Package 'truncreg'

January 2, 2012

Version 0.1-1

Date 2009-02-03

Title Truncated Regression Models

Author Yves Croissant <yves.croissant@let.ish-lyon.cnrs.fr>

Maintainer Yves Croissant <yves.croissant@let.ish-lyon.cnrs.fr>

Depends R (>= 1.8.0), maxLik

Description Estimation of models for truncated variables by maximum likelihood

License GPL (>= 2)

URL http://www.r-project.org

Repository CRAN

Date/Publication 2009-02-03 20:15:17

R topics documented:

`truncreg` *Models for truncated regressions*

Description

Estimation of models with truncated explanatory variables by maximum likelihood

Usage

```
truncreg(formula, data, subset, weights, na.action,
       point = 0, direction = "left", ...)
## S3 method for class 'truncreg'
print(x, digits = max(3, getOption("digits") - 2),
    width = getOption("width"), ...)
## S3 method for class 'truncreg'
summary(object, ...)
## S3 method for class 'summary.truncreg'
print(x, digits = max(3, getOption("digits") - 2),
    width = getOption("width"), ...)
## S3 method for class 'truncreg'
logLik(object, ...)
## S3 method for class 'truncreg'
vcov(object, ...)
## S3 method for class 'truncreg'
residuals(object, ...)
## S3 method for class 'truncreg'
fitted(object, ...)
```

Arguments

x, object	an object of class truncreg
formula	a symbolic description of the model to be estimated,
data	the data,
subset	an optional vector specifying a subset of observations,
weights	an optional vector of weights,
na.action	a function which indicates what should happen when the data contains 'NA's,
point	the value of truncation (the default is 0),
direction	the direction of the truncation, either "left" (the default) or "right",
digits	the number of digits,
width	the width of the printing,
...	further arguments.

Details

The model is estimated with the maxLik package and the Newton-Raphson method, using analytic gradient and hessian.

Value

An object of class "truncreg", a list with elements:

coefficients	the named vector of coefficients,
vcov	the variance matrix of the coefficients,

`fitted.values`	the fitted values,
`logLik`	the value of the log-likelihood,
`gradient`	the gradient of the log-likelihood at convergence,
`model`	the model frame used,
`call`	the matched call,
`est.stat`	some information about the estimation (time used, optimisation method),

Author(s)

Yves Croissant

References

Hausman, J.A. and D.A. Wise (1976) "The evaluation of results from truncated samples: the New-Jersey negative invome tax experiment", *Annals of Economic ans Social Measurment*, 5, pp.421–45.

Hausman, J.A. and D.A. Wise (1976) "Social experimentation, truncated distributions and efficient estimation", *Econometrica*, 45, pp.421–5.

Examples

```
## Simulate a data.frame
n <- 10000
sigma <- 4
alpha <- 2
beta <- 1
x <- rnorm(n,0,2)
eps <- rnorm(n)
y <- alpha+beta*x+eps*sigma
d <- data.frame(y = y, x = x)

## Use a truncated subsample
dl1 <- subset(d, y>1)

## Use truncreg to estimate consistently the model

truncreg(y~x, dl1, point = 1, direction = "left")
```

Index