



THE UNIVERSITY OF  
**CHICAGO**

Department of Statistics  
**MASTER'S THESIS PRESENTATION**

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**Component-Driven Regime-Switching Volatility**

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117 Eckhart Hall, 5734 S. University Avenue

**ABSTRACT**

We review a new class of regime-switching volatility models, termed the component-driven regime-switching (CDRS) model, that is characterized by high dimensional state spaces, parsimonious transition matrices, and ARMA dynamics for the log volatility process. This combination of features is achieved by assuming that we can decompose the Markov chain that describes regime dynamics into a number of two-state component chains that evolve independently through time. The parameters of the models are estimated by maximum likelihood and its accuracy are assessed by numerical simulations. Daily returns on Microsoft share and the FTSE 100 index are used to estimate the CDRS models. We find that for both data set CDRS models with low-order ARMA dynamics perform well.

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