

Creditor Concentration: An Empirical Investigation

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The Basic Idea

- what determines the structure of a firm's bank relationship?
- bulk of previous literature: number of relationships
- this paper: asymmetry of relationship
 - two lenders with 50/50 share versus two lenders with 90/10 share
- why should it matter? several reasons, for example:
 - large lender may effectively be relationship lender
 - can presumably better solve coordination problem
 - moreover: obviously also changes bargaining relationship
- thus, we can learn a lot about optimal design of bank-firm relationship by studying asymmetry

Data

- German data 1993-2003
- German credit register: banks have to report all loans exceeding 1.5 mln Euros
- matched with balance sheet data for firms and for banks

Results

- firm characteristics are important
 - quality increases creditor concentration
 - redeployability has a (moderate) effect on creditor concentration
- relationship lender characteristics are important
 - profits increase degree of concentration
 - non-performing loans increase concentration
 - capital adequacy ratio reduces concentration
- results also hold for larger firms, and in a sense are even stronger
 - thus, relationship lending also important for those firms

Summary

- very interesting paper
- paper also has nice section on predictions of theory about asymmetry =>clear predictions from theory, contrasted with results
- well executed empirical study
- variety of new results
 - many consistent with theory, but also some unexpected ones
 - may motivate further theory

Suggestions

- differentiation between concentration and asymmetry
 - main innovation of study is to look at asymmetry
 - some confusion in the paper:
 - abstract: talks about asymmetry, introduction and empirical work: mostly concentration, sometimes both also seem to be used interchangeably

Why is this an issue?

- Herfindahl index

$$HHI_j = \sum_{i=1}^n s_{ij}^2$$

- set $s=1/n$ (equal shares), then we get: $HHI=1/n$
- thus, higher number of creditors automatically reduces concentration

- same problem also for Comprehensive Industrial Concentration Index (CCI)

$$CCI_j = s_{1j} + \sum_{i=2}^n s_{ij}^2(2 - s_{ij})$$

- for $s=1/n$ we get that CCI is also decreasing in n for $n>1$
- Thus, concentration measures combined effect of number of relationships and asymmetry

- authors clearly recognize this but do not address issue in main part of study (only use some form of correction as robustness check)
- problematic: theory suggests that the same bank/firm variables affect both number of relations and asymmetry
 - for example if there are coordination problems: firms with higher costs of coordination problems may choose both low n and high asymmetry (not clear: may also substitutes)
- thus, by looking at impact of bank-firm variables on concentration, we may effectively capture effects on the number of relationships, and not asymmetry

The paper's approach to correct for this issue

- regress HHI on $1/n$ and take residuals
- two relationships between $1/n$ and HHI
 - technical one, as described above
 - economic one (because $1/n$ and asymmetry are related)
- by regressing HHI on $1/n$ one takes out both relationships
- my suggestion: subtract from HHI the value that would arise if all firms were of equal size:

$$HHI^{Corr} = HHI - 1/n$$

- recognize that this is problematic under the main assumption of infinite creditors but then make some alternative assumption there (e.g., maximum number of creditors, or only use observed loans)

A suggestion

- why not run regressions for both number of banks and for asymmetry?
 - many theories have joint predictions about number of relationship and asymmetry
 - this may allow us to distinguish among them
 - can also establish whether number of relations and asymmetry are complements or substitutes

Single versus Multiple Relationship Lenders

- paper assumes that there is precisely one
- at least one main theory allows for multiple relationship lenders [Detragiache et al 2000]
- what if two banks have very similar shares?
 - actually very interesting case
 - test whether results are different if two main financiers have similar shares
- alternatively:
 - count everybody as relationship lender who has a share that exceeds a certain fraction
 - study whether the second largest lender has a different influence on concentration

Bonds versus Loans

(does data allow for this?)

- bonds informationally less sensitive: split in bond and loan financing and check whether results are different
- also: firms with bond financing can tap markets=>access to arms-length financing
 - include dummy for bond financing, and see how this affects results

Further Research

- different ways of testing theories about the asymmetry of bank-firm relationships:
 - test whether bank-firm characteristics lead to the relationship predicted by theory (this paper)
 - or: does relationship structure achieves what theory assumes?
- for example
 - theory based on reduction to exposure to liquidity shocks: if firms have multiple creditors, does this insulate them from bank liquidity shocks?
 - theories based on coordination problems: how does structure which exhibits less coordination problems affect restructuring/loan defaults?