# Parameter Approximations for Quantile Regressions with Measurement Error

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July 21st 2001

Abstract.    The impact of covariate measurement error on quantile regression functions is investigated using a small variance approximation. The approximation shows how the error contaminated and error free quantile regression functions are related, a key factor being the distribution of the error free covariate. Exact calculations probe the accuracy of the approximation. The order of the approximation error is unchanged if the error free covariate density is replaced by the error contaminated density. It is then possible to use the approximation to investigate the sensitivity of estimates to varying amounts of measurement error.

Keywords: measurement error, parameter approximations, quantile regression.