k\) years ago
- \textit{OB}_{it}: OB implemented at \(t\)
- \textit{Country}_i: country FE; \textit{Region}_{rt}: region-by-time fixed effects
- Use only countries with \(\geq 5\) fintech deals prior to the sample (\(\leq 2010\))
- Cluster-robust standard errors at country-level, EU treated as single country
II. VC fintech funding—fintech VC deals
II. VC fintech funding—fintech VC dollars

![Graph showing fintech VC dollars over years after open banking initiative.](image)
II. VC fintech funding

- Stronger policies show stronger effects:
  Required sharing; standardized technical specs; more products
- Results survive many robustness checks
- Results show up for all types of fintech VC, except crypto

<table>
<thead>
<tr>
<th>Fintech Product Type</th>
<th>After OB initiative 1</th>
<th>After OB initiative 2</th>
<th>After OB initiative 3</th>
<th>After OB initiative 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative lending</td>
<td>0.737</td>
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<tr>
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<td>Wealth management</td>
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Results by fintech product type:

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<td>Yes</td>
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<td>Yes</td>
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<tr>
<td>Region-Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
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<td>Observations</td>
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<td>231</td>
<td>231</td>
<td>231</td>
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<tr>
<td>Adjusted $R^2$</td>
<td>0.866</td>
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III. Model: Offer quantification of OB across key uses of consumer data

Model captures three key aspects of OB:

- Heterogeneous consumers ← this is what data are informative about
- Different firms have different access to consumers’ data (banks vs. fintechs)
  - **Relationship banking**: single bank observes customer-level data
  - **Open banking**: all banks/fintechs observe customer-level data
- Speaks to main goals of OB: entry/innovation, competition, and financial inclusion
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Setup: IO/BLP with rich consumer heterogeneity, designed for quantification:
- Key innovation: data informative about consumer heterogeneity
  - Nests two key conceptions of data: marginal cost and demand (product customization)
- Main estimation object is distribution of consumer heterogeneity
- Validate model with reduced form results (increased entry)
III. Model overview

Consumers:

Period 1, buy “data generating product” (e.g., bank account)
Period 2, buy “data using product” (e.g., mortgage, financial advice)
Characteristics $\chi_i \sim dF(\chi_i)$, e.g., marginal cost, customization, willingness to pay

Banks:

Period 1, supply “data generating product” and learn about consumer
Period 2, supply “data using product”, using data from period 1 product

Fintechs:

Period 2, supply “data using product”, competing with banks
May or may not observe consumer data from period 1

Fixed cost of entry + zero-profit condition pins down entry
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**Consumers**: explicitly model three types of consumer heterogeneity

- Determining **marginal costs**: e.g., default probability
- Product **customization**: e.g., financial advice/wealth management product
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- When consumer data **observed**, set product price/product characteristic **per-customer**
- When consumer data **unobserved**, set one **pooling** price/characteristic
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**Two calibrations based on financial products**

1. Mortgage (Buchak et al. 2018): high marginal costs variation
2. Financial advice (Di Maggio et al. 2021): high customization variation
III. Increase in fintech entry and consumer welfare, decrease in bank profit
Consumer outcomes by their marginal cost: Mortgages
III. Interpretation

Effect of transitioning to open banking depends on the TYPE of customer data:

- Data on product customization needs $\rightarrow$ better products
  $\rightarrow$ entry + competition + welfare

- Data on customer marginal cost $\rightarrow$ less adverse selection against fintechs
  $\rightarrow$ entry + competition + most expensive customers buy less

- Data on willingness to pay $\rightarrow$ more price discrimination by fintechs
  $\rightarrow$ entry + competition + willing to pay customers buy less

Short- vs. long-term effects:
- Short-term: consumer welfare typically increases in aggregate
- Long-term: less data/financial services if consumers do not internalize value of data
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Conclusion

**Open banking**: On the way to adoption in 80+ countries
- Empower consumers to share their banking data with fintechs
- Alters relationship between consumer, bank, and bank’s competitors

**Opening financial data** → **financial innovation**
- Significant inflows of VC funding to related startups (e.g., lending, financial advice)
- Implementation details matter: weak OB policies ineffective

**Policy evaluation**: Discussion misses two key tradeoffs
- Distributional consequences: innovation potentially at odds with inclusion
- Ex-ante data production: may reduce data production/financial service provision
  → must understand how data is used!