An Empirical Analysis of the Curvature Factor of the Term Structure of Interest Rates

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Abstract

This work extends the strand of literature that examines the relation between the term structure of interest rates and macroeconomic variables. The yield curve is summarized by few latent factors (level, slope, and curvature) which are obtained through Kalman filtering. In this paper, we address the challenging issue of attributing an economic interpretation to the third unobservable component of the term structure, i.e. curvature. In particular, we find significant evidence suggesting that curvature reflects the cyclical fluctuations of the economy. Interestingly, this result holds in spite of whether the curvature factor is extracted from the nominal or the real term structure. A negative shock to curvature seems either to anticipate or to accompany a slowdown in economic activity. The curvature effect thus appears to complement the transition from an upward sloping yield curve to a flat one. Finally, a joint macro-econometric model for curvature and real activity is developed and estimated.

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in

Abstract

This work extends the strand of literature that examines the relation between the term structure of interest rates and macroeconomic variables. The yield curve is summarized by three latent factors which are obtained through Kalman filtering the Nelson-Siegel term structure model. In this paper we address the challenging issue of attributing a macroeconomic interpretation to the curvature factor finding evidence that curvature reflects the cyclical fluctuations of the economy. Interestingly, this result holds in spite of whether curvature is extracted from the nominal or the real term structure. A negative shock to curvature seems either to anticipate or to accompany a slowdown in economic activity. The curvature effect thus complements the transition from an upward sloping yield curve to a flat one.