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 ωy_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.

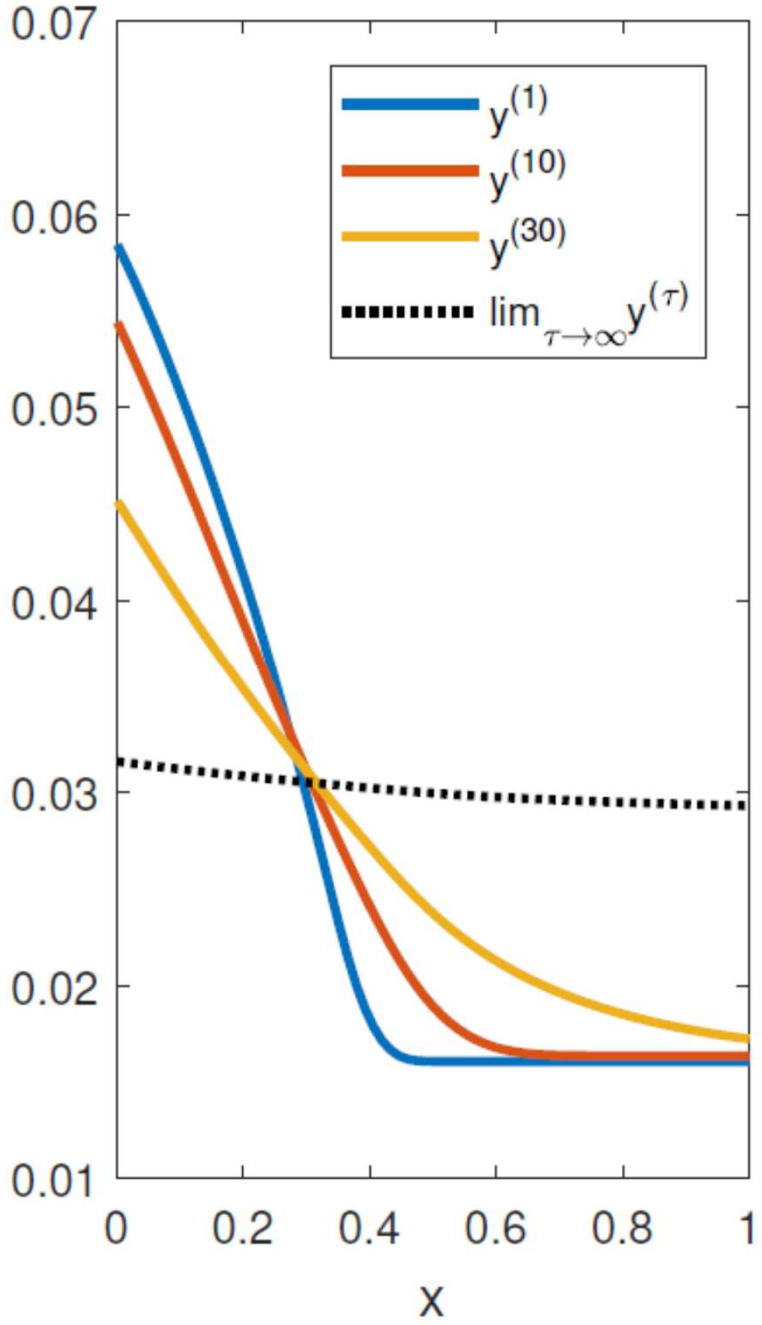
State variable:

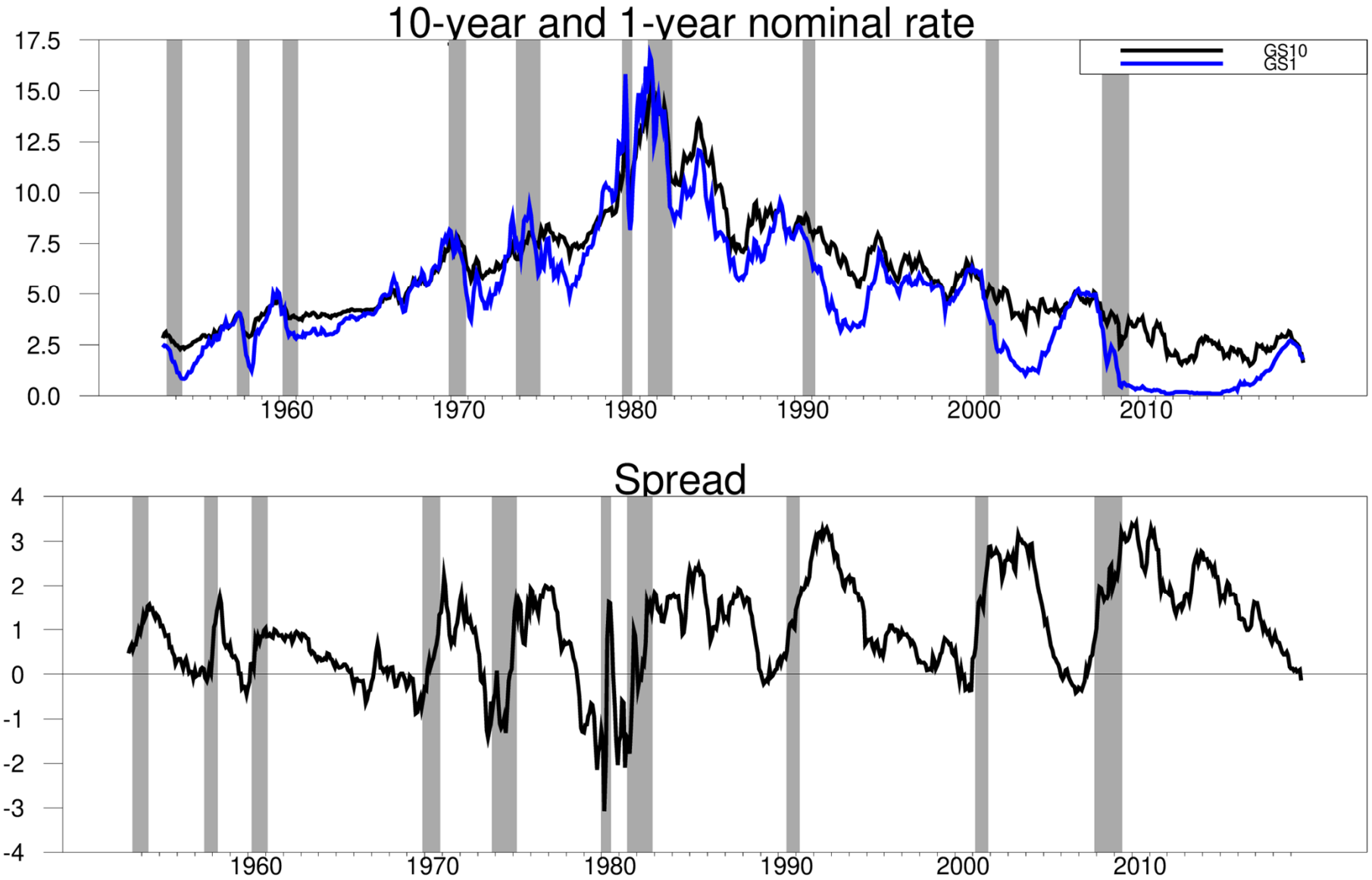
$x_t =$ market value of financiers' equity

divided by market value of productive capital

When $x_t > x^* \simeq 0.38,$ constraint not binding

Yields on different maturities as a function of state variable *x*




10-year and 1-year nominal rate
GS10
GS1
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
1960
1970
1980
1990
2000
2010
Spread
4
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2
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-4
1960
1970
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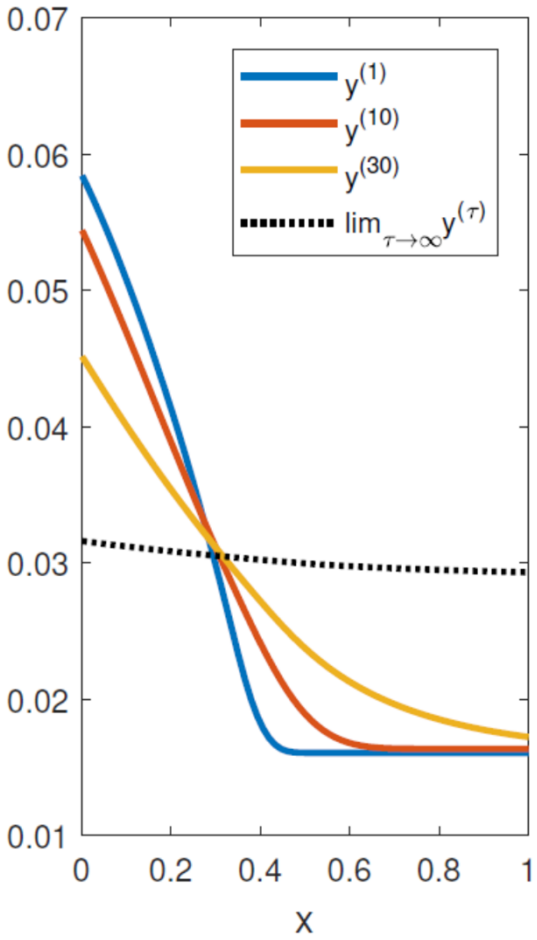
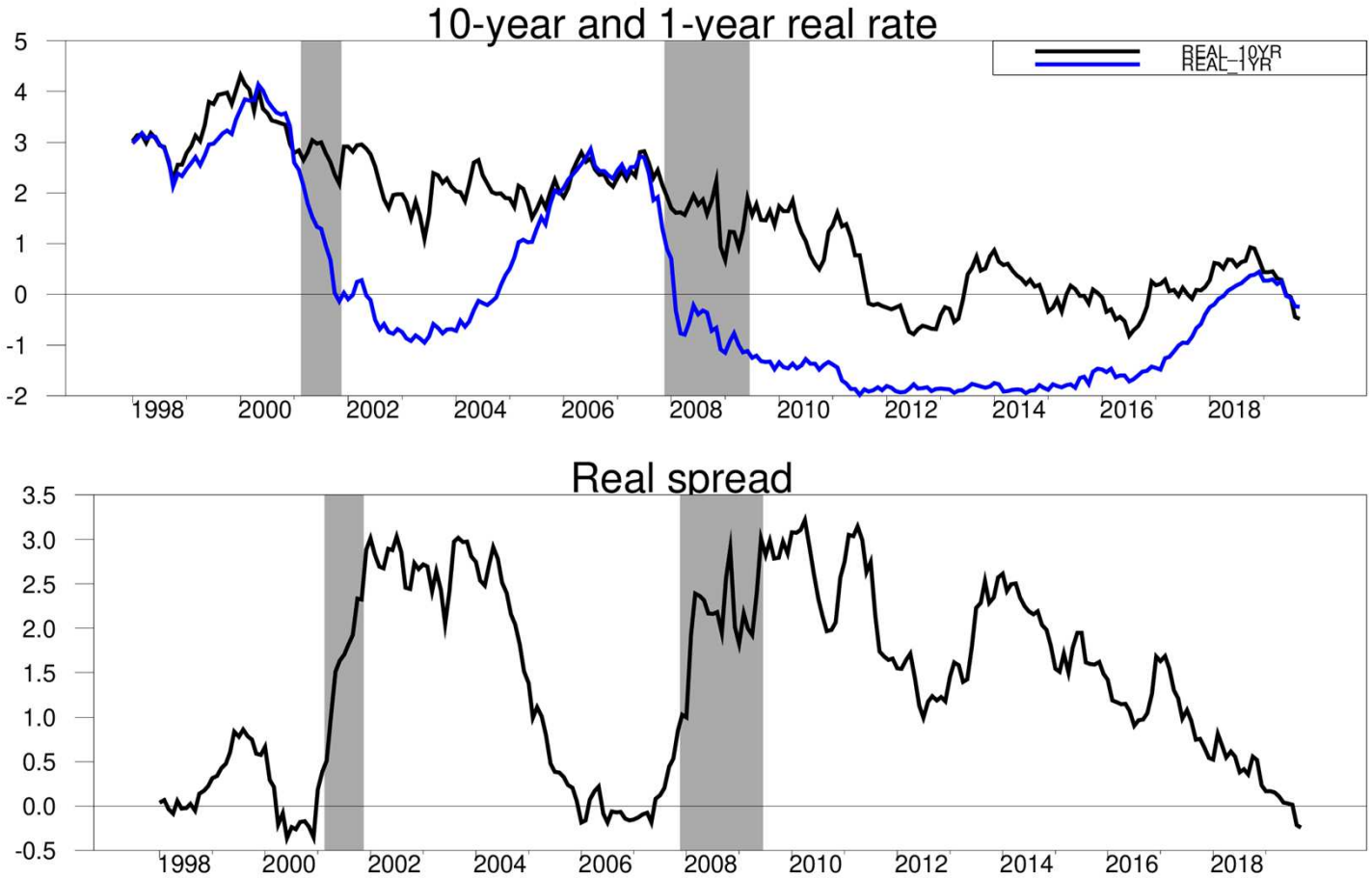
2010

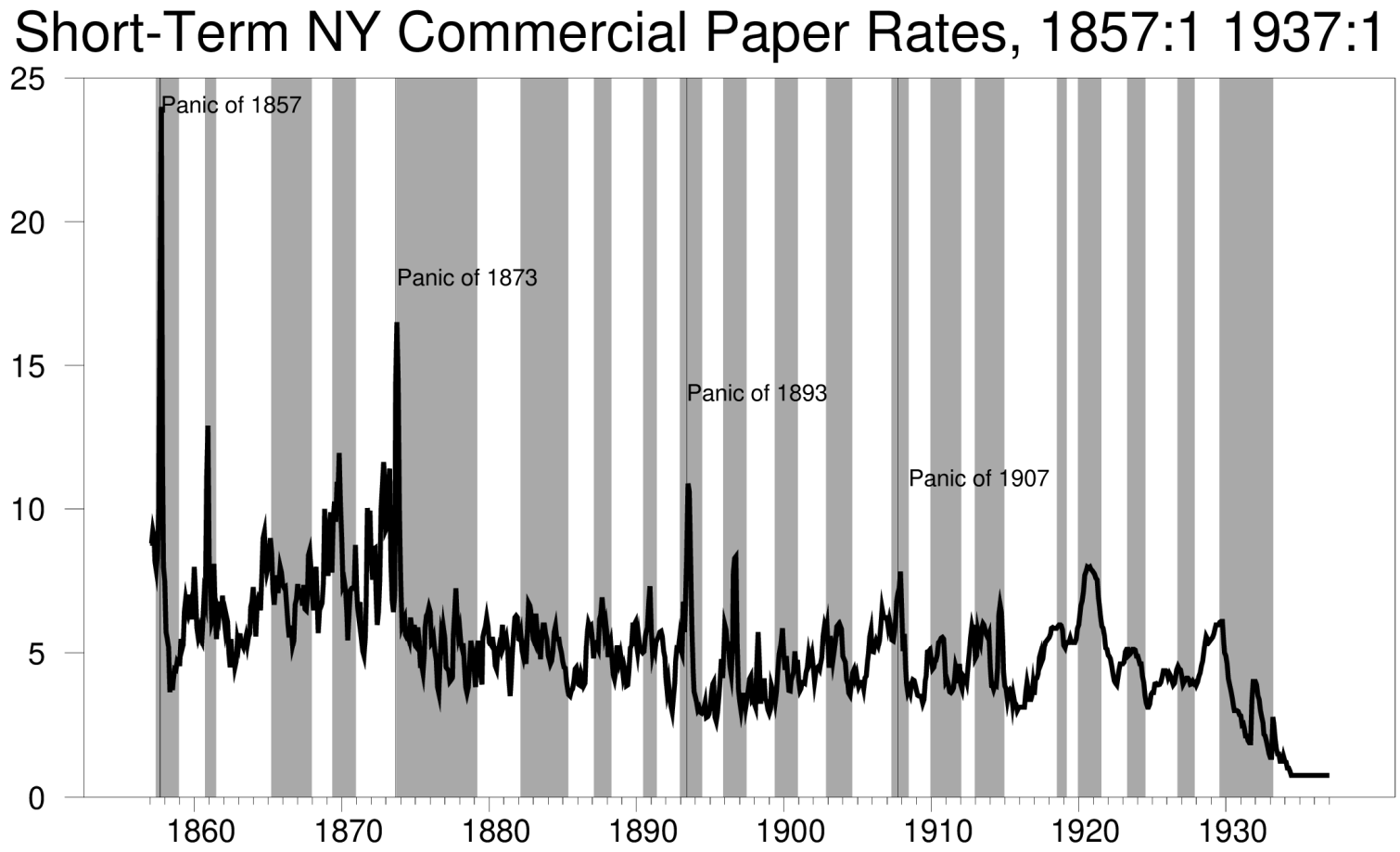


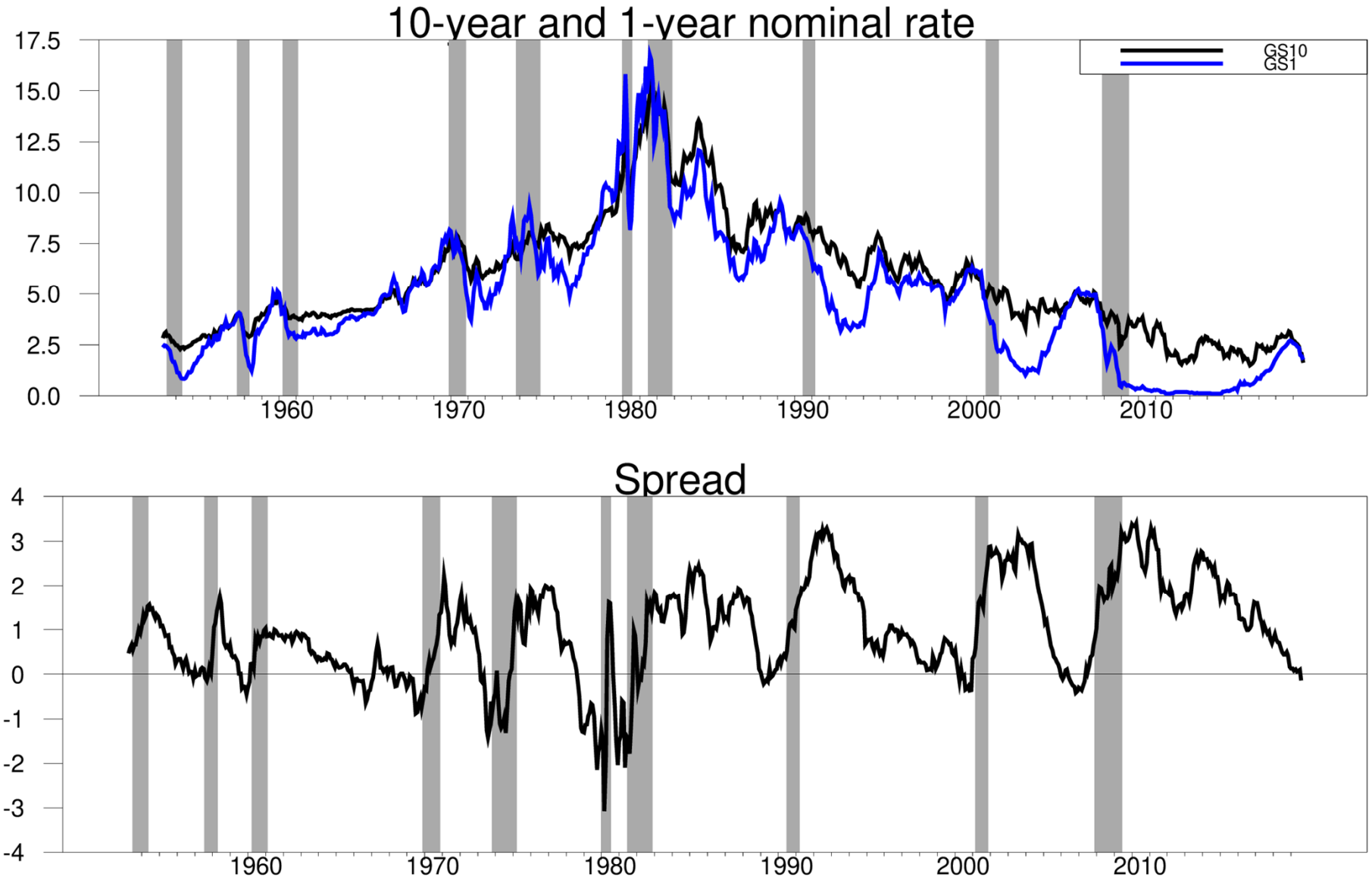
- Data: rising short rate and flattening yield curve come before recession
- Model: yield curve becomes more inverted as recession worsens

Real rates from Aruoba (JBES, forthcoming; FRB Phil)



Nominal short rates from Macaulay (1938)

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Summary

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