Reverse Engineering the Yield Curve

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Prices of riskfree bonds in any arbitrage-free environment are governed by a pricing kernel: given a kernel, we can compute prices of bonds of any maturity we like. We use observed prices of multi-period bonds to estimate, in a log-linear theoretical setting, the pricing kernel that gave rise to them. The high-order dynamics of our estimated kernel help to explain why first-order, one-factor models of the term structure have had difficulty reconciling the shape of the yield curve with the persistence of the short rate. We use the estimated kernel to provide a new perspective on Hansen-Jagannathan bounds, the price of risk, and the pricing of bond options and futures.

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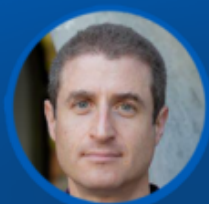
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Supported by the Alfred P. Sloan Foundation, the National Science Foundation, and the Lynde and Harry Bradley...

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