

# Volatility and the Term Structure: Evidence from Interest Rate Derivatives

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## Abstract

Recent evidence on bond markets suggests that there are risk factors underlying changes in interest rate derivatives prices that are independent of those underlying shifts in the yield curve. The presence of *unspanned* factors seems puzzling because derivatives are based on the underlying interest rates. This paper shows that the factors extracted from interest rate derivatives prices are essential in forecasting yields out-of-sample, despite being poorly related to movements in the yield curve. More specifically, we bring in information about the term structure of implied volatility from derivatives data and we use it to model the yield curve as a six-dimensional parameter dynamic system. The forecasts generated by our model appear more accurate than various standard benchmark forecasts. Moreover our investigation proves to be interesting with respect to the extant literature, because of a higher data frequency and a longer sample period. As a by-product of our analysis, we obtain forecasts of volatility that can be useful for derivatives pricing and hedging purposes. Finally, our results are especially important in light of the general failure of affine term structure models for the purpose of forecasting.