An empirical investigation of affine term structure model uncertainty

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Discussion by
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Main results

Models calibrated on 1-month yield, and indistinguishable from estimated model, generate different yield curves
- but how different?
- and how good?

- robustness of 3-factor models calibrated on a broad cross-section
- but need both long and short yields
Single factor model, calibrated on 1-month yield, does not fit long-term yields
What to discuss?

Two themes

1. affine term structure models
   • Empirical analysis
   • Number and identification of factors

2. model uncertainty
   • How bad are simple models that from a statistical testing perspective seem misspecified?
Dealing with model uncertainty

• Different uncertainties
  • parameter estimates: sampling error
  • model misspecification: omitted variables
  • predictive failure: instability

• Simple models often perform well
  • forecasting, portfolio choice, risk management
  • tradeoff between bias and variance
  • robustness
  • more data → more complex models
  • all models are wrong

• More useful to think about consequences of decisions rather than statistical significance
On the term structure empirics

- A data issue: Fed H.15 data are constant maturity yields
  - ... and already interpolated: not all yields are independent data

- What are good factors?
  - individual yields all have measurement error
  - literature suggest principal components (Joslin, Singleton and Zhu, RFS, 2011)

- Is single factor model always bad?
  - depends on purpose: prediction, derivative pricing, monetary policy