Financial crisis: pension funds asset allocation strategies

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Abstract

It has been debated that pension funds should have limitations on their asset allocation, based on the risk profile of the different financial instruments available on the financial markets. This issue proves to be highly relevant at times of market crisis, when a regulation establishing limits to risk taking for pension funds could prevent defaults. In this paper we present a framework for monitoring the risk level and re-balancing the pension portfolio accordingly. By assuming that asset returns can be described by a multifractional Brownian motion, we evaluate the risk using the time dependent Hurst function $H(t)$ which models volatility. Given fixed risk level thresholds, should $H(t)$ reach them, we implement an automatic optimization procedure that rebalances the portfolio and minimizes the risk by varying the asset composition.

Keywords: pension funds, risk control, multifractional Brownian motion.

J.E.L classification: C22, G11, G23.

References