The Value of Renegotiation Frictions: Evidence from Commercial Real Estate

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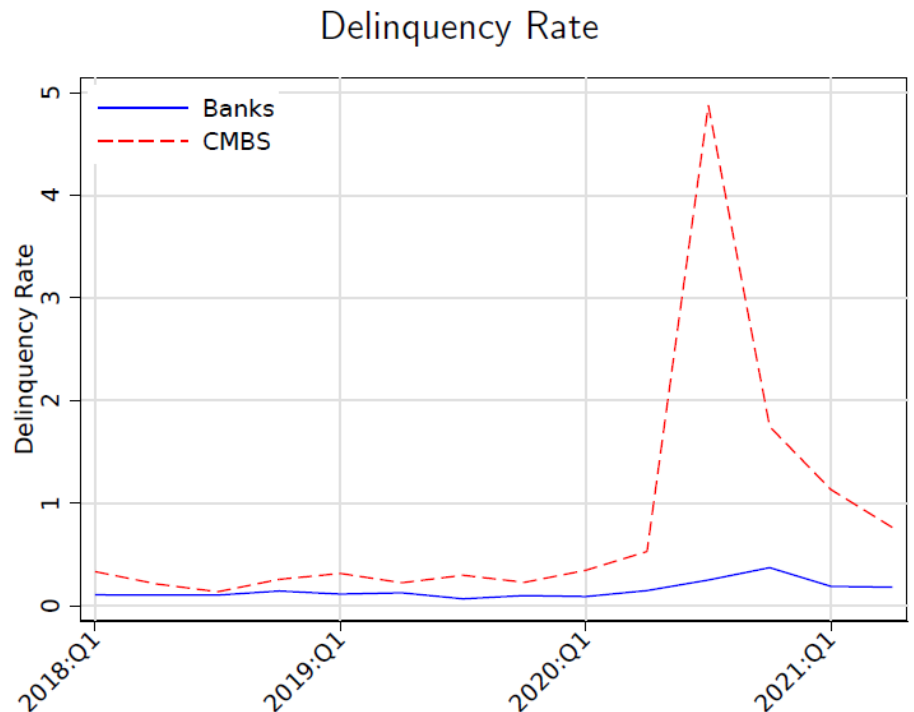
Interesting and Important Topic

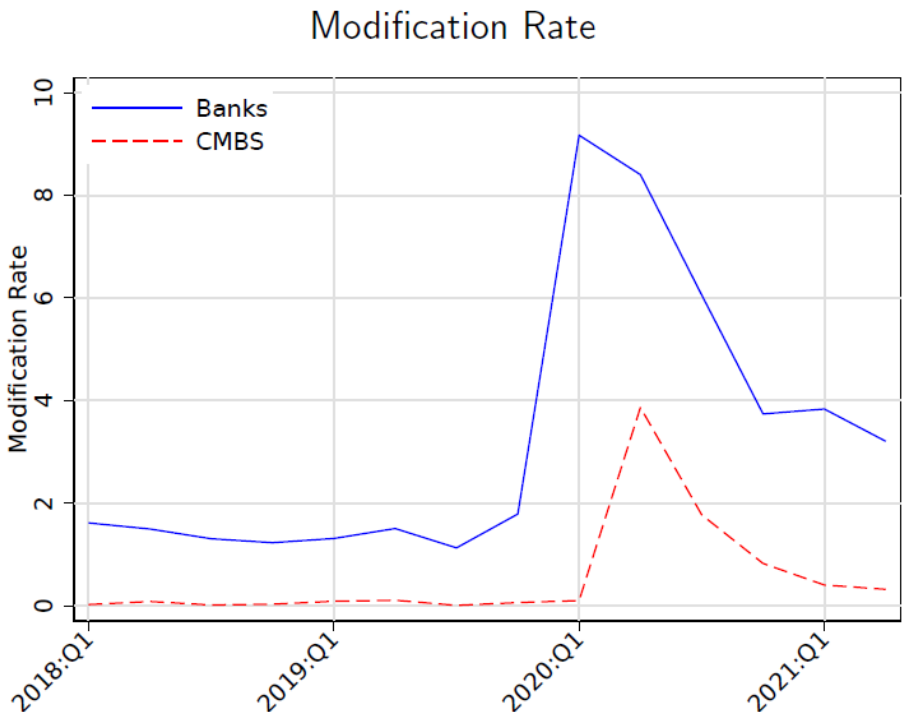
- Banks and CMBS are two major sources of CRE financing.
- Foreclosures are costly and inefficient.
  - Negative externalities.
  - Threat to the financial stability.
  - Great Depression, Great Recession, Covid crisis.
- Multiple policy implications.

- What explains differences in CRE loan modification across lenders?
- Theory may help explain the differences and guide towards better policies and regulations.

Key Empirical Results

- Compared to CMBS servicers,
  - banks modify more loans overall;
  - banks modify loans more preemptively;
  - banks experience lower delinquency rates, but higher modification rates, for stressed loans.





Key Theory Insights

- Modification frictions can account for observed differences in loan underwriting and performance across CRE lenders.
- High frictions to modifying securitized CRE loans increase debt capacity for these loans.
- Easing these frictions reduces welfare by restricting LTVs available in the market.

Model

- Built on elegant framework of Leland (1994)
  - Hackbarth, Hennessy and Leland (2007)
- Fully rational lender and borrower
- No asymmetric information
- Loan modification frictions differs across lenders
- Borrowers **endogenously** choose when to renegotiate their loans
- Borrower **endogenously** sort into heterogeneous lenders (banks or CMBS)
- Loan LTVs and interest rates are **endogenous**
- **Closed-form** solution

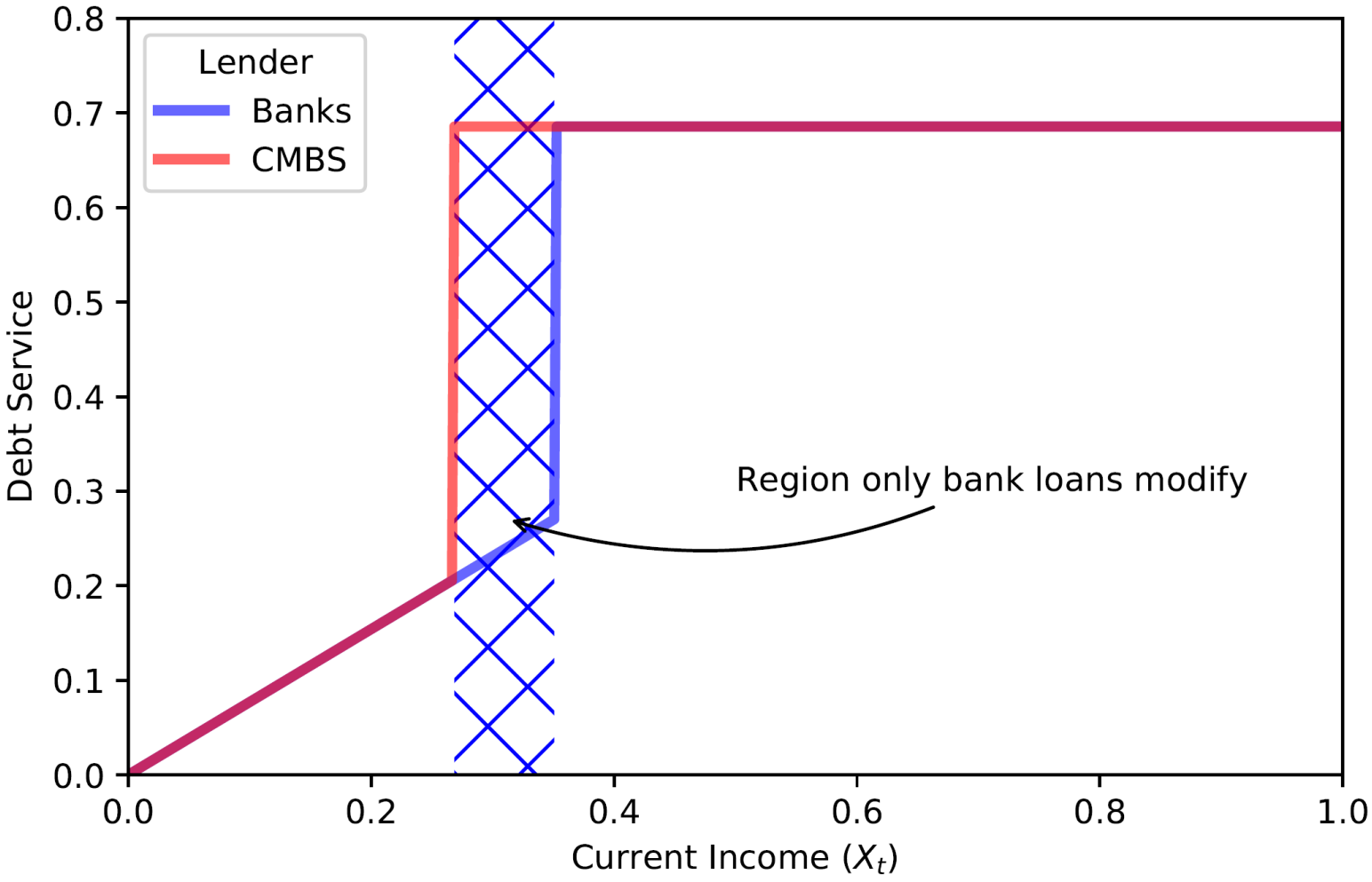
Cash Flows

- NOI is the key state variable that determines property value and timing of foreclosures and debt renegotiations:

$$\frac{dX_t}{X_t} = \mu dt + \sigma dZ_t$$

- Debt pays coupon ***C*** in perpetuity (time-homogeneous setting).
  - Borrower optimally choses time to renegotiate debt .
    - Endogenous renegotiation threshold, X_n
  - Borrower has all the bargaining power.
    - Take-it-or-leave-it offer to the lender.
- Negotiations break down at an exogenous rate **λ**, resulting in foreclosure
    - Key departure from Hackbarth, Hennessy and Leland (2007)
    - CMBS have high **λ**
    - Banks have low **λ**
    - Modification boundary X_n is decreasing in **λ**

Debt Payments with Renegotiations



Theory Explains Empirical Findings

- Compared to CMBS servicers,
  - banks modify more loans overall;
  - banks modify loans more preemptively;
  - banks experience lower delinquency rates (low λ), but higher modification rates (1- λ), for stressed loans.

Economic Intuition

- Borrowers decide when to renegotiate a loan.
  - Benefit of renegotiation: lower debt payments with probability **λ.**
  - Risk of renegotiation: foreclosure with probability **λ.**

- Benefits are higher and risks are lower when negotiating with banks (lower **λ**) ➔ earlier negotiations.

- Modification frictions are associated with higher LTV loans, i.e., LTVs of bank loans are lower.
  - CMBS borrowers keep making full payments longer.

Differences between Banks and CMBS

- Regulations
  - CMBC are tax exempt ➔ stricter regulations ➔ higher modification frictions
  - Focus of this paper.
- Relationship banking
  - CMBS: one-time game between borrower and special servicer.
  - Banking: repeated game between borrower and bank.
    - Continuation value > 0

Comment 1: Bargaining Power

- Assumption that borrowers have all the bargaining power seems to be too strong.
  - Lenders are indifferent between foreclosures and modifications.
  - All benefits of modifications go to borrowers.
- Model extension with lenders having all bargaining power
  - Modification frictions are associated with lower LTV loans (banks should lend more).
  - Inconsistent with the observed LTV differences between banks and CMBS.
- Suggestion: extension with split (50/50) bargaining power and continuation value for banks but not CMBS.
  - Foreclosure ruins continuation value ➔ banks are more willing to make concessions to borrowers.

Comment 2: Temporally Vs Permanent Modifications

- Model describes temporally (reversible) modifications.
  - Modified loan payments are performance-based (depend on NOI).
  - Loan payments go back to normal when NOI recovers.
  - Good to model forbearances and other temporally concessions.
  - May not be easy to implement in practice when NOI can be manipulated.
- Model can be easily modified to analyze permanent modifications, such as DPOs or permanent interest rate reductions.
- Under what conditions different types of modifications are optimal?
  - Simplicity of permanent modifications vs efficiency of performance based modifications.

Comment 3: Policy Implications

- Paper provides a great framework to model *anticipated* regulatory changes.
  - Lenders and borrower take into account new regulations when loans are originated.
- New policies are often introduced during an unanticipated crisis, e.g., Great Depression, Great Recession, Covid, to deal with loans originated before the crisis.
  - The model is the best to evaluate *long term* consequences of such policies, i.e., for loans originated after the policy change.

Summary

- Important topic
- Very well written paper
- Many interesting findings and insights
- I enjoyed reading it