

# **Capital: What is it good for?**

## **Discussion of the Boot-Ratnovski and Gallemore papers**

**Discussion by:**  
**Richard Rosen**  
**Federal Reserve Bank of Chicago**

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Federal Reserve Bank *of* Chicago

# Capital: what is it good for?

- We all agree that capital is good for banks (don't we?).
  - In fact, some (e.g., Admati et al.) have argued that banks need a lot more capital.
- The Boot-Ratnovski (BR) paper and Gallemore papers illustrate that simple notions of capital may miss important factors.
  - BR: Capital allocation may have time inconsistency problems.
  - Gallemore: Composition of capital matters.

# Boot-Ratnovski: Banking and Trading

- Summary: There are potential synergies from having “relationship banking” and “trading” in the same organization.
  - However, the synergies – more efficient use of capital – come with a time inconsistency problem.
  - Key insight of the model: A bank may use the capital backing its relationships to engage in risky trading and this trading can devalue the relationships.

# Overview of the BR model

Split banking into two parts:

- “Relationship banking”: creates charter (future) value, not scalable, safe.
- “Trading”: scalable, single-period, may be risky.  
→ Synergy: banks trade using the (cheap) capital held for banking to back the trades.

## Overview of the BR model (2)

Relationship banking: Borrowers pay an ex ante fee to get future lending capacity.

- This is not relationship banking in the sense of Petersen and Rajan (1995).

Combination of relationship banking and trading creates a problem:

- If trading is risky, the future lending capacity is risky. This reduces the value of a relationship to a borrower.

# When does BR model apply?

This model seems a good description of at least one firm in the period leading up to the financial crisis:



A relationship in the BR sense is an insurance contract. AIG used the ‘AAA’ rating of its insurance businesses to trade in CDS and other derivatives.

- This trading (should have) devalued its insurance business.

# When does BR model apply?

Does this apply to banks as well:

This paper views banks as liquidity providers (as in Kashyap, Rajan, and Stein, 2002).

- Most corporate loans are taken out under commitment.
- Is there any evidence that a bank's trading activity affected the value of a loan commitment from the bank?

# Capital in the BR model

Capital in the BR model is intended to prevent looting (Holmstrom-Tirole, 1998).

There is no need for capital to prevent credit risk in relationship banking ('law of large numbers ... save for exposure to the business cycle').

- It would be nice to understand the effect of aggregate risk; my intuition is that in general it should not make a qualitative difference.

## Capital in the BR model (2)

Banks may want to hold excess capital:

“Thus relationship banks, while inherently safe, need to operate at levels of capital sufficiently in excess of the regulatory minimums to have the flexibility necessary to fulfill their relationship commitments. This is consistent with the proposed role of procyclical and other capital surcharges ... as opposed to fixed high capital requirements.”

- This is important and should be worked out in more detail.
  - If capital is more expensive than debt, then when is “excess capital” optimal?
  - Does this still give the bank an incentive to concentrate risk in certain states?

## What we learn from BR

This paper shows that having universal banks can lead to inefficiencies that may offset economies of scope (assuming such scope economies exist).

- Moral hazard may require banks to hold “excess” capital.
- This is an interesting and important insight.

# Gallemore: Deferred Tax Assets

- Summary: Not all capital is created equal. Markets and rating agencies may know this.
  - Deferred tax assets (DTA) – a part of equity – are positively associated with bank risk.
    - DTA expected to be realized in the next year is counted as Tier 1 capital.
    - But, DTA does not provide a cushion against imminent losses.
    - All else equal, more DTA → higher spreads, lower credit ratings.

## What a deferred tax asset is

	Purchase	Year 1	Year 2	Year 3	Year 4
Accounting value	\$1,000	\$800	\$600	\$400	\$200
Tax value	\$1,000	\$750	\$563	\$422	\$316
Taxable/(deductible) temporary difference	\$0	\$50	\$37	\$(22)	\$(116)
Deferred tax liability/(asset) at 35%	\$0	\$18	\$13	\$(8)	\$(41)

Source: Wikipedia (so it must be correct)

# Why DTA might matter

- DTA as a cushion (or not) from bankruptcy.
  - DTA can only be counted in Tier 1 capital if they are expected to be realized in the next year. This means they may disappear from Tier 1 as a firm heads toward bankruptcy.
- DTA as a signal.
  - DTA may signal problems at a bank.
- DTA as an incentive.
  - In order to realize DTA, a firm may take risks to boost earnings.

# Bank failure

- DTA positively associated with bank failure.
  - But bank size is not significantly correlated with bank failure and Tier 1 capital ratio is only weakly negatively correlated with failure?
  - Also, DTA percent =  $\text{DTA} / \text{Tier 1 capital}$  not  $\text{DTA capital} / \text{risk-weighted assets}$ .
    - DTA percent as a signal: DTA may be a proxy for how well capitalized a bank is (that is, risk-weighted assets has problems when predicting failure).

# Bank failure: sample period

- Sample period for bankruptcy model is 2008Q1-2010Q2.
  - Not a normal period for banks.
  - Need to think about how results might generalize.
    - Impact of special crisis-related programs.

# Credit spreads and bond ratings

- Test effect of DTA on credit spreads and bond ratings.
  - Small point: What bond is credit spread on and how is it adjusted for the credit cycle? (Put in time dummies.)
- Sample is 2001-2010 with a crisis dummy.

# Credit spreads and bond ratings

- Find credit spreads are increasing in DTA percent and bond ratings are decreasing in DTA percent.
  - But Tier 1 ratio is insignificant for bond ratings and positively related to credit spreads and size is generally insignificant for credit spreads.
    - DTA as signal: Is there something else going on?

# Sample construction

- Bank failure sample: commercial banks  $>$  \$750 million.
- Spread sample: BHCs (large ones since they have credit ratings and public bonds).
  - Are the mechanisms driving the results different because of the different samples?

# What we learn from Gallemore paper

- Accounting matters.
- DTA may be another example of regulatory arbitrage.
  - But it is important to understand the extent to which DTA is the problem or a signal of a problem.