Package "MEsreg"

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MEregress	**Generalized Maximum Entropy for estimating linear regression**

Description

This function is used to estimate the linear regression

Usage

```
MEregress(y,x,number,Z,V)
```

Argument

y	vector of dependent variable
x	independent variable
number	number of supports i.e. "3", "5" and "7"
Z	bound of coefficient
V	bound of error

Details

Entropy refers to the amount of uncertainty represented by a discrete probability distribution. The maximum entropy method was proposed by Jaynes (1957) and developed in the early 1990s by Golan, Judge, and Miller (1996) for estimating the unknown probabilities of a discrete probability distribution. This estimator uses the entropy-information measure of Shannon (1948) to recover those unknown probability distributions of underdetermined problems. This function is a simple estimation function for one covariate.

Value

beta	intercept,beta
maxent	Maximum entropy

How to cite this package

Author(s)

Woraphon Yamaka

Example

```r
library("Rsolnp")
set.seed(1)
n=100
e=rnorm(n)
x0=rnorm(n)
x1=rnorm(n)
y=1+2*x0+3*x1+e
x=cbind(x0,x1)
MEregress(y,x,number="3",Z=10,V=5)
```

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MEregress	Generalized Maximum Entropy for estimating linear regression

Description

GME inference method for the smooth transition kink regression model with under kink point. The advantage of GME method is that it is robust even when we have ill-posed or ill-conditioned problems, and thus, it has higher estimation accuracy and robustness, especially when the probability distribution of errors is unknown

Usage

```
MEskink(y,x,number,Z,V)
```

Argument

y	vector of dependent variable
x	one dimension of dependent variable
number	number of supports i.e. "3", "5" and "7"
Z	bound of coefficient
V	bound of error

Details

Entropy refers to the amount of uncertainty represented by a discrete probability distribution. The maximum entropy method was proposed by Jaynes (1957) and developed in the early 1990s by Golan, Judge, and Miller (1996) for estimating the unknown probabilities of a discrete probability distribution. This estimator uses the entropy-information measure of Shannon (1948) to recover those unknown probability distributions of underdetermined problems. This function is a simple estimation function for one covariate.

Value

beta	intercept,beta_regime1,beta_regime2
threshold	Kink point
smooth	smooth parameter
maxent	Maximum entropy

How to cite this package

Author(s)

Woraphon Yamaka

Example

```
set.seed(1)
n=100
thres=3
gam=1.2
e=rnorm(n)
x=rnorm(n,thres,5)
alpha=c(0.5,1,-1)

y=alpha[1]+(alpha[2]*(x*(1-
logis(gam,x,thres))))+(alpha[3]*(x*(logis(gam,x,thres))))+e

MEskink(y,x,number="5",Z=10,V=5)
```