

Abstract: This paper studies dynamic asset allocation with interest rate risk and several sources of ambiguity. The market consists of a risk-free asset, a zero-coupon bond (both determined by a Vasicek model), and a stock. There is ambiguity about the volatility of the short-term interest rate and the bond, the volatility of the stock, the correlation between both, and the expected excess return on the stock. The ambiguity about the volatility of the short-term interest rate endogenously leads to an ambiguous expected excess return on the bond. The investor allocates wealth between the risk-free asset, the bond, and the stock. The investor is ambiguity averse and has constant relative risk aversion utility. The optimal investment problem can be solved in closed-form under certain market conditions related to the ambiguous quantities. The conditions correspond to typical market situations as shown in a numerical implementation of the results. Ambiguity generally decreases the investment in bonds and stocks, where the different sources of ambiguity have different impacts, but does not alter the demand for hedging interest rate risk, leading to more reasonable investment strategies in practice. The solution method for the optimal investment problem is based on an extension of the martingale optimality principle.