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Financial Innovation and Borrowers: Evidence from Peer-to-Peer Lending

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Motivation

- Imperfections in consumer credit market ($4 trillion in the U.S.)
  - High rates, "pooled" credit card pricing, credit rationing...
  - The Economist: *"... for most borrowers, credit is scarce and costly"*
- Recent entry of financial technology (FinTech) companies
  - FinTech lending: 30% of personal unsecured loan market (TransUnion)
  - Differentiation: Online presence, automation, and favorable regulation + alternative screening algorithms
  - FinTech may relieve *information frictions* in consumer credit market
  - Does it? How will banking change as a result of FinTech entry?

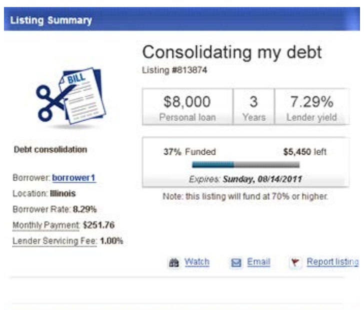
Research question: How does FinTech lending impact bank credit?

- Examine how obtaining a loan from a FinTech lender affects credit provided by banks and consumers' borrowing patterns

Peer-to-Peer (P2P) Lending

- Direct matching of borrowers and lenders on-line

Borrowers



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P2P platforms

$48B in loans

Median loan: $12k

APR: 6.4%-36%

Investors

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- On-line loan request
  'Hard' borrower data

- Screening (pricing, adjudication)
- Loan origination and servicing

- To fund or not?
- Funding amount?

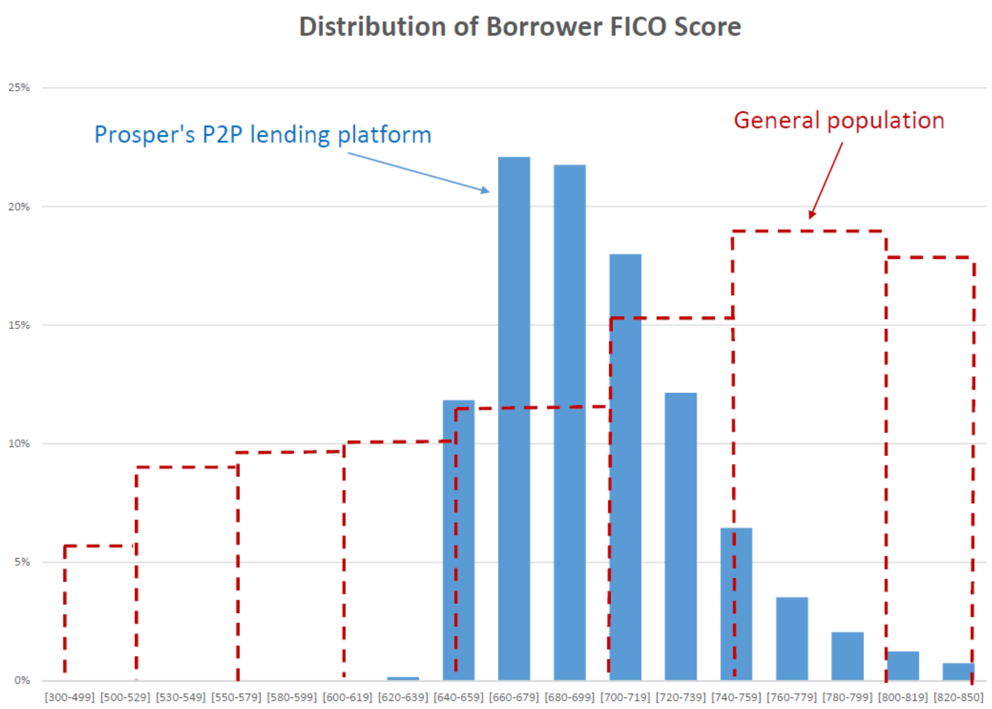
- Innovation in lending technology
  - New public market for unsecured consumer debt
  - Fully automated algorithm-based pricing and underwriting

Key Results

- Banks increase access to credit following a P2P loan
  - Increase in credit larger for more credit constrained borrowers (shorter credit histories, lower credit scores)
  - Effect primarily comes from existing lenders (intensive margin)
- Borrowing patterns of consumers change after P2P loan take-up
  - Most borrowers refinance expensive credit card debt with P2P loans
  - Marginally funded borrowers consume P2P loans, but obtain more access to bank credit nonetheless
  - Credit scores do not improve for marginally-funded borrowers
- No evidence of higher delinquencies despite larger total debt

⇒ Findings consistent with FinTech *relieving information frictions* for borrowers and *information spillovers* from FinTech to banks

Who Borrows from P2P Lenders?



Characteristic	P2P	All
Monthly income	$6.2k	$2.5k
Employment (years)	8.9	
Credit history (years)	18.1	
Home owner	48%	
Total debt	$151k	$60k
Open accounts	10	
Revolving accounts	8	
Credit card utilization	54.5%	30%

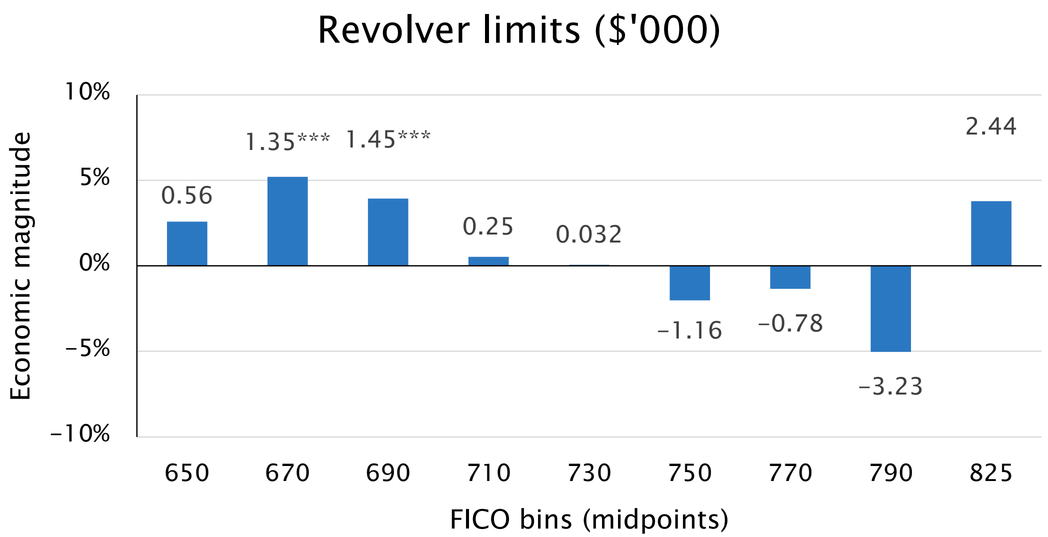
- P2P borrowers have strong borrower profile, but large amount of total debt and preference for consumption on credit cards
- Significant credit card utilization suggests credit constraints

Theoretical Predictions

- Supply of bank credit
  - Lax screening by P2P platforms → consumers overborrow and banks reduce access to credit for P2P borrowers
  - Accurate screening by P2P platforms → extension of a P2P loan signals creditworthiness and banks increase access to credit for P2P borrowers
- Demand for bank credit
  - Creditworthy borrowers → benefit from credit repricing and shift away from bank debt toward P2P lending
  - Marginal borrowers → benefit from reduced credit rationing and borrow from both banks and P2P platforms, increasing overall indebtedness

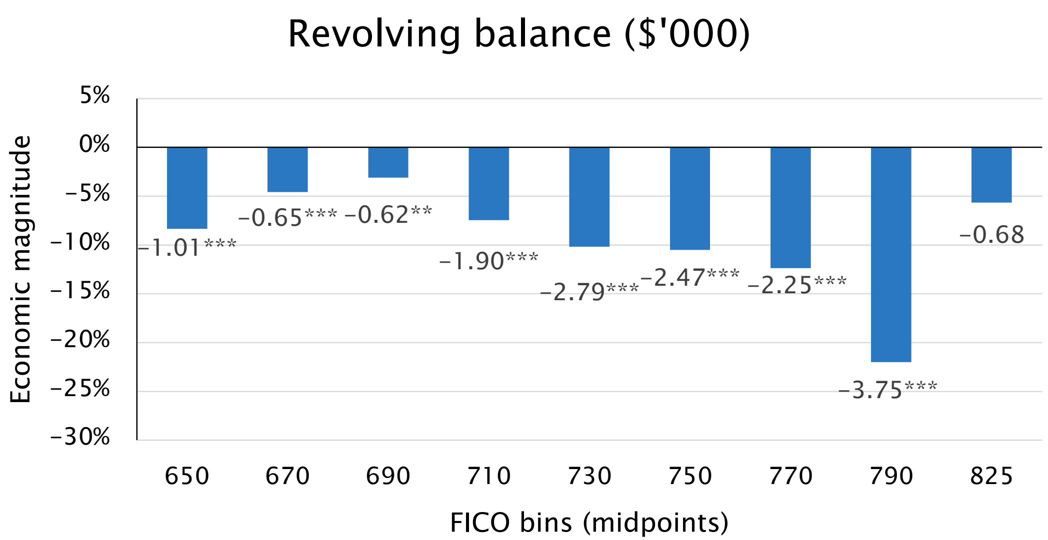
Access to Bank Credit after P2P loan

- Higher credit limits on revolving accounts following a P2P loan
  - P2P borrowers on average: $1,020 increase (+2.6%)
  - Confirmed by analysis of marginally funded borrowers
- Increase in bank credit larger for more credit constrained borrowers
  - Shorter credit history: +$3,370 for 1 year vs. +$900 for 20 years
  - Lower credit score: +2.6% to +5.2% for FICO < 700



Demand for Bank Credit after P2P loan

- Revolving balances at banks lower following a P2P loan
  - P2P borrowers on average: $1,480 decrease (–7.6%)
  - No change for marginally funded borrowers
- Debt refinancing stronger for borrowers with higher FICO scores



- Credit scores are not significantly affected by P2P loan take-up

Do P2P Borrowers Overborrow?

- Total debt higher for P2P borrowers, especially those with lower FICOs
  - P2P borrowers on average: +3.6% to +4.5%
  - Slightly higher for marginally funded borrowers as well
- No evidence of higher debt accompanied by higher delinquencies
  - P2P borrowers on average: some evidence of lower delinquencies
  - Delinquencies do not increase for marginally funded borrowers

$\Rightarrow$ Borrowers whom P2P lenders screen in are likely creditworthy

Interpretation and discussion

- Can banks indeed learn anything from P2P lending?
  - Banks have experience and more information (soft and private)
  - But: important differences between banks and FinTech
- Industry evidence that banks may outsource screening to FinTech
  - Bank-FinTech partnerships: Regions Bank + Avant, Beneficial State Bank + LendUp, JP Morgan + OnDeck, ING and Scotiabank + Kabbage
  - Community banks invest in P2P loans on major platforms
- When can information about a P2P loan be a valuable signal?
  - P2P lenders screen borrowers more precisely (e.g., machine learning)
  - Screening by P2P lenders is complementary to bank screening
  - P2P lenders screen borrowers that banks do not find profitable to screen

Summary of Findings

- Extension of FinTech credit increases access to bank credit
  - Especially for borrowers with shorter credit histories and lower scores
  - Irrespective of the use of FinTech loans: debt refinancing vs consumption
- FinTech changes consumer demand for bank credit
  - Most creditworthy borrowers shift away from bank debt, whereas marginal borrowers with preference for consumption do not
  - Total debt increases for all FinTech borrowers
  - Borrower creditworthiness is not significantly affected
- Avenues for future research
  - How is the structure of bank revenues affected? What are the implications for risk in the banking sector? How should banks respond?

Key takeaway: FinTech innovation relieves information frictions