The Rise of Bond Financing in Europe

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Euro Area NFCs bond market doubled in size since 2000

Macro trends favorable to bond financing:

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

Monetary policy (Grosse-Rueschkamp et al. 2019, De Santis and Zaghini 2019, Todorov 2020);

Bankruptcy reforms (Becker and Josephson 2016)

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- Micro-data on firms debt structure and balance sheet overt past two decades
  (public firms: CIQ from 2002, private firms: Orbis + CSDB from 2010)

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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 overt past two decades (public firms: CIQ from 2002, private firms: Orbis + CSDB from 2010)
- Bond market is not a frictionless "spare tire": shift is not without risk

Related literature

- 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]

  → holistic view over longer time frame, inc. private firms; risk implications

- Classical view on bank vs. bond: Higher cost of financial distress for bonds [theory: Bolton and Scharfstein, 1996, Diamond, 1991, Holmstrom and Tirole, 1997; empirics: Squith et al., 1994, Hoshi et al., 1990, 1991, Schwert, 2020]; banking crisis in U.S. [Becker and Ivashina, 2014, Schwert, 2018]; fragility in commercial paper/corporate bond funds [Kacperczyk and Schnabl, 2010, Jin et al., 2020, Falato et al., 2020, Ma et al., 2020]

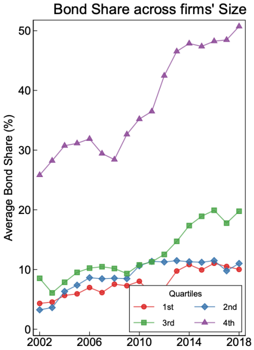
  → evidence from new issuers

- 2020 bond market crisis and policy response: Europe [Zaghini, 2020], U.S. [Acharya and Steffen, 2020, Liang, 2020, Boyarchenko et al., 2020, Gilchrist et al., 2020]

  → 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



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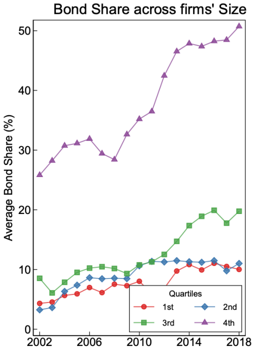

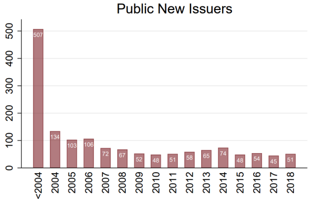

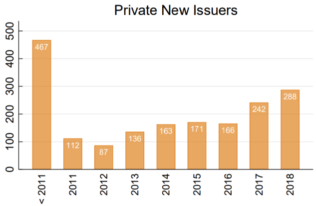

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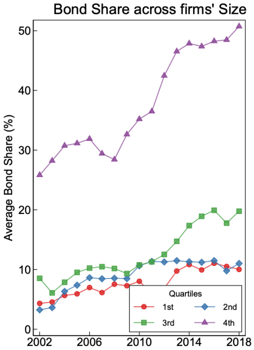

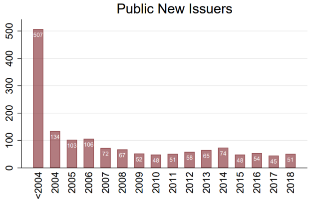

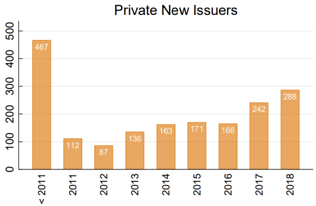

- **Question:** What are implications for firms and policy-makers?

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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    - Extensive evidence Gilson et al. 90, Squith et al. 94, Hoshi et al. 90, 91, Crouzet 17, Becker Josephson 16

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  $\rightarrow$ 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

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- Firm-level prediction I: changing composition of bond issuers
  - Riskier and smaller firms enter bond market in recent years

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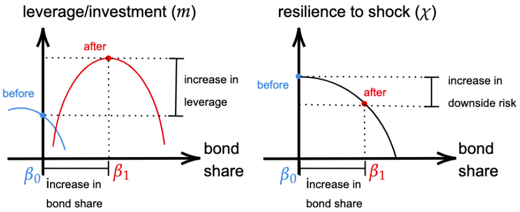
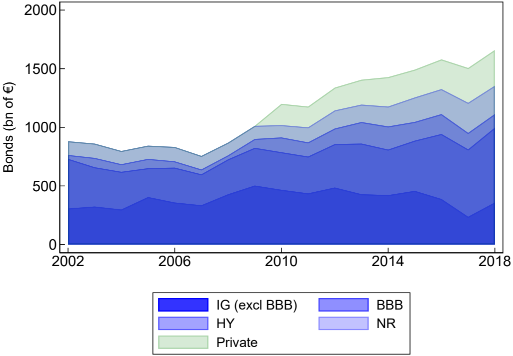
- Firm-level prediction I: changing composition of bond issuers
  - Riskier and smaller firms enter bond market in recent years
- Firm-level prediction II: bond issuance implies trade-off between growth and risk

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



Changing composition of bond issuers I: Credit ratings

- BBB is fastest growing segment
- Drop in average rating in part driven by riskier recent issuers



Changing composition of bond issuers II: Firm characteristics

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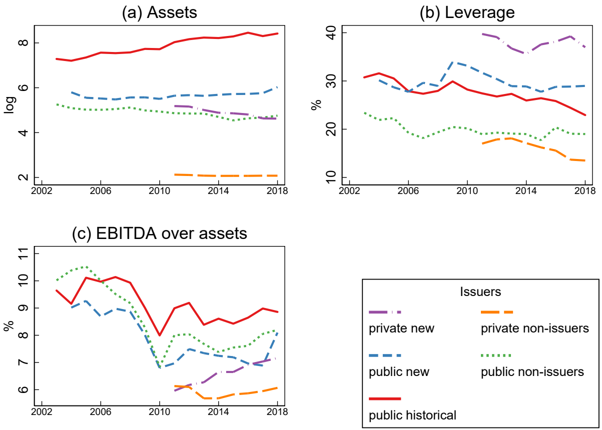
- New issuers are smaller, less profitable, but more levered than historical issuers
- Especially true of private issuers



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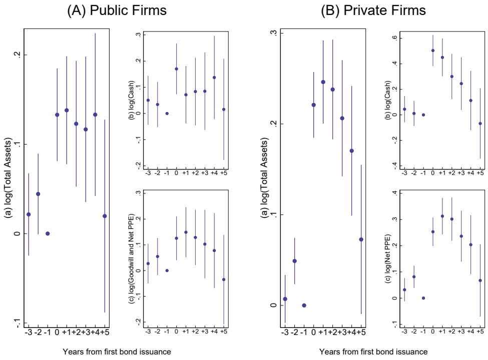

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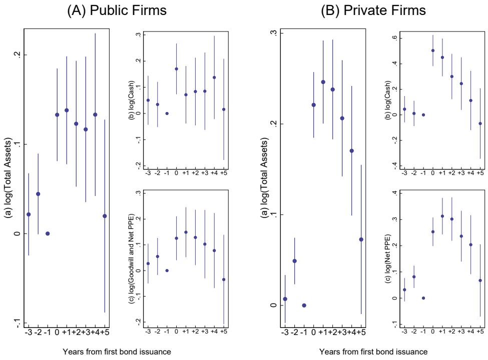

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- Increase in interest rate (and maturity)

Growth and risk II: Rating downgrades

- Financial distress $\rightarrow$ real effects

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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 $\rightarrow$ Which firms?

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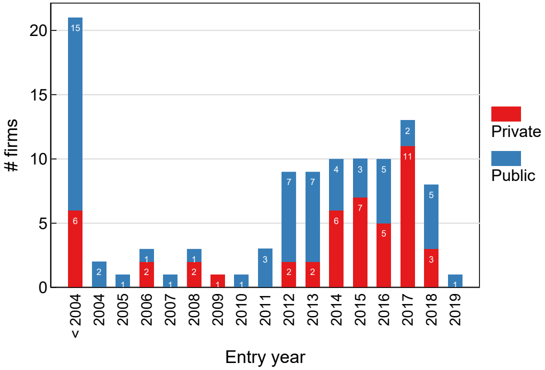
  - Most downgrade are recent new issuers, many of them private



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- Policy implications: extending lender-of-last resort policies to bond market?
  - Now includes many mid-size firms, not just corporate giants
  - Open question: How to best intervene in corporate bond markets?

    Most existing macro-prudential tools focus on banking sector (i.e. stress testing)

Thank you!