1116-VM-2479 **Tao Pang** and **Azmat Hussain*** (ahussai@ncsu.edu), North Carolina State University, 2152 Burlington Labs, 2500 Stinson Drive, Raleigh, NC 27695. *An Infinite Time Horizon Portfolio Optimization Model with Delays.*

In this paper we consider a portfolio optimization problem of the Merton's type over an infinite time horizon. Unlike the classical Markov model, we consider a system with delays. The problem is formulated as a stochastic control problem on an infinite time horizon and the state evolves according to a process governed by a stochastic process with delay. The goal is to choose investment and consumption controls such that the total expected discounted utility is maximized. Under certain conditions, we derive the explicit solutions for the associated Hamilton-Jacobi-Bellman (HJB) equations in a finite dimensional space for exponential, logarithmic and power utility functions. For those utility functions, verification results are established to ensure that the solutions are equal to the value functions, and the optimal controls are derived, too. (Received September 22, 2015)