Fintech Fintech Lending and the Roles of Alternative Data

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The views expressed here are my own and not the views of the FRB Philadelphia or the Federal Reserve Systems
Fintech Background
Fintech Broadly Defined

- Data aggregation, open banking, application programming interface (API),
- Artificial intelligence (AI), machine learning (ML), Big data, alternative data
- Natural language processing (NLP), Regtech, Suptech, InsureTech, Robo advisors
- Crowdfunding, Peer-2-Peer (P2P), marketplace lending (MPL)
- Bitcoins, cryptocurrencies, Libra, e-wallet, Venmo, initial coin offerings (ICOs), decentralized finance (DeFi), blockchain, other DLTs, smart contracts
- Cloud computing, Quantum computing
- Real-Time Payments and Settlements, Central Bank Digital Currency (CBDC)
Example of Potential Research Questions

- Big data and AI/ML – risk associated with data accuracy, representativeness, interpretability, What is inside the black box?
- Data sharing – concerns related to consumer privacy, fairness/biased against certain groups, cyber security.
- Cryptocurrencies -- price volatility – Bitcoin at $20,000 in Dec 2017; $3,187 in Dec 2018, and $11,711 as of August 2020 -- unrelated to stock performance?
- Real-time payment -- private vs. public digital currencies? Would central bank digital currency (CBDC) solve the volatility and public trust issues?
- Cloud Computing -- Big Tech (Google, AWS, Microsoft, IBM) provide cloud computing service & technology – enabler of the Fintech ecosystem but very concentrated mkt – implications on interconnectedness, financial stability, cyber security, etc.
Fintech Lending and Alternative Data
Various Business Models & Products Offered

- **Marketplace Lender**
  - P2P but recently some also securitize their loans (Fintech ABS)

- **Balance Sheet Lender**
  - Ease of application, reduced collateral requirements, and expedited funding

- **Payment Processors**
  - Using proprietary big data collected while processing payment transactions
  - Also use SBL as a means to grow business volume
Nontraditional data was increasingly used in credit decisions, allowing for more accurate risk evaluation and risk pricing – resulting in more borrowers accessing credit at lower cost.

Sources: Jagtiani and Lemieux (2019)

Note: Hughes, Jagtiani, and Moon (2019) find that LendingClub became more efficient than traditional lenders of the same size (2013 vs. 2016).
The Potential Enhanced Risk Assessment and Pricing

Source: Jagtiani and Lemieux (2019)
Delinquency Rate of Fintech Loans by Rating Grades and Year of Origination

Source: Jagtiani and Lemieux (2019)

Source: Croux, Jagtiani, Korivi, and Vulanovic (2020)
The Potential Lower Funding Costs to Consumers
By Rating Grades, FICO Scores, and Maturity

Source: Croux, Jagtiani, Korivi, and Vulanovic (2020)

<table>
<thead>
<tr>
<th>FICO Segment At Origination</th>
<th>% APR Average Spread (Origination Fees Included)</th>
<th>% Ave Spread Bank Y-14M Revolvers Only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LendingClub</td>
<td>3Year Maturity 5 Year Maturity</td>
</tr>
<tr>
<td>660-679</td>
<td>15.336</td>
<td>18.113</td>
</tr>
<tr>
<td>700-719</td>
<td>12.013</td>
<td>15.351</td>
</tr>
<tr>
<td>720-739</td>
<td>10.432</td>
<td>14.033</td>
</tr>
<tr>
<td>740-759</td>
<td>9.125</td>
<td>12.818</td>
</tr>
<tr>
<td>760-779</td>
<td>8.236</td>
<td>11.972</td>
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<tr>
<td>780-799</td>
<td>7.604</td>
<td>11.338</td>
</tr>
<tr>
<td>800+</td>
<td>6.9519</td>
<td>10.699</td>
</tr>
</tbody>
</table>

Source: Jagtiani and Lemieux (2019)
Fintech Lending and Consumer Credit Access
"Does FinTech Substitute for Banks? Evidence from the Paycheck Protection Program" by C.A. Dice and J. Lebbersohn (2020) working paper Ohio State and UC Irvine

They study the response of FinTech and nonbank lenders to financial services demand created by the introduction of the PPP. Online banks and nonbank financial institutions are disproportionately used in ZIP codes located with fewer bank branches, and in industries with little ex ante small-business lending. “Borrowers were more likely to get a FinTech-enabled loan if they are located in ZIP codes where local banks were unlikely to originate PPP loans.”


We use account-level data from LendingClub and Y-14M data CCAR data -- and we find that LendingClub’s consumer lending activities penetrated areas that were underserved by traditional banks – 50% in highly concentrated markets; 40% where bank branches decline >5%; 60% where there are <30 bank branches per 100,000 people (fewer bank branches per capita). We also find that the portion of LendingClub loans increases in areas where the local economy is not performing well (based on UE, HPA, Income).
More Empirical Research on Credit Access


Mortgages – We use HMDA data and find more Fintech mortgage originations in areas that had larger rate of mortgage denials by non-Fintech lenders in the previous period. In addition, fintech lenders have greater market shares in areas with lower average credit scores.

![Distribution of Conventional Mortgage Offers by VantageScore Segments, 2016-2019](chart.png)
Additional Fintech Readings by J. Jagtiani (1)


Additional Fintech Readings by J. Jagtiani (2)


Additional Fintech Readings by J. Jagtiani (3)


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