

1163-90-449

**Lynesia R Taylor\*** (lrtaylo2@ncsu.edu). *Portfolio Rebalancing with Illiquid Assets*.

Consider a portfolio consisting of three types of assets, a bond, a liquid risky asset, and an illiquid risky asset. Liquid assets can be traded continuously whereas an illiquid asset can only be traded at specific pre-specified times or randomly. The investor's liquid and illiquid wealth are modeled as stochastic differential equations (SDE). We consider a control problem governed by these SDEs. We will model the rebalancing of the portfolio, transferring between liquid and illiquid wealth, as an impulsive control problem. Using a dynamic programming approach we will derive an integro-differential equation to characterize the solution as well as an explicit form for the value function. Numerical examples are given to validate the correctness for our results. (Received September 07, 2020)