Voluntary Support and Ring-Fencing in Cross-Border Banks

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The views expressed in this paper are our own and do not necessarily coincide with those of Bank of Italy

Cross-border banks (CBBs), support & ring-fencing

- CBBs frequently use subsidiary structure with internal capital market
- Possibility of parent support to distressed subsidiaries
- But national supervisors can limit capital flows within CBB (ring-fencing)
- Examples of cross-unit support & ring-fencing during GFC
 - Support: Baltic & Portuguese subsidiaries of foreign banks
 - Ring-fencing: Italian bank subsidiary in Germany, Austrian banks with Eastern Europe subsidiaries

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Open ring-fencing debate

- Ring-fencing constrains efficient capital/loss distribution during crises
- Little progress in supervisory coordination to remove local ring-fencing power
- Even in EA banking union ring-fencing still an issue (Enria, 2022, Konig, 2020)

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- 1. When does ring-fencing emerge?
 - ▶ For large correlation across CBB subsidiaries & national authorities
- 2. What effect of supranational set-up (= no ring-fencing) on CBB risk-taking?
 - Ambiguous: novel interplay risk-sharing ex-post & risk-taking ex-ante
- 3. When are supranational authorities beneficial?
 - For large correlation & weak CBBs
 - Not when risk-sharing within CBB more valuable (negative correlation)

Model setup

- Three dates (t = 0, 1, 2) & risk-neutrality
- A cross-border bank & supervisory authorities

The CBB

- Two subsidiary units located in two countries i = A, B
- Each unit: Risky asset & deposits insured by national fund
- Pure bank holding structure: CBB owns units' residual claim (equity)

The unit's assets

Unit *i* asset payoffs

• t = 1 : r > 0

- t = 2: either R > 1 (success) or 0 (failure)
- t = 2 success probability p^i is realized at t = 1:

$$p^{i} = \begin{cases} p_{h} & (Healthy) \\ p_{\ell} < p_{h} & (Impaired) \end{cases}$$

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- Cross-unit correlation $\rho \in (-1, 1)$ both at t = 1, 2
 - $\triangleright \rho = 0$: independence
 - $\rho > 0$ (< 0): positive (negative) correlation

National supervision (I)

- One national authority responsible for each unit *i*
- Can intervene at t = 1 to minimize own deposit insurance cost (DIC)

Supervisory intervention at t = 1: on impaired unit

• "Liquidation": recovery value L satisfies

$$\underbrace{1-r-L}_{\text{DIC liq.}} < \underbrace{(1-p_{\ell})(1-r)}_{\text{DIC no liq.}}$$

 \Rightarrow Liquidation reduces DIC vs no intervention

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 \Rightarrow Liquidation destroys asset value

National supervision (II)

CBB recapitalization of impaired unit at t = 1**:** to avoid liquidation

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- 2. Internal capital: from other unit, if healthy (cross-unit support)
- \Rightarrow CBB prefers cross-unit support

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Supervisory intervention at t = 1: on healthy unit

• Ring-fencing: limit on cross-unit support

The impaired unit recapitalization game at t = 1

• Unit *B* impaired & unit *A* healthy at t = 1 (only interesting case)

Sequence of actions

- 1. CBB proposes recapitalization plan:
 - Capital raised by holding company and injected in impaired unit: *x*
 - Support from unit *A* to *B*: transfer *s* against junior promise *S* at t = 2
- 2. Each authority approves plan or not, implementation only if unanimity
- 3. If plan fails, impaired unit is liquidated

- Consider CBB recapitalization plan (*x*, *s*, *S*)
- Authority of impaired unit *B* approves plan iff

$$\underbrace{(1-p_{\ell})\left[1-r-(x+s)\right]}_{\text{DIC under recap.}} \leq \underbrace{1-r-L}_{\text{DIC under no recap & liq.}}$$

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- For high correlation ρ two units tend to jointly succeed/fail at t = 2
- \Rightarrow Intragroup loan less likely to reduce DIC

National supervision: outcome for impaired unit at t = 1

Prop 1 Recapitalization of impaired unit with national supervision

- Low correlation: recapitalization only via cross-unit support (s > 0, x = 0)
- High correlation: limited support due to ring-fencing of healthy unit (x > 0)

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Prop 3 Recapitalization of impaired unit with supranational supervision

- Fully via cross-unit support & no ring-fencing: s > 0, x = 0
- Low correlation: = national sup
- High correlation: \neq national sup \rightarrow CBB gets more value from impaired unit

The CBB risk-taking decision at t = 0

- Supervisory set-up affects ex-post cross-unit risk-sharing
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Healthy & impaired state of each unit at t = 1 depends on:

- Endogenous costly effort e exerted by CBB manager at t = 0
- Exogenous fundamental strength γ

Ring-fencing and risk-taking: trade-offs

Large correlation ρ :

- National sup: ring-fencing (x > 0)
- Supranational sup: no ring-fencing (x = 0)
- BCC value from support given effort *e* & ring-fencing level *x*:

$$\underbrace{2(1-\rho)(\gamma+e)(1-\gamma-e)}_{\ell}\underbrace{(p_{\ell}R-L-xc)}_{\ell}$$

Probability of cross-unit support Support gains

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Probability of cross-unit support Support gains

Effects of supranational sup. on effort: No ring-fencing \Rightarrow Support gains \uparrow

- Charter value (+): Unit *i* effort + valuable since enables supporting unit *j*
 - ▶ Key: internalization of effort effect at **CBB level** ≠ unit level
- Liquidation threat eff. (-): Unit *i* effort valuable if can be supported by unit *j*

Normative implications on supervisory set-up (high correlation) Prop 5 and 6 Weak CBBs (low γ):

- Charter value eff. dominates \Rightarrow Supranational sup. encourages effort..
- ...and removes ring-fencing costs
- \Rightarrow Welfare \uparrow & DIC \downarrow
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Strong CBBs (high γ):

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Intermediate CBBs (intermediate γ):

- Supranational sup. *mildly* discourages effort, but removes ring-fencing costs
- \Rightarrow Welfare \uparrow & DIC \uparrow
 - Supranational sup. optimal but (could be) unfeasible

Strong CBBs (high γ):

- Liquidation value eff. dominates ⇒ Supranational sup. *strongly* reduces effort
- \Rightarrow Welfare \downarrow & DIC \uparrow
 - National sup. optimal & feasible

Value of cross-border banking & supervisory architecture

Highly negative correlation

- *Ex post*: No ring-fencing with national sup
- *Ex ante*: Likely that cross-unit support arises
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Highly positive correlation

- *Ex post*: Severe ring-fencing with national sup.
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 \Rightarrow Is the ring-fencing problem not so relevant in the end?

Conclusions

Framework to understand impact of supervisory set-up for CBBs on:

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Contribution to literature

- Role of asset correlation in financial restructuring possibilities for CBBs
- Novel ex-ante risk-taking effects from ex-post cross-unit risk-sharing options

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Policy take-aways

- Positive correlation leads to value destroying ring-fencing with national sup.
- Supranational sup. eliminates ring-fencing & likely optimal in euro area BU
- Ring-fencing no concern when flexible capital flows in CCBs most valuable