

Package ‘Paneldata’

February 19, 2015

Type Package

Title Linear models for panel data

Version 1.0

Date 2014-03-16

Author Zaghoudi Taha

Maintainer Zaghoudi Taha <zedtaha@gmail.com>

Description Linear models for panel data: the fixed effect model and the random effect model

License Artistic-2.0

NeedsCompilation no

Repository CRAN

Date/Publication 2014-03-20 21:05:50

R topics documented:

PanelData-package	1
fixed	2
Paneldata	3
Paneldata.formula	4
Rand	4
summary.Paneldata	5

Index	6
--------------	----------

PanelData-package	<i>Panel data models</i>
-------------------	--------------------------

Description

Linear models for panel data: the fixed effect model and the random effect model

Details

Package: PanelData
 Type: Package
 Version: 1.0
 Date: 2014-03-16
 License: Artistic-2.0

Panledata is general function for the estimation of linear panel models. It supports the following estimation methods: fixed effect("fe"), random effect("re").

Author(s)

Zaghdoudi Taha
 Zaghdoudi Taha <zedtaha@gmail.com>

References

Amemiya, T. (1971) The estimation of the variances in a variance-components model, *International Economic Review*, **12**, pp.1–13.
 Baltagi, B.H. (1981) Simultaneous equations with error components, *Journal of econometrics*, **17**, pp.21–49.
 Baltagi, B.H. (2001) *Econometric Analysis of Panel Data*. John Wiley and sons. ltd.

Examples

```
#Create some data
pib<-as.matrix(c(12,3,4,0.4,0.7,5,0.7,0.3,0.6,89,7,8,45,7,4,5,0.5,5),nrows=18,ncols=1)
tir<-as.matrix(c(12,0.3,4,0.4,7,12,3.0,6.0,45,7.0,0.8,44,65,23,4,6,76,9),nrows=18,ncols=1)
inf<-as.matrix(c(1.2,3.6,44,1.4,0.78,54,0.34,0.66,12,0.7,8.0,12,65,43,5,76,65,8),nrows=18,ncols=1)
npl<-as.matrix(c(0.2,3.8,14,2.4,1.7,43,0.2,0.5,23,7.8,88,36,65,3,44,65,7,34),nrows=18,ncols=1)
# create a data frame
mdata<-data.frame(p=pib,t=tir,int=inf,np=npl)
# fit the fixed function
fx<-Paneldata(t~p+int+np,mdata,n=6,t=3,model="fe")
summary(fx)
# fit the random function
rx<-Paneldata(t~p+int+np,mdata,n=6,t=3,model="re")
summary(rx)
```

fixed

fixed effect function

Description

fixed effect function

Usage

```
fixed(y, x, n, t)
```

Arguments

y	vector of dependent variable
x	matrix of independents variables
n	number of sections
t	times per section

Value

Coefficients a named vector of coefficients
vcov covariance matrix of coefficients
df the degree of freedom

Author(s)

Zaghdoudi Taha

Examples

```
pib<-as.matrix(c(12,3,4,0.4,0.7,5,0.7,0.3,0.6,89,7,8,45,7,4,5,0.5,5),nrows=18,ncols=1)
tir<-as.matrix(c(12,0.3,4,0.4,7,12,3.0,6.0,45,7.0,0.8,44,65,23,4,6,76,9),nrows=18,ncols=1)
inf<-as.matrix(c(1.2,3.6,44,1.4,0.78,54,0.34,0.66,12,0.7,8.0,12,65,43,5,76,65,8),nrows=18,ncols=1)
npl<-as.matrix(c(0.2,3.8,14,2.4,1.7,43,0.2,0.5,23,7.8,88,36,65,3,44,65,7,34),nrows=18,ncols=1)
# create data frame
mdata<-data.frame(p=pib,ti=tir,int=inf,np=npl)
# create the designed matrix for the model
d<-matrix(c(mdata$p,mdata$int,mdata$np),18, 3)
# Fit a fixed model
fx<-fixed(mdata$p,d,n=6,t=3)
fx
```

Paneldata

method

Description

method

Usage

```
Paneldata(x, ...)
```

Arguments

x a numeric design matrix for the model.
 ... not used

Author(s)

Zaghdoudi Taha

Paneldata.formula *formula*

Description

formula

Usage

```
## S3 method for class 'formula'
Paneldata(formula, data = list(), n, t, model = c("fe",
  "re"), ...)
```

Arguments

formula PIB~INF+TIR
 data the dataframe
 n the number of section
 t the time per section
 model if fixed==>"fe" if random==>"re"
 ... not used

Rand *random effect function*

Description

random effect function

Usage

```
Rand(y, x, n, t)
```

Arguments

y	vector of dependent variable
x	matrix of independents variables
n	number of sections
t	times per section

Value

Coefficients: a named vector of coefficients
vcov: covariance matrix of coefficients
std: a named vector of standard errors
stats: a named vector of students statistics

Author(s)

Zaghdoudi Taha

Examples

```
pib<-as.matrix(c(12,3,4,0.4,0.7,5,0.7,0.3,0.6,89,7,8,45,7,4,5,0.5,5),nrows=18,ncols=1)
tir<-as.matrix(c(12,0.3,4,0.4,7,12,3.0,6.0,45,7.0,0.8,44,65,23,4,6,76,9),nrows=18,ncols=1)
inf<-as.matrix(c(1.2,3.6,44,1.4,0.78,54,0.34,0.66,12,0.7,8.0,12,65,43,5,76,65,8),nrows=18,ncols=1)
npl<-as.matrix(c(0.2,3.8,14,2.4,1.7,43,0.2,0.5,23,7.8,88,36,65,3,44,65,7,34),nrows=18,ncols=1)
mdata<-data.frame(p=pib,t=tir,int=inf,np=npl)
# create the designed matrix for the model
d<-matrix(c(mdata$p,mdata$int,mdata$np),18, 3)
# Fit a random model
rx<-Rand(mdata$p,d,n=6,t=3)
rx
```

summary.Paneldata *Summary*

Description

Summary

Usage

```
## S3 method for class 'Paneldata'
summary(object, ...)
```

Arguments

object	is the object of the function
...	not used

Index

`fixed`, [2](#)

`PanelData` (`PanelData`-package), [1](#)

`Paneldata`, [3](#)

`PanelData`-package, [1](#)

`Paneldata.formula`, [4](#)

`Rand`, [4](#)

`summary.Paneldata`, [5](#)