Collateral Eligibility of Corporate Debt in the Eurosystem

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2020 AFA Meeting
San Diego, January 3-5, 2020
Motivation

- Central banks have three main monetary instruments:
  - open market operations,
  - the minimum reserve system,
  - standing facilities.

- The ECB and national central banks use these tools to affect money market rates and to provide funding liquidity to the banking sector.

- The cornerstone of this liquidity provision and an important part of the marginal lending facility is the **collateral framework** of the open market operations (REPO) and standing facilities.

- The ECB is one of the few central banks that has always accepted **corporate bonds** as collateral (even for OMO-REPO), since its inception.
Motivation

- **Collateral pledgeability** helps the ECB to fulfill multiple policy objectives:
  - Control short-term interest rates, and provide overnight funding to banks,
  - Enlarge the pool of eligible assets to reduce the scarcity effect of government bonds, which instead can be used for more profitable transactions (e.g., repo),
  - Influence the secondary and primary markets for corporate bonds, affecting Security Lending, secondary bond market yields/liquidity and the financial decisions of bond-issuing firms,
  - Improve market functioning and completeness (there is not a liquid REPO market for corporate bonds in the Eurozone).
What we do

▶ We focus on the **Eurosystem’s Collateral Framework**
  
  ▶ Using the pledgeable asset list (eligibility list) to identify the inclusion date of
    ▶ individual assets,
    ▶ first ever inclusion date of bond-issuing non-financial firms.
  
  ▶ we measure the **direct** and **capital structure effects** of the Eurosystem’s collateral policy.

▶ We consider the collateral channel of monetary policy at the level of **eligible bonds** and **bond issuing firms**.
Results preview

- Following an asset’s inclusion in the eligibility list, we find that:
  - activity in the securities lending (SL) market increases, relaxing the constraint of limited collateral supply for the ECB OMO-REPO activity.
  - Eligible bonds trade at lower yields due to the fungibility feature of pledgeability (quasi-money)
  - Liquidity of Newly issued bonds declines, whereas the liquidity of older bonds does not change, or even improves.

- Following the first-time eligibility list inclusion, bond-issuing firms
  - Reduce bank debt and expand corporate bond issuance activity,
  - Increase the overall size of debt (not only bank to bond substitution), and issue bonds with longer maturity.
Literature contribution

- Studies on collateral frameworks:

- **Studies on eligibility premium**
  - Bindseil et al. (2009) find a small eligibility premium in the Eurozone preceding the financial crisis,
  - Chen et al. (2019) quantify the value of pledgeability in the Chinese corporate bond repo market.

- Methodologically similar papers on the CSPP of the ECB:

- Capital and debt structure literature:
  - Debt structure: Rauh and Sufi (2010), Becker and Ivashina (2014),
The data

- The ECB’s list of eligible assets
  - Daily lists: Apr 2010-June 2016 from the ECB’s website
  - the list of eligible assets per day is about 25,000 securities.
    - About 6% of the list consists of corporate bonds, an average of 1450 individual securities on a given day.

- Bond level data
  - Bond characteristics, daily price, yield, and liquidity information from Bloomberg
  - Securities lending data from IHS Markit

- Firm level data
  - Balance sheet information from Compustat
  - Debt structure information from Capital IQ
    - Bond/Public debt: commercial paper, senior and subordinated notes and bonds
    - Bank debt: drawn credit lines and term loans
Identification strategy and methodology

- The identification comes from the **eligibility assessment framework**:
  - the ECB never confirms eligibility prior to an asset’s issuance,
  - The ECB might not include otherwise suitable assets in the list due to risk management and operational reasons, or any other discretionary measure.
  - Therefore the eligibility list inclusion is **not mechanical and predictable** even for compliant bonds/issuers.

- Methodology: two-way fixed effects diff-in-diff model

\[
\text{Firm/bond}_f,t = \alpha + \beta_1 E_{A_{bt}} \times \text{Post}_t + \beta_2 E_{A_{bt}} + \beta_3 \text{Post}_t + B_{bt} + \Phi_f + \Gamma_t + \epsilon_{bt}
\]

- Bond proxies are SL activity, yield and liquidity, while we study debt structure, size of total debt, and debt maturity at the firm level.
- \(E_{A_f}\) is a time-invariant indicator for treated firms, \(\text{Post}_t\) is an indicator for post-treatment periods \(X_{,t}\) are controls, and \(\Phi_f\) and \(\Gamma_t\) are firm and time fixed effects.
The collateral channel of monetary policy

1. Eligibility list inclusion of a corporate bond
   - Securities lending activity
   - Secondary market yield
   - Secondary market liquidity

2. Bond issuance to primary market

3. Banks pledge collateral

Banks’ demand

Firms’ supply response
The SL market allows market participants to borrow collateral eligible assets, thereby relaxing the constraint of limited collateral supply.

Eligibility increases supply, demand, and utilisation, while borrowing costs drop. SL activity is concentrated in the new bond segment.
## Secondary market yield effects of eligibility

<table>
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<th>Yield spread</th>
<th>Overall sample</th>
<th>On-the-run bonds</th>
<th>Old bonds</th>
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<tbody>
<tr>
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<td>-0.110***</td>
<td>-0.070**</td>
<td>-0.165***</td>
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<tr>
<td></td>
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<td>[0.032]</td>
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<tr>
<td>Post</td>
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<td></td>
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<tr>
<td>EA</td>
<td>-</td>
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<td>TTM/tenor</td>
<td>3.111***</td>
<td>-</td>
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</tbody>
</table>

| Observations      | 113,813         | 21,210          | 92,601       |
| R-squared         | 0.750           | 0.984           | 0.716        |
| Time FE           | Yes             | Yes             | Yes          |
| Bond Controls     | Yes             | Yes             | Yes          |
| Bond FE           | Yes             | Yes             | Yes          |
| #Bond Clusters    | 819             | 735             | 146          |

- In the 30 days following the eligibility list inclusion of a bond, its yield drops by 7-16 basis points, but this effect is larger in seasoned bonds.
- The yield drop is an eligibility premium, compensating for the fungibility/liquidity service of eligible bonds.
Secondary market liquidity effects of eligibility

Two liquidity measures: bid-ask spread and % zero returns.

- Eligibility and the subsequent demand pressure can trigger either an increase in liquidity (spotlight effect) or a decrease (hoarding effect).
- We find an asymmetric liquidity reaction for both liq. measures: on-the-run bonds are subject to hoarding, whereas the liquidity of older bonds does not change, or even improves.
The collateral channel of monetary policy

Eligibility list inclusion of a corporate bond

- Securities lending activity
- Secondary market yield
- Secondary market liquidity

Bonds pledge collateral

- Banks’ demand
- Firms’ supply response

Bond issuance to primary market
Capital structure effects of collateral policy

- A unique feature of the eligibility list is that we see the first ever inclusion date of an issuer.

- So we can study the effect of eligibility on the firm’s capital and debt structure.

- We study the debt structure, size of total debt, and bond maturity of treated firms pre- and post eligibility list inclusion.

- We control for the eligibility list inclusion predictability by including the probability of inclusion estimated from issuer-level logistic regressions.
Capital structure effects of collateral policy: Public debt share of bond issuing firms

Year

Public Debt/Total Debt

ineligible bond issuing firms eligible bond issuing firms
Capital structure effects of collateral policy

- **Debt structure**
  - Firms restructure their debt following their inclusion in the eligibility list: they decrease bank debt and increase public debt.

- **Total debt**
  - In the 4 quarters following the eligibility event, firm increase their total debt by about 5%.
  - Eligibility improves the capital market access of firms, which tilt their debt structure toward the cheaper funding option, corporate bond issuance.

- **Debt maturity**
  - The maturity of public (bond) debt increases by up to 1.5 years, following the eligibility list inclusion.
Policy implications

- Corporate bond pledgeability and its externalities have **policy implications**:
  - The collateral framework is an efficient crisis management tool: expand/contract the size of the eligible asset list or the specific set of asset classes depending on the business cycle.
  - Expanding the pledgeable asset classes is more flexible than the standard practice of OMOs, as it can even address liquidity issues in the repo market during QE.

- The **unintended consequences** of eligibility criteria are:
  - Positive externality of improved market functioning and completeness, mostly due to the SL market for corporate bonds.
  - Capital market development, whereby the European corporate bond market doubled in size by 2018, reaching about 10% of EU GDP.
Our paper is the *first* to examine the plethora of implications the **collateral channel of monetary policy** has on the primary and secondary markets for Eurozone corporate debt.

We find that increased demand for pledgeable collateral,

- Increases trading activity in the SL market, that relaxes the constraint of limited collateral supply.
- Gives rise to an eligibility premium (yields)
- Generates an asymmetric liquidity response along the maturity spectrum of corporate bonds.

We observe that eligible firms

- Reduce bank debt and expand corporate bond issuance activity,
- Increasing the overall size and maturity of their total debt.
Thank you for your attention!