

ESTIMATION OF DISCRETELY SAMPLED DIFFUSION PROCESSES OF THE SHORT RATE

BY TONY S. WIRJANTO
DEPARTMENT OF ECONOMICS
UNIVERSITY OF WATERLOO
WATERLOO, ONTARIO, N2L 3G1
CANADA

THIS VERSION: AUGUST 2005

ABSTRACT. This paper uses simulated maximum-likelihood approach to estimate several nested versions of one and two-factor models of the term-structure of interest rate based on weekly recorded observations of Canadian three-month Treasury bill rate for the period from January 3, 1962 to November 15, 2003. According to the values of the models' log-likelihoods, two-factor models consistently outperform one-factor models for the data under study. In addition, according to the Bayesian Information Criterion, the two-factor stochastic volatility model with a constant drift term and a simple nonlinear volatility term performed the best for the data at hand.