Idenifying the Valuation Effects and Agency Costs of Corporate Diversification: Evidence from the Geographic Diversification of U.S. Banks

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Contribution

- The first study to clearly identify the **causality**:

Geographical diversification

Reduction of bank market value

- Positive aspects of geographical diversification
  - economies of scale
  - better diversification of idiosyncratic shocks
- ...are **dominated by** the negative consequences of growing informational asymmetries
  - More credit to insiders
  - More bad loans

New Identification Strategy

- *Not new*: -ve correlation between geographic (activity) diversification & market valuation
- *New*: causality from a close scrutiny of interstate bank deregulation (1978 – 1994)
- Bank-level data on balance sheet and income st. (1986 – 2007)
  - 50 US states and D.C.
  - 964 Bank Holding Companies (BHCs) and their subsidiaries
  - FED's quarterly data on "Call Reports": balance sheet & income st.
- Allows construction of instruments heterogeneous across:
  1. Time
  2. States
  3. Banks (BHCs)

Careful variable selection

- Measures of geographic diversification
  1. *Dummy* $= 1$ if BHC in > 1 states
  2. Share of BHC's assets helf out-of-state
  3. Herfindahl-Hirschman Index of BHC's assets in each state
  4. Average distance to affiliates' HQs
- Control for other factors to limit spurious inference
  - Activity diversity (income & asset levels & rates,)
  - Size of BHCs
  - Time-varying but state-specific characteristics (q, growth of income)

Banks

- Banks which diversify are:
  - $\sim$ 9 times larger than banks which don't
  - More profitable
  - More diverse in their activities
  - Slightly less well capitalized
  - Tobin's Q nearly identical! (larger Mean but smaller Median)

- Preliminary OLS regression
  - More highly valued BHCs diversify
  - But valuations fall after diversification
  - A break in a downward trend of q after diversification
    - But not very significant
  - Not causal

Instrumental variables #1

1. State – Time instruments:
   - Nine sets of instruments (!!)
     - 3 inward time-state removal measures
     - 6 *new* measures identify outward expandability: accessible states, accessible markets, different weighting schemes,...
   - Deregulation soaks up a lot of variation in BHC's diversification
   - Valid instruments, new ones perform better
   - **Geographic diversity significantly lowers Tobin's Q**
     - Small but economically meaningful coef: $\uparrow$ 1 s.d.(Div) $\Rightarrow\downarrow$ Q by 0.15 - 0.3 s.d.
   - Results 4-9 times larger than from OLS

Instrumental variables #2

1. State – Time – Bank instruments:
   - Method #1 does not differentiate between banks in the same state
   - Apply "Gravity" framework of Frankel and Romer (1999) to banks
   - Distance adds a bank-level dimension of heterogeneity
     - Far-away subsidiaries should see smaller asset share (diversity), c.p.
     - Market size matters
   - Use four different techniques in the first stage (just in case!)
     - Shares declines in distance
     - Shares increase in *relative* market size
   - Again, **geographic diversity significantly lowers Tobin's Q of BHCs**
   - Similar second-stage coefficient size as with method #1
   - Decline in Q is mainly due to **decline in Market Value**

Evidence: increasing agency problems in diversifying banks

- Use Call Reports data to measure loans to insiders and bad loans
  1. *Insiders*: executive officers, directors, main shareholders & relatives
  2. *Bad loans*: 90+ days past due
- Quantitatively:
  - $\uparrow$ 1 s.d.(Divers.) $\Rightarrow\uparrow$ 0.4 s.d. Insider lending share
  - $\uparrow$ 1 s.d.(Divers.) $\Rightarrow\uparrow$ 0.6 s.d. Bad loans share
- Strongly suggestive of **decline in monitoring effort following diversification**
  - $\Uparrow$ Insider loans after diversification (moral hazard?)
  - $\Uparrow$ Bad loans after diversification (imperfect information or lack of enforcement?)
    - "HQ in NYC now performs remote due diligence"?, but could also be
    - "My boss used to be upstairs, now she is a thousand miles away"

Comments

Comment #1

- Very thorough, convincing and complete empirical work
- Yet also a creative new approach utilizing 3D heterogeneity
  - The deregulation indeed seems fairly idiosyncratic from BHCs view, thus a good "laboratory"
  - But I wonder if there is some historical evidence on **lobbying** by the banks to gain access to the most lucrative markets
  - You discuss orthogonality of timing of deregulation and distance. Was this also true if consider their market sizes?

Wishlist: Gross effects

- I would like to see work identifying the **gross effects**
  - beneficial risk-sharing (etc.) effects of diversification, vs.
  - adverse agency effects

1. Is there some natural experiment?
2. Diversification benefits may increase in some macro/industry heterogeneity which determines the potential for sharing risks. Perhaps this can be incorporated to infer gross effects.

- Or at least try some interaction dummies to learn when your net effect is stronger and weaker

Wishlist: empirical evidence on mechanism

- More work on the **mechanism** to draw policy implications
- May be possible to identify from micro-data the origin of said insider/bad loans or other aspects of agency problems:
  - *Why* do these (big) banks diversify?
  - Lots of cash looking for a return & dropping their game? That could cause bad loans, but not insider loans.
  - Are banks buying up as much market access as possible to pre-empt competition, and being shabby at it?
    Again, cannot explain insider loans.
  - Or are these some "growing pains" that go away few years after M&A? You may want to consider modeling the *dynamics* (*Transitory effects?*).
  - Alternatively, are the expanding banks "too big", causing some structural informational/agency problems to dominate?
- You have the right kind of data to answer these questions.

Comment #2: Gravity

- **Gravity** equations typically see the "force" (here: asset share) *increasing in both* market sizes.
- The authors use a single relative metric (home and foreign markets have identical coefficients but opposite signs): "gravity" *decreases* in home (relative) market size.
- More of a Krugman's IRS trade aspect than gravity per se

Comment #3: Distance

- Distance to HQ used to capture the bank-dimension in gravity equations
- **How heterogeneous is this measure across banks within a (median) state?**
  - Aren't most big banks' HQs located in NYC?
  - If they are, then the bank-dimension of the panel is very similar to state-dimension, when considering *distance* as the metric.
- How much additional gain?

A Loose comment/suggestion

- My prior was that this result was surely spurious
  - Surely diversification is good!
- But it seems that there indeed is small, but very important net effect:

(Geographic) Risk-sharing at Micro-level does not work very well, due to agency problems

- Macro puzzle about the observed lack of risk-sharing: Backus-Smith
- Answers evolve around a nominal exchange rate "disconnect"
- Perhaps Macro risk-sharing should also consider more "earthly" reasons?
  - Institutional proximity?
  - Geographical proximity?
  - Cultural proximity?