

Quantile Autoregressive Distributed Lag Model with an Application to House Price Returns

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Abstract

This paper studies quantile regression in an autoregressive dynamic framework with exogenous stationary covariates. Hence, we develop a quantile autoregressive distributed lag model (QADL). We show that these estimators are consistent and asymptotically normal. Inference based on Wald and Kolmogorov-Smirnov tests for general linear restrictions is proposed. An extensive Monte Carlo simulation is conducted to evaluate the properties of the estimators. We demonstrate the potential of the QADL model with an application to house price returns in the United Kingdom. The results show that house price returns present a heterogeneous autoregressive behavior across the quantiles. The real GDP growth and interest rates also have an asymmetric impact on house prices variations.

Key Words: quantile autoregression, distributed lag model, autoregressive model

JEL Classification: C14; C32

Words: 7895

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