Fintech Lending: Financial Inclusion, Risk Pricing, and Alternative Information

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Agenda

❖ **Growth in Fintech Lending and Literature**

❖ **The Roles of Technology**

❖ **The Data and Analysis**

❖ **Who Are Lending Club Consumers?**

❖ **Impacts on Consumer Credit Access?**

❖ **The Roles of Alternative Information Sources**

❖ **Risk Pricing – Impacts on Consumers?**

❖ **Conclusions**

Growth in Fintech Lending

❖ **Consumer lending by Fintech firms reached $28.5 Billion in 2015, 12.5% of total consumer lending.**

❖ **Business lending by Fintech firms reached $5.6 Billion in 2015, 1.3% of total business lending.**

❖ **Fintech has been playing an increasing role in shaping financial landscapes. Banks have been concerned about the uneven playing field -- because Fintech lenders are not subject to the same rigorous oversight.**

Our Objectives

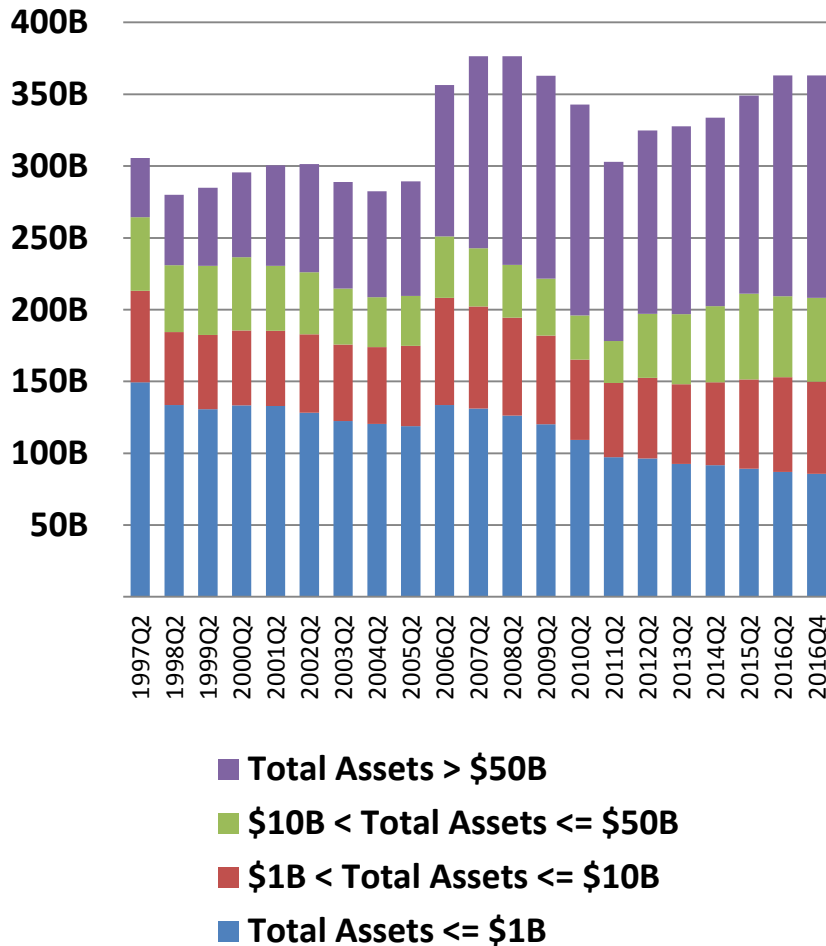- **Jagtiani and Lemieux (2016):**
  - **Technology has enabled lending -- increased the ability of large banks to provide small dollar loans to consumers and businesses.**
  - **Found an increase in bank lending in areas where larger banks do not have a physical presence**
- **In this paper, we explore the advantages/ disadvantages of loans made by a large Fintech lender and similar loans that were originated through traditional banking channels – pricing, credit access, etc.**
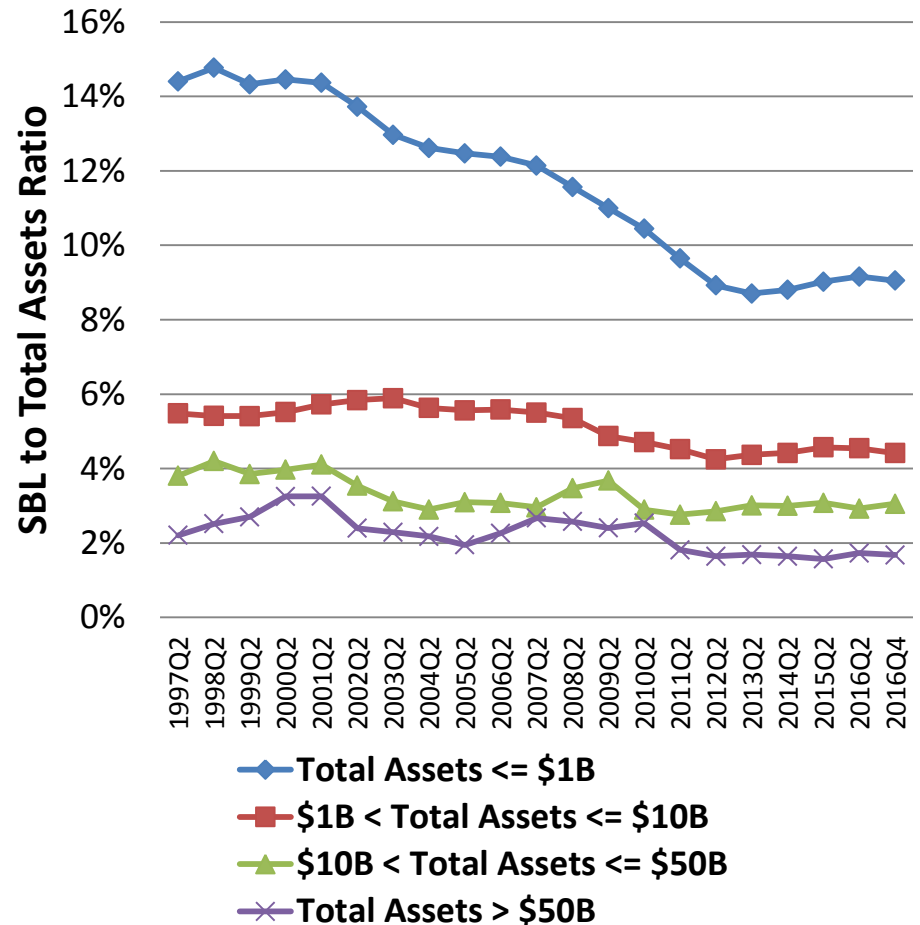
Small Business Lending by U.S. Banks – Volume and Ratio to Assets – By Bank Size   Jagtiani and Lemieux (2016)

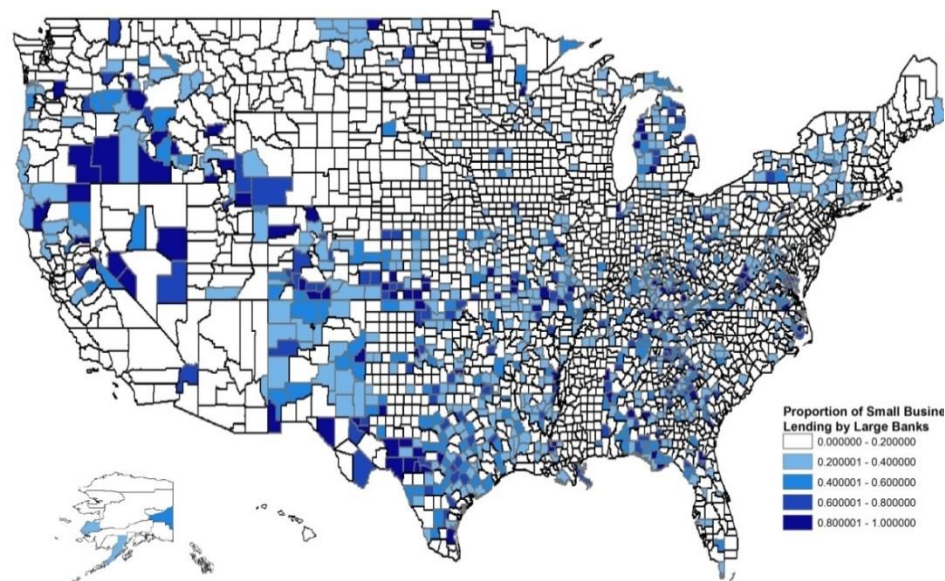**Total Amount of Small Business Loans Held by Banks - by Bank Size Group**

Legend:
- Total Assets > $50B
- $10B < Total Assets <= $50B
- $1B < Total Assets <= $10B
- Total Assets <= $1B

Ratio of Small Business Loans to Assets by Bank Size Group

Legend:
- Total Assets <= $1B
- $1B < Total Assets <= $10B
- $10B < Total Assets <= $50B
- Total Assets > $50B

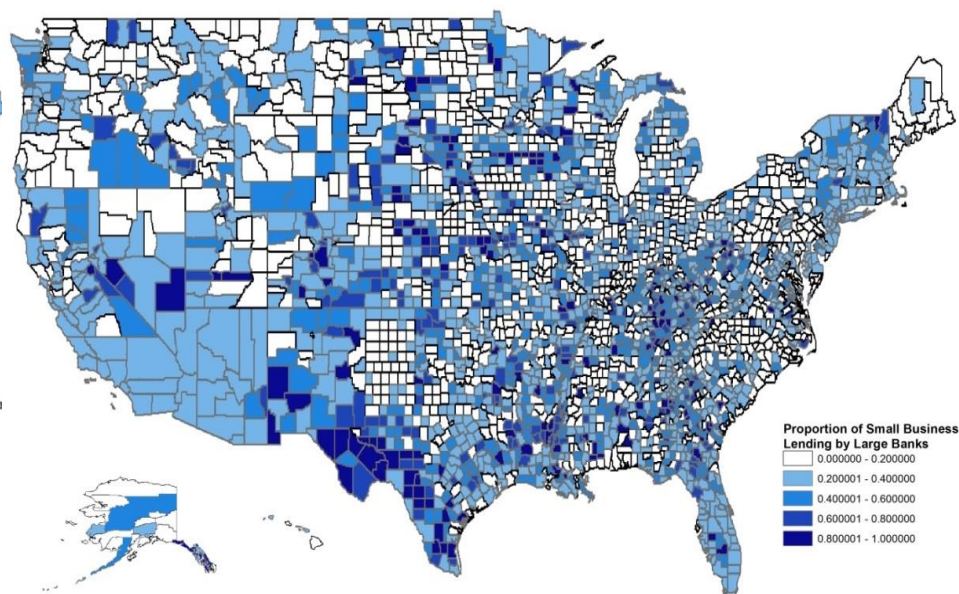# Ratio of Newly Originated SBL by Large Banks (>$10 Billion) that Do Not Have Physical Presence in the County
Source: Jagtiani and Lemieux (2016)

1997

2014

Proportion of Small Business Lending by Large Banks

- 0.000000 - 0.200000
- 0.200001 - 0.400000
- 0.400001 - 0.600000
- 0.600001 - 0.800000
- 0.800001 - 1.000000

Source: Community Reinvestment Act Data 19
The proportion shown is SBL by large banks (> $10B assets) without a branch in the county to total SBL in the county

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Source: Community Reinvestment Act Data 2014
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The Data

The Data

- ❖ **Fintech Loans -- Loan-level data from the Lending Club (consumer loan) platform – focusing on cards & debt consolidation loans**

- ❖ **Traditional (Similar) Loans -- Loan-level data from the Y-14M stress test data**

- ❖ **FRBNY Equifax Consumer Credit panel**

- ❖ **FDIC Summary of Deposits database – for banking market concentration and bank branch information**

- ❖ **Economic factors -- from the Haver Analytics database**

Composition of Lending Club Consumer Loans (2007-2015)

Figure 1: Lending Club Loans (Origination Amount) by Loan Purposes By Origination Year 2007-2015
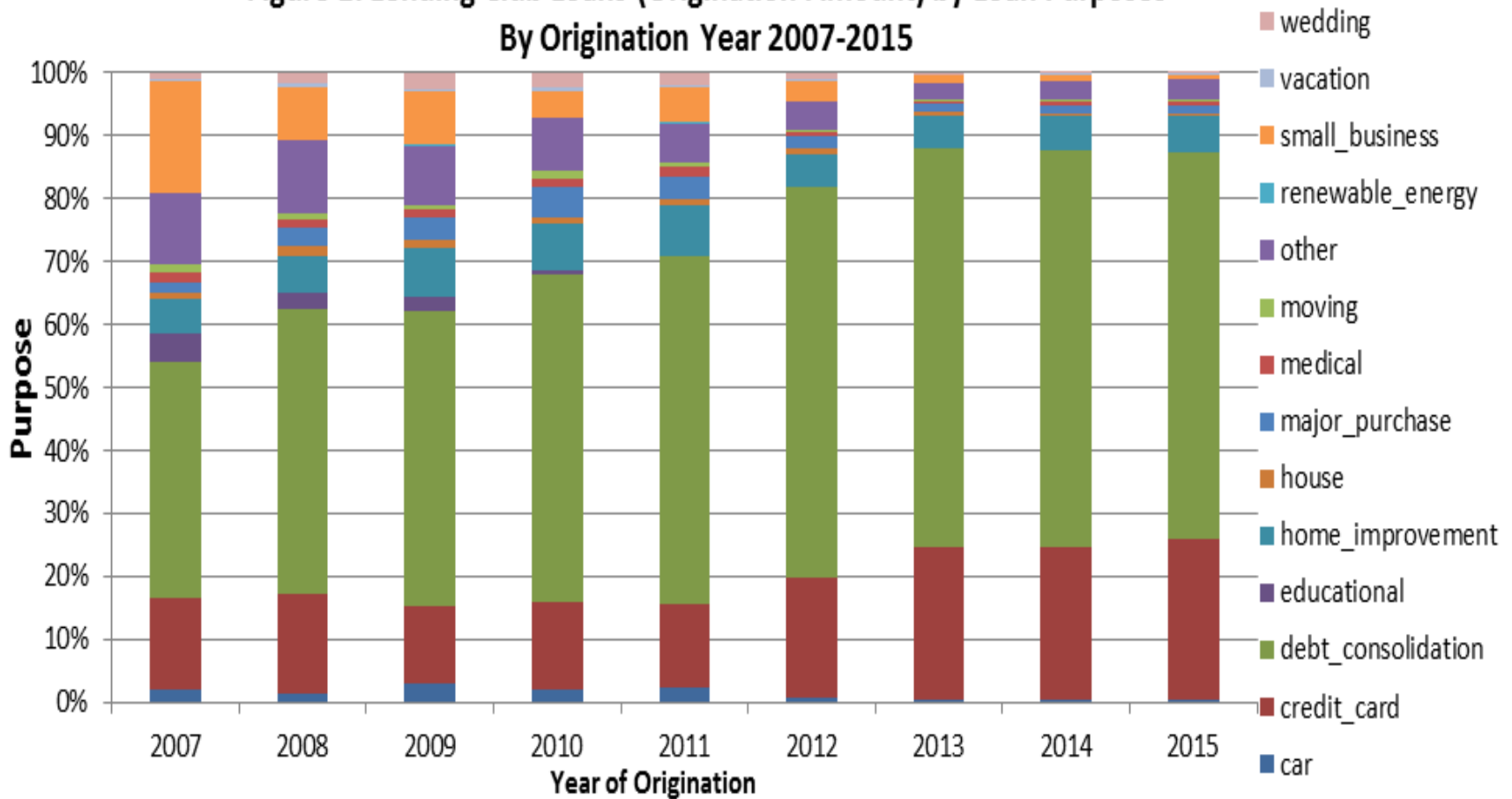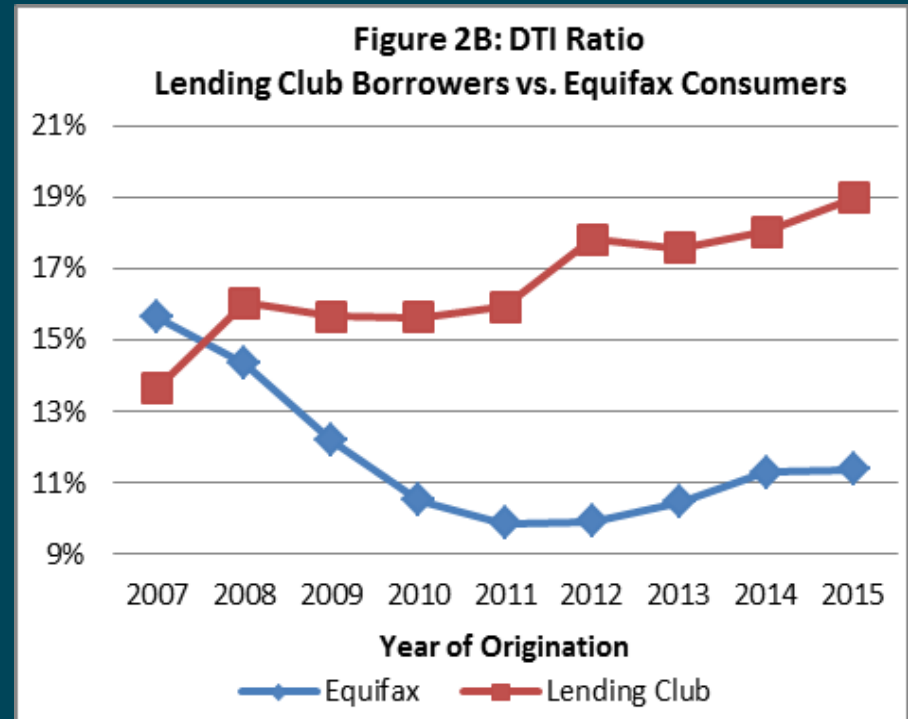
Who Borrow from Lending Club?

Lending Club Borrowers vs. FRBNY Equifax Consumer Population
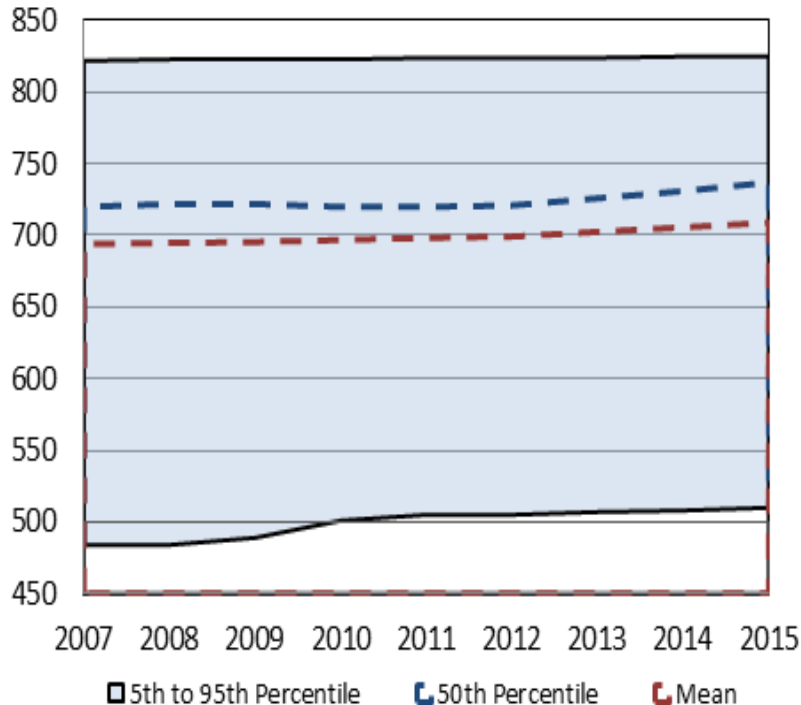
Home Ownership

DTI Ratio

Figure 2A: Homeownership Ratio
Lending Club Borrowers vs. Equifax Consumers

Figure 2B: DTI Ratio
Lending Club Borrowers vs. Equifax Consumers
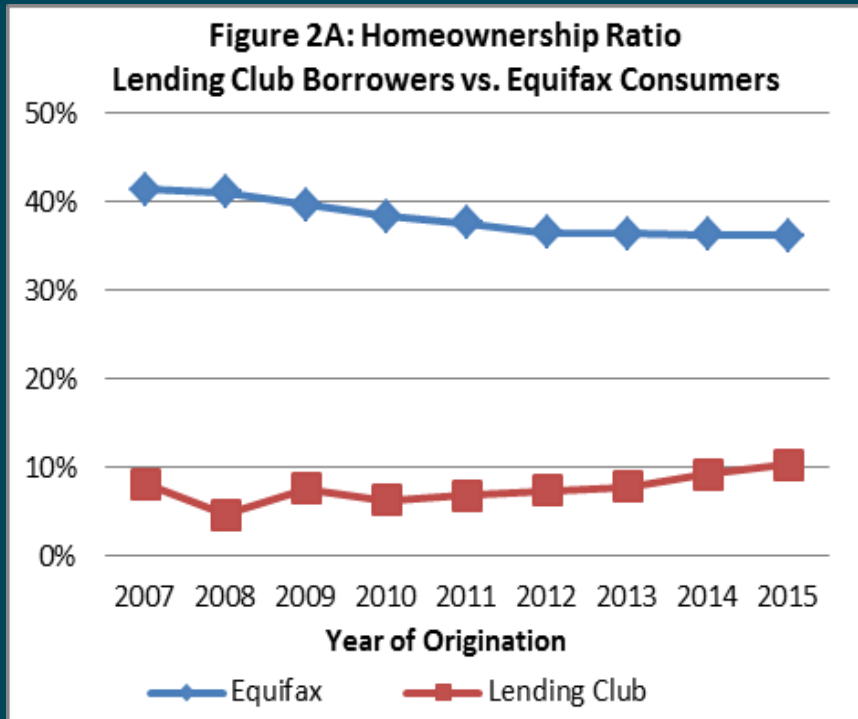
Lending Club Borrowers vs. Equifax Population: FICO Scores

Equifax

Figure 3A: Equifax Consumers' FICO Scores

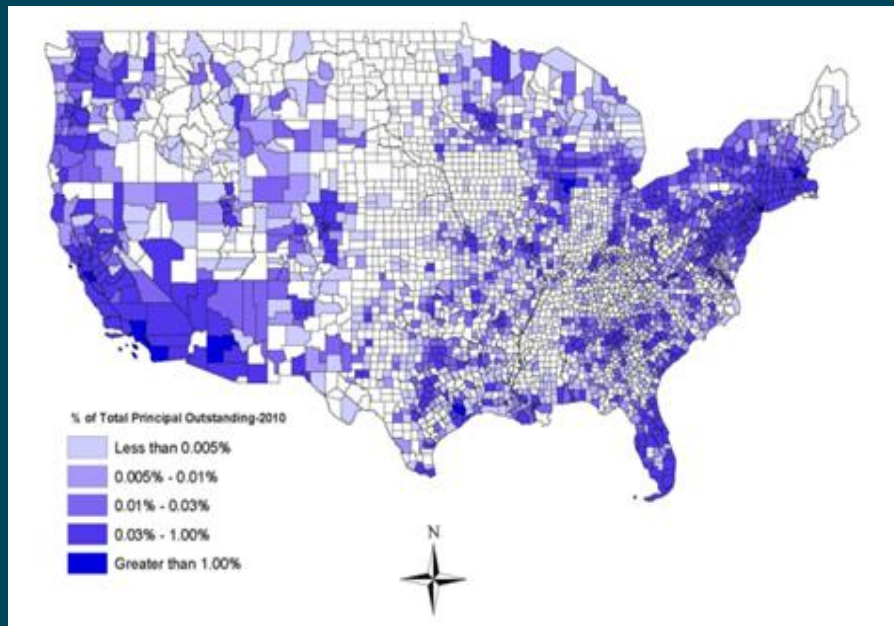□ 5th to 95th Percentile   ⌐ 50th Percentile   ⌐ Mean

Lending Club

Figure 3B: Lending Club Borrowers' FICO Score

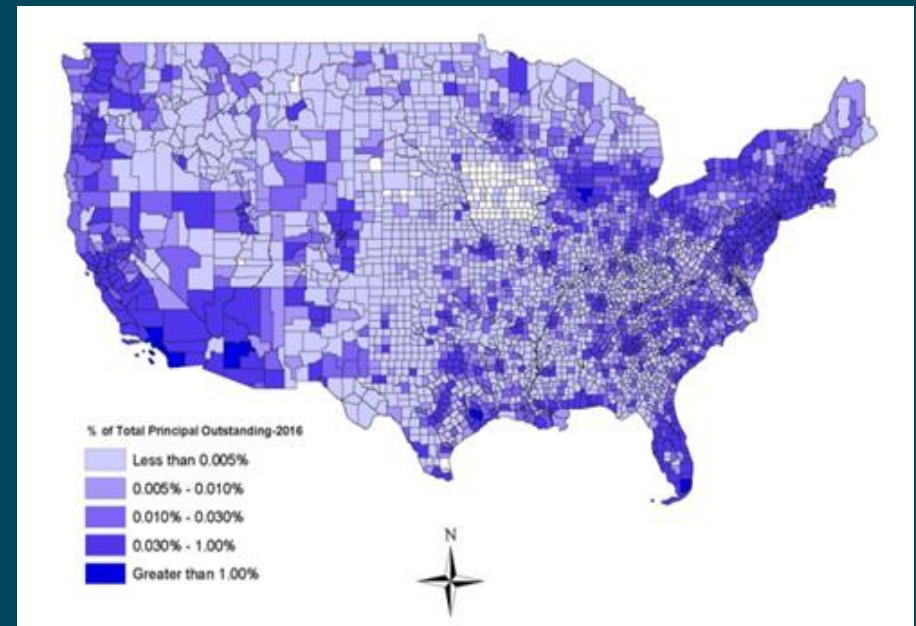□ 5th to 95th Percentile   ⌐ 50th Percentile   ⌐ Mean
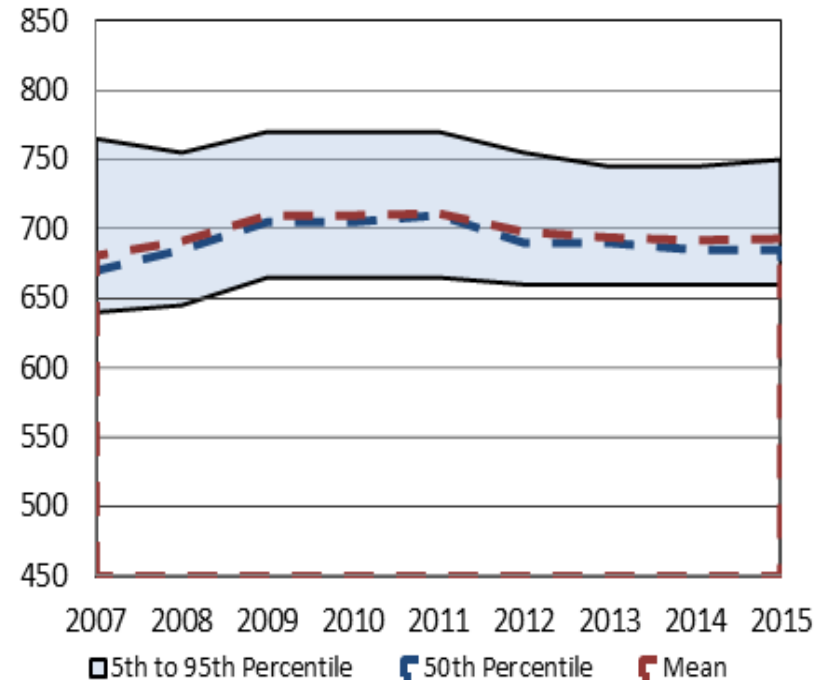
Geographic Distribution of Lending Club Portfolio (% Total Principal Outstanding)

Lending Club initially concentrated in Northeast and West Coast, today they have loans in every state.

As of 2010

% of Total Principal Outstanding-2010
- Less than 0.005%
- 0.005% - 0.01%
- 0.01% - 0.03%
- 0.03% - 1.00%
- Greater than 1.00%

As of 2016

% of Total Principal Outstanding-2016
- Less than 0.005%
- 0.005% - 0.010%
- 0.010% - 0.030%
- 0.030% - 1.00%
- Greater than 1.00%

Improved Credit Access?

About 50% of Lending Club Loans in Highly Concentrated Banking Market
HHI based on Deposit Taking in 5-Digit Zip

Figure 5A: Landscapes of U.S. Banking Market by 5-Digit Zip HHI (2007-2016)
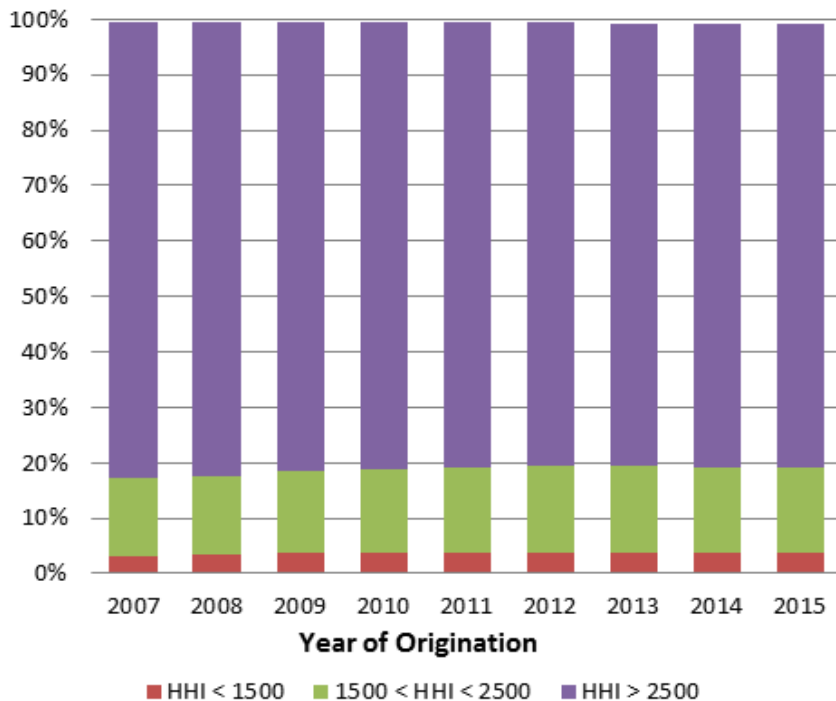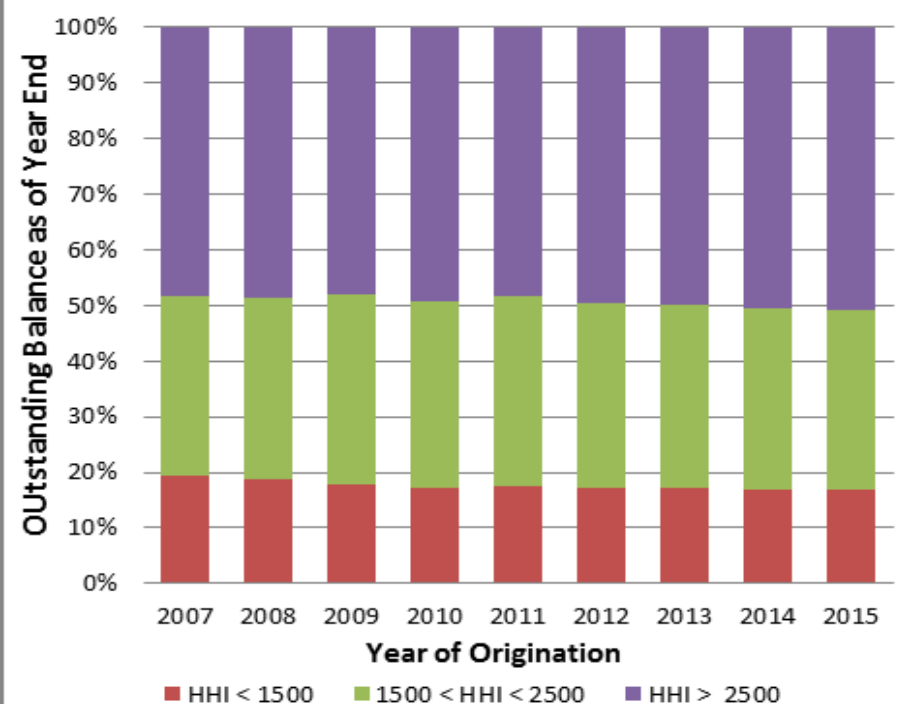
Figure 5B: Lending Club Consumer Loans Outstanding -- by 5-Digit Zip HHI Markets

Increasingly, Lending Club is originating loans in areas where bank branches have declined
In 2014-2015, 40% of Lending Club Loans Originated in Areas with at least 5% Decline in Bank Branches

Figure 6A: Bank Branch Landscapes
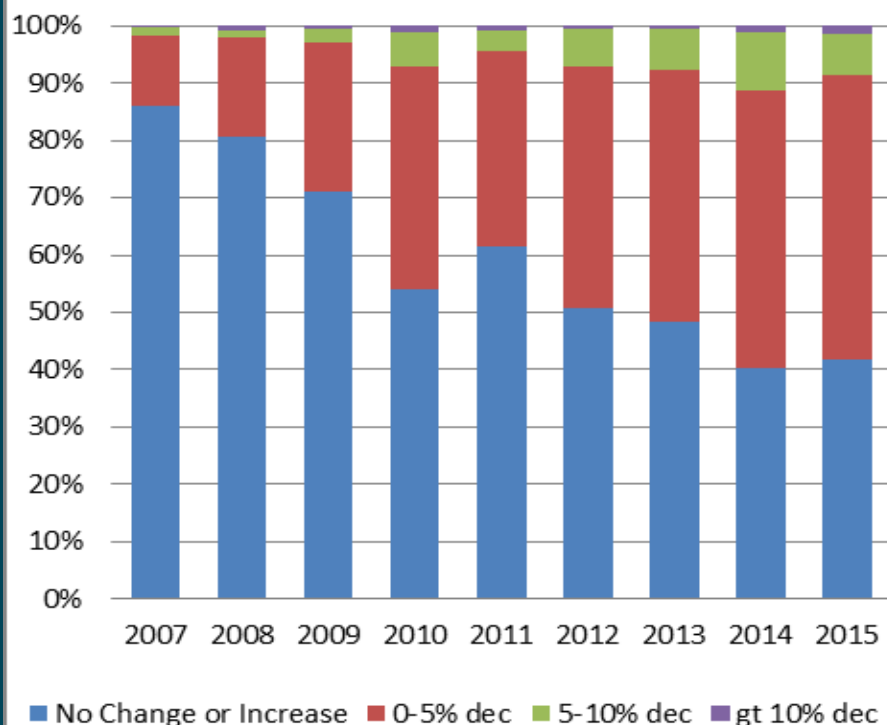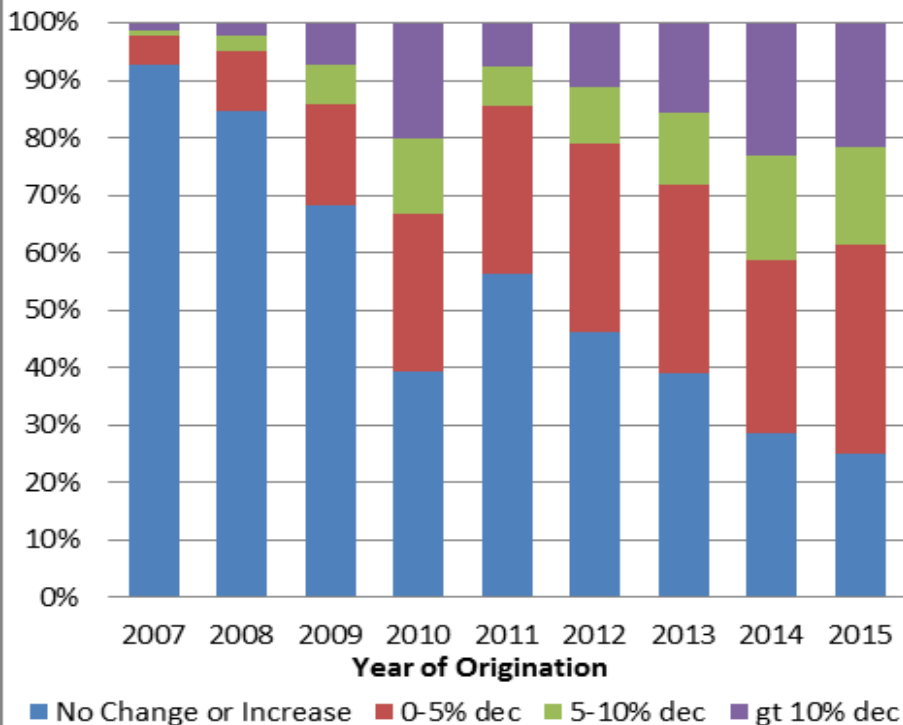Share of 3-Digit Zip Codes with Changes in Bank Branches

Figure 6B: Distribution of Lending Club Loans (in Dollar) in 3-Digit Zip Codes with Declining Bank Branches
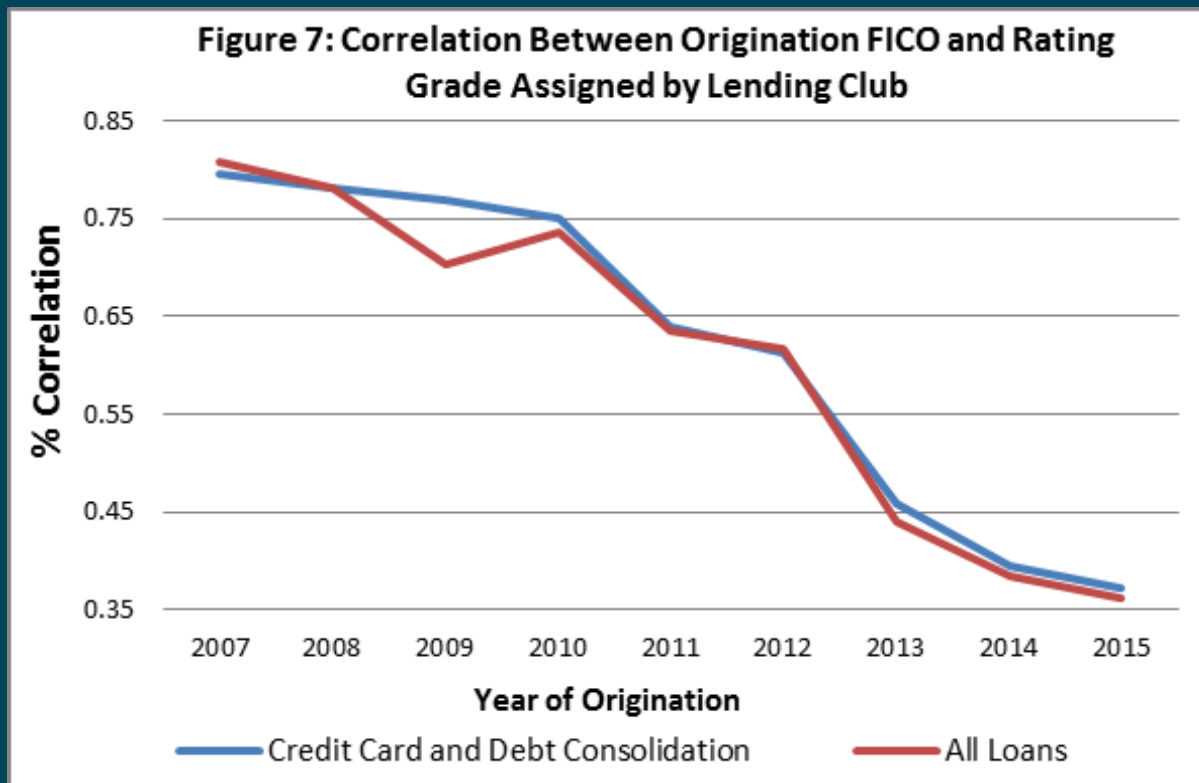
Roles of Alternative Information Sources?
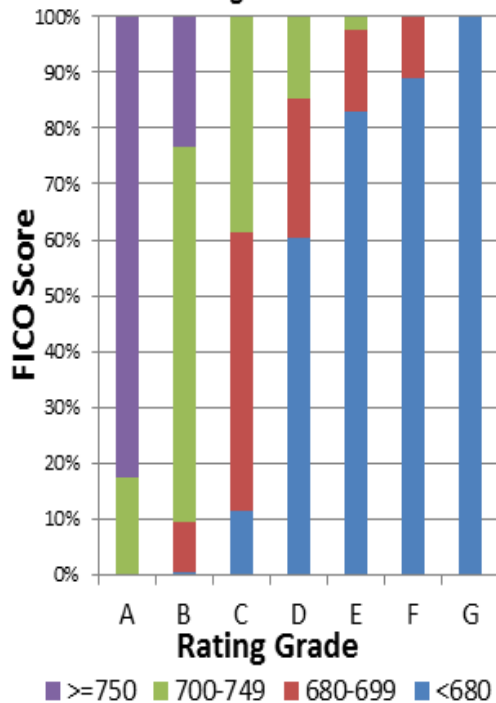
Increasing Roles of Alternative Information (2007-2015)

There have been concerns about the use of alternative data sources by Fintech lenders and the impact on financial inclusion.
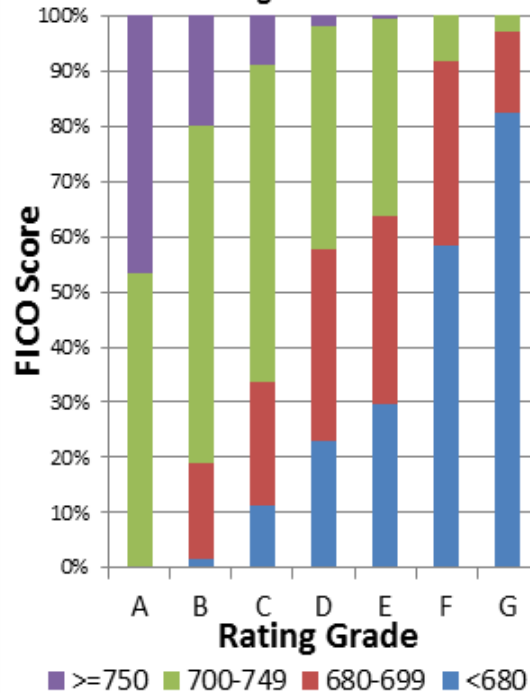

Figure 7: Correlation Between Origination FICO and Rating Grade Assigned by Lending Club

FICO vs. Rating Grades
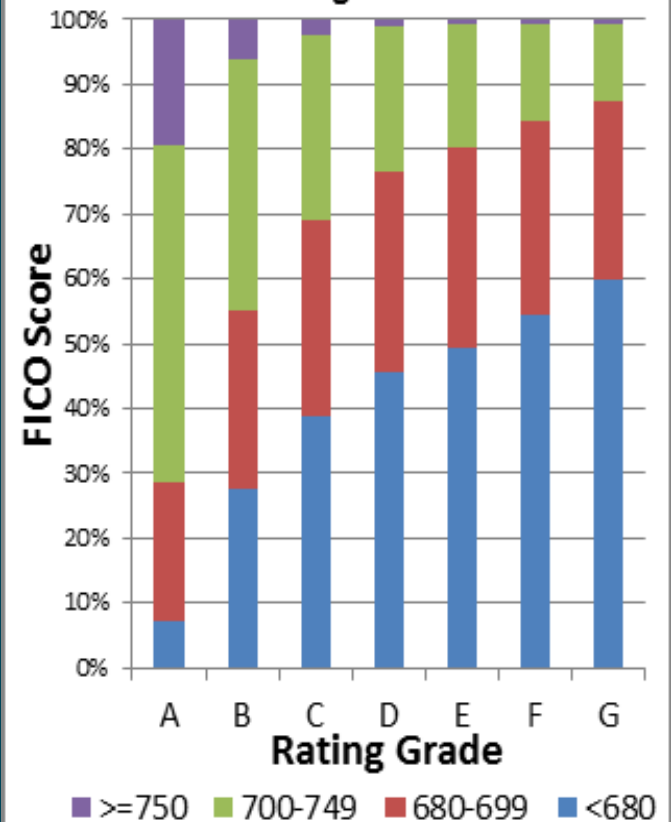
Richard Cordray (March 2017)

- ❖ He pointed out potential benefits to consumers through the use of these alternative data sources.

- ❖ "By filling in more details of people's financial lives, this information may paint a fuller and more accurate picture of their creditworthiness. So adding alternative data into the mix may make it possible to open up more affordable credit for millions of additional consumers….."

Regression -- Table 1

❖ **Lending Club penetrated areas that are underserved.**

❖ **The activities both in terms of loan accounts and loan amounts are positively related to the market concentration indicators.**

❖ **The coefficients of the *D_HHI_1500 to 2500* and *D_HHI_2500+* indicators are significantly positive and with larger positive coefficient for the *D_HHI_2500+* indicator, after controlling for all other relevant factors that impact the lending activities.**

Accurate Risk Pricing?

Lending Club uses loan grades to risk-price loans
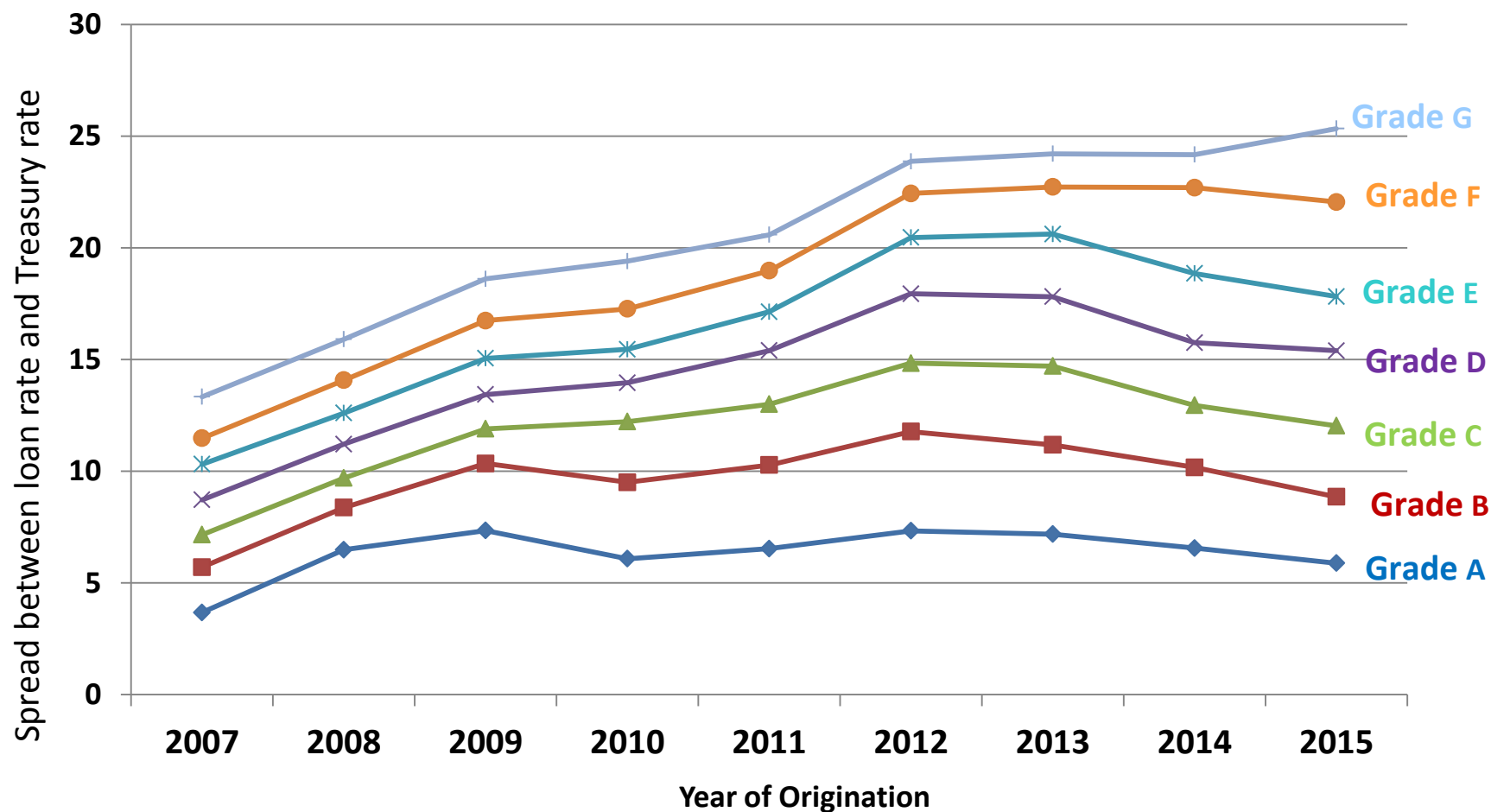
Source: Jagtiani and Lemieux (2017)

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Rating Grades ➡ Spreads ➡ PD
Lending club interest rates are correlated to the probability of delinquency

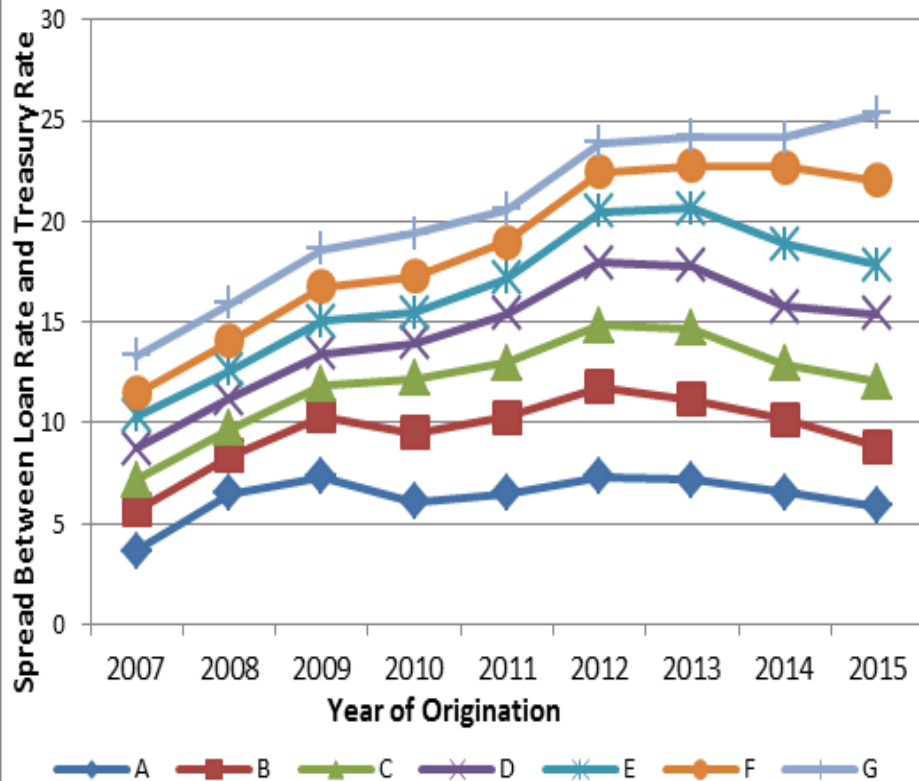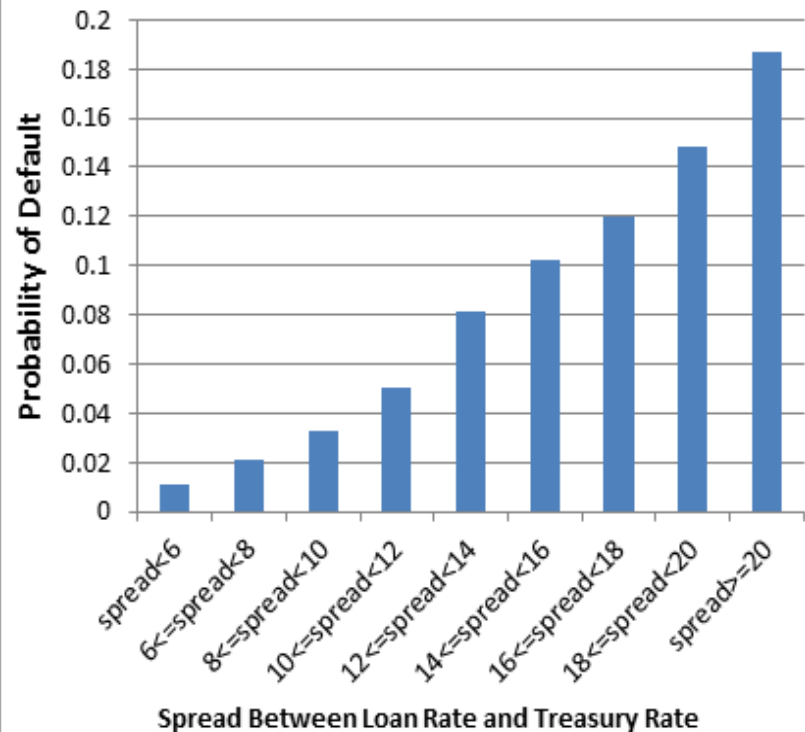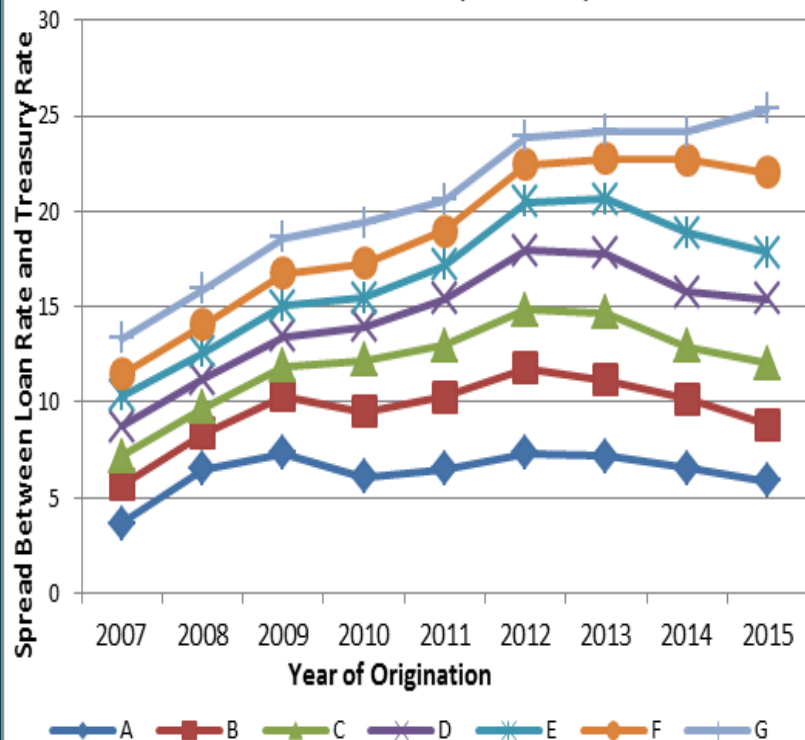Figure 9A: Average Spread by Rating Grades -- Cards and Debt Consolidation (2007-2015)

Figure 9B: Probability of Being 60+DPD Within 12 Months after Origination (Origination in 2014-2015)

Delinquency Rate Still Line Up with Both FICO Scores and Rating Grades

Rating Grades

FICO Scores
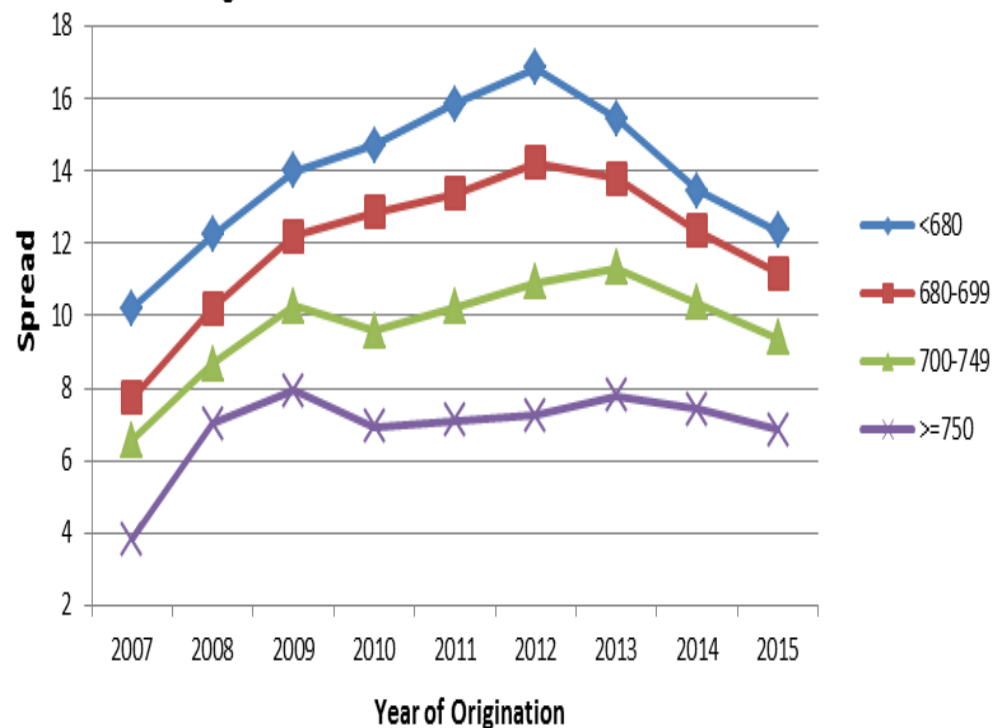

Figure 9A: Average Spread by Rating Grades -- Cards and Debt Consolidation (2007-2015)

Figure 10: Average Spread by FICO Lending Club Loans -- Cards and Debt Consolidation

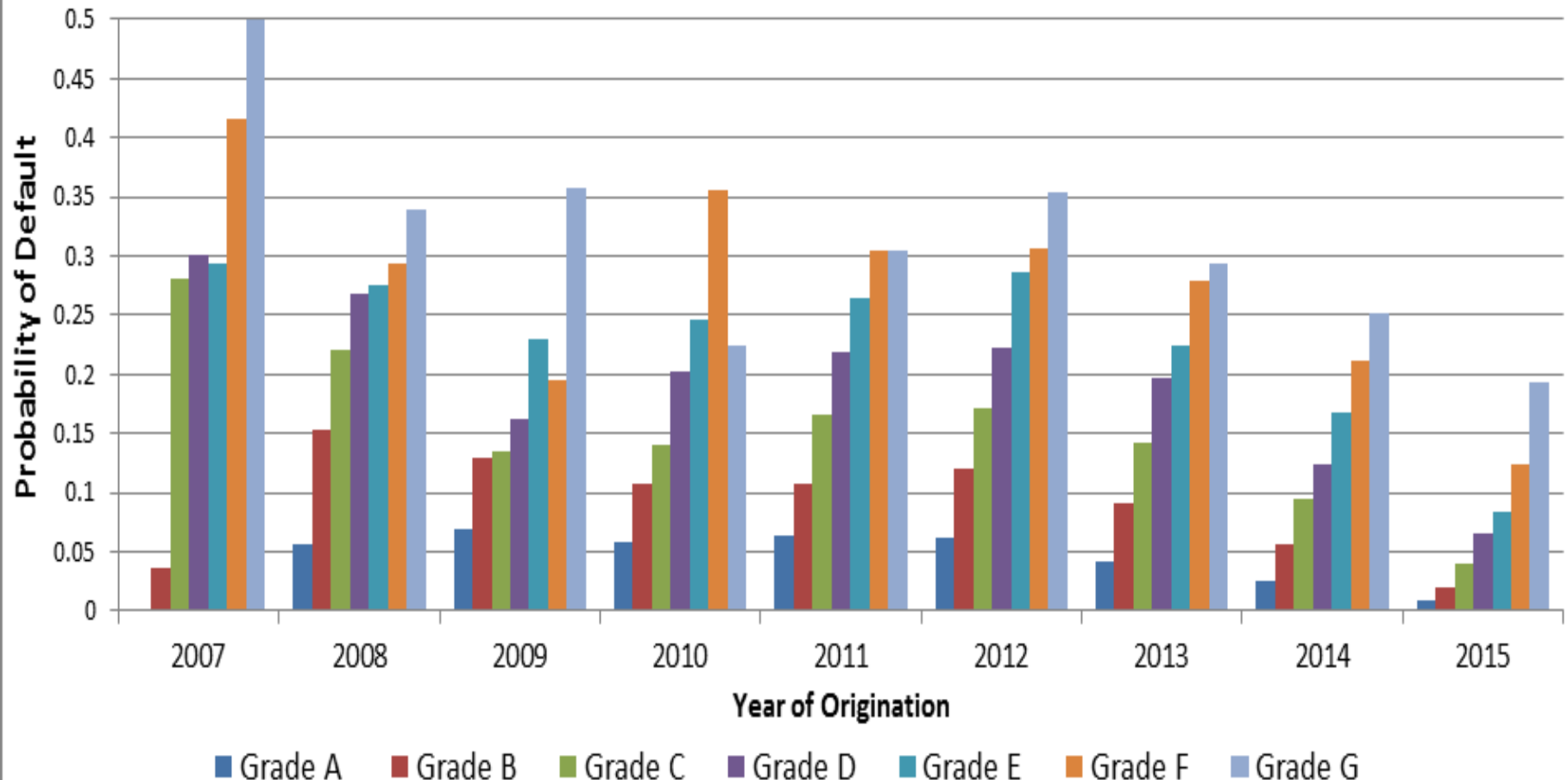# Lowered Funding Cost for Consumers?

Improved Loan Quality – Smaller PD for All Loan Grades

Figure 11: Lending Club Loans
60+DPD within 12 Months After Origination -- by Loan Grade and years
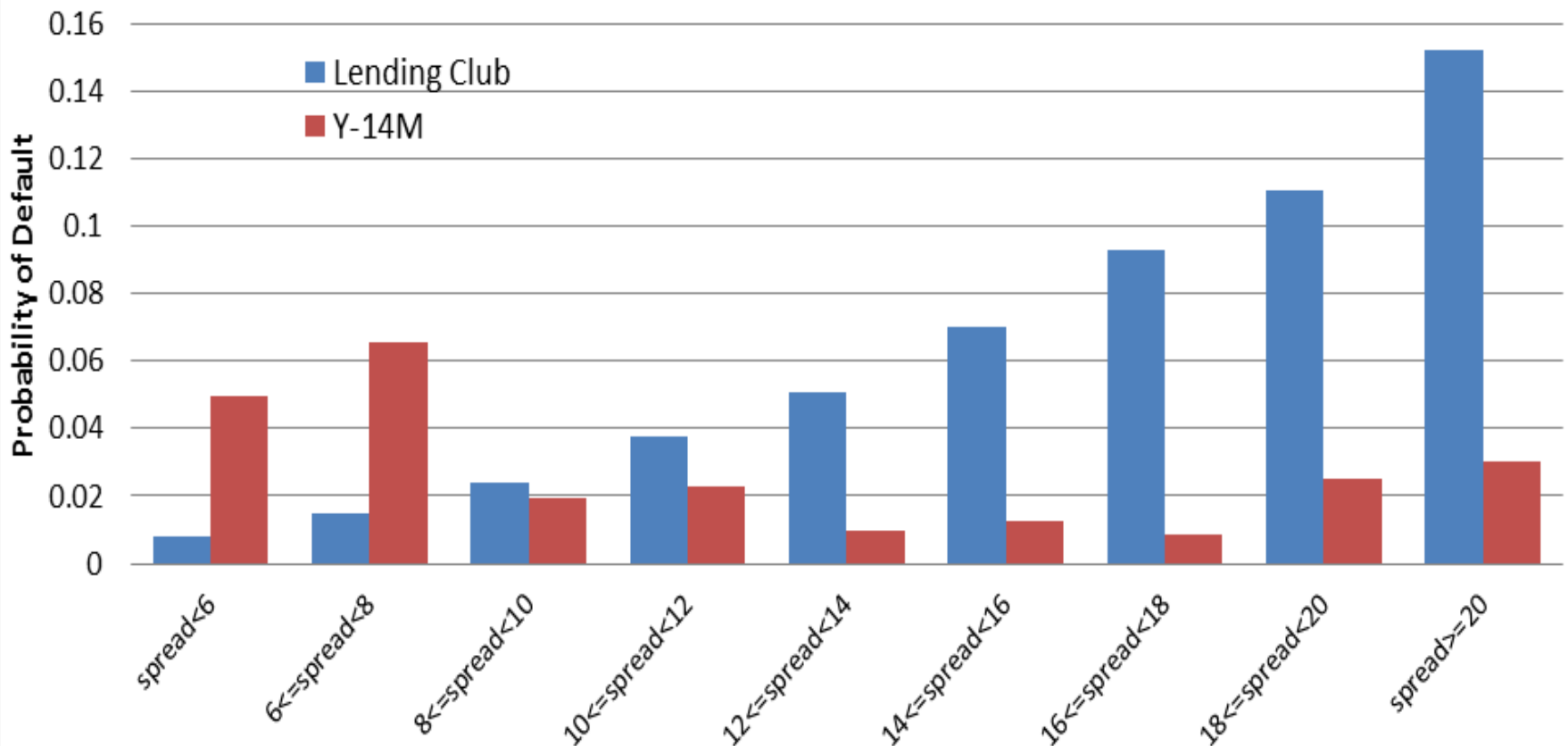
Lending Club vs. CCAR Banks
For Loans Originated in 2014-2015
Smaller Spreads on Lending Club Loans

Figure 12: Lending club Loans vs. Y-14M Data
Probability of 60+DPD Within 12 Months after Origination (2014-2015)

Regression – Table 2

❖ **Table 2A -- Lending Club charges significantly higher spreads in regions of higher banking market concentration. Coefficients are significantly positive for areas with *1,500<HHI<2,500* and *HHI>2,500***

❖ **Lending Club has more monopolistic power in these markets and is able to charge higher prices**

❖ **Table 2B -- banks also charge higher credit spreads in areas with greater degree of market concentration, with an *HHI>2,500***

❖ **More market power has allowed both banks and Fintech lenders to charge higher price of credit**

Controlling for FICO Scores, Lending Club Borrowers Are More Likely to Default

Borrowers of the same FICO brackets at the Lending Club tend to be more risky, on average, than those who stick with credit card loans through traditional lending channels

FICO Scores

Figure 14: Lenging Club vs. Y-14M Bank Data
Probability of 60+ DPD within 12 Months
For Loans Originated in 2014-2015 -- by FICO
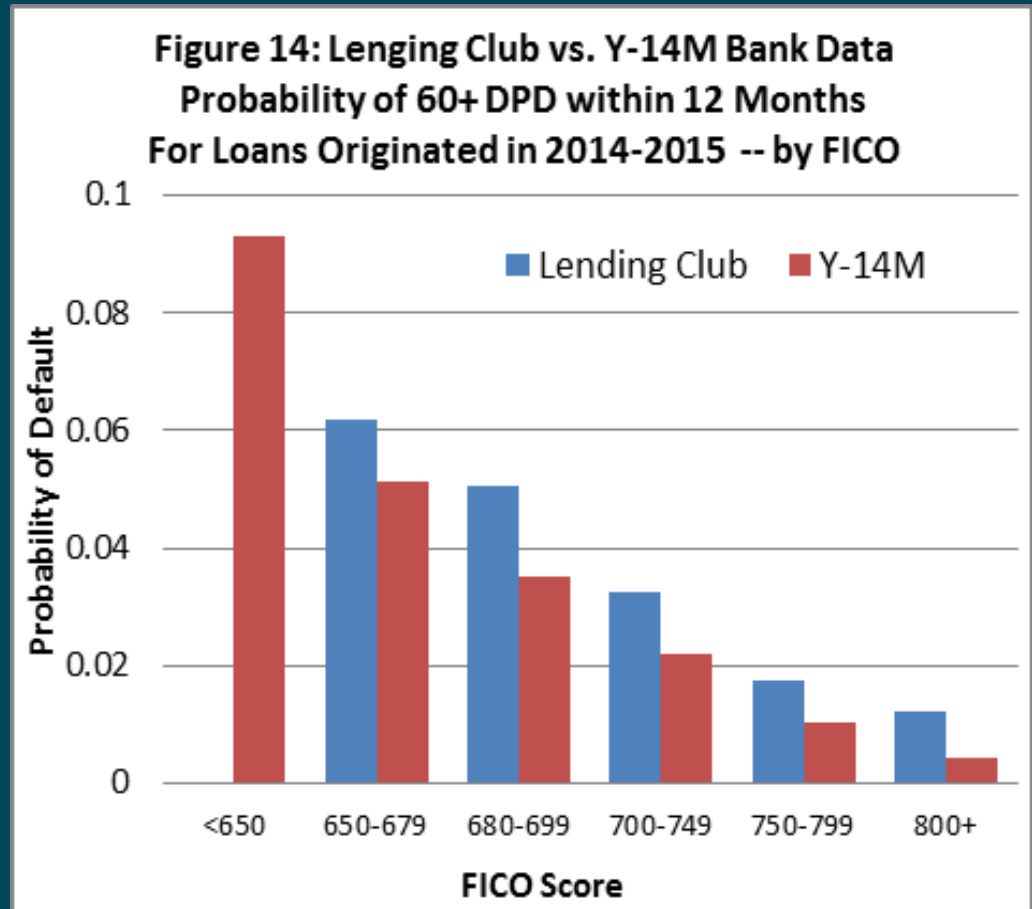
Regression – Table 3

- ❖ **Data indicate that rating grades seem to do a good job of identifying riskier borrowers.**

- ❖ **We explore this further using Logistic regression analysis to control for a number of additional factors (e.g., credit spreads, borrower's risk characteristics, and economic factors).**

- ❖ **Dependent variable is the probability that the loan becomes delinquent within 12 months following the origination date.**

- ❖ **Results confirm that rating grades do a good job of predicting future loan defaults**

Takeaways (1)

❖ **Alternative Data Sources -- There is additional information in Lending Club's ratings that are not already incorporated in traditional risk factors (FICO) -- allowing some borrowers to be assigned better loan ratings and receive lower priced credit**

❖ **Access to Credit -- Lending Club activities have penetrated into areas that could benefit from additional credit supply – e.g. areas that lose bank branches and more concentrated banking markets**

❖ **Loan Performance -- Lending Club borrowers are, on average, more risky than traditional borrowers given the same FICO scores.**

Takeaways (2)

❖ **Risk Pricing:**

- **Rating grades have a decreasing correlation with FICO scores over the years**

- **High correlation between interest rate spreads, Lending Club rating grades, and loan performance**

- **Alternative data is being used and performing well**

❖ **Funding Cost:** **for the same risk of default, some consumers pay smaller spreads on loans from Lending Club than if the credit was priced solely on the basis of FICO scores**

❖ **Partnership** **– Increasingly, banks are finding ways to partner with Fintech lenders**