On the Jackknife for Regression Quantiles

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A recent paper: “The jackknife’s edge: Inference for censored regression quantiles” (Portnoy, 2014) showed that the delete-d jackknife enjoyed a serious advantage for inference on censored regression quantiles, especially when the probability argument was not too far from its upper limit. In fact, it appeared that the jackknife also worked much better than expected even for small probability arguments (that is, for very little censoring). This suggested looking at the jackknife for the usual (uncensored) regression quantiles. After briefly summarizing earlier results, some simulation results will be presented. These suggest that indeed the delete-d jackknife works remarkably well when compared with the best methods available in the quantreg R-package. Here d could be set to exactly twice the square root of n, the sample size; and so no empirical selection of the tuning parameter was needed (at least for n not very large). The reasons for this relatively favorable result are less clear than for the case of censored regression quantiles, but the results suggest the need for further (more general) investigation.

References