

```

#####
> # PENALIZED ESTIMATOR QUANTILE REGRESSION
> # Example: Balanced Panel
#####
> taus=c(0.1,0.25,0.5,0.75,0.9)
> m=length(taus)
> w=rep(1/m,m)
> #

> set.seed(14)
> n=50
> T=5
> s <- rep(1:n,each=T)
> n <- length(unique(s))
> nT <- length(s)
> Z <- model.matrix(s~as.factor(s)-1)
> x <- exp(rnorm(n*T))
> X <- cbind(1,x)
> y <- rep(rnorm(n),each=T) + rnorm(n*T)
> XY <- cbind(y,X)
> p <- length(taus)*dim(X)[2]+dim(Z)[2]
> #
> # Here we tentatively select the value of lambda
> # It can be estimated as Lamarche (2010, JoE)
> #
> lambda=1
> #
> coef.test <- rq.fit.panel(X,y,s=s,w=w,taus=taus,lambda=lambda)$coef
> #
> R=25
> Bb <- matrix(0,R,p)
> for (i in 1:R)
+ {
+ r <- split(seq(s), s)
+ q <- sample(r, replace = TRUE)
+ sb <- unlist(q, use.names = FALSE)
+ XYb <- XY[sb,]
+ Bb[i,] <- rq.fit.panel(XYb[,-1], matrix(XYb[,1]),s=s,w=w,taus=taus,lambda=lambda)$coef
+ }
> cov.test <- cov(Bb)
> se.test <- sqrt(diag(cov.test))
> #
> round(coef.test,2)
[1] -1.74 0.03 -1.07 -0.04 -0.32 -0.08 0.59 -0.14 1.07 -0.02 1.86 -0.92 0.66 1.08 0.00 -1.95 -0.24 0.00 -1.14 -0.59 0.15 0.00
0.00 0.00 -0.04 1.26 0.00 0.01
[29] 0.98 0.03 0.77 -0.02 0.00 -0.99 -0.03 0.00 0.00 0.00 0.20 0.90 -0.04 -0.54 -0.23 -1.44 1.02 -0.47 2.83 0.00 0.62 0.69 -
0.56 0.03 -0.08 -1.09 0.00 -1.00
[57] -0.02 0.02 1.14 -1.27
> round(se.test,2)
[1] 0.21 0.06 0.14 0.06 0.15 0.06 0.15 0.08 0.25 0.13 0.70 0.65 1.03 0.80 0.70 0.78 0.76 0.74 0.71 0.73 0.76 0.65 0.99 0.78 0.74
0.82 0.94 1.21 1.18 0.95 0.70 0.63
[34] 0.80 0.86 0.87 0.95 1.02 0.70 0.95 0.84 0.67 1.04 0.72 0.67 0.91 0.75 0.90 0.73 0.67 0.89 0.64 0.90 0.90 0.93 0.96 0.84 0.88
0.65 0.99
>
>
```