# Evolution of Debt Financing Toward Less Regulated Financial Intermediaries

**Isil Erel**
Ohio State University, NBER, and ECGI

# Outline of my Talk

Extent of U.S. nonbank/less regulated lending in the loan and bond markets!

Characteristics…

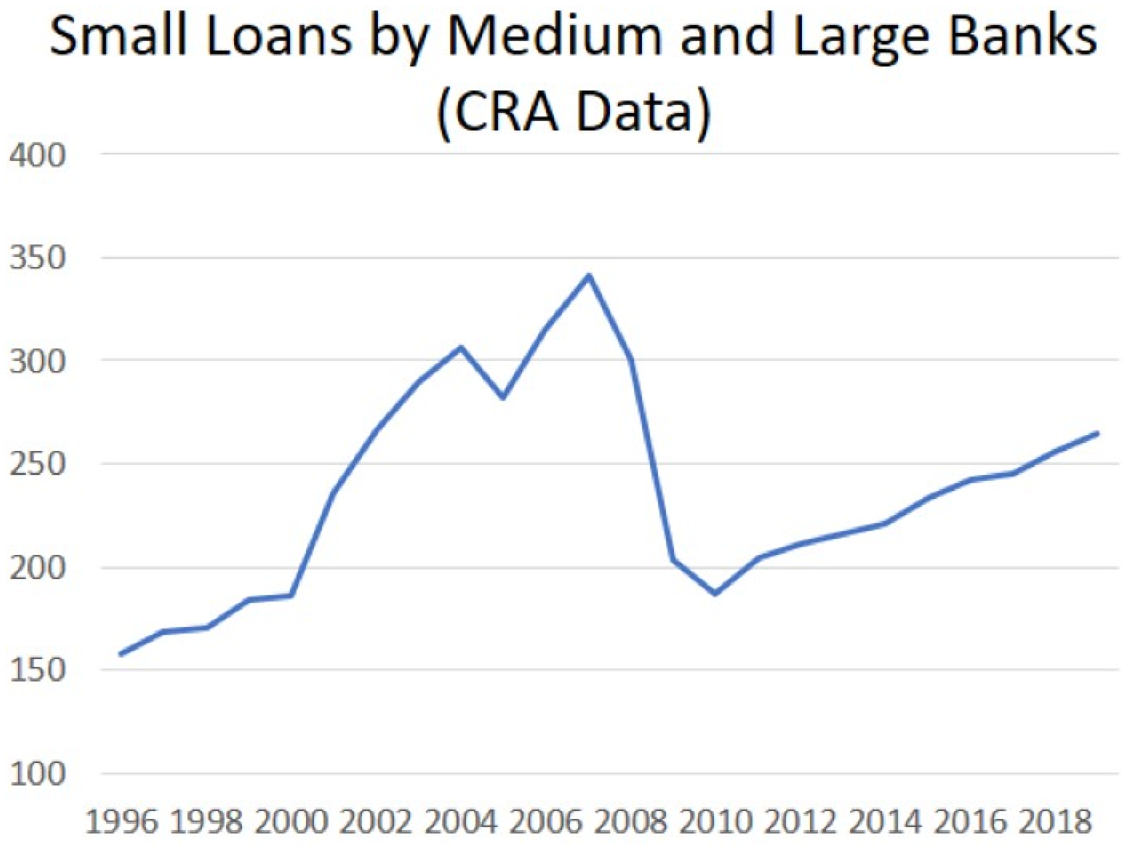
Vulnerabilities of/with nonbanks → Concerns for credit market stability!

COVID-19 shock as an experiment!

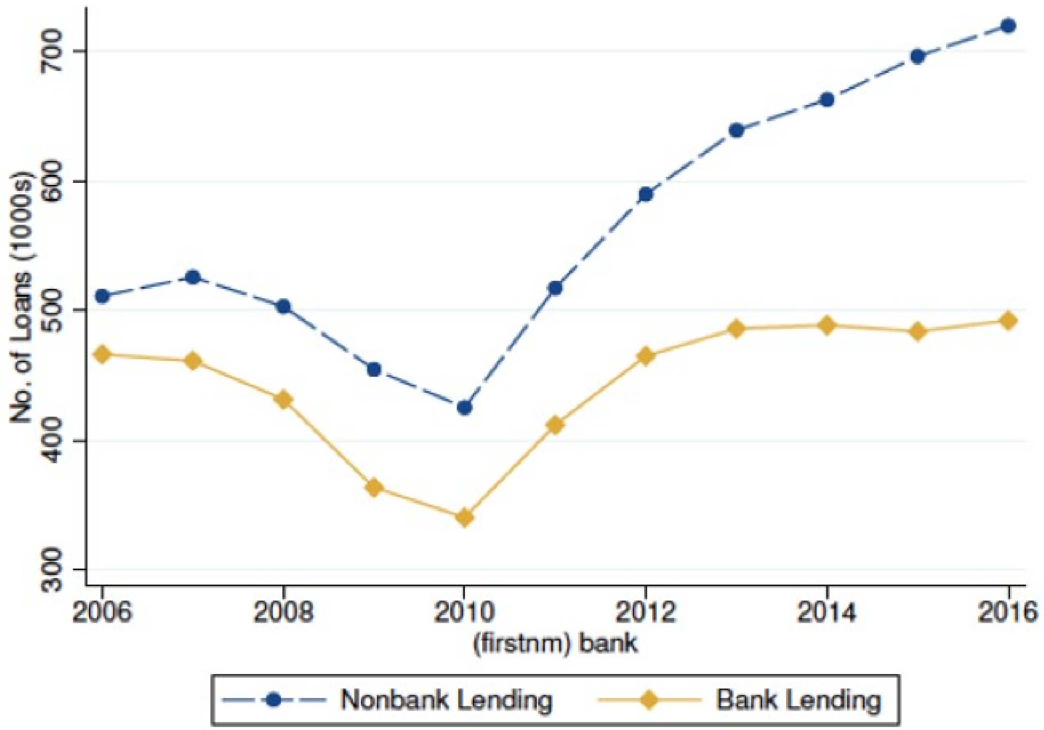
**All references and more are in the paper, which provides a selective review of the literature!**

# Small Loans by Nonbanks

- **Credit gap in small business lending** by commercial banks post Great Recession!
  (Mills and McCarthy 2014, Bord, Ivashina, and Taliaferro 2018,...)
- The change post crisis is the most significant for the largest four banks!
- The gap is partially filled by nonbanks in 2010-2014! (Chen, Hanson, and Stein 2017)



# Gopal and Schnabl (2020)'s Figure 1




- Loan-level Uniform Commercial Code (UCC) data on small loans recured by (non-real estate) collateral, 2006-2016.
- Finance Company and FinTech lending share reached to 56% in 2016!
- Some evidence on substitution for bank lending: Nonbank share increases in counties with a larger share of bank lending pre crisis.

# Digital Lending

- Large growth pre-COVID. Why?
  - 32% of the employer small businesses applying for an online loan do so because they are denied by other lenders (Federal Reserve's 2020 Small Business Survey).
  - Faster turnaround and online accessibility (Mills and McCarthy 2014)

- Could replace hard-information based lending but not necessarily soft-information based relationship lending (Balyuk, Berger, and Hackney 2020);
- Bank lending partners: Celtic bank & OnDeck, Square and Kabbage; WebBank and PayPal…
- Recently merging with online banks: Kabbage and AMEX; Lending Club and Radius Bank…

**Open question:** Can they stay independent, unregulated lenders especially in economic downturns?

# Nonbank Lending to Middle-Market Firms

- Chernenko, Erel, and Prilmeier (2020): Unique, hand-collected data on direct loans to publicly traded middle-market firms, 2010-2015.
  - **1/3 of direct loans to middle market firms are nonbank loans!**
- Preqin's 2019 Global Private Debt Report: global assets under management of ***private debt funds*** has grown to almost $900 billion!
  - Why? Reaching for yield!

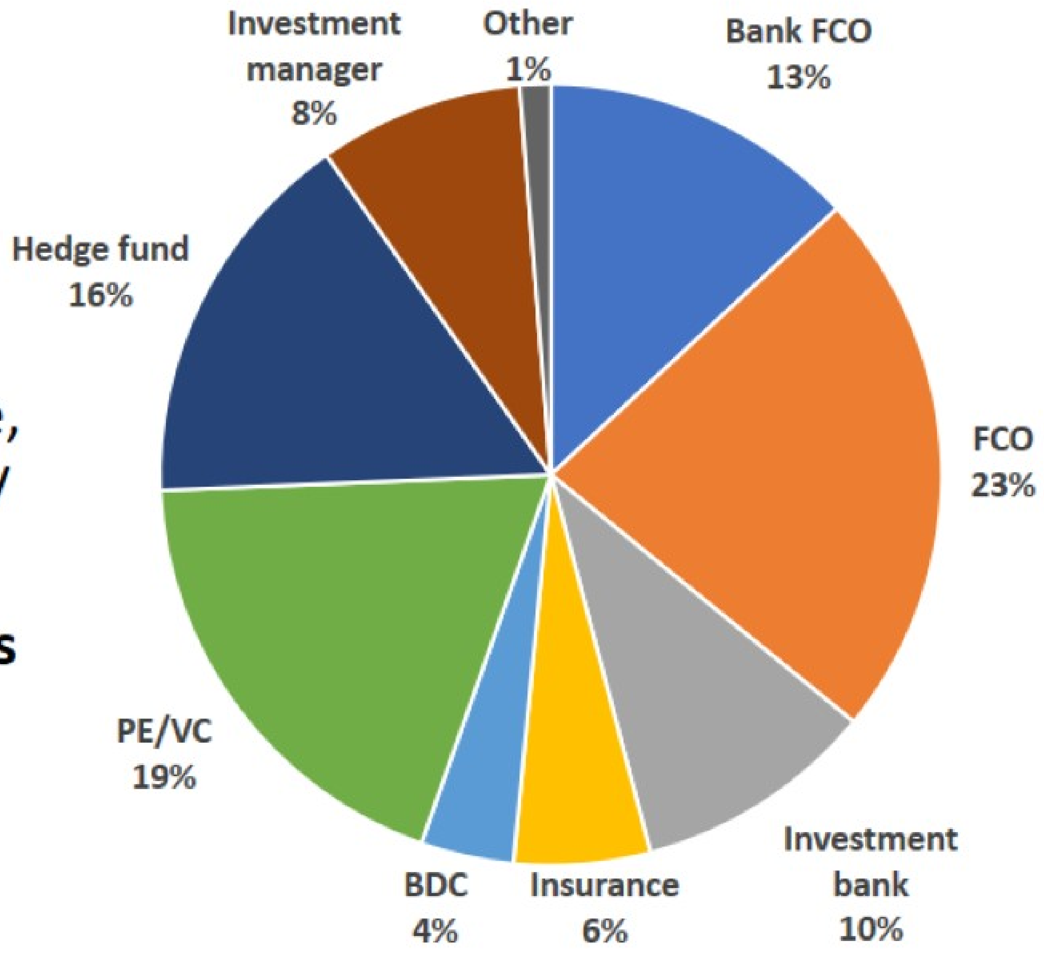
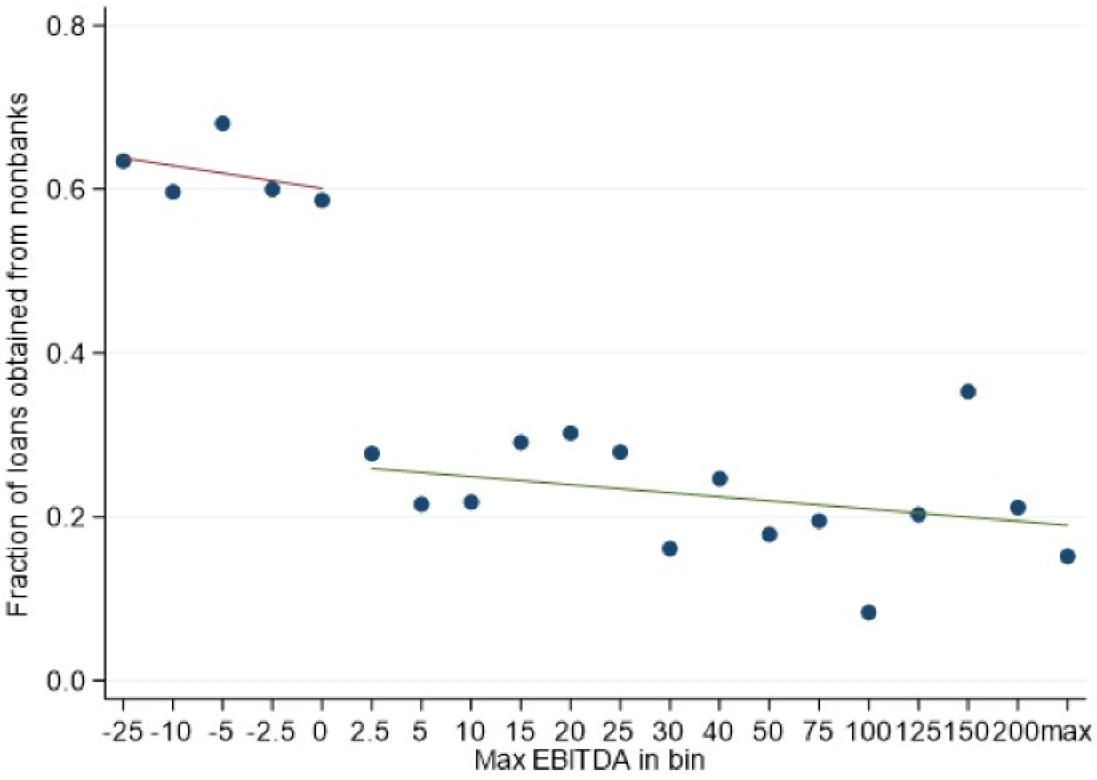


Figure 1 of Chernenko, Erel, and Prilmeier (2020)

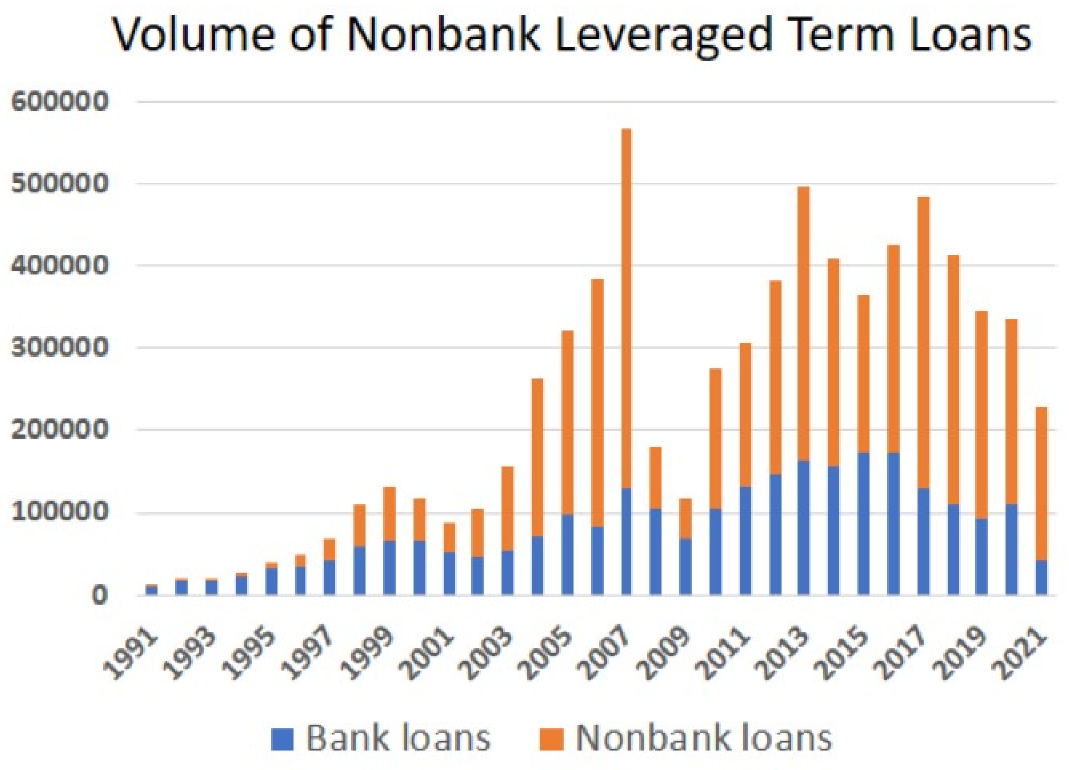
# Characteristics of Nonbank Borrowers and Loans

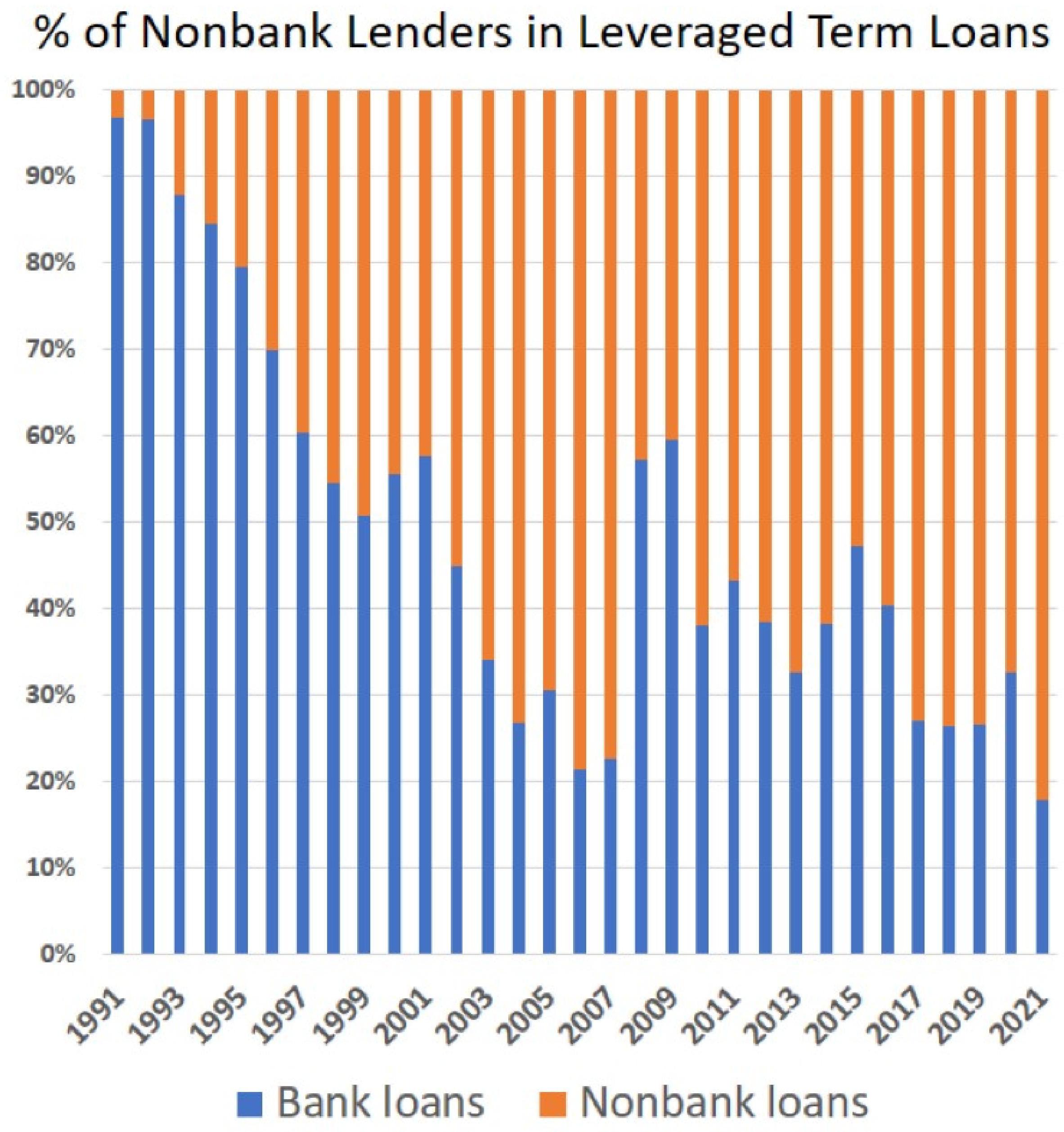
- Riskier borrowers with lower (even negative) profitability and higher leverage!
  - Controlling for loan and borrower characteristics, probability of bankruptcy is similar to bank loans.
- Higher interest rates (170 basis points more with controls);
- 37% less likely to include covenants;
- More likely to be unsecured;
- May include warrants.




A middle market firm with a small negative EBITDA is **34%** more likely to borrow from a nonbank!

# Nonbank Participation in Syndicated Loans



# Nonbank Participation in Syndicated Loans – *Cont.*

- CLOs became the largest nonbank investor by 2002; hedge funds, private equity firms, and loan mutual funds caught up in 2014 (Irani, Iyer, Meisenzahl, Peydró 2021).
  - Nonbanks started dominating the secondary market purchases in 2002; but sales/purchases volume doubled to $100 billion in the next 10 years.
- Institutional demand leads to *lower* spreads reducing the syndication completion time (Ivashina and Sun 2011) or increasing the securitization (Nadauld and Weisbach 2012).
- Cov-lite syndicated loans are associated with the highest ownership by CLOs and mutual funds (Becker and Ivashina 2016).

# Why is this shift important?

- Shift is from regulated lenders to unregulated (or lightly regulated) ones!
  - Data ownership, privacy, and security; fraudulent lending; …
- … from lenders with stable funding to lenders subject to runs (more later)!
- Nonbank lending is concentrated in riskier loans! **Serving the underserved**! But…
  - Extracting rents from borrowers as they cannot borrow elsewhere (Biswas, Ozkan, and Yin 2020);
  - Likely exit if the creditworthiness of the borrower improves (Beyhaghi, Nguyen, and Wald 2019) …
- Nonbanks partially finance these loans by loans from regulated banks –> interconnections with the regulated institutions!

# Role of Bank Regulation?

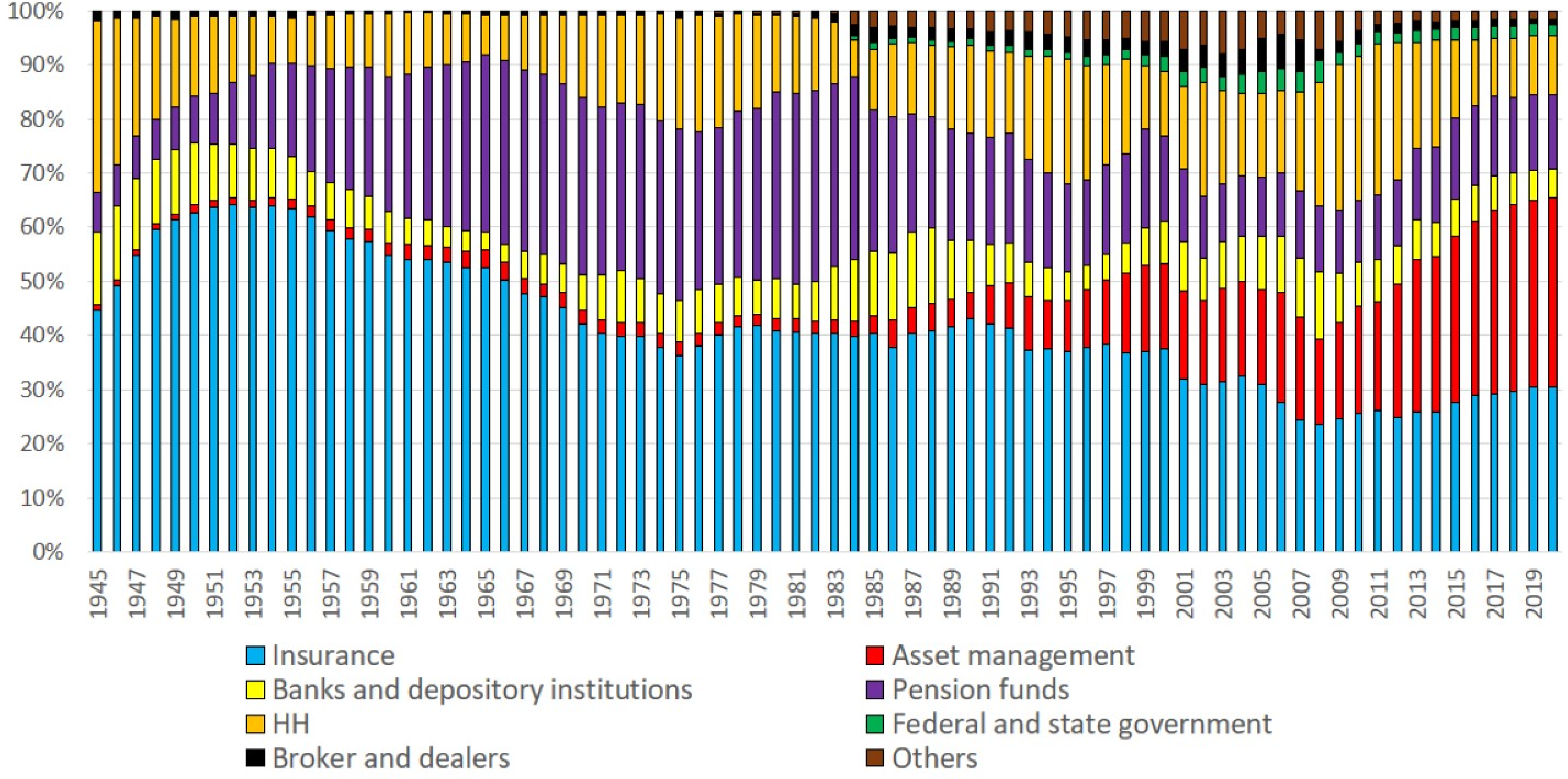
# Bank Regulation **drives** Nonbank Loans

- **Substandard loans:** Lending to negative EBITDA firms is due to cash-flow loans deemed substandard by the OCC (Chernenko, Erel, and Prilmeier 2020);
- **Interagency guidance on leverage lending** shifted leveraged lending to nonbanks (Kim, Plosser, and Santos 2018);
- Increase in Tier 1 **capital requirements** for banks contributed to the increase in nonbank participation in syndicated loans (Irani et al. 2021);
- **Stress tests** have reduced riskier small business lending by large banks (Cortes, Demyanyk, Li, Loutskina, and Strahan 2020) and nonbanks filled in the gap.
  - Davydiuk, Marchuk, and Rosen (2020) also use stress tests and an accounting rule change (**FAS 166/167**) to show that BDC lending increases in these areas.

# Corporate Bond Market

- Primary source of external funding for nonfinancial firms:
  - Total amount outstanding reached $7.3 trillion – almost three times as the bank lending and leveraged loans taken together.
- Changing landscape of institutional bondholders:
  - Rapid development of the asset management industry --> **Mutual funds increased their presence from about 5% in 1990 to 35% in 2020!**

# Institutional Investors in the U.S. Bond Market



# Reaching for Yield by two Largest Bond Investors

- Insurance companies prefer higher-yielding instruments within risk weights (Becker and Ivashina 2015)
  - Shifted focus towards CLOs with higher yields after 2010 regulatory capital change (Fringuellotti and Santos 2021).
- Mutual fund families also reach for yield to generate higher returns and attract more inflows to their funds (Choi and Kronlund 2018)

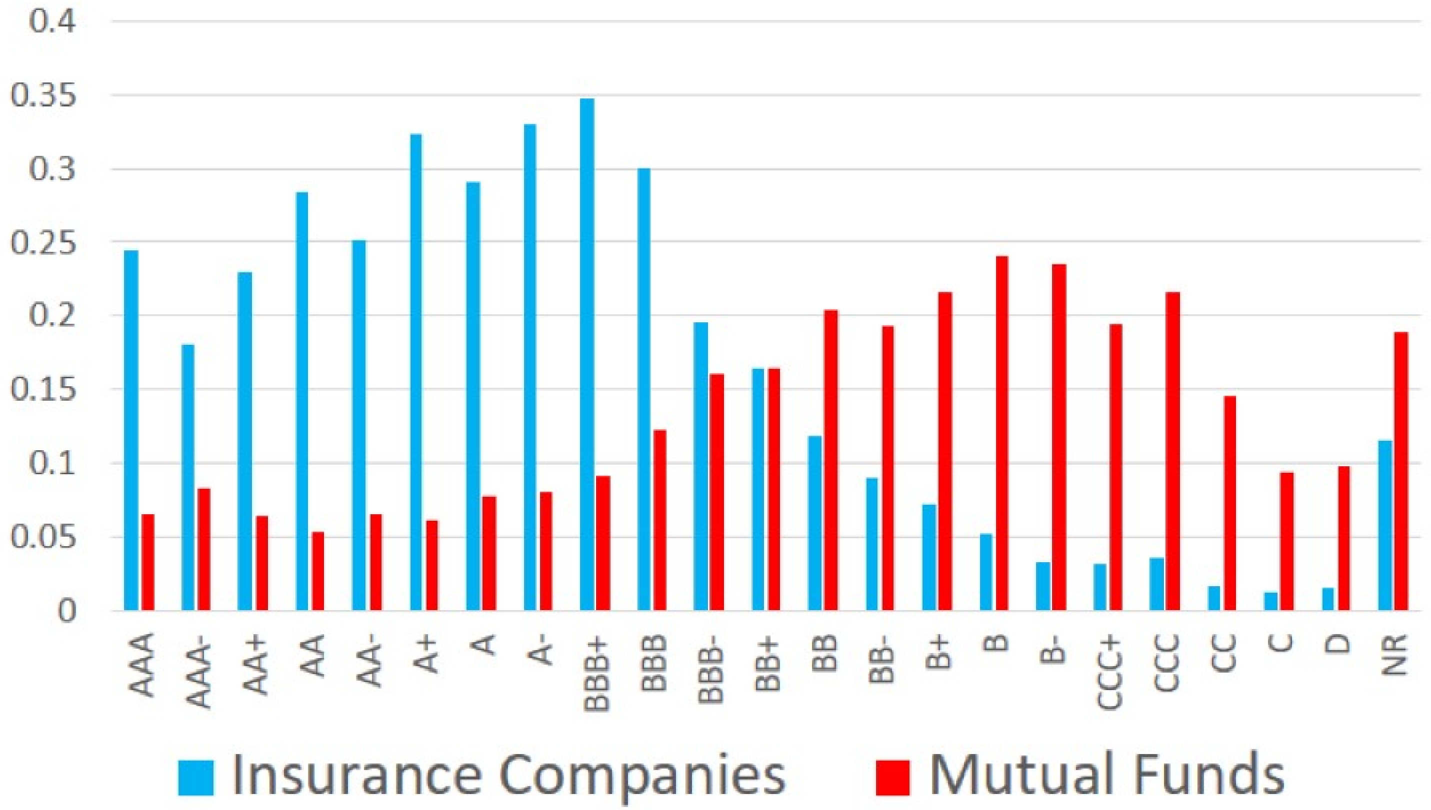
Shifts the overall supply of funds towards riskier borrowers and securities....

Surge in both IG and HY bonds but **IG has shifted towards BBB-rated bonds!**

## Concerns about Fallen Angels

- Insurance companies sell downgraded bonds due to capital requirements (Ellul, Jotikasthira, and Lundblad 2011)
- Passively managed mutual funds and ETFs have predetermined investment mandate restrictions.

Bond Holdings of Insurance Companies and Mutual Funds by Credit Rating, as % of Amount Outstanding, 2010-2018



Credit risk --especially in high-yield borrowing-- has increasingly been held by nonbanks rather than banks.

**What are the financial stability implications?**

# Funding Fragility of/with Nonbanks

- Nonbanks are subject to runs when investors become concerned about the entities' solvency (Gorton and Metrick 2012, Stein 2012, Covitz, Liang, and Suarez 2013, Greenwood and Scharfstein 2013,…)

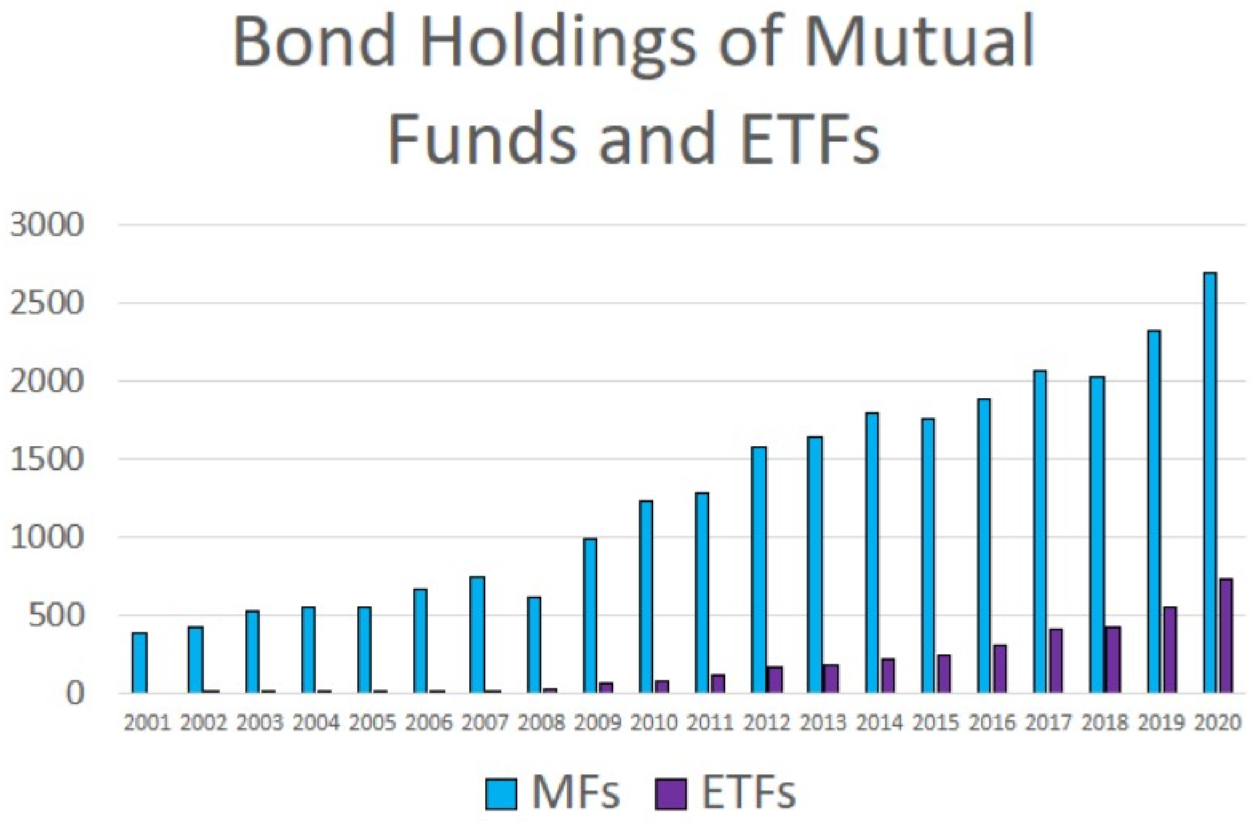
  → **Fire sales** (Shleifer and Vishny 2011)…

  - Evidence from the Financial Crisis: Nonbank participation share in syndicated loans had a negative effect on credit availability (Irani et al. 2021);
    - Had larger downwards pressure on secondary market prices;
    - Borrowers could not substitute to other syndicated loans.

- Stein (2013): With the surge in junk bond issuance and leveraged loans, it is important to understand what % is financed by funds fragile to runs.

## Growth in Bond Mutual Funds, subject to runs!

- Secondary bond market is highly illiquid (IMF 2021)
- Outflows more sensitive to recent performance
- Redemption price does not adjust for trading costs




→ First mover advantage (Chen, Goldstein, and Jiang 2010, Goldstein, Jiang, and Ng 2017)

→ Cascade of redemptions (Falato, Hortacsu, Li, and Shin 2021) )

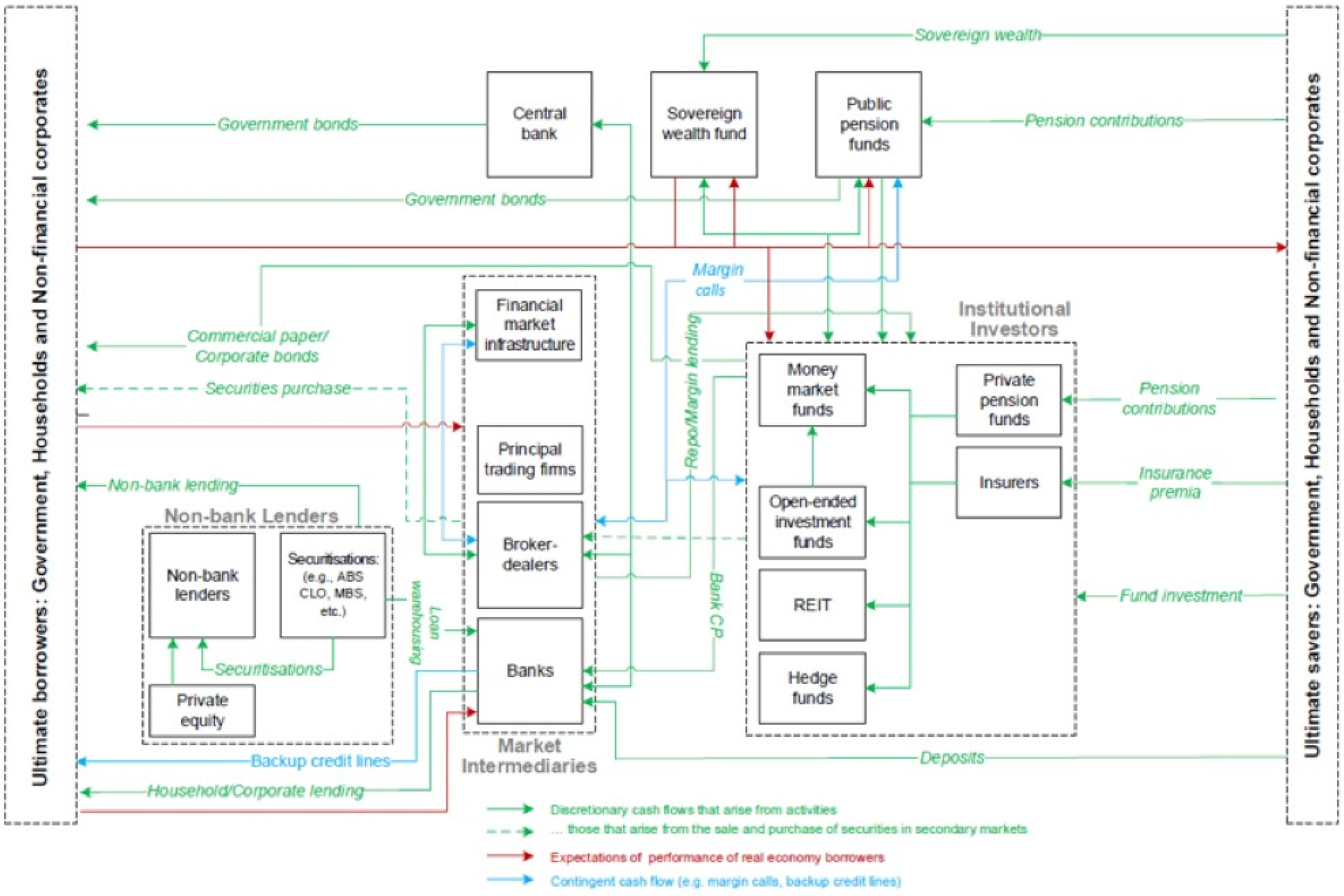
# Why should we care about Runs to Funds?

- Mutual fund flows directly affect **primary bond markets** (Massa, Yasuda, and Zhang 2013 and Zhu 2020)
- **Fire sales in the secondary market** put downward pressure on market prices (Cai et al. 2018) and increase return volatility (Jiang et al. 2021)

→ Higher issuance costs → Decrease in the probability of bond issuance

→ Jeopardize corporate borrowing → Underinvestment or search for alternative sources of funds (loans)!

# Interconnectedness in March 2020
(Financial Stability Board)




Graph 3.3, "Holistic Review of the March 2020 Turmoil," Financial Stability Board

# Trends in Nonbank Lending leading to the COVID-19 Shock

Significant increase in high-yield investments (in loans and bond markets);

Hence a significant increase in the size of their short-term, demandable liabilities for corporate lenders;

Ever-growing interconnectedness of regulated and unregulated financial institutions.

# Market liquidity is even more central to financial stability!

Evidence from the COVID-19 Shock!

# Banks during the COVID-19 Shock

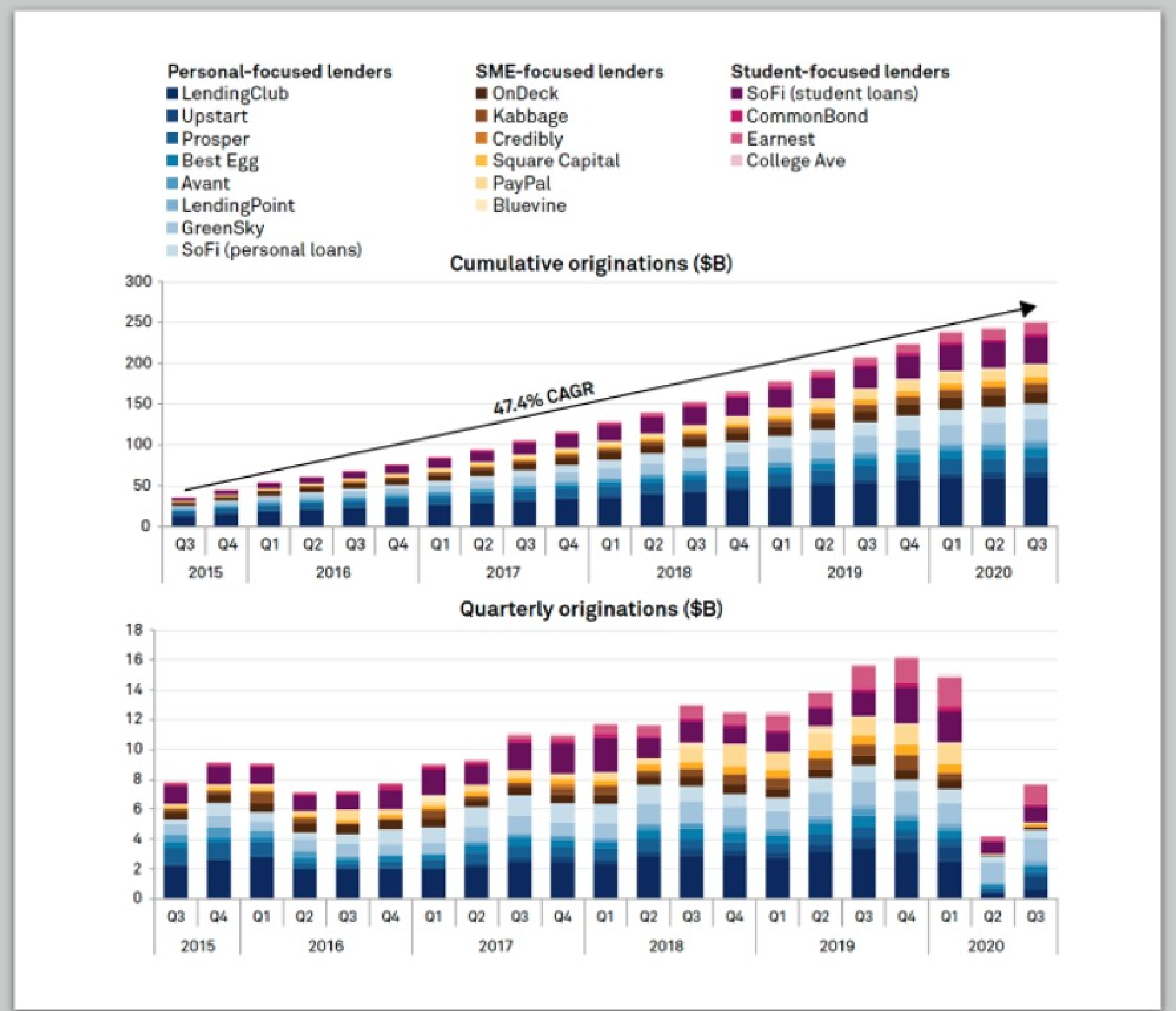
- Unprecedented inflow of deposits: an increase of $3 trillion in 2020, with the majority in March-April…
  - Flight to safety? (Kashyap, Rajan, and Stein 2002, Gatev and Strahan 2006,…)
  - Levine, Lin, Tai, and Xie (2021): more anxiety about future income loss (deposit rates at bank branches fell more in counties with higher COVID-19 infection rates).

- Banks provided liquidity to customers: Banks faced the largest increase in takedowns under existing credit lines *ever* observed in the last three weeks of March 2020 (Li, Strahan, and Zhang 2020).
  - A weekly growth in demand for bank C&I loans that is 50 times the average of the last half-century!

# Collapse (?) of FinTech Lending in March 2020

- Driven by SME lending!
- Evidence on funding fragility affecting lending (Ben-David et al. 2021)…

- However, FinTech helped big time allocating PPP loans to underserved borrowers in April-August 2020 (Erel and Liebersohn 2021)!



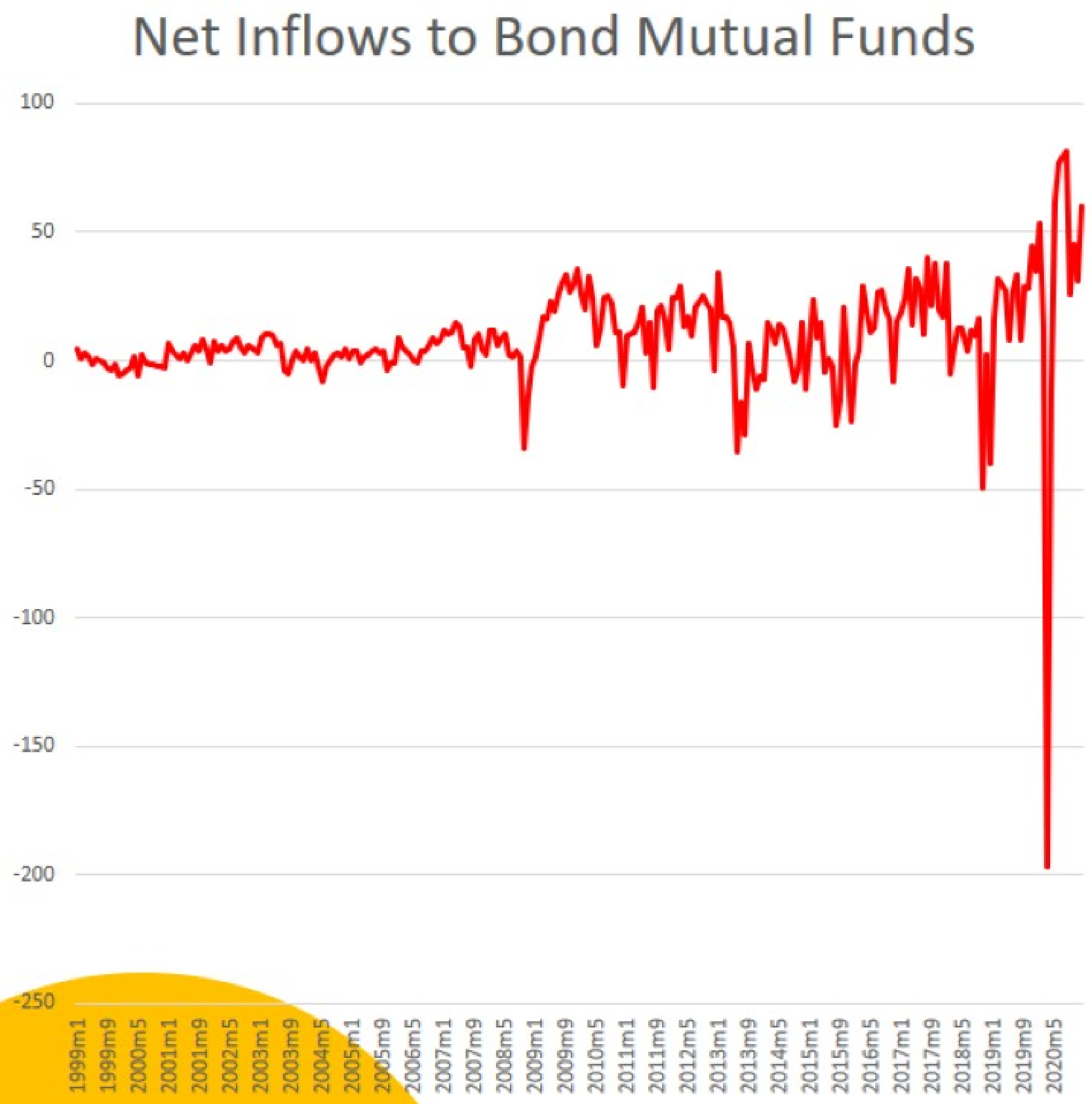
# Leveraged Loans during the COVID-19 Shock

No issuance in March 2020!

Average Debt/EBITDA of outstanding leveraged loans reached record high levels of 6.41% in Q2 2020!

Recovery was quick!

Over 80% of leveraged term loans have nonbank participation in 2021!

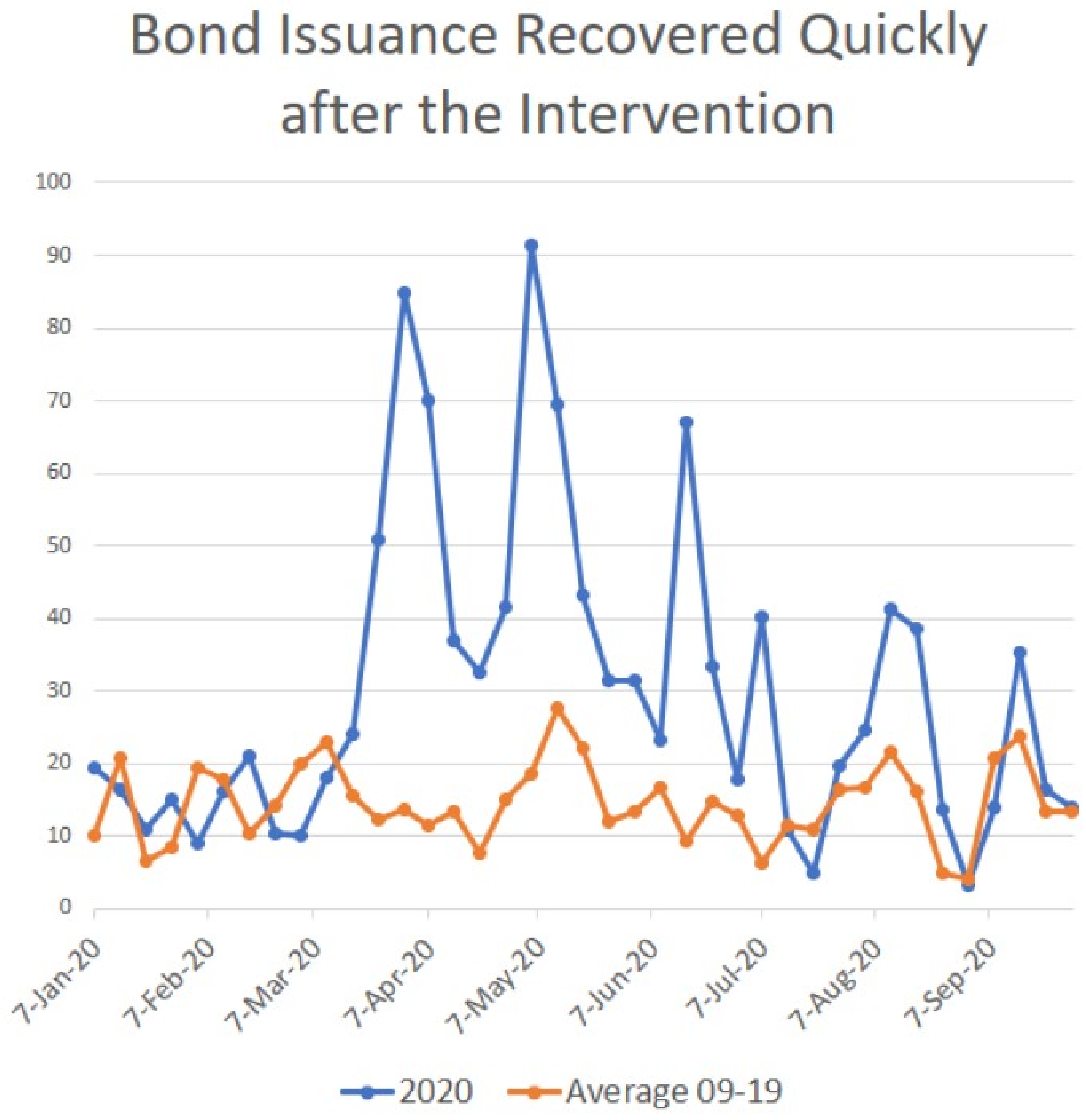



# Bond Markets in March 2020

- Over $200 billion of net outflows from bond mutual funds plus $21 billion from bond ETFs.
- Assets redemptions from these funds started far earlier (Falato, Goldstein, and Hortaçsu 2021).
- Daily trade volume tripled, reaching about $40 billion per day (O'Hara and Zhou, 2021).
- Yield spread on investment-grade and high-yield bonds tripled relative to mid-February.
- One-fourth of bond price decline is attributed to dealers' reduced balance sheet capacity after the Volcker Rule (Chikis and Goldberg, 2021).

# FED Intervened

- Primary Dealer Credit Facility (PDCF)
- Secondary Market Corporate Credit Facility (SMCCF).



# Conclusion

- Extent of nonbank lending is large and growing fast!
- Substitution into nonbanks is an unintended consequence of financial regulation!
- Reaching for yield incentives are important!

COVID-19 shock created an experiment on the fragility of the nonbanks subject to runs.

Fed intervention was an effective financial stability tool …

What else can we do?

- Runs:
  - *Swing pricing* schemes in eliminating the first-mover advantage in funds with illiquid holdings (Jin et al. 2021).
    - 2020 Global Financial Stability Report by the IMF: Lower outflow-induced price pressure in countries with swing pricing during March 2020.
- Fire Sales:
  - *Mark-to-market (MTM)* accounting rules should apply to both sides of the balance sheet (Ellul et al. 2015).
- Capital requirements:
  - *Macroprudential Regulation* -i.e, similar capital requirements for all players in the market (Hanson et al. 2011, Martinez-Miera and Repullo 2019,…).