

In this paper we investigate several methods of determining confidence bands for shrinkage (Stein rule) estimators. Although it has been known for many years that these estimators dominate least squares for the linear regression model, their empirical application has been limited by the inability to estimate confidence bands. We investigate two general techniques of generating confidence intervals: Those derived from Edgeworth expansions and those based on the bootstrap. Several ways of implementing the bootstrap are considered. We use a simplified linear regression model and parametric bootstrap in the Monte Carlo study. Our results suggest that Efron's bias correction method with acceleration generates $(1 - \alpha)$ -level confidence bands with the smallest width while still providing $(1 - \alpha)\%$ coverage over the Monte Carlo repetitions. The percentile method using a single bootstrap also performs well, with average bands slightly larger than the accelerated bias correction technique. On the other hand, approximations based on Edgeworth expansions do not work well for shrinkage estimators. We then apply the bootstrap techniques to generate bands for one step ahead predictions of GNP growth rates from a leading-indicators model. We consider a new shrinkage estimator for the leading-indicators model, and generate one-period ahead forecasts and bootstrap confidence intervals using the percentile method with a single bootstrap. The results of this study, together with previous work, show that simple percentile bootstrap confidence bands work well enough to support empirical applications of shrinkage methods.