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Dynamics of the Shape of the Yield Curve

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In this article, we examine two broad questions about yield-curve behavior: How to interpret the steepness and curvature of the curve on a given day? And how does the yield curve evolve over time?

Yield curve shape reflects the market's rate expectations, required bond risk premiums, and convexity bias. We discuss various economic hypotheses and empirical evidence about the relative roles of these three determinants in influencing the curve steepness and curvature. We also discuss term structure models that describe the evolution of the yield curve over time and summarize relevant empirical evidence.

The key determinants of the curve steepness are the market's rate expectations and the required bond risk premiums. The pure expectations hypothesis assumes that all changes in steepness reflect the market's shifting rate expectations, while the risk premium hypothesis assumes that changes in steepness reflect only changing bond risk premiums. In reality, rate expectations and required risk premiums do influence the curve slope.

Historical evidence suggests that above-average bond returns, and not rising long rates, are likely to follow abnormally steep yield curves. Such evidence is inconsistent with the pure expectations hypothesis and may reflect time-varying bond risk premiums. Alternatively, the evidence may represent irrational investor behavior and the long rates' sluggish reaction to news about inflation or monetary policy.

The determinants of the yield curve's curvature have received less attention. It appears that curvature varies primarily with the market's curve reshaping expectations. Flattening expectations make the yield curve more concave (humped), and steepening expectations make it less concave or even convex (inversely humped).

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