Package ‘truncreg’

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Title Truncated Regression Models

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Depends R (>= 1.8.0), maxLik

Description Estimation of models for truncated variables by maximum likelihood

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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)

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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")
```

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