

This example demonstrates the use of R for analysis of complex sample survey data with bootstrapping for quantile regression. This approach is an excellent alternative to a quantile regression survey command and utilizes a number of useful features of R. The data used in this example is the API data. (The authors are most grateful to Thomas Lumley for providing the idea and syntax for this example.) See the R documentation for more details.

The code below first loads the API data set:

```
> data(api)
```

set up complex sample variables including id, weights, data and fpc:

```
> dclus1<-svydesign(id=~dnum, weights=~pw, data=apiclus1, fpc=~fpc)
```

set up bootstrap with use of dclus1 as survey replicate design with type as bootstrap with 100 replicates:

```
> bclus1<-as.svrepdesign(dclus1,type="bootstrap", replicates=100)
```

execution of a quantile regression (median) with bootstrapped replicates/standard errors:

```
> withReplicates(bclus1, quote(coef(rq(api00~api99, tau=0.5, weights=.weights))))
```

Full code and results:

```
> data(api)
```

```
> dclus1<-svydesign(id=~dnum, weights=~pw, data=apiclus1, fpc=~fpc)
```

```
> bclus1<-as.svrepdesign(dclus1,type="bootstrap", replicates=100)
```

```
> withReplicates(bclus1, quote(coef(rq(api00~api99, tau=0.5, weights=.weights))))
```

	theta	SE
(Intercept)	87.78505	19.4667
api99	0.91589	0.0294