Financial Intermediaries and the Yield Curve by Andrés Schneider

Discussion by James D. Hamilton
If productive capital (Lucas tree) is owned by financiers, it produces output $y_t$

$$\frac{dy_t}{y_t} = \mu dt + \sigma dW_t$$

If productive capital is owned by savers, it produces output $\omega y_t$ ($\omega = 0.85$)
Financiers borrow from savers to buy equity subject to financing constraint. (value of purchased equity cannot exceed $1/\kappa = 2.5$ times financier’s market valuation)
Normal times: constraint not binding, 
financiers hold all equity 
Crisis regime: financiers forced to liquidate, 
savers hold some equity 
Aggregate consumption declines because 
\[ \omega y_t < y_t \]
Crisis is temporary: $C_{t+N}$ will be higher than $C_t$
$U'(C_{t+N})$ will be lower than $U'(C_t)$

$U'(C_t) = E_t \beta^N U'(C_{t+N})(1 + r_t)(1 + r_{t+1})\cdots(1 + r_{t+N-1})$

$r_t$ temporarily high

$E_t r_{t+N}$ is decreasing in $N$

In crisis yield curve slopes down.
The deeper the crisis, the bigger the inversion.
State variable:

\[ x_t = \text{market value of financiers’ equity divided by market value of productive capital} \]

When \( x_t > x^* \approx 0.38 \), constraint not binding
Yields on different maturities as a function of state variable $x$
• Data: rising short rate and flattening yield curve come before recession
• Model: yield curve becomes more inverted as recession worsens
Real rates from Aruoba (JBES, forthcoming; FRB Phil)
Nominal short rates from Macaulay (1938)
Summary

• Extremely interesting and important paper
• Useful extensions:
  – Role for monetary policy
  – Dynamics of business cycles