

Learning from Interest Rates: Implications for Stock-Market Efficiency

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Iterating the Model

- Baseline Assumptions:
 - Atomistic continuum of agents.
 - Symmetric Information
 - Noisy Fundamental
 - No Noise Traders
 - Agents care about time-2 consumption
 - Stock endowment, no bond endowment.
- Results:
 - Price is fully revealing in equilibrium.

With Noise Traders

- Assumptions:
 - Same as previous slide but also with noise traders.
- Results:
 - Price is not partially revealing in equilibrium.

With Limited Bond Supply

- Assumptions:
 - Same as previous slide but bond is in limited supply
- Results:
 - No income from stock, so no demand for bond.
 - Bond price is 0.

With Initial Dividend

- Assumptions:
 - Same as previous slide but stock gives initial dividend.
- Results:
 - $R_f = \frac{\theta_Y}{\pi_1 \theta_X}$.

Bond Supply Matters!

Chain of Logic:

- Observe the risk-free rate.
- Infer information about supply of risk-free and risky asset.
- Reduce impact of noise traders
- Improve price efficiency.

Initial thought: one signal from R_f must dissipate in value as stocks multiply?

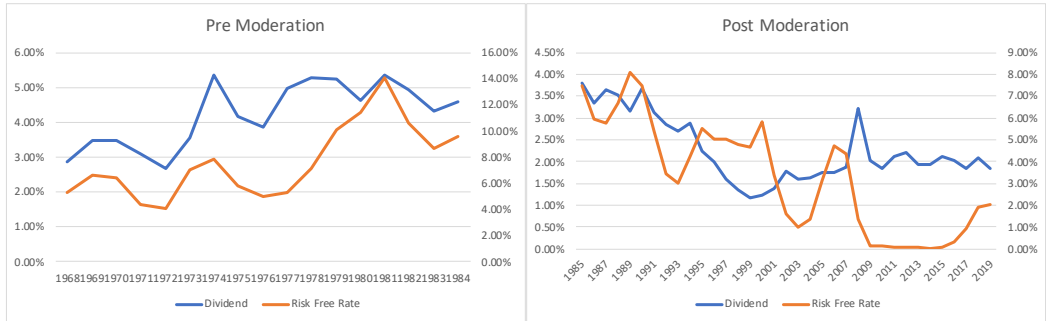
Interest Rate Level Also Matters!

- As θ_Y gets large, τ_{θ_Y} does not change.
- Therefore, *percentage* of bond noise is decreasing in supply.
- More precise information about bond supply can be inferred.
- More precise information about stock supply can be inferred.

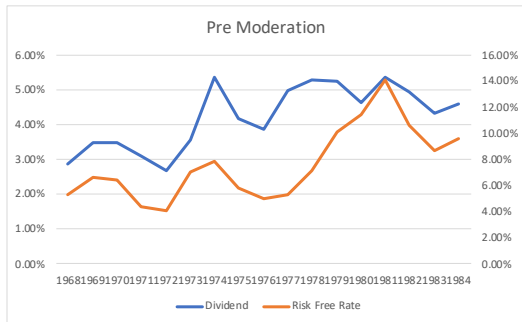
Is it Just the Interest Rate?

- Rewrite key equation: $R_f \Pi_1 = \frac{\theta_Y}{\theta_X}$.
- In all updating key term is $R_f \Pi_1$
- How do R_f and Π_1 correlate?

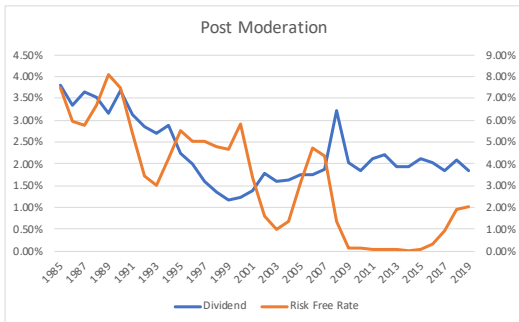
Evidence Has Two Sides



Evidence Has Two Sides

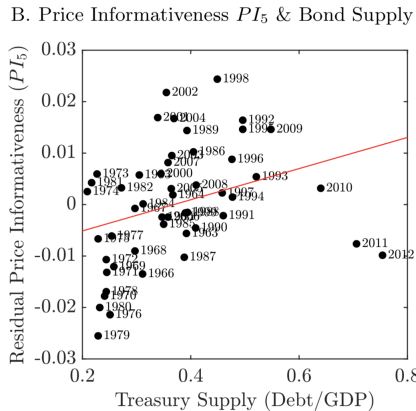
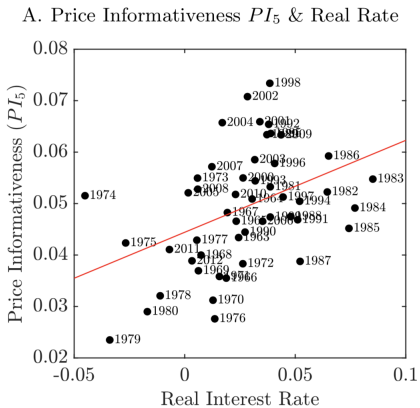


$$\rho = 0.52$$

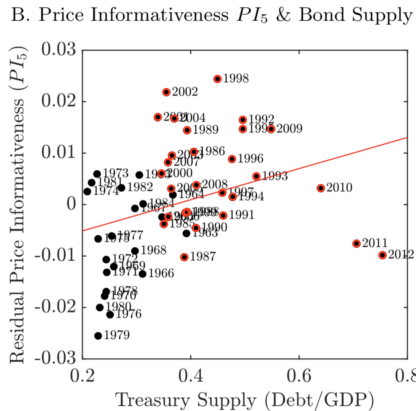
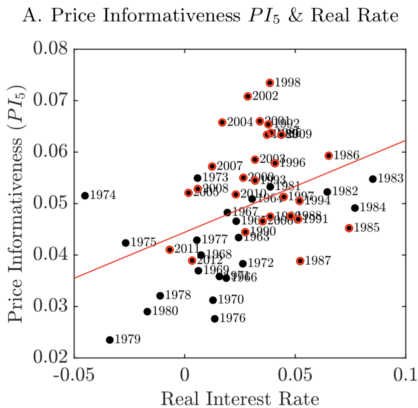


$$\rho = -0.15$$

Evidence Has Two Sides



Evidence Has Two Sides



Relevance of Great Moderation?

- Discretionary vs Commitment Monetary Policy
- Probably don't want to get into this dimension.
- Accounting for dividend yield fluctuations could get closer matches to data