Creditor Heterogeneity and the Optimal Use of Enhanced Collective Action Clauses

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Introduction

Collective Action Clauses (CACs)

- key pillar of sovereign debt architecture
- in a restructuring, supermajority of consenting creditors can bind dissenting minority

Within a restructuring of multiple bonds, can choose among 3 voting/threshold rules

- Series-by-series: within-bond ($\approx 75\%$)
- Two-limb: across-bonds ($\approx 66.6\%$) and within-bond ($\approx 50\%$)
- Single-limb: across-bonds ($\approx 75\%$) + *uniform applicability* constraint

Enhanced CACs in Theory and Practice

Single-limb voting rule

- most recent innovation, introduced with 2014 ICMA Model CACs
- belief that it would become most effective procedure
- Eurozone 2022 Model CACs include single-limb only

Argentina & Ecuador 2020 debt restructurings

- Enhanced CACs tested in practice for the first time
- both opted for two-limb aggregation
- both offered different bonds to holders of different bond series

This Paper

- An theoretical analysis of Enhanced CACs in restructurings of multiple bonds
- Consider **heterogeneity**
  - within each bond
  - across bonds

  (e.g. expected litigation cost/outcome, discount rates, preferences, coupon rates, maturities)
- Characterise optimal voting rule for the debtor government

Environment

Restructuring pool $\rightarrow$ 2 bonds

- "expensive" bond H, relative weight λ
- "cheap" bond L, relative weight $1 - \lambda$

Bondholders

- atomistic
- assign *idiosyncratic* reservation value v to holding out of the bond exchange
- holders of bond i have reservation values distributed according to CDF F_i

Exchange offer

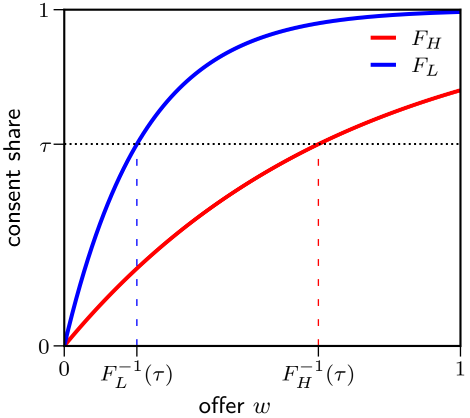
- government makes offer w_i to holders of bond i
- creditor accepts if $w_i \geq v$
- share of consent within bond i is given by $F_i(w_i)$

Creditor-Bond Heterogeneity

Holders of bond H have higher reservation values, that is

$$F_H(w) < F_L(w) \qquad \text{for any } w$$

→ i.e., bond H has better payment terms, holders have better litigation skills, ...



Government Problem

- Objective function = restructuring payout

$$\min_{w_H, w_L} \lambda w_H + (1-\lambda) w_L$$

- Participation constraints, depending on the voting rule
  - Two-limb

$$\lambda F_H(w_H) + (1-\lambda) F_L(w_L) \geq \tau_2^{\text{a}}$$
$$F_i(w_i) \geq \tau_2^{\text{s}} \qquad \text{for } i \in \{H, L\}$$

  - Single-limb

$$w_H = w_L = w \qquad \text{(uniform applicability)}$$
$$\lambda F_H(w) + (1-\lambda) F_L(w) \geq \tau_1$$

Voting Rules

- What about creditors with large, possibly blocking positions?
  - would be mass points of bondholder distribution in our framework
  - as long as position $< 1 - \tau$, can model it as higher *effective threshold*
- We assume

$$\tau_2^{\mathrm{s}} < \tau_2^{\mathrm{a}} \leq \tau_1$$

Single-limb Offer

- Cost-minimising offer for the government

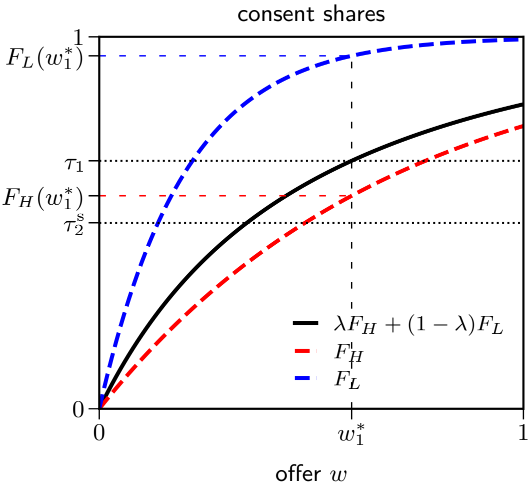
$$\lambda F_H(w_1^*) + (1-\lambda)F_L(w_1^*) = \tau_1$$

- Total government cost

$$\mathcal{C}_1 = w_1^*$$

- Remark

$$F_H(w_1^*) < \tau_1 < F_L(w_1^*)$$



Single-limb Offer

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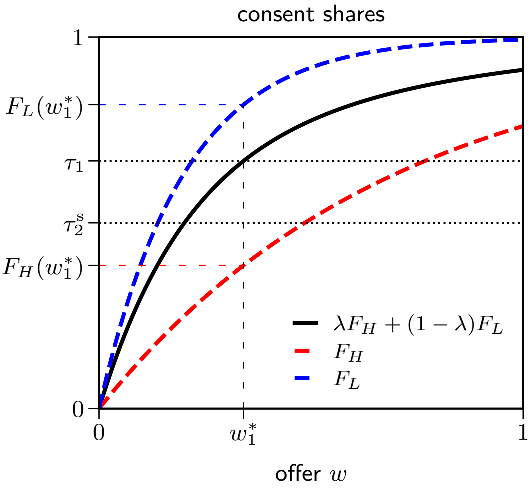


Two-limb Offer

- Government problem

$$\min_{w_H, w_L} \quad \lambda w_H + (1-\lambda) w_L$$

subject to

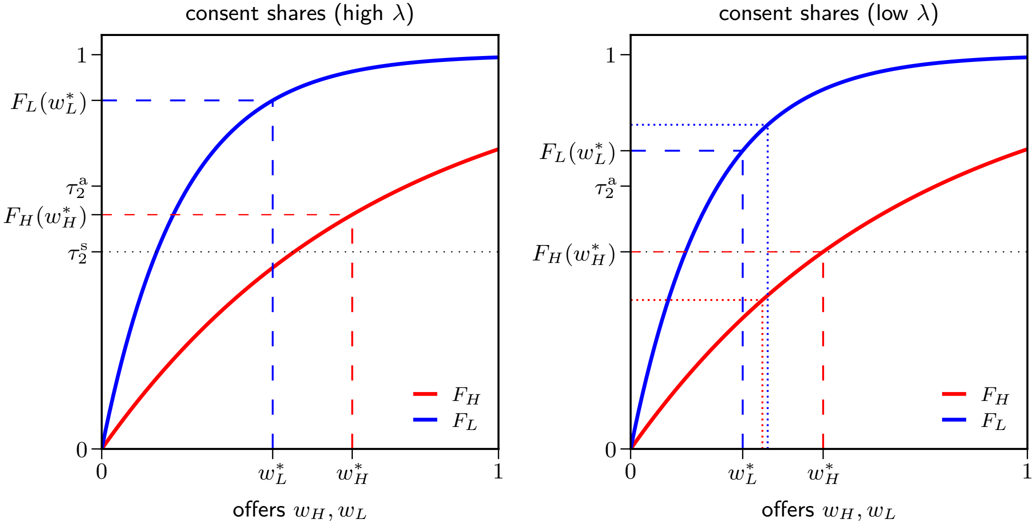
$$\lambda F_H(w_H) + (1-\lambda) F_L(w_L) = \tau_2^{\mathrm{a}}$$
$$F_i(w_i) \geq \tau_2^{\mathrm{s}}, \qquad i = H, L$$

- Optimal offers (w_H^*, w_L^*)

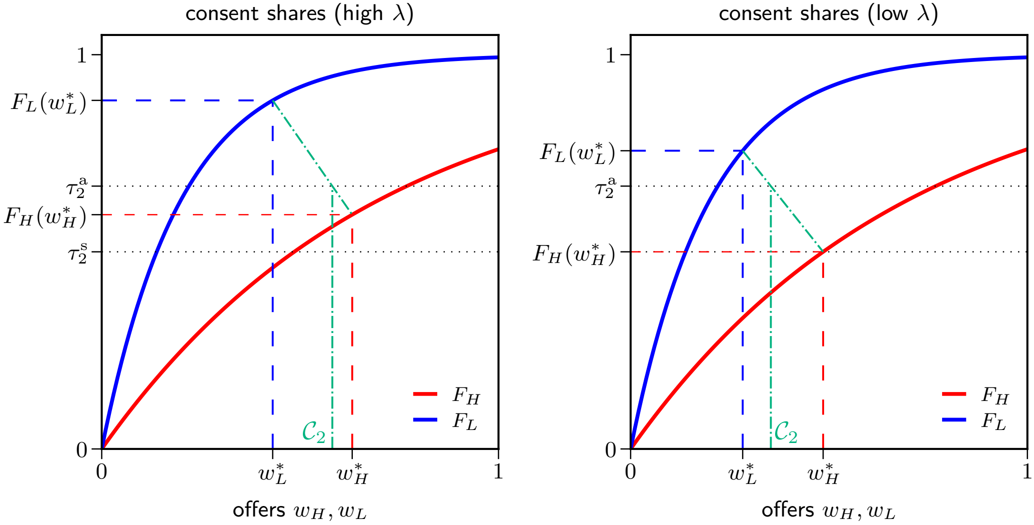
- Total government cost

$$\mathcal{C}_2 = \lambda w_H^* + (1-\lambda) w_L^*$$

Two-limb Offer



Two-limb Offer



Key Trade-Offs

Single-limb (as compared to two-limb)

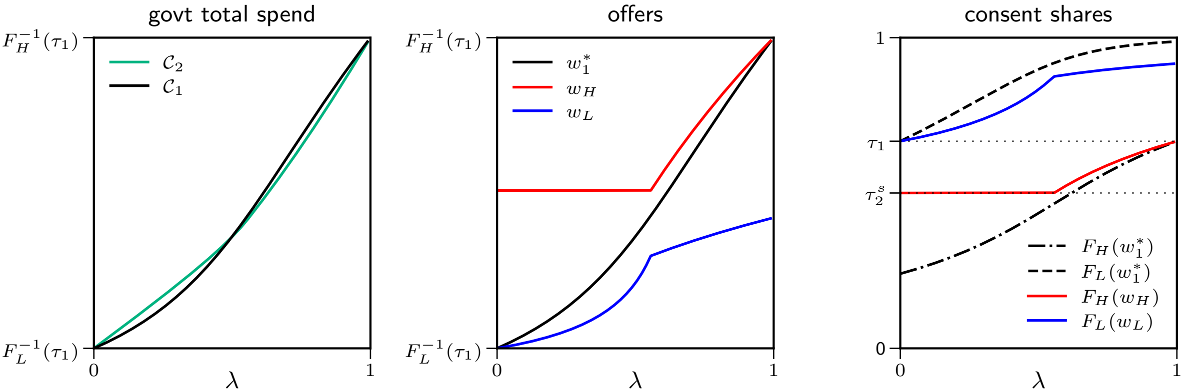
- Advantage: removes the series-by-series constraint
  - most relevant when H-bond share is small (low λ)
    $\Rightarrow$ very different contribution of F_H to aggregate vs series-by-series constraint
- Drawback: adds uniform applicability, possibly higher aggregate threshold (if $\tau_2^{a} < \tau_1$)
  - can't price-discriminate

$\Rightarrow$ both channels are stronger when creditor heterogeneity $\uparrow$

Optimal Voting Rule

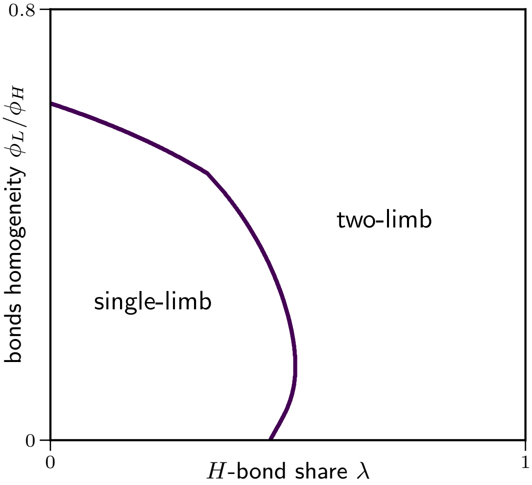
Assuming

- $F_i(w) = 1 - e^{w/\phi_i}$, $\phi_H = 0.7, \phi_L = 0.2$
- $F_L^{-1}(\tau_1) = 0.22, F_H^{-1}(\tau_1) = 0.77$



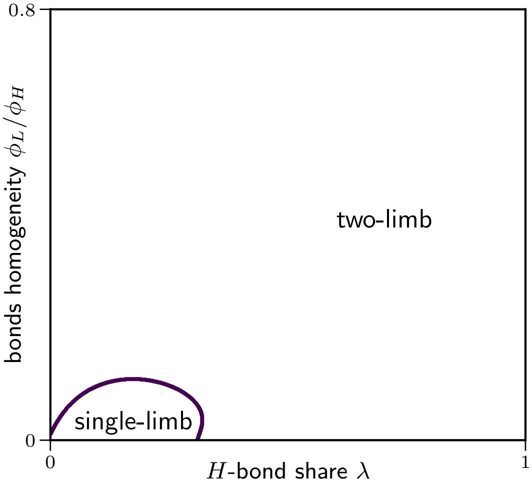
Optimal Voting Rule

$\tau_1 = \tau_2^{\mathrm{a}}$



Optimal Voting Rule

$\tau_1 > \tau_2^{\mathrm{a}}$



Takeaways and Agenda

Takeaways

- we provide a economic theory of the optimal use of Enhanced CACs
- results depend on degree of bond & creditor heterogeneity

A lot more to be done with this framework:

- quantitative analysis of ARG and ECU restructurings through the lens of our model
- optimal bond pool designation
- uncertainty over participation rates

and taking a step back

- endogenous investor sorting into bonds (i.e. endogenous F_i and λ_i)
- endogenous government bond issuance/maturity structure