

Disentangling Credit Spreads and Equity Volatility

Author: Adrien d'Avernas

Discussion: Fabrice Tourre

University of Chicago

March 2017

Research Question

- ▶ What are the forces driving credit spreads?
 - ▶ Default risk?
 - ▶ Stochastic discount factor?
 - ▶ Liquidity?

- ▶ Which shocks were important in explaining credit spread throughout the financial crisis?
 - ▶ Firms' cashflow levels?
 - ▶ Idiosyncratic cashflow volatility?
 - ▶ Aggregate cashflow volatility?
 - ▶ Risk prices?

Approach and Contribution

- ▶ “State of the art” corporate default model: *Chen et al. 2015*
 - ▶ Markov-modulated geometric Brownian motion for cashflows
 - ▶ Long run risk SDF (agg. state s_t)
 - ▶ Liquidity friction in bond markets
 - ▶ Strategic default
 - ▶ “Calvo-style” upward leverage adjustment

- ▶ Calibration / Estimation
 - ▶ *Bansal & Yaron 2004* preference parameters
 - ▶ Idio. and agg. cashflow vol. $\sigma_{j,A}^I(s), \sigma_{j,A}^A(s)$ estimation
 - ▶ Hidden agg. Markov state $\{s_t\}$ estimation
 - ▶ Aggregate output vol. tied to aggregate cashflow vol.
 - ▶ State-dependent output growth and recovery rate estimation
 - ▶ Cashflow growth calibrated to match 8-yr default rate
 - ▶ Liquidity friction parameters calibrated

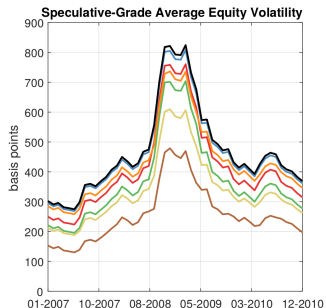
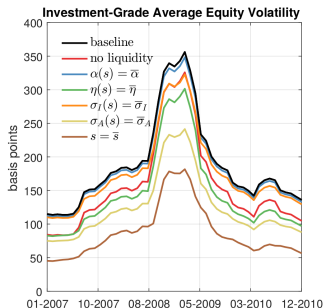
Results

► Credit spread decomposition

	Investment Grade	High-Yield
Default Risk	26%	52%
SDF	44%	32%
Liquidity	30%	16%

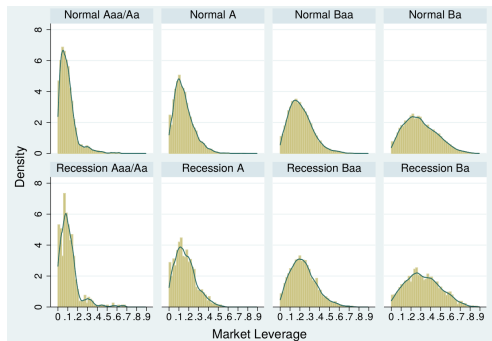
► Financial crisis contributors:

- Large increase in aggregate asset vol. $\sigma_{i,A}^A(t)$ (2 channels)
- Large drop in firm's cash-flow levels $Y_i(t)$



Thoughts on Future Research

- ▶ Disciplining capital structure decisions
 - ▶ Calvo-style capital structure adjustments? (*D'Avernas 2017*)
 - ▶ Fixed adjustment costs? (*Goldstein & Ju & Leland 2001*)
 - ▶ Smooth adjustments? (*De Marzo & He 2016*)



- ▶ Term structure of credit spreads and returns
- ▶ SDF estimation