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THE OPTIMAL ASSET ALLOCATION PROBLEMFOR AN INVESTOR THROUGH UTILITY MAXIMIZATION

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Abstract

This paper studies the optimal asset allocation problem for an investor through utility maximization. A power utility function is adopted for this sake, and the model takes into account, taxes, and dividends and transaction costs. The assets available in the market are assumed to be risky asset, whose price follows a geometric Brownian motion, and riskless asset, given by the money market account. Interest rates are deterministic, and increase linearly over time with a slope equal to half the volatility of the risky asset. Transaction costs and Taxes are assumed to be proportional to the whole investment in the risky asset.

Keywords: Dividend, Optimal investment, Tax, Transaction cost, Power Utility function, Hamilton-Jacobi-Bellman (HJB) equation.

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