

Portfolio Choice in Markets with Contagion

Yacine Ait-Sahalia

Princeton University

(Dated: November 15, 2012)

We consider the problem of optimal investment and consumption in a class of multidimensional jump-diffusion models in which asset prices are subject to mutually exciting jump processes. This captures a type of contagion where each downward jump in an asset's price results in increased likelihood of further jumps, both in that asset and in the other assets. We solve in closed-form the dynamic consumption-investment problem of a log-utility investor in such a contagion model, prove a theorem verifying its optimality and discuss features of the solution, including flight-to-quality. The exponential and power utility investors are also considered: in these cases, the optimal strategy can be characterized as a distortion of the strategy of a corresponding non-contagion investor.