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Interest Rate Uncertainty and the Value of Bond Call Protection

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Abstract

More

Abstract

This paper uses a model of the valuation of bonds bearing call options, together with observed market yields on callable bonds, to infer information about the uncertainty associated with interest rate expectations. A dynamic programming solution of the model simultaneously determines both the bond price and the issuer's optimal refunding strategy, given the relevant data describing the bond and the market's expectations of future interest rates. Application of the valuation model in reverse, for quarterly average data for 1969-76, generates a time series representing the uncertainty which the market associated with its expectations of future interest rates during this interval, given the then-prevailing yields on new issues of utility bonds and industrial bonds callable after 5 years and 10 years, respectively. This uncertainty, parameterized as the standard deviation of a truncated normal distribution, fluctuated between 1/2 percent and 3/4 percent between 1969 and early 1974, then rose to sharply higher levels from mid-1974 through mid-1975, and has fluctuated between 3/4 percent and 1 percent since late 1975.

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