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Qi Fu* (umacfuqi@gmail.com), Faculty of Business Administration, University of Macau, Macau, 999078, Peoples Rep of China. *Valuing Callable Bonds Based on Monte Carlo Simulation Techniques with Least-Squares Approach.*

A callable bond is a bond that allows the issuer to buy back the bonds from the bond holders at pre-specified prices on the pre-specified call dates. Therefore, a callable bond is a straight bond embedded with a call of European option (a single call date) or Bermudan option (several call dates). However, this option is an integral part of a bond, and cannot be traded alone, and hence, its prices cannot be observed. Thus, the callable bond pricing must be involved in the pricing problem of the corresponding option.

In this paper, a Monte Carlo method via least-squares approach, which is based on some new simulation techniques proposed recently, is presented to numerically price the callable bond with several call dates and notice under the Cox-Ingersoll-Ross (CIR) interest rate model. The numerical experiments show that this method works well for callable bond under the CIR interest rate model and can value break-even interest rate more precisely than the pure Monte Carlo method proposed before. (Received September 19, 2012)