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REGIME SWITCHING GARCH MODELS

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Abstract

We develop univariate regime-switching GARCH (RS-GARCH) models wherein the conditional variance switches in time from one GARCH process to another. The switching is governed by a time-varying probability, specified as a function of past information. We provide sufficient conditions for stationarity and existence of moments. Because of path dependence, maximum likelihood estimation is infeasible. By enlarging the parameter space to include the state variables, Bayesian estimation using a Gibbs sampling algorithm is feasible. We apply this model using the NASDAQ daily return series.

Keywords: GARCH, regime switching, Bayesian inference.

JEL Classification: C11, C22, C52.

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