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Dong Li, Xingfa Zhang, Ke Zhu, Shiqing Ling

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The ZD-GARCH model: A new way to study heteroscedasticity

BY DONG LI

Center for Statistical Science and Department of Industrial Engineering, Tsinghua University

malidong@tsinghua.edu.cn

XINGFA ZHANG

Department of Statistics, Guangzhou University

xingfazhang@hotmail.com

KE ZHU

Department of Statistics and Actuarial Science, University of Hong Kong

mazhuke@hku.hk

AND SHIQING LING

Department of Mathematics, Hong Kong University of Science and Technology

maling@ust.hk

ABSTRACT

This paper proposes a first-order zero-drift GARCH (ZD-GARCH(1, 1)) model to study conditional heteroscedasticity and heteroscedasticity together. Unlike the classical GARCH model, the ZD-GARCH(1, 1) model is always non-stationary regardless of the sign of the Lyapunov exponent γ_0 , but interestingly it is *stable* with its sample path oscillating randomly between zero and infinity over time when $\gamma_0 = 0$. Furthermore, this paper studies the generalized quasi-maximum likelihood estimator (GQMLE) of the ZD-GARCH(1, 1) model, and establishes its strong consis-

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