Discussion of:
Inefficient Banking
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Overview

Goal: Measure performance of the aggregate banking sector

How: Performance *relative* to capital market alternatives

- Create a replicating portfolio

Findings:

- Unlevered $ROA_{1999-2015}$: banks 2.7% Vs. capital mkt 3.7%
- Bank use of leverage magnifies the underperformance
- Underperforming banks use leverage to increase ROE
- Stock market rewards high leverage banks

Building the Replicating Portfolio

- Aggregate banking sector risk exposures:
  1) Securities: **maturity risk** (8y maturity), no credit risk
  2) Loans: illiquid, **maturity risk** (3.4y maturity), **credit risk**
  3) Funding: **insured** deposits provide **transaction services**

- Replicating portfolio
  - Quarterly report on 600 BHCs and equity prices from CRSP
  - Assets: 0.5*Vanguard ST US Treasury securities fund + 0.5*Vanguard ST IG corp. securities fund
  - Funding: FF rate + 25bps.
- Aggregate banking sector funding/costs
  - Bank "effective" risk-free $= f$(deposit rate, ST non-deposit int. expense, LIBOR)
  - Bank average 3% of assets per year operating expenses

$\Rightarrow$ Similar exposures should be priced similarly

Banks Underperform the Replicating Portfolio

1) Unlevered after-tax $\text{ROA}_{1999-2015}$ 2.7%
   Replicating portfolio 3.7%
2) Loans outperform replicating portfolio by 1.5%
3) Securities perform similarly but banks are taxed at the corporate level
4) High operating costs of banks through tax disadvantage relative to mutual funds.

$\Rightarrow$ Everyone should just buy the replicating portfolio

$\Rightarrow$ Banks are inefficient (Philippon (2015))

Equity Valuations and Bank Leverage

- What drives valuations?
- Regress (Market Equity/Tier 1) on ROE
  - High 0.7 R-squared
  - Variation due to leverage
- Stock market seems to reward leverage
  - Banks with negative risk adj. returns use high leverage
  - High leverage-induced ROE associated to high multiples, despite poor asset performance

$\Rightarrow$ Profitable trading strategy: short banks that use leverage to boost ROE and long stocks with low multiples, low leverage, and strong asset performance

1) Exploit Bank Cross-Sectional Heterogeneity

- Cross-section: 499 small, 72 medium, 14 large, 3 mega
  - Loans: small banks 68% Vs. mega banks 40%
  - Trading assets: small banks 0% Vs. mega banks 19%
  - Deposits: small banks 78% Vs. mega banks 45%
  - Leverage: small banks 12 Vs. mega banks 18
- The passive strategy replicates the *aggregate* banking sector
  - Example: targeting a leverage of 14
- Possible to replicate small/medium/large/mega banks
  - Which types of banks drive the underperformance?
  - Obtain banking sector by aggregating these portfolios

2) Funding Advantage

- Bank deposits are insured and provide transaction service
  - Funding advantage mechanically larger for smaller banks
  - Risk-shifting on the taxpayers funded deposit insurance might explain equity valuations
  - Govt guarantee might also take other forms (e.g. TBTF)
- Banking sector is assumed to be competitive
  - Maturity transformation might not expose banks to significant interest rate risk
  - Exploit geographical variation in concentration
    See Drechsler, Savov, and Schnabl (2017)

3) Replicating Strategy and Interpretation

- Securities: Maturity risk ✓
- Loans: Maturity risk ✓ Credit risk ✓ Illiquidity **X**
  - Replicating portfolio does not capture illiquidity
  - Loans expose banks to "double runs"
    (47% loans have maturity $<$3 months $\Rightarrow$ likely credit lines)
- Illiquidity used to rationalize the underperformance of loans in the replicating portfolio

  "as expected the aggregate bank loan portfolio performs well relative to the passive capital market benchmark..."