Liquidity Risk in Corporate Bond Returns

Viral Acharya, Yakov Amihud, and Sreedhar Bharath

Discussion

Ilya A. Strebulaev
Stanford GSB

October 2010

Structure of the Paper

- Main question: Can liquidity explain corporate bond returns
- Data needed
  - Long-term corporate bond returns
  - Liquidity and other explanatory factors
- Econometric specifications
  - Time-series regressions
  - Regime-switching time-series regressions
- Extensions:
  - Economic identification of regimes
  - Out-of-sample regime predictions
  - Out-of-sample return predictions
  - Regime-conditional flight to liquidity

Data

- Bond returns
  - 1971–1996: Monthly LB FID (Warga)
  - 1997–2009: ML (Schaefer and Strebulaev)
  - Aggregated, value-weighted into rating classes: IG and non-IG (J)
- Explanatory factors
  - Non-liquidity factors (taken from FF)
    - TERM: the difference between long-term and short-term risk-free bond returns
    - DEF: the difference between return on EW portfolio of all corporate bonds and average return on government bonds
  - Liquidity factors
    - Stock illliquidity (SILLIQ): EW average of ratio of absolute stock return to its dollar volume
    - Bond illiquidity (BILLIQ): EW quoted bid-ask spread on on-the-run short maturity treasuries

Econometric Specification

- Time-series bond regressions

$$R_{j,t} = X_t \beta_j^k + \epsilon_{j,t}^k \tag{1}$$

where: j: IG or J; k: regime 1 or 2, X: constant and four variables

- Regimes: Discrete asymmetric Markov switching process
  - Estimated as in Hamilton (1994), by MLE

Results

- Asymmetric dependence on liquidity
  - IG: returns $\uparrow$ when liquidity measures $\downarrow$
  - J: returns $\downarrow$ when liquidity measures $\downarrow$
  - Effect particularly strong in the bad regime
- Bad regime is identified by various macro/financial parameters
- Some predictability of regimes/returns out-of-sample

Regression specification

- Variables which (could) matter (Schaefer and Strebulaev)
  - Level of risk-free returns (TERM picks up the effect)
  - Aggregate stock returns (particularly important for J)
  - FF HML/SMB factors
  - VIX (also picking up liquidity?)
- Question: would S/BILLIQ still matter when control for the above?
- Estimating regime-switching model:
  - Unclear how p and q (probabilities of changing states) are estimated
  - Result: p and q are very large (0.95): both regimes are almost equally persistent
  - Question: Bar regimes are likely to be much less persistent?
  - Question: Are regimes the same for IG and J regressions?

Further Comments

- Identification of regimes: not surprising?
  - "Bar" regimes are associated with higher volatility
  - Higher volatility is explained by macro/finance parameters
  - Question: If take volatility of the stock/bond market returns as indicator, would results be very similar?
- Changing nature of corporate bond market
  - 1971-early 80s: Js are all fallen angels
  - 1980s-now: substantial fraction of Js are OJI
  - Question: How would the results change if reports for subperiods?