We consider the problem of optimal investment and consumption when the investment opportunity is represented by a hedge-fund charging proportional fees on profit. The value of the fund evolves as a geometric Brownian motion and the performance of the investment and consumption strategy is measured using discounted power utility from consumption on infinite horizon. The resulting stochastic control problem is solved using dynamic programming arguments.

We show by analytical methods that the associated Hamilton-Jacobi-Bellman equation has a smooth solution, and then obtain the existence and representation of the optimal control in feedback form using verification arguments. The presentation is based on joint work with Karel Janecek.