The Rise of Bond Financing in Europe

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OCTOBER 19TH, 2021

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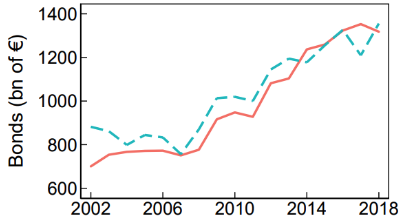
Euro Area NFCs bond market growing fast since 2000



Macro trends favorable to bond financing:

Bank loan supply (Becker and Ivashina 2018, Altavilla et al. 2017);

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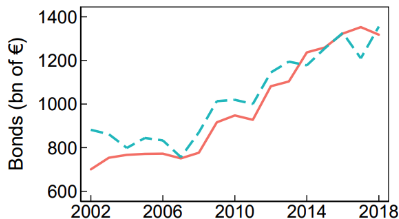

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This paper: Dissect aggregate growth through lens of firm-level data to understand implications

- Micro-data on firms debt structure and balance sheet over past two decades (public firms: CIQ from 2002, private firms: Orbis + CSDB from 2010)
- Broadened firms access to funding, but can also lead to new risks

Related literature

- Classical U.S. studies: Denis-Mihov 2003, Faulkender-Petersen 2006, Hale-Santos 2008, Rauh-Sufi 2010

  $\rightarrow$ Euro bond market less mature than U.S.

- Macro-trends driving bond financing in Europe: Loan supply [Altavilla et al., 2017, Becker and Ivashina, 2018]; Monetary policy [Grosse-Rueschkamp et al., 2019, Arce et al., 2018, De Santis and Zaghini, 2019, Giambona et al., 2020, Todorov, 2020, Pegoraro and Montagna, 2021]; Bankruptcy reforms [Becker and Josephson, 2016]; minibonds [Nobili et al. , 2020, Ongena et al., 2018]

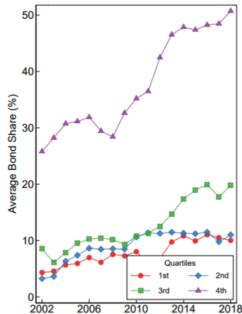
  $\rightarrow$ holistic view over longer time frame, including private firms; risk implications

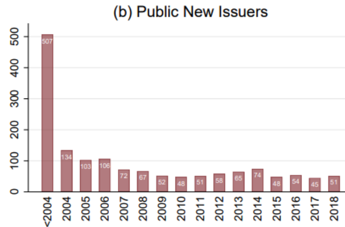
- Non-banks and financial fragility: Bonds and financial distress [Hoshi et al. 1990, 1991, Bolton and Scharfstein 1996, Crouzet 2017]; bond funds [Goldstein et al. 2017], Falato et al. 2020, Ma et al. 2020], commercial paper [Kacperczyk and Schnabl 2010], CLO [Fleckenstein et al. 2020]; banking spillovers [Balloch 2018]

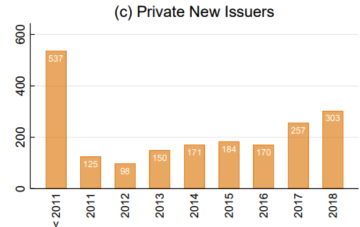
  $\rightarrow$ investor composition; link 2020 turmoil to previous market expansion

First fact: Bond market growth reached well beyond largest firms

- Bond share of total debt doubled across the firm size distribution
- Constant stream of new issuers entering bond market







- Question: What are implications for firms and policy-makers?

Bank vs. bond financing: Illustrative framework

- Equilibrium debt composition: Firms choose investment/leverage m jointly with bond share β
  - Project I pays RI with prob. p_H, χI otherwise; lenders require return ρI
  - Financial frictions: limited cash A + share $\theta < 1$ can be pledged to lenders in state H
  - Eq. investment $I = m(\beta)A$ depends on debt composition
- Optimal bond share: trade-off btw bank and bond financing to max investment multiplier $m(\beta)$

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  - Bank loans have lower downside risk

    (i) dispersed creditors $\implies \uparrow$ cost of financial distress [Bolton Scharfstein 96 Becker Josephson 16 Crouzet 17]

    European legal system: "A law which produces an efficient outcome in times of pre-dominant relationship-lending does not necessarily promote successful bond restructuring" [Ehmke 18]

    (ii) bond fund outflows [Goldstein et al. 2017] (iii) rating downgrades [Almeida et al. 17 Acharya et al. 18]

  $\rightarrow$ Low state payoff $\chi(\beta)$ decreases with bond share β

  - Bonds economize on intermediation costs (monitoring, regulatory costs, market power...)

  $\rightarrow$ Lenders' required return $\rho(\beta)$ decreases with bond share β

Empirical predictions

- Framework relates rise of bond financing to macro trends and firm characteristics
  - Aggregate growth: lower loan supply (higher bank's cost of funds), loose monetary policy (lower bond investors cost of funds), institutional reforms (higher χ)
  - Bond market selection: issuers are safer than non-issuers (higher p_H)

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- Firm-level prediction I: changing composition of bond issuers
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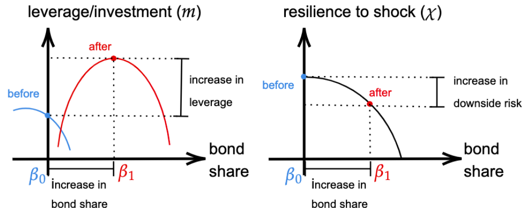
- Firm-level prediction I: changing composition of bond issuers
  - Riskier and smaller firms enter bond market in recent years
- Firm-level prediction II: entering bond market implies both growth and risk

- Relax financial constraints
- New issuers borrow and invest more, but more exposed to negative shocks



Changing composition of bond issuers

- Trends in credit ratings: fast rise of BBB issuers, just above speculative-grade
- However, credit ratings understates the underlying shift in risk: many more unrated issuers in Europe than in U.S.
    - less than 15% of new issuers are rated

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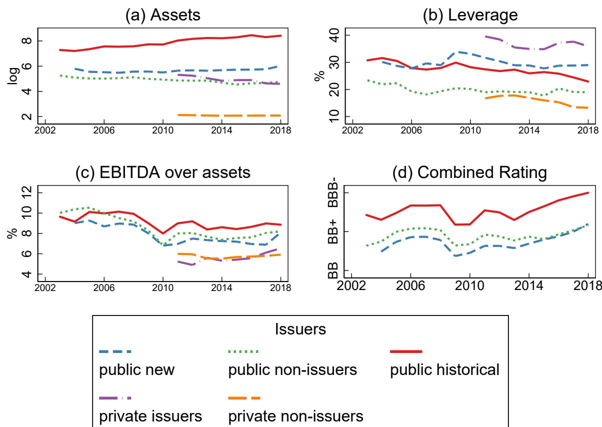
  - less than 15% of new issuers are rated
- Firm characteristics: new issuers are smaller, less profitable, but more levered than historical issuers
- Especially true of private issuers



New issuers use of funds

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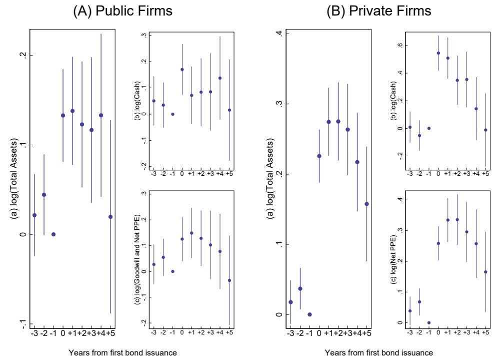
- Limited substitution of bank loans
- Large investment and growth instead
- Increase in interest rate (and maturity)



Bond investor composition

- Debate on fragility of bond supply:

  Long-term investors (pensions, insurance, central banks) [Becker Benmelech 21]

  vs. Bond funds: outflows, fire sales and market freezes [Goldstein et al. 17, Falato et al. 20]

$\rightarrow$ micro-data on investor holdings at bond-level: investor composition across types of issuers

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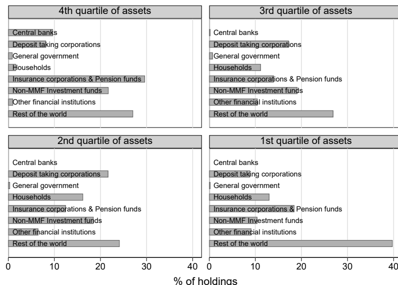
- 40% of aggregate held by pensions + insurance + ECB
- Strikingly different for weaker issuers: insurance companies and pensions funds hold only 15% of small private issuers' bonds, ECB $\approx$ 0%
- Firm-investor matching reinforce fragility: investment mandates of LT investors can exclude weaker issuers



Rating downgrades

- Financial distress → real effects [Acharya et al 18 Fracassi Weitzner 20 Almeida et al 17]

- Bond market turmoil in 2020: Spike in spreads and fund outflows following COVID-19 shock
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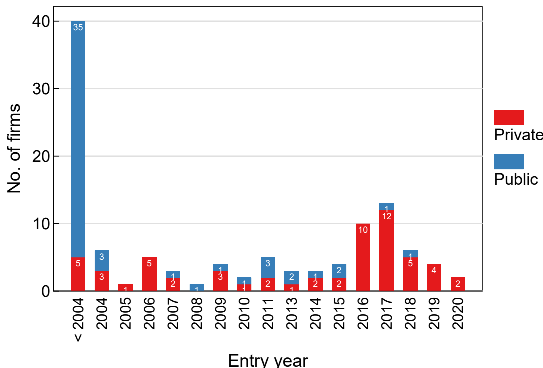
- Bond market turmoil in 2020: Spike in spreads and fund outflows following COVID-19 shock
  - Wave of downgrades in face of deep recession → Which firms?
  - Most downgrade are recent new issuers, many of them private
- 2004-18 event study: no bond issuance after downgrade (unlike US, Rauh Sufi 10)



Implications

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    $\Longrightarrow$ build more comprehensive framework of bond supply and macro implications
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    $\implies$ build more comprehensive framework of bond supply and macro implications
  - Many more firms are now exposed to market turmoil
- Open question: Extending lender-of-last resort policies to bond market?
  - If market turmoil purely driven by non-fundamental runs and panics, yes
  - but potential for excessive risk-taking, exacerbating reach for yield in financial markets

$\implies$ Revisit macro-prudential policy toolbox

Thank you!