

Discussion of:

*Taxing Bank Leverage:  
The Effects on Bank Portfolio Allocation*

by C. Célérier, T. Kick, and S. Ongena

Todd Keister  
Rutgers University

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# The question

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- ▶ The paper studies how regulations that affect the cost of:
  - ▶ debt / new equity issuance / leverage ...
- ▶ ... affect the *composition* of bank assets
- ▶ When we talk about taxing leverage, focus is usually on:
  - ▶ the overall size of bank balance sheets
  - ▶ the composition of liabilities (debt vs. equity)
- ▶ Discussions (and theoretical models) often implicitly assume:
  - ▶ asset holdings will not change, or
  - ▶ holdings of different assets will shrink in same proportion
- ▶ But ... is this true in principle? In practice?
- ▶ The paper does two things:

# 1) A simple, illustrative model

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- ▶ Shows we should expect policies that affect the cost of leverage ...
  - ▶ ... either directly or by affecting cost of new equity ...
- ▶ ... to systematically alter the composition of bank assets
- ▶ Mechanism relies, in part, on the interaction of new policies with existing capital requirements
- ▶ If risk weight on government bonds is artificially low:
  - ▶ policies that make equity less expensive will tend to decrease the share of bonds in bank assets
- ▶ With some policies, there are multiple effects at work
  - ▶ but they tend to point in the same direction
  - ▶ result: taxing leverage will decrease the share of bonds in bank assets

## 2) Empirical results

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- ▶ Identifies regulatory changes in individual European countries that created useful natural experiments
  - ▶ challenging task; much has changed in Europe in the last 10 years
- ▶ Policies seem, at first glance, to be quite different
  - ▶ allowance for corporate equity in Belgium
  - ▶ liabilities tax in Slovakia, Germany
- ▶ Paper carefully controls for changes in the environment
  - ▶ macroeconomic conditions, credit demand, other policies, etc.
- ▶ Results come through clearly
  - ▶ the predictions of the illustrative model are supported
- ▶ Impressive amount of robustness analysis

# My plan

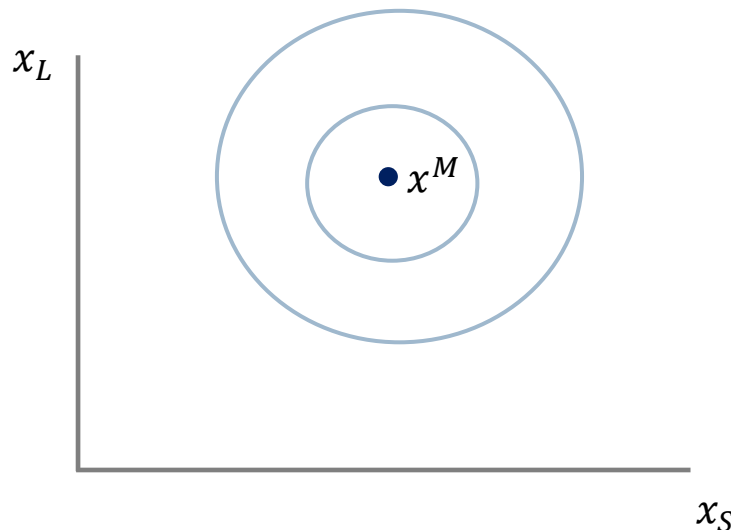
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- ▶ I will focus my discussion on understanding:
  - ▶ the mechanisms at work
  - ▶ the implications for policy makers

# Capital requirements and portfolio choice

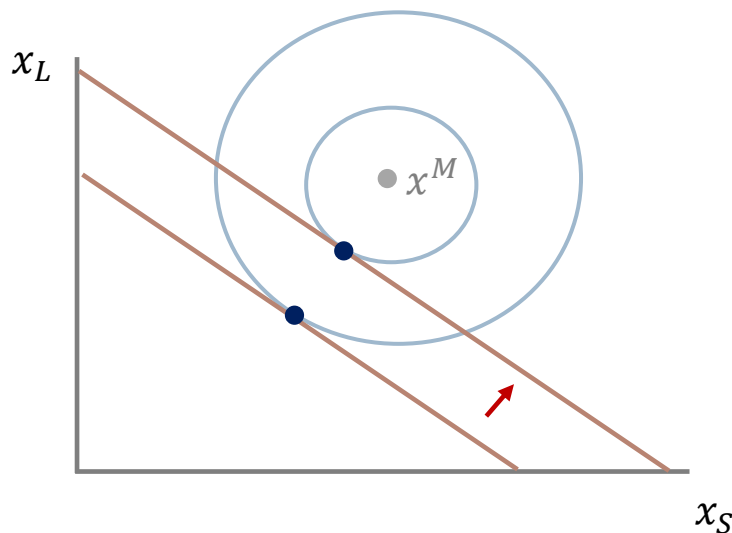
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- ▶ Start with a simple model with two assets
  - ▶ loans to firms ( $x_L$ ) and govt securities ( $x_S$ )
  - ▶ each have some random return
- ▶ A competitive bank has fixed equity  $E_0$ , mean-variance preferences
  - ▶ can issue debt/deposits at a given interest rate
- ▶ With no capital requirement → optimal portfolio  $x_m$



- ▶ depends on expected returns, variances, and covariance

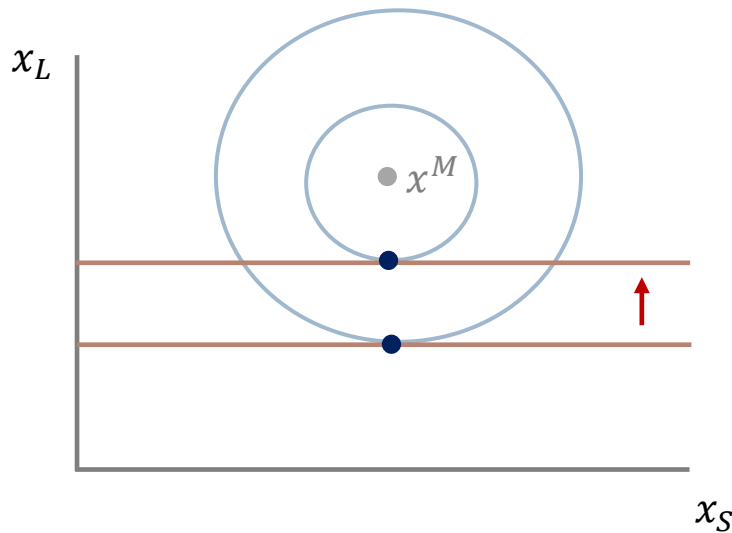
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- ▶ Add a capital requirement:  $w_L x_L + w_S x_S \leq \frac{1}{k} E$
  - ▶ Suppose we relax the requirement (i.e., decrease  $k$ )



- ▶ Change in optimal portfolio depends on:
  - ▶ slope of the requirement (the risk weights)
  - ▶ shape of the indifference curves (mean-variance)

- ▶ Change in policy *could* leave the ratio  $\frac{x_L}{x_S}$  unchanged
- ▶ But generally should expect it to change the composition of assets

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- ▶ Suppose government securities are given a zero risk-weight ( $w_S = 0$ )
  - ▶ capital requirement:  $x_L \leq \frac{1}{kw_L} E$



- ▶ Relaxing the requirement:
  - ▶ has a big effect of  $x_L$
  - ▶ little or no effect on  $x_S$
- ▶ Shifts composition of portfolio toward loans

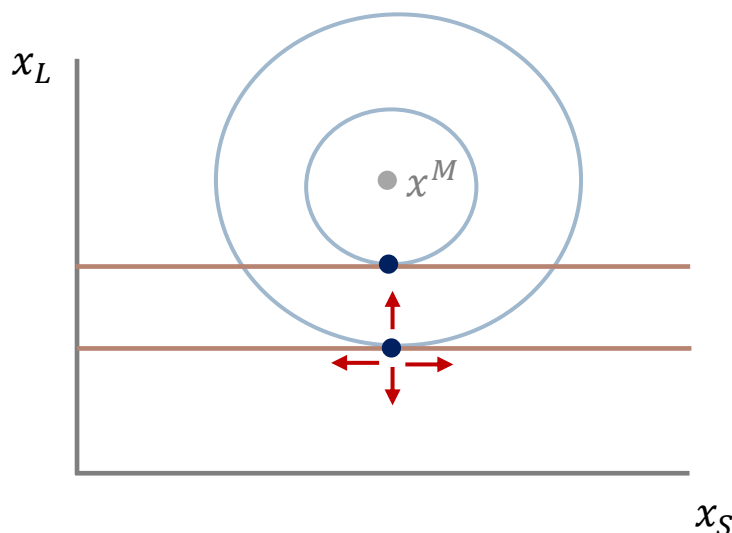
- ▶ Or, think of it in reverse:
    - ▶ if we tighten capital requirement and  $w_S = 0$  ...
    - ▶ loans are more impacted than bonds → portfolios shift toward govt bonds
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# Next step

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- ▶ Now suppose equity is not fixed
  - ▶ instead, can be increased by paying a cost
  - ▶ bank is optimizing on two margins: size and composition of assets



- ▶ a policy that makes it cheaper to increase equity
  - ▶ like an allowance for corporate equity (ACE)
- ▶ will lead bank to choose higher  $E$

- ▶ ... and change the composition of assets toward loans
    - ▶ as before, capital requirement is “distorting” portfolio toward bonds
    - ▶ ACE effectively loosens requirement → portfolio shifts back toward loans
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# Taxing leverage

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- ▶ Taxing bank liabilities (or leverage) sounds quite different
  - ▶ for one thing, banks will tend to shrink rather than grow
  - ▶ might naively expect the opposite effect on asset composition

- ▶ Consider a tax on all (non-equity) liabilities at rate  $\tau$

- ▶ Profit:  $(1 + r_L)x_L + (1 + r_S)x_S - (1 + \tau)D - R\Delta E$

- ▶ where:  $x_L + x_S = D + E$

- ▶ Or profit:  $(r_L - \tau)x_L + (r_S - \tau)x_S - (R - \tau)\Delta E$

- ▶ Two effects:  $\uparrow \quad \uparrow \quad \uparrow$

- ▶ reduces the effective return on each asset by  $\tau$
- ▶ reduces the effective cost of equity issuance (since it saves on debt)
  - ▶ this second effect is similar to before

$$(r_L - \tau)x_L + (r_S - \tau)x_S - (R - \tau)\Delta E$$

↑                      ↑

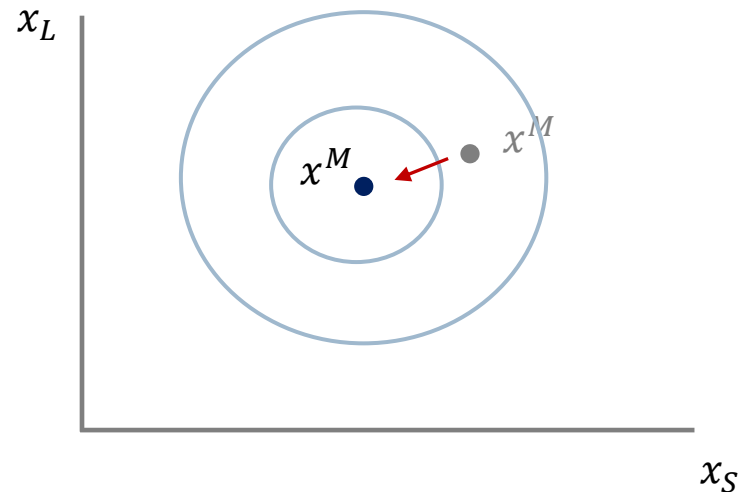
▶ First effect: tax decreases return on bonds by higher percentage

▶ In the mean-variance framework:

- ▶ desired bond holdings decrease more
- ▶ bank's allocation shifts toward loans
- ▶ even with no capital requirement

▶ In other words:

- ▶ a liabilities tax has two effects on asset composition
  - ▶ direct: makes low-return bonds less attractive
  - ▶ indirect: incentive to increase equity loosens capital requirement
- ▶ both effects → shift in composition of portfolio toward loans



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# Comments

# Differentiating policies

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- ▶ Effect of an equity subsidy depends on binding capital constraint

- ▶ but the effect of a liabilities tax does not

Q: Is there a way to test these predictions?

- ▶ Are there some banks/situations where capital constraint does not bind?

- ▶ perhaps the binding concern is a leverage ratio, liquidity requirement, ...

- ▶ If so, can we see the effect of an introduction of:

- ▶ an allowance for corporate equity, or a liabilities tax ...

- ▶ ... on the asset composition in these banks?

- ▶ Is this possible?

- ▶ I have no idea but, if so, it would be interesting

# Policy implications

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- ▶ Results in the paper are positive in nature
  - ▶ establishes the effects of a given change in policy
- ▶ But the language leans at times toward the normative
  - ▶ tax on leverage leads banks to “refocus their activity on lending”
  - ▶ and helps “maintain the supply of credit” to the economy
- ▶ Are these changes desirable?
  - ▶ are they an added benefit of taxing leverage? Or a cost?
  - ▶ the answer is not so clear (to me)
- ▶ Results in the paper raise some interesting policy questions
  - ▶ lie beyond the scope of the present paper
  - ▶ but are interesting to think about going forward

# Why is $w_S = 0$ ?

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- ▶ One view: the weights are wrong
  - ▶  $w_S$  really should be  $> 0$
  - ▶ but is not due, for example, to political constraints
  - ▶ incorrect risk weight distorts allocations, and we would like to correct the distortion
    - ▶ that is, get banks to “refocus on lending” is good
- ▶ Another view:  $w_S = 0$  is designed to increase demand for bonds
  - ▶ concern about self-fulfilling debt crises, for example
  - ▶ aim to help maintain the flow of credit *to governments*
  - ▶ a policy that shifts bank assets away from bonds may cause problems
- ▶ What is the “right” way to think about optimal policy here?

# More generally

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- ▶ How do the results in this paper change our view of the overall optimal regulatory regime?
- ▶ Suppose banks benefit from government guarantees
  - ▶ this fact distorts their choices (become too large, leveraged, etc.)
- ▶ How effective is a liabilities tax in correcting the distortion?
- ▶ In a model with a single asset ...
  - ▶ ... where the only choices are size and leverage ...
  - ▶ ... the tax will tend to be very effective
- ▶ But with many assets, both the guarantee and the tax will affect the composition of bank portfolios
  - ▶ does a liabilities tax become more attractive, or less?



# Conclusion

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- ▶ Interesting paper!
- ▶ Main takeaway: policies that affect the cost of bank debt/equity ...
- ▶ ... will also likely affect the allocation of bank portfolios
- ▶ The provides convincing evidence that these effects are present
  - ▶ and quantitatively important
- ▶ Also illustrates how national policy changes in the EU are a useful source of identification
- ▶ Policy makers need to take these effects into account
  - ▶ when trying to correct distortions associated with tax treatment of debt, or with implicit guarantees ...
  - ▶ need to recognize how policy will affect incentives, composition of assets