

AR ESTIMATION FROM DATA WITH MEASUREMENT ERROR

A study by

JESSA S. LOPEZ

In partial fulfillment of the requirements for the degree of

Master of Science in Statistics

School of Statistics
University of the Philippines
Diliman, Quezon City

June 2017

ABSTRACT

Measurement error can modify the structure of a data, and worse, distorts the distribution of the data generating process (Chesher, 1991). We present three methods based on spline smoothing and bootstrap in estimating an autoregressive process with measurement error. Simulation studies show that the methods are capable of estimating the parameter of interest more than the usual estimation even when the data is measured with error.

Keywords: measurement error, spline smoothing, GCV, bootstrap, simulation, time series data