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Reintermediation in FinTech: Evidence from Online Lending

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The agenda

- Designed to bring together borrowers and lenders *without* intermediaries
  - Often thought of as consumer loan "crowdfunding"
  - "Disruptive outsiders", "an industry that was meant to be the antithesis of Wall Street" ...

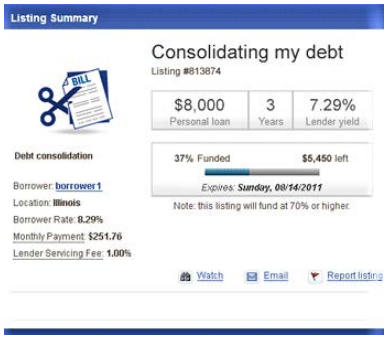
Research question:

- Is FinTech likely to disintermediate markets?
  - Study evolution of online peer-to-peer (P2P) loan market

P2P market design

- Two-sided market design (e.g., Uber, Airbnb, eBay)

Borrowers



- On-line loan request
- 'Hard' borrower data

Platform

- Loan pricing & screening
- Fees tied to origination volume

Investors

- Screening
- Funding

- Important: information asymmetry and adverse selection
- P2P platform can be a trading venue *or* an intermediary

Hypotheses

- **Disintermediation of P2P lending**
  - "Wisdom of crowds" makes investors better at screening than the platform
  - Investors switch from passive to active strategies as learning improves returns to screening

- **Reintermediation of P2P lending**
  - Platform increases loan evaluation quality when it can screen (Vallee & Zeng, 2018)
  - Investors respond by becoming passive
  - Average loan returns decrease

Key results

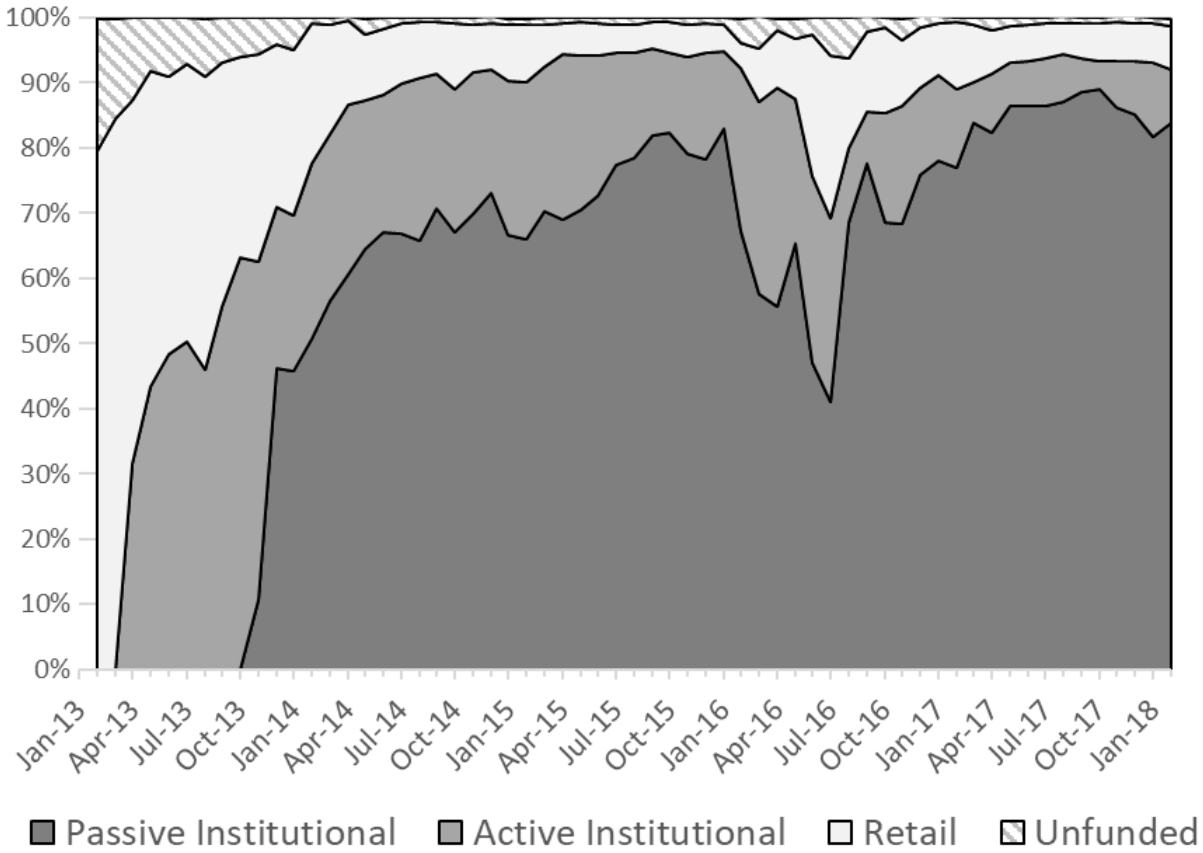
- Main stylized facts: P2P platform is a new intermediary
  1. P2P loan investors are *sophisticated*, *passive*, and *algorithmic*
     - Share of passive investment strategies has increased over time
  2. Investors rely on platform's pricing and fraud detection algorithms
  3. Screening by lending platform replaced investor screening over time
- P2P platform processes hard information *efficiently*
  - Platform produces useful info overcoming borrower adverse selection
  - Platform's default prediction has been improving over time
  - Platform effectively screens out risky loan applications
  - Investors earn respectable net returns, which decrease with reintermediation
- Market structure vulnerable to moral hazard
  - Platform's moral hazard mitigated by threat of investor withdrawal

Reintermediation: Platform's growing technological expertise crowds out loan screening by investors

Main Stylized Facts

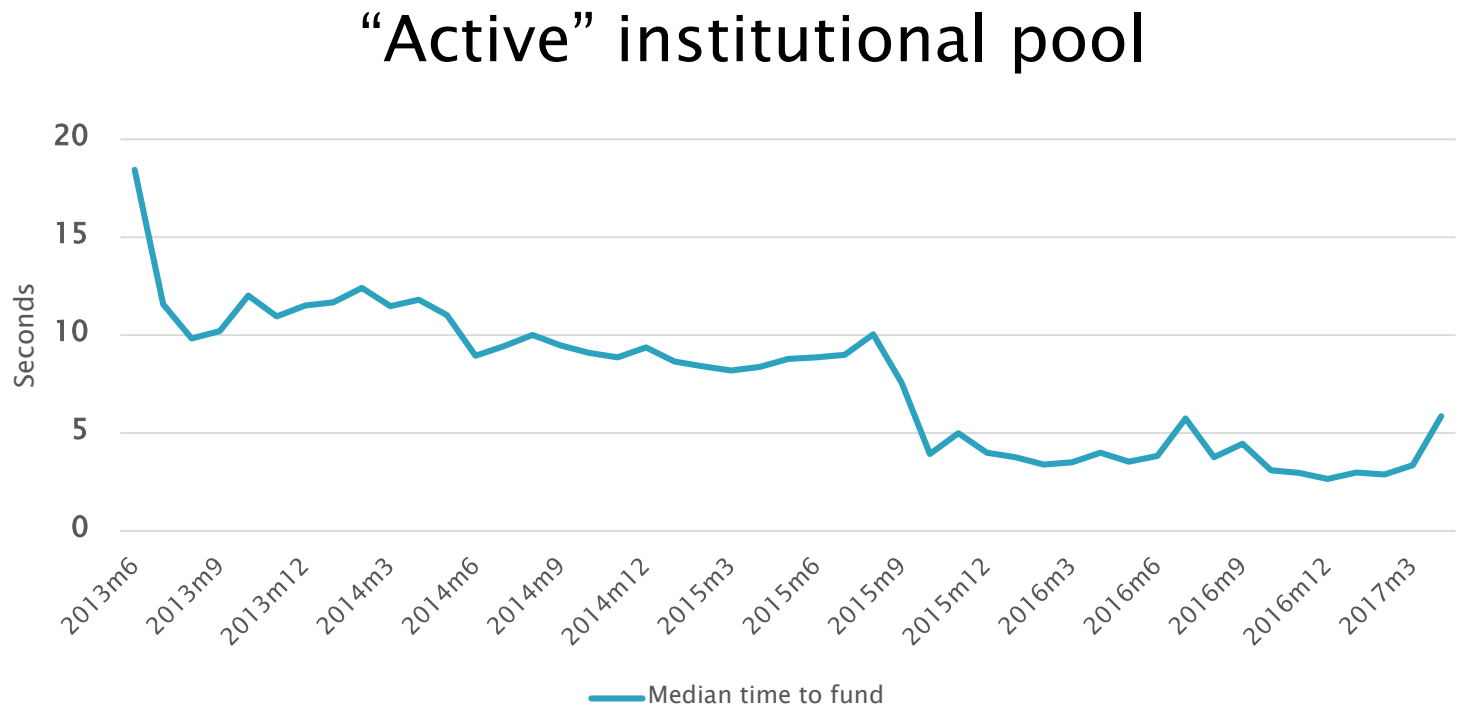
① Investors are sophisticated, passive

P2P investor pools



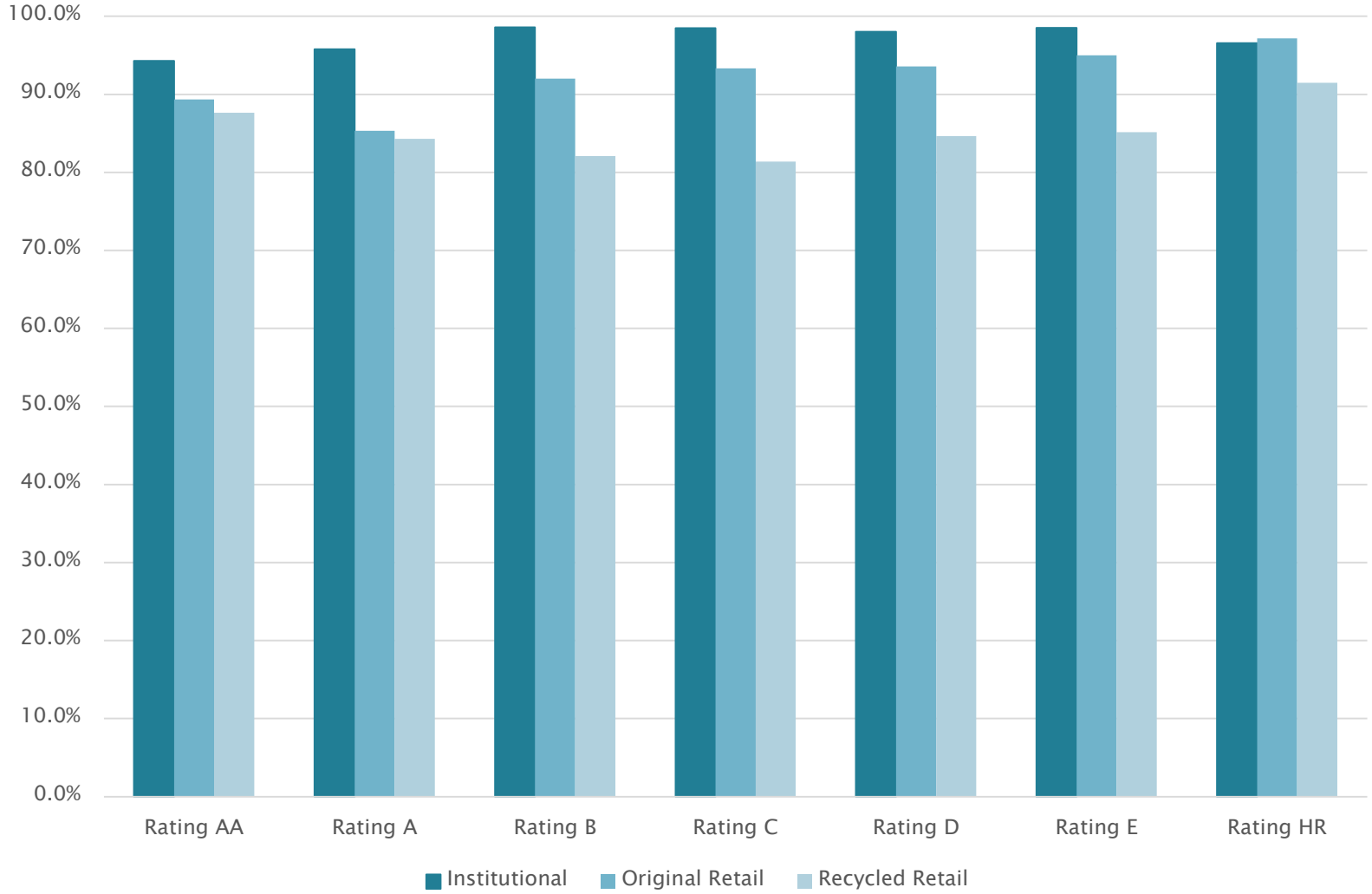
- 91% of P2P loans provided by institutional investors
- 82% of institutional loans automatically funded in full

① … and algorithmic



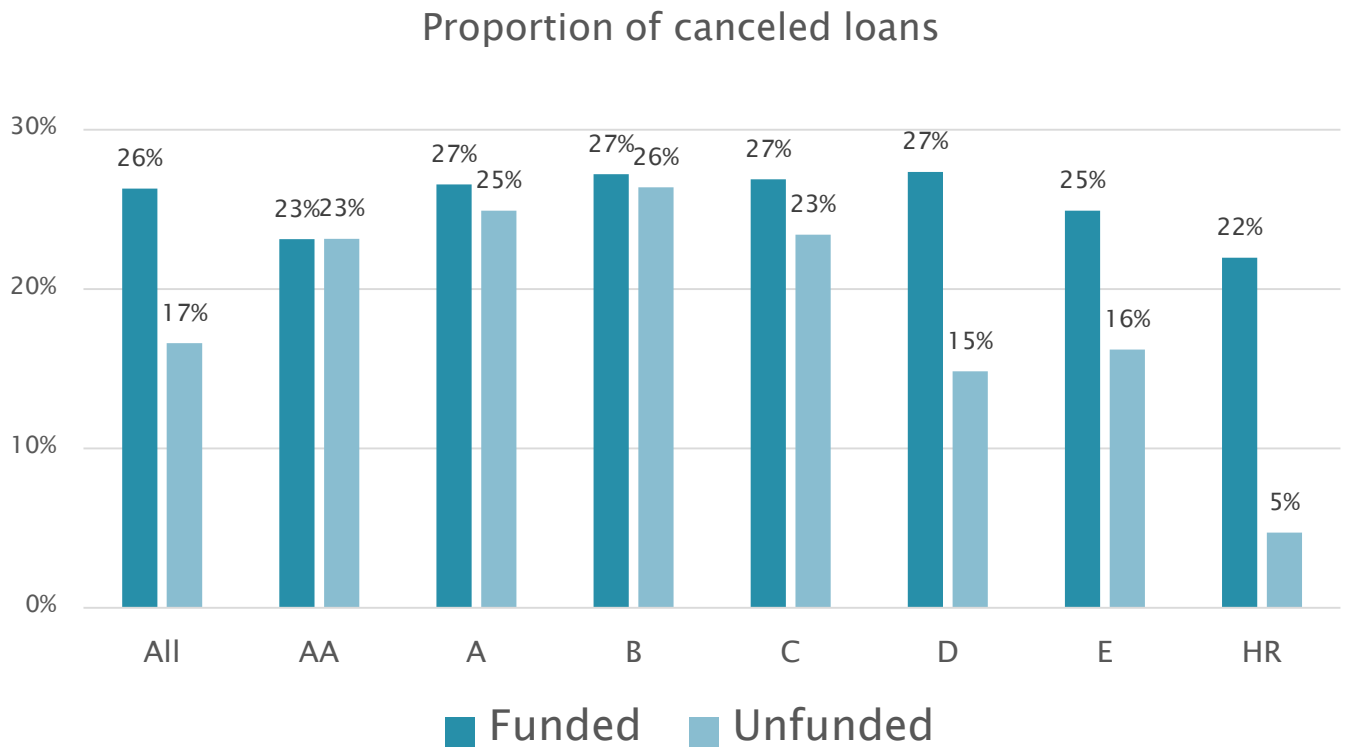
- Investors in Active Institutional pool can screen loans
- But: Loans get funded within seconds of being listed
  - Suggests automated investment by robots
  - Funding time has been steadily decreasing → Faster algorithmic investment

2. Investors rely on platform's pricing

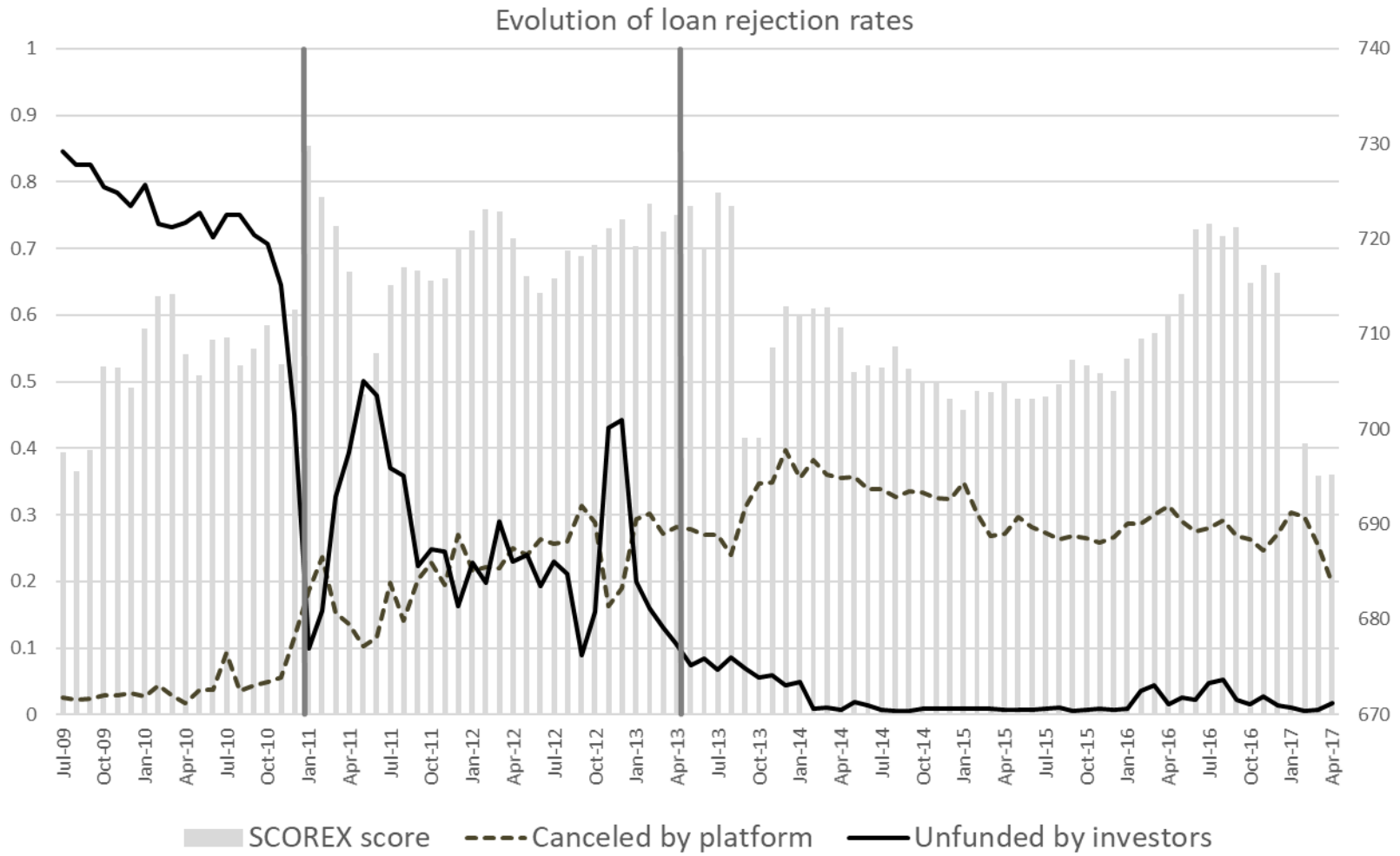


② … and "outsource" loan rejection

- Lending platform verifies loan applications it deems suspicious
  - Risky/potentially fraudulent loans canceled *after* receiving funding (or not)
- Investors don't try to avoid these loans
  - Canceled loans no less likely to receive funding

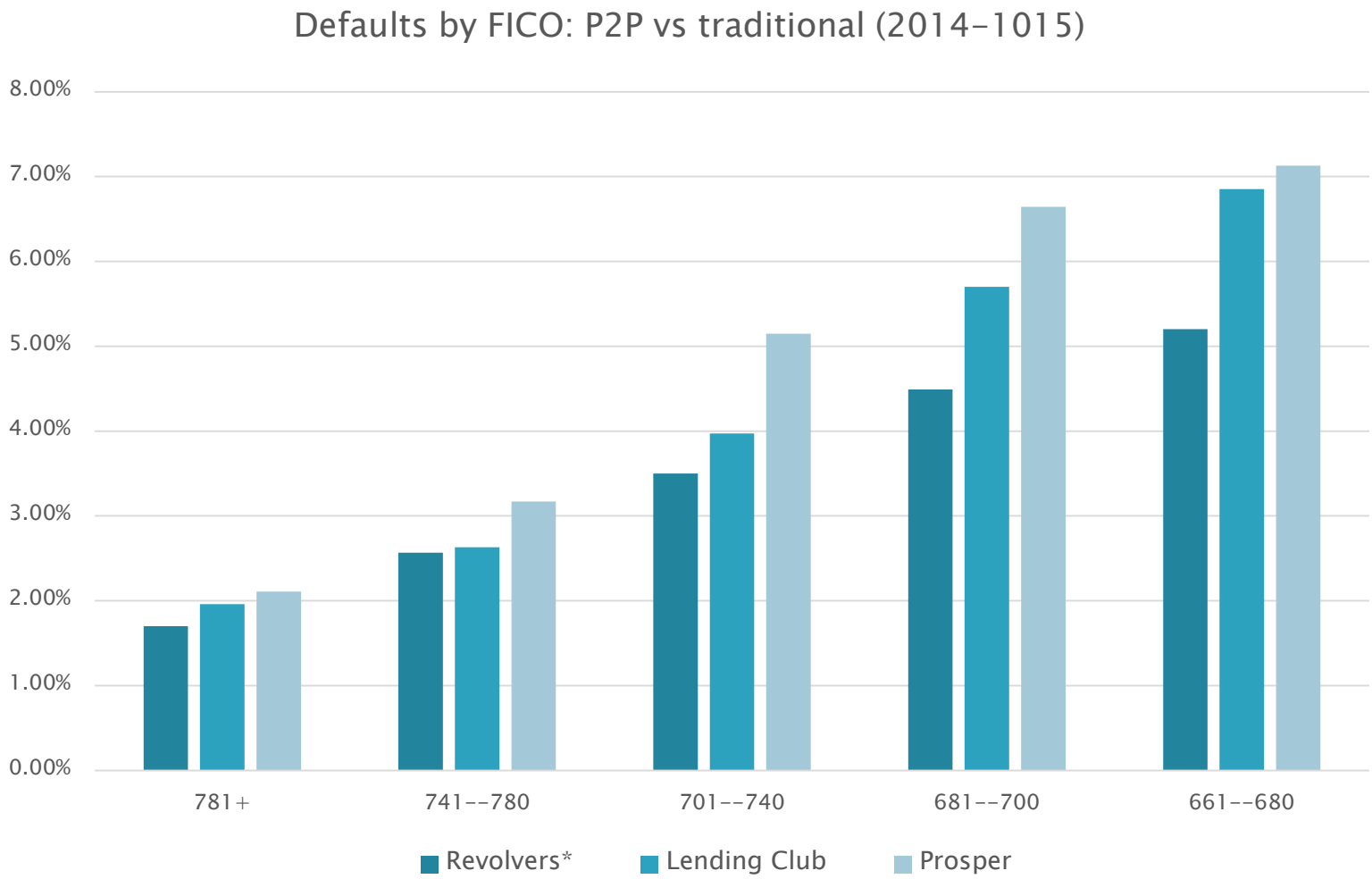


3. Screening by platform dominates



Platform's Pricing & Screening

Adverse selection in P2P markets



*Source: Jagtiani and Lemieux (2017)

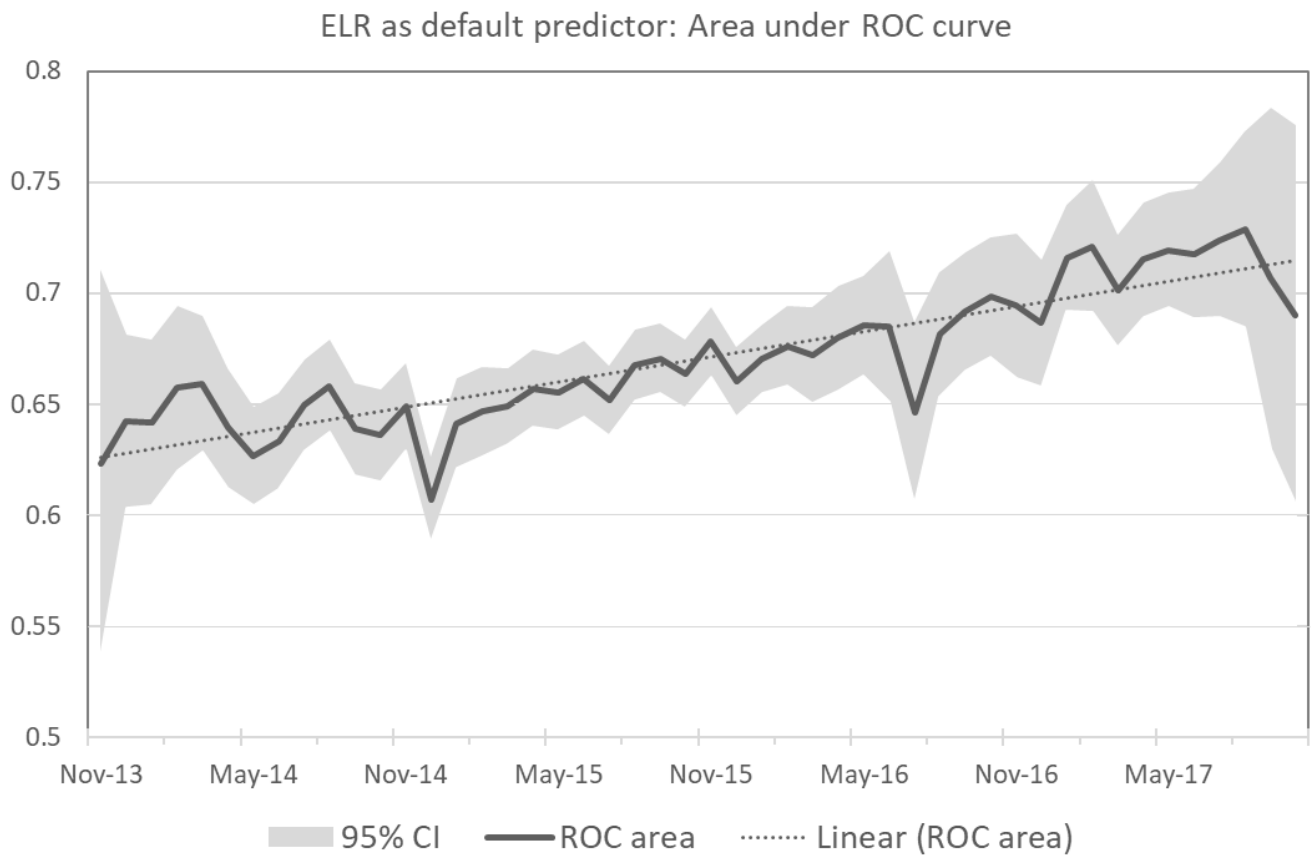
Default rates: Rating vs FICO

← *Safe* **Prosper Rating** *Risky* →

FICO	AA	A	B	C	D	E	HR
780+	0.95%	2.52%	4.30%	8.13%	15.02%	9.26%	
760-779	1.49%	2.65%	4.38%	6.84%	10.14%	13.68%	
700-739	2.02%	3.48%	5.19%	7.80%	10.22%	11.75%	12.94%
680-699	2.19%	3.93%	5.86%	8.54%	10.85%	12.38%	13.12%
660-679	2.68%	3.53%	5.42%	7.99%	10.49%	12.58%	13.89%
<660		3.27%	4.51%	7.08%	9.59%	11.22%	14.22%

- Prosper rating *much* more informative than FICO
  - It incorporates FICO, but also Prosper's analysis of historical P2P loan defaults

Default prediction ability



- ROC = measure of cross-sectional accuracy in credit risk assessment
- Platform able to discern between borrowers of different credit quality
- Sorting quality has increased over time after April 2013

Default hazard: canceled loans

	Default hazard			
	(1)	(2)	(3)	(4)
Resubmitted	0.31***	0.27***	0.20***	0.16***
	(24.9)	(21.3)	(15.9)	(13.0)
Controls	NO	YES	NO	YES
Old ELR FEs	YES	YES	NO	NO
New ELR FEs	NO	NO	YES	YES
Month FEs	NO	NO	NO	NO
No.obs.	376,489	299,435	376,489	299,435
Log-likelihood	-149487	-142216	-149485	-142249

- Borrowers screened out by the platform appear *riskier*
  - Canceled and resubmitted loans have higher default rates

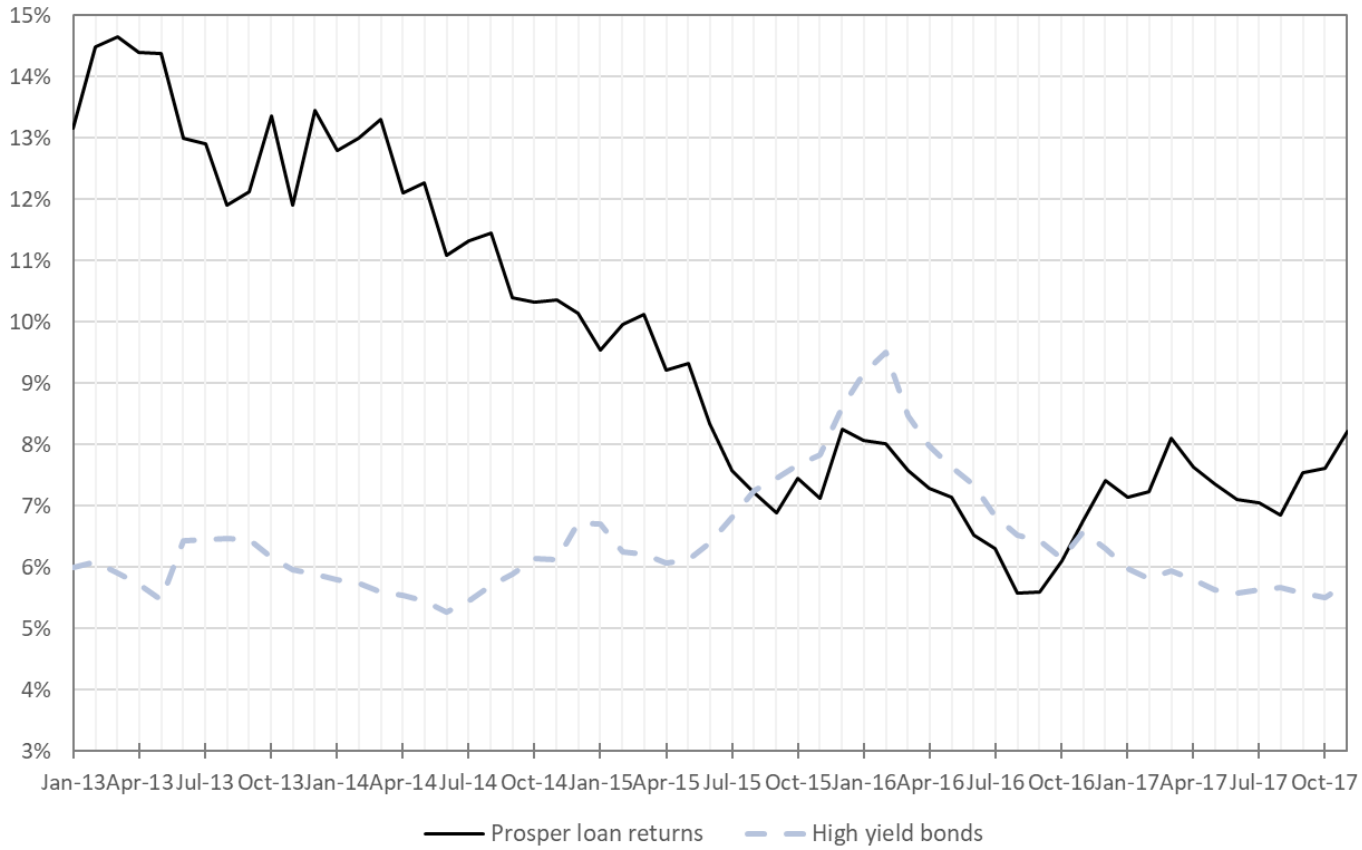
Pricing precision & screening trade-off

	Canceled					
	(1)	(2)	(3)	(4)	(5)	(6)
ROC area	-0.84***	-0.84***	-0.84***	-0.84***	-0.84***	-0.84***
	(-37.9)	(-38.0)	(-38.1)	(-37.7)	(-38.0)	(-38.0)
Passive				-0.0020*	0.00037	0.00033
				(-1.81)	(0.34)	(0.30)
Funded		-0.072***	-0.015		-0.072***	-0.015
		(-16.1)	(-0.97)		(-16.0)	(-0.98)
FICO bins	YES	YES	YES	YES	YES	YES
FICO bins * Funded	NO	NO	YES	NO	NO	YES
No.obs.	856,578	856,578	856,578	856,578	856,578	856,578
R^2	0.003	0.003	0.003	0.003	0.003	0.003

- Fewer loan cancellations when platform's pricing improves

Loan Performance

P2P loan returns over time



- Net returns above returns on high yield bond benchmark
- Loan returns decrease with reintermediation

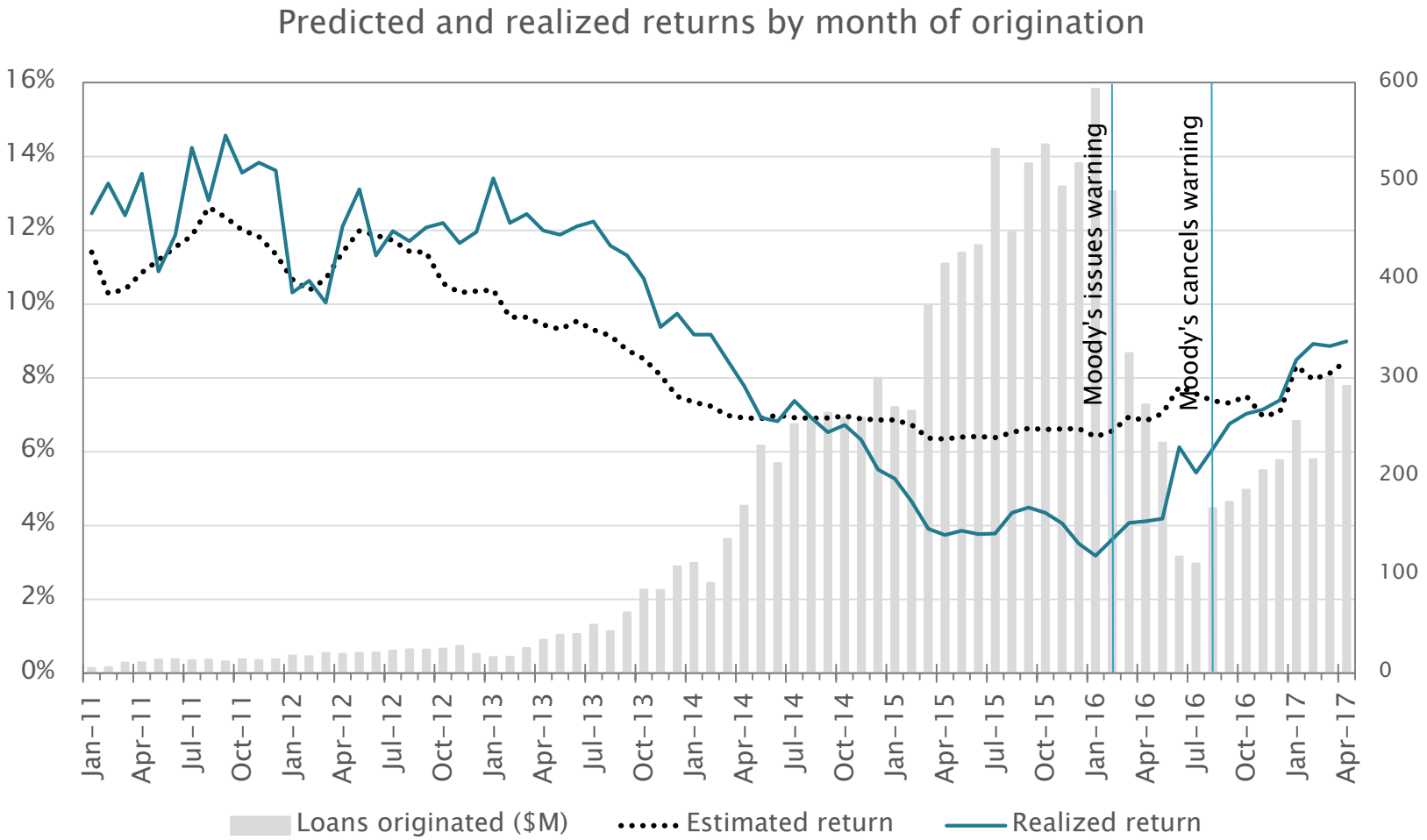
Passive vs. active investment strategies

	Realized return				Default hazard		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Passive	-0.0091***	-0.00084	-0.0012	-0.0011	0.083***	0.071***	0.072***
	(-2.92)	(-0.96)	(-1.37)	(-1.31)	(4.01)	(3.43)	(3.49)
Rating FEs	NO	NO	YES	NO	NO	YES	NO
ELR FEs	NO	NO	NO	YES	NO	NO	YES
Month FEs	NO	YES	YES	YES	NO	NO	NO
No.obs.	268,995	268,994	268,994	268,994	342,927	342,927	342,927
R^2/LL	0.00046	0.013	0.014	0.014	-140037	-134687	-134374

- Loans originated in Passive Institutional pool default more often
- But: Loan returns do not differ across passive vs. active strategies

Platform's Moral Hazard

Platform's moral hazard



- Market structure vulnerable to platform's moral hazard

Summary

- P2P lending is dominated by institutional investors
  - NOT *peer to peer* anymore!
  - Almost all automated
- Sophisticated investors are increasingly becoming passive
  - Passive loan-selection strategy is dominant and its share has grown over time
  - Investors rely on platform's pricing and screening algos in funding decisions
- P2P platform's volume maximization incentivizes quality pricing and screening
  - Produces valuable incremental info overcoming *borrower adverse selection*
  - Default prediction ability has been improving over time
- But the market structure is vulnerable to moral hazard
  - Platform's *moral hazard* mitigated by threat of investor withdrawal

Bottom line: Findings consistent with reintermediation: lending platform's credit expertise crowds out investor screening in FinTech lending

Thank you!

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