

IT Risk: FinTech

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Agenda – Purpose of Presentation

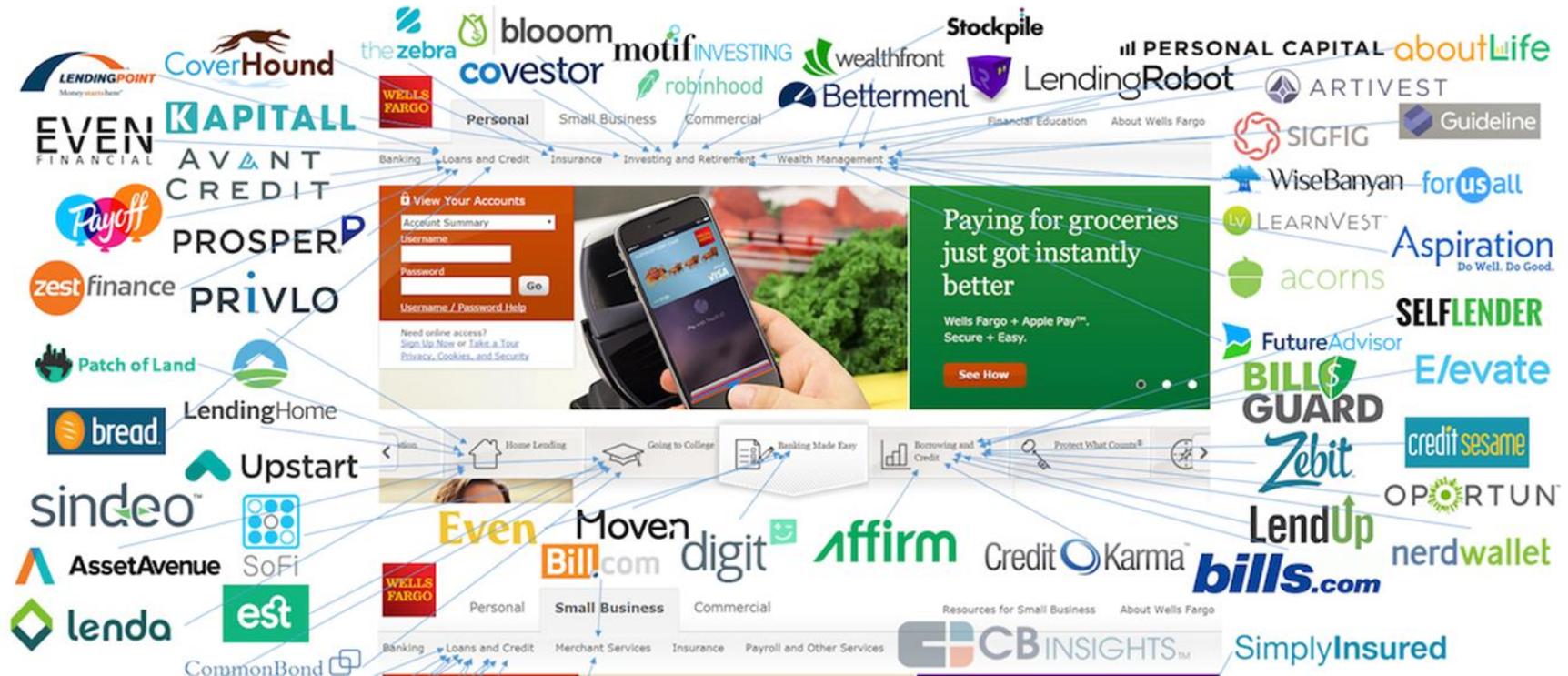
- Define fintech
- Describe the importance of fintech to supervisory community
- Summarize Federal Reserve's and other U.S. regulators' response to fintech innovation and growth
- Describe various fintech segments
- Explain important developments and concepts in alternative lending



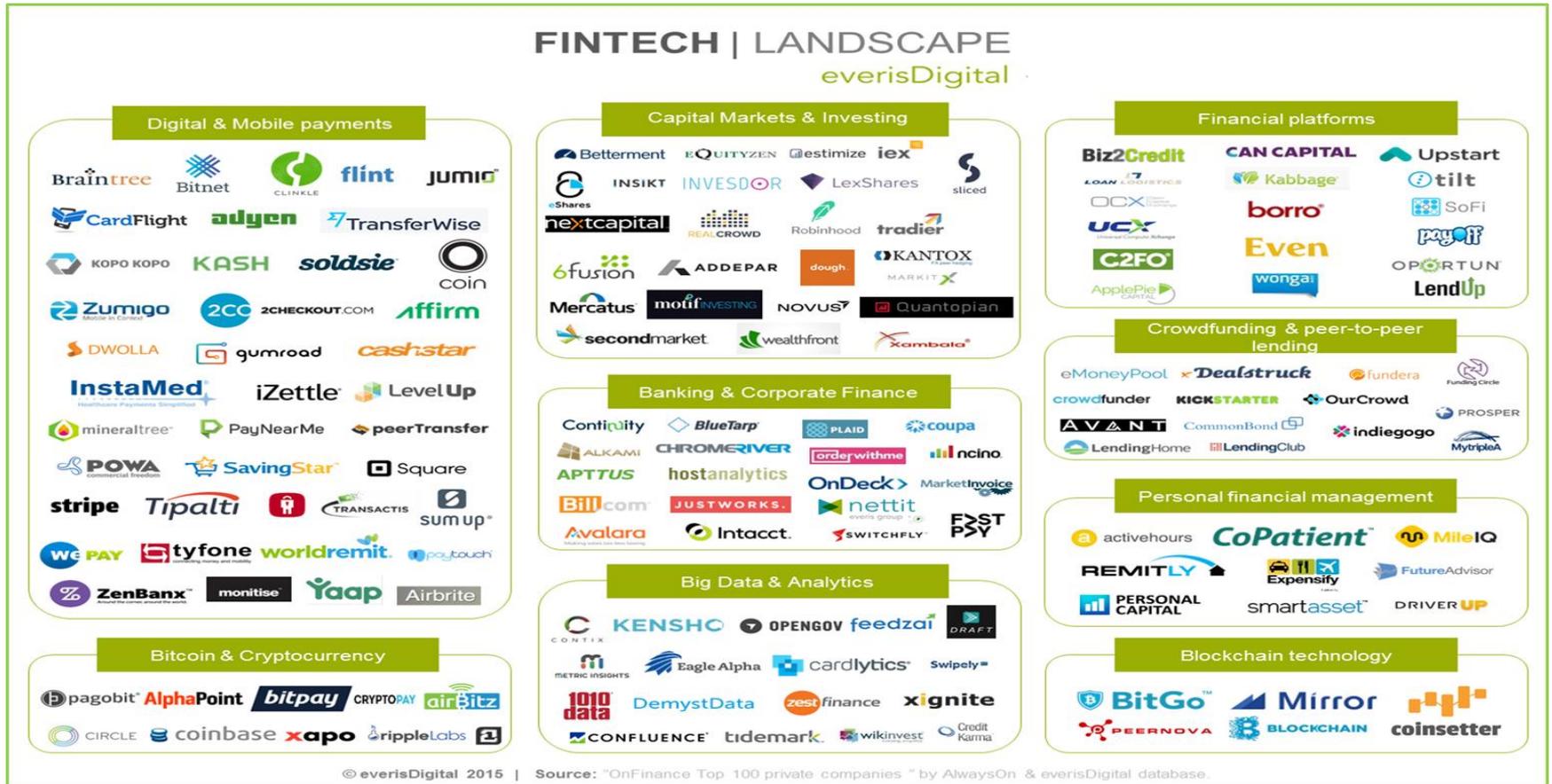
What Is Fintech?

- Fintech is an industry composed of companies that use technology to make financial systems and the delivery of financial services more efficient

Unbundling of a Bank



Fintech Innovations are Transforming Financial Services for Consumers and Businesses



According to one report, global investment in fintech companies totaled \$19.1 billion in 2015 (\$13.8 billion in the United States).

One firm (Venture Scanner) is tracking 1,379 fintech companies.

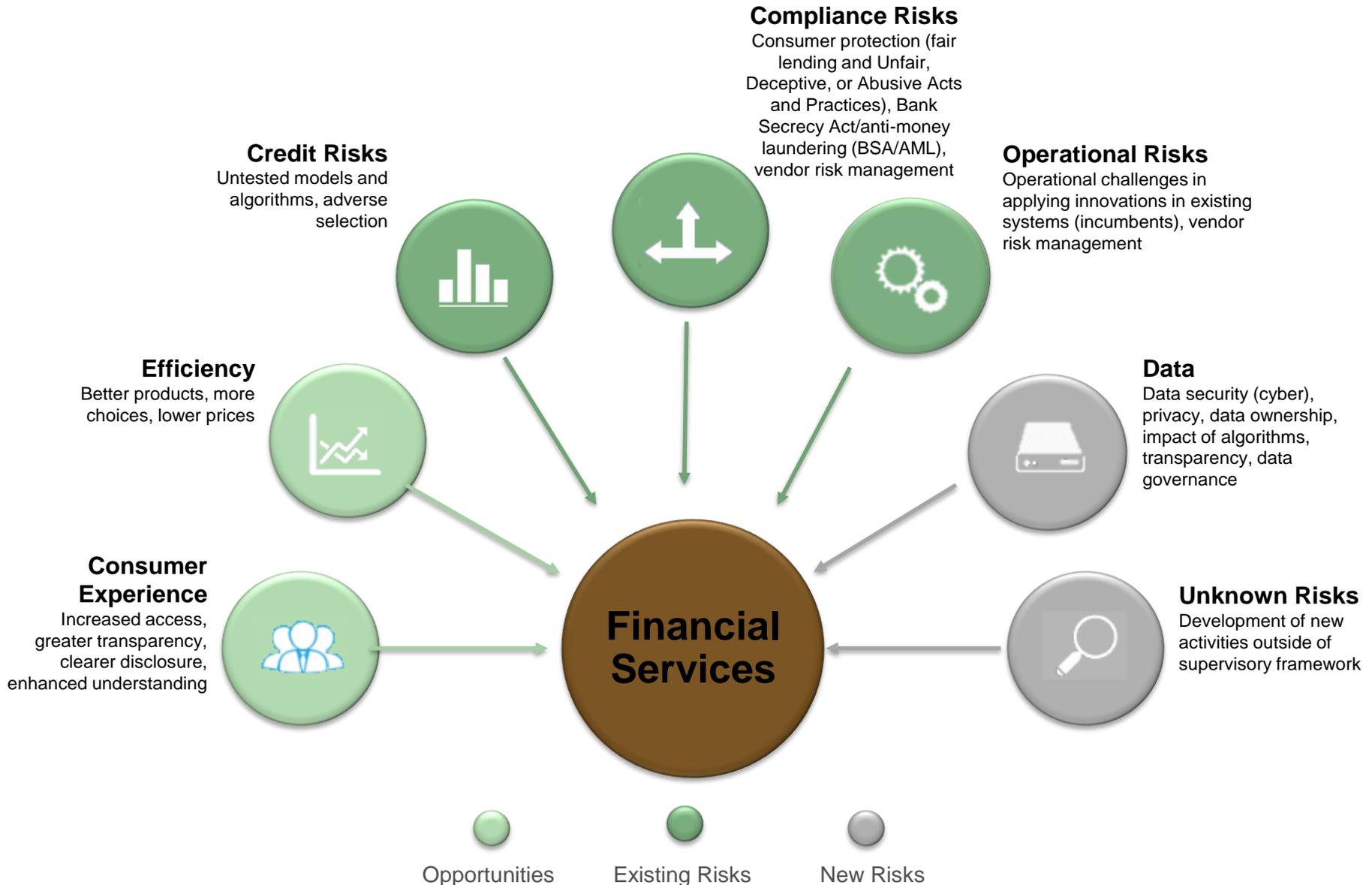


Why Do Regulators Care?

- Fintech and banks are connecting in multiple ways:
 - Banks invest in fintech companies
 - Banks establish start-up programs to incubate fintech companies
 - Banks partner with fintech companies:
 - Originate loans for fintech lenders
 - Retail business platform provider – cobranding arrangements
 - White label/private label arrangements
 - Referral arrangements for a fee
 - Banks acquire fintech companies
 - Banks launch own fintech solutions



Fintech Impacts: Opportunities & Risks



Source: This figure was inspired and derived from a similar figure in the report *Technological Innovation and the Dutch Financial Sector* published by *De Nederlandsche Bank*



Initial Regulatory Response to Fintech Innovation

- **Federal Reserve System (FRS):**
 - Governor Lael Brainard Steering Committee – Overarching umbrella for all Federal Reserve System efforts
 - Fintech High-Priority Initiative – Multidisciplinary working group
 - Other efforts relating to payment systems and the Basel Committee
 - BSA/AML and distributed ledger workstreams
- **Office of the Comptroller of the Currency (OCC):**
 - *Responsible Innovation* whitepaper (March) and related public forum (June)
 - Considering limited-purpose fintech charter and regulatory sandbox
- **Federal Deposit Insurance Corporation (FDIC):**
 - *Supervisory Insights* article on marketplace lending
 - Limited examinations of fintech firms partnering with banks
 - Proposed new third-party lending guidance
- **U.S. Treasury:**
 - Completed request for information (RFI), *Public Input on Expanding Access to Credit through Online Marketplace Lending*, in 2015
 - Issued *Marketplace Lending* whitepaper (after RFI) in May 2016
- **Consumer Financial Protection Bureau (CFPB):**
 - Consumer bulletin on marketplace lenders in March 2016
 - Accepting consumer complaints against marketplace lenders
 - Project catalyst
- **Federal Trade Commission:**
 - Hosting a series of forums on marketplace lending beginning June 2016



As policymakers, we want to **facilitate innovation** where it has the potential to yield **public benefit**, while ensuring that **risks are thoroughly understood and managed**.

...It is important to give promising technologies the serious consideration they merit, seek to **understand their opportunities and risks**, and actively engage in dialogue about their potential uses and evolution.

We should be **attentive to the potential benefits** of these new technologies and prepared to make the necessary **regulatory adjustments** if their **safety and integrity** is proven and their potential benefits found to be in the **public interest**.

Lael Brainard
Federal Reserve Governor
April 14, 2016



Federal Reserve's Primary Areas of Fintech Focus

- The Board of Governors of the Federal Reserve System established a multidisciplinary working group that is engaged in a 360-degree analysis of fintech innovation
- Focused on the following fintech segments:

Alternative lending

Savings,
investments,
financial planning

Digital payments

Blockchain and
virtual currency

Data and Technology Ecosystem

Application Programming Interface (API) standards, big data/data analytics, and mobile delivery channel

- Fintech creating **nontraditional platforms** for banking products and services
- Disruption most likely to impact **how financial services are delivered**
- Each fintech area developing at different pace; **not all will be equally disruptive**

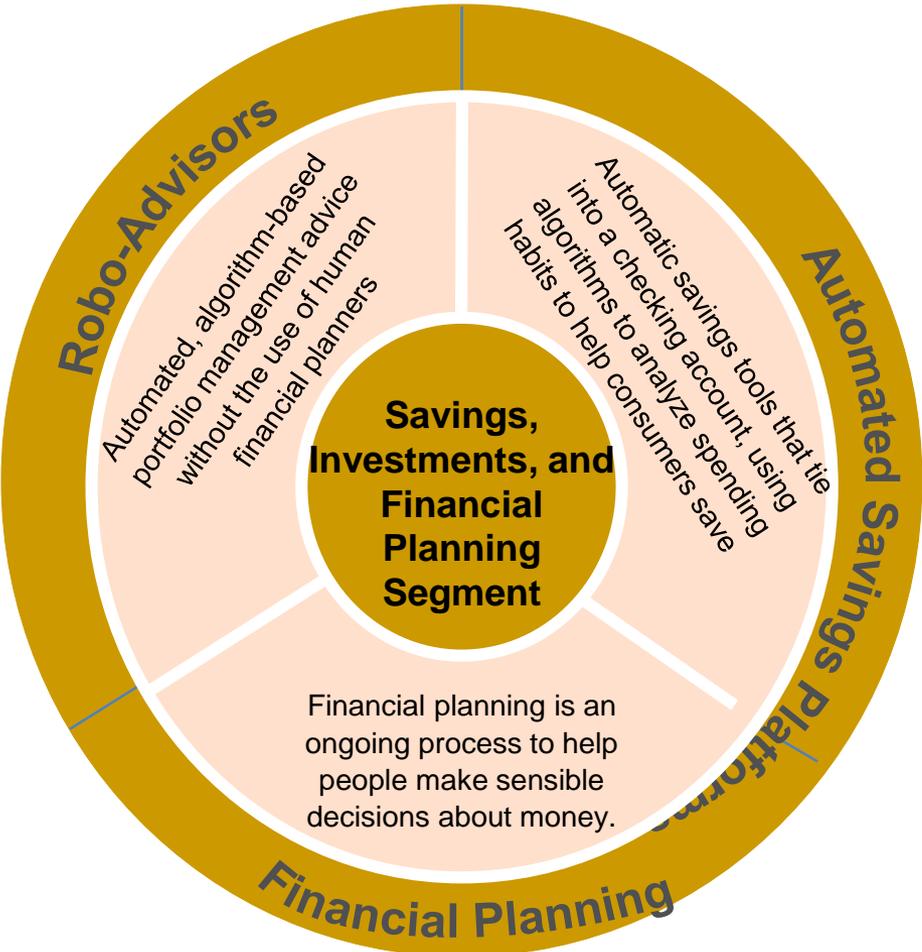


Federal Reserve Fintech Initiative

RISKS AND OPPORTUNITIES ANALYSES – “WHY SHOULD WE CARE?”
Work Stream
Market Efficiency and Alternative Lending
Data Aggregation
Savings, Investment and Financial Planning
Payments / Digital Wallets
Blockchain
SMB Survey
LEVERS TO PULL IN RESPONSE – “HOW SHOULD WE RESPOND?”
Work Stream
Outreach / Public Statements
Convening Power
Bank Service Company Act Options
Chartering / Licensing Position
Innovation Hub / Sandbox Position
Vendor Risk Management Guidance and Supervisory Practices
Fair Lending / UDAP Guidance and Supervisory Practices
BSA / AML Guidance and Supervisory Practices



Savings, Investments, and Financial Planning Segment



Robo-Advisors



Automated Savings Platforms



Financial Planning



Source: Federal Reserve System



Payments Segment

Digital wallets are the electronic devices that allow individuals to make e-commerce transactions.

Consumer to Consumer

Online tools that allow individuals to complete financial transactions with one another



Payments between consumers

Consumer to Business

These are the major payment services which allow users to make payments via a mobile device.



Consumers pay merchants with credit cards through mobile devices.



Business to Business



These companies provide real-time online payment processing. Their digital payment networks connect with financial institutions to facilitate bank transfers.

Making Automated Clearing House easier to use



Blockchain Segment

The entire Bitcoin network relies on a Blockchain network

Blockchain could be used to facilitate the exchange of financial assets with less middlemen.



Bitcoin is digital currency, created and held electronically.



Blockchain is the distributed ledger technology behind Bitcoin.

Several Blockchain companies are on the rise, e.g.,



Bitcoin and Blockchain could have vast impacts on the fintech industry.



Data and Technology Ecosystem Segment

The Technology Behind Fintech

Mobile

- Apps, complete with modified user experiences, are being rolled out for consumers' on-the-go financial services needs.

Big Data

- Vast amounts of consumer data
- How to interpret and use it

API

- Programming code allows two software programs to communicate with each other
- Bank transactional data about consumers



Source: Federal Reserve System



Alternative Online Lending Segment

- Alternative Lenders (ALs) are nonbank lenders that focus on the Internet and emerging data-analytic technologies.
 - Technology is used to improve customer experience, lending decisions, customer sourcing, and funding.
- ALs were originally viewed as a competitive threat to banks despite relying on them for loan origination.
- More recently, many banks have established a variety of business engagements with ALs.
 - The System is contacting state member banks to determine the types of ALs and fintech companies with which they are engaged.



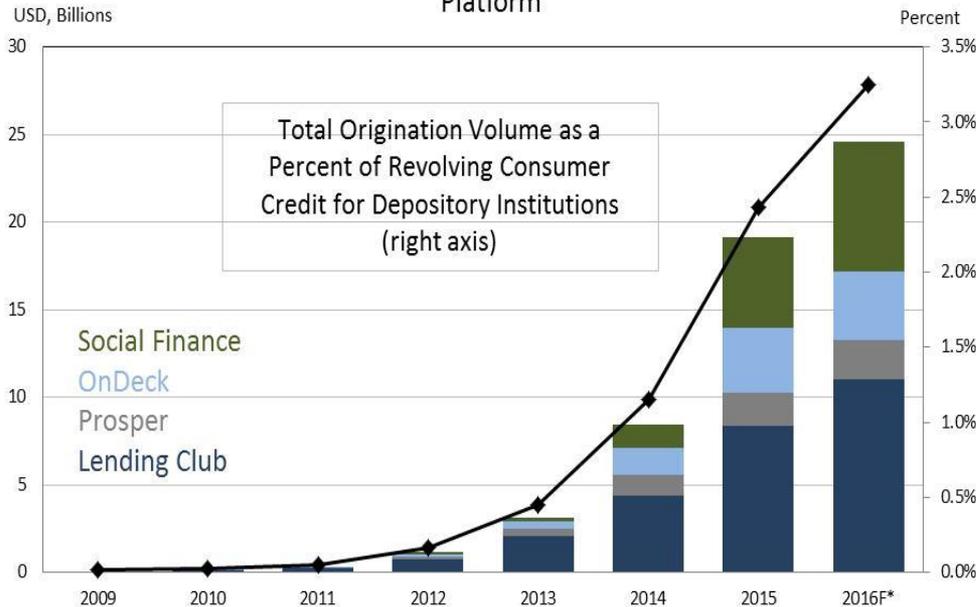
AL Landscape

- Most loans are consumer or small business loans.
 - Consumer: Typically 3–5 years, <\$35,000, unsecured
 - Small business: Typically <\$500,000, <5 years, secured/unsecured
- Growth in loans has been rapid, from virtually nothing pre-crisis, but market shares are still very small.
 - Consumer loans are only about 3 percent of the U.S. market.



Alternative Lending Originations

U.S. Marketplace Loan Origination Volume by Year by Leading Platform



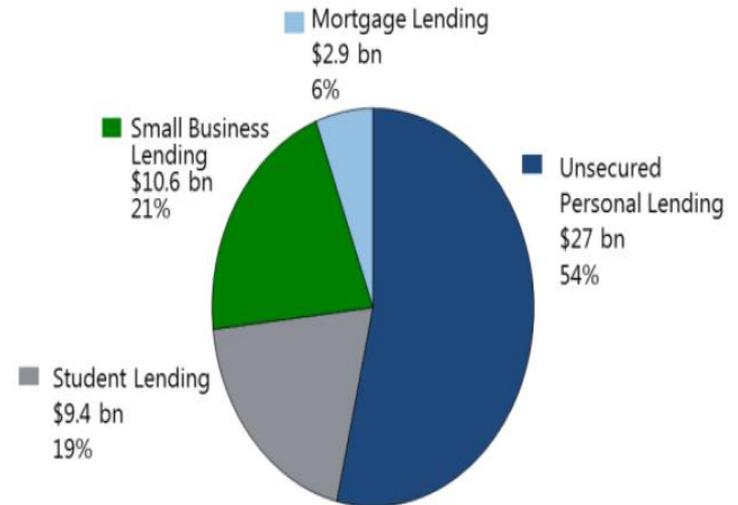
*2016 Numbers are based on annualized 2016Q1 lending data.

Source: Company websites, Bloomberg, Lend Academy, Federal Reserve, FRBNY estimates.

- Based on annualized 1Q16 originations, the top four alternative lenders are on pace to represent only about 3 percent of total consumer credit in United States.

Cumulative MPL* Origination Volume by Lending Segment

Based on \$50 Billion Cumulative Origination Volume



Source: FRBNY, company websites. as of April 2016. Cumulative data begins in 2009. Figures are estimates due to intermittent reports of origination volumes. Firms included: Avant, CANCapital, CircleBack Lending, CommonBond, Credibility Capital, Dealstruck, Earnest, Groundfloor, Kabbage, Lending Club, LendingHome, LendKey, Marlette Funding, OnDeck, Patch of Land, Prosper, RealtyMogul, SocialFinance, Upstart. *Marketplace Lending (MPL)

- Personal loans are primarily used for debt consolidation, credit card repayment, and home improvement.
- The majority of consumer loans are made to prime or near-prime borrowers.

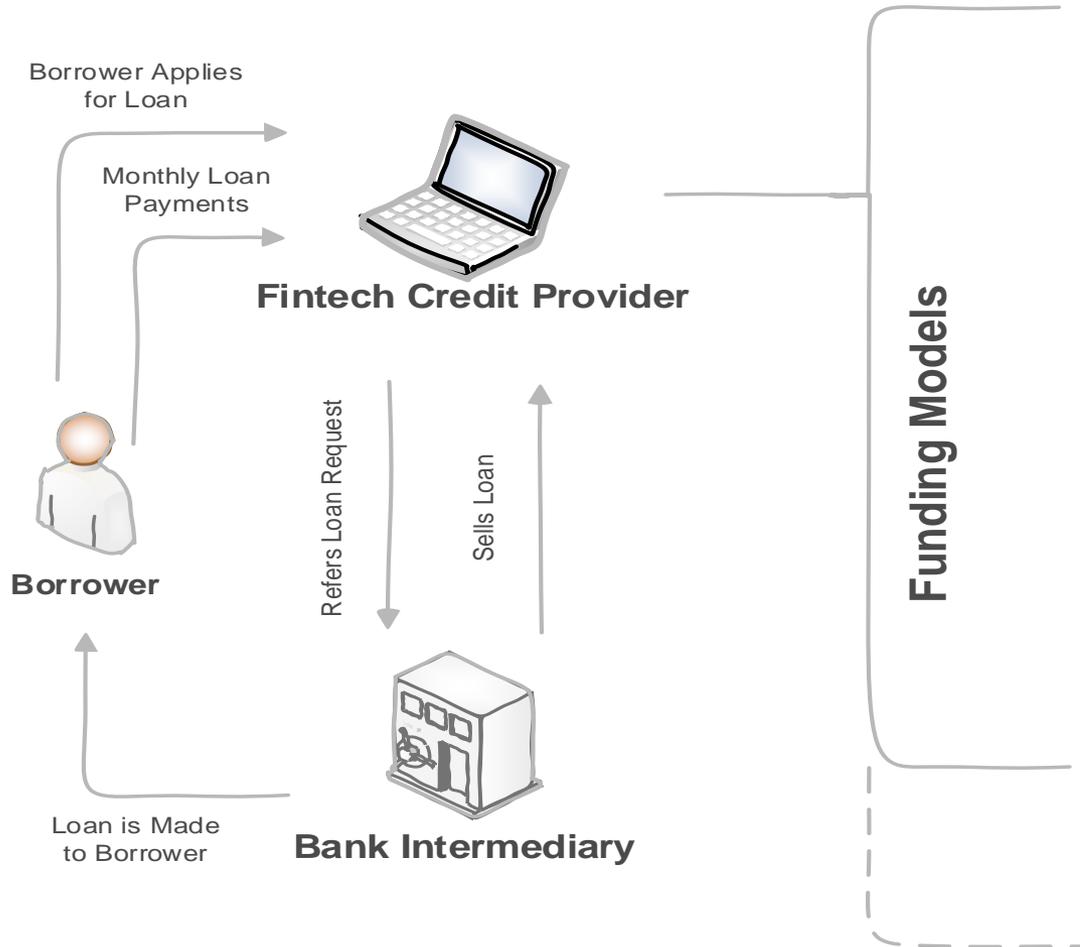
Bank Engagements with ALs

- **Traditional AL business model** – Banks originate loans (funding from individuals/institutional investors).
- **Partnerships** – Banks provide referrals, whole loan purchases, white labeling/cobranding of AL lending platform, and securitization services.
- **Funding** – Banks fund ALs through credit extensions, whole loan purchases, and equity investments.
- **Acquisitions** – Banks acquire an AL that becomes a primary business line unit, such as an online consumer lending unit.
- **Incubators** – Banks provide workspace, seed funding, mentoring, training, and other related support for startup entrepreneurs.



Business Model Example

Origination Process




Loan is Sold to Bank Partner
(Co-Branding Arrangement)


Loan is Sold to
Group of Retail
Investors


Loan is Sold to
Institutional Investor


Loan is Placed in
Securitization Channel


Loan is Retained On-Balance
Sheet Using Own Capital or
Debt Financing

Source: [Fintech Innovations in Financial Services](#)



Alternative Lenders Face Hurdles

- “Goldman, Jefferies Put LendingClub Deals on Hold”
Wall Street Journal, May 10, 2016
- “LendingClub CEO Fired Over Faulty Loans”
Wall Street Journal, May 9, 2016
- “Prosper Marketplace to Cut Jobs and Shuffle Executives”
Wall Street Journal, May 3, 2016
- “OnDeck Losses Grow as Lender Sells Fewer Loans”
Wall Street Journal, May 2, 2016
- “Fintech Lenders Dial Back Marketing in Response to Softer Investor Demand”
Wall Street Journal, April 10, 2016



Alternative Lending: New Risks and Challenges

- Data movement:
 - Data aggregators – Customer permissions, screen scraping, authentication methods, and use of APIs
 - Data ownership, security, and privacy
- Data usage:
 - Nontraditional data sources – What is used? How is it used? Is it accurate?
 - Impact of algorithms, machine learning, and artificial intelligence
- Market transparency:
 - Not all lenders are reporting to credit reporting agencies.
 - Transparency of algorithms/underwriting models:
 - Consumer ability to understand how their behaviors impact their creditworthiness
 - Inability for banks and investors to fully understand the impact of algorithms and models through the entire credit cycle
- New business models:
 - Chartering and oversight
 - Regulatory uncertainty
 - Regulatory innovation hub
 - Investor redlining



Alternative Lending: Existing Risks and Challenges

- Credit and business model risks:
 - Customer sourcing and risk for adverse selection
 - Ability to maintain strong growth and associated pressures to do so
 - Loan performance and risk retention
 - Fintech funding challenges – Balance sheet and loans
 - Untested credit models and data algorithms
 - Opaque underwriting practices
- Compliance and operational risks:
 - Consumer protection – Fair lending, unfair and deceptive
 - Small business protection – Need for similar consumer protection safeguards?
 - BSA/AML, Know Your Customer, and fraud
 - Third-party risk management
 - New technologies and partnerships
 - Regulatory costs
- Reputation risk:
 - “WebBank: The Ugly Duckling Behind the San Bernardino Loan” – *Financial Times*, December 11, 2015
- Strategic risk:
 - What missteps might banks make as they adjust their strategic plans to deal with this competitive threat?



ALs: Fair Lending – Potential Disparate Impact Practices

- Disparate impact – When a lender applies a racially or otherwise neutral policy or practice equally to all credit applicants, but the policy or practice disproportionately excludes or burdens certain persons on a prohibited basis, the policy or practice is described as having a “disparate impact.”
- Different loan terms – Applying via the fintech firm’s website vs. branch walk-in



Summary: Federal Reserve - Key Points of Consideration

- Fintech covers many types of financial products and services
 - Understand how financial institutions are already engaging or plan to engage in fintech activities
 - Think beyond innovation as being good or bad. Many products could be beneficial and addressing an unmet need.
 - Understand emerging views and public statements from various regulators
 - How do we address risks and concerns, while still allowing opportunities to foster?



Appendix



List of Companies in Key Fintech Segment

Credit	Savings, Investments, Financial Planning	Digital Payments	Blockchain & Virtual Currency	Data and Technology Ecosystem
<ul style="list-style-type: none">• Lending Club• Prosper• SoFi• Kabbage• OnDeck• Affirm• Ascend• PayPal Working Capital• Square Capital	<ul style="list-style-type: none">• Betterment• Wealthfront• Future Advisor• Personal Capital• Digit• Acorns• Even	<ul style="list-style-type: none">• Paypal (Venmo, Xoom)• Google• Apple Pay• Seamless• Stripe• Square• MCX• Dwolla• Yapstone	<ul style="list-style-type: none">• The Linux Foundation• R3CEV• Digital Asset Holdings• Bitcoin• Coinbase• Ripple• Chain	<ul style="list-style-type: none">• Plaid• AlphaSense• Dataminr• BillGuard• Yodlee



Additional Resources

Federal Reserve

- FRB Governor Lael Brainard, April 2016 – [The Use of Distributed Ledger Technologies in Payment, Clearing, and Settlement](#)
- FRB Governor Lael Brainard, October 2015 – [Community Banks, Small Business Credit, and Online Lending](#)
- FRB San Francisco President John Williams, April 2016 – [Fintech: The Power of the Possible and Potential Pitfalls](#)
- FRB San Francisco Senior Vice President Teresa Curran, April 2016 – [Tailoring, Fintech, and Risk Culture: The Talk of the \(Community Banking\) Town](#)

Other U.S. Regulators

- CFPB – [Marketplace Lending Consumer Complaints](#)
- CFPB – [Understanding Online Marketplace Lending](#)
- FDIC – [Supervisory Insights Marketplace Lending Article](#)
- OCC – [Supporting Responsible Innovation in the Federal Banking System: An OCC Perspective](#)
- U.S. Treasury – [Opportunities and Challenges in Online Marketplace Lending](#)
- California Department of Business Oversight – [Survey of Online Consumer and Small Business Financing Companies](#)

Industry Self-Regulation

- [Small Business Borrowers' Bill of Rights](#)
- [Marketplace Lending Association](#) (newly formed trade association)
- [Innovative Lending Platform Association](#) (newly formed trade association)

