Package 'spanel'

June 2, 2015

Type Package

Title Spatial Panel Data Models

Version 0.1

Date 2015-06-01

Author Taha Zaghdoudi

Maintainer Taha Zaghdoudi <zedtaha@gmail.com>

Description Fit the spatial panel data models: the fixed effects, random effects and between models.

License GPL-3

LazyData TRUE

Depends R (>= 2.12.0)

NeedsCompilation no

Repository CRAN

Date/Publication 2015-06-02 00:16:11

R topics documented:

spanel-package 2
hausman 3
Produc 4
span 4
span.formula 5
summary.span 5
usaww 6

Index **7**

spanel-package *Spatial Panel Data Models*

Description

Fit the spatial panel data models: the fixed effect model, between model and the random effect model.

Details

Package:	spanel
Type:	Package
Version:	1.0
Date:	2015-06-01
License:	GPL-3

In this package, we apply the instrumental variables two stage estimation to fit the fixed effects, random effects and between spatial models.

Author(s)

Taha Zaghdoudi

Taha Zaghdoudi <zedtaha@gmail.com>

References

Amemiyia 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.

Baltagi B, Egger P, Pfa???ermayr M (2006), A Generalized Spatial Panel Data Model with Random Effects, *woking paper*, Center For Policy Research, Syracuse University.

Munnell AH (1990). Why has Productivity Growth Declined? Productivity and Public Investment, *New England Economic Review*, pp. 3-22.

Examples

```
# Load data
data(Produc)
data("usaww")
# fit the fixed function
fx<-span(log(gsp) ~ log(pcap) + log(pc) + log(emp) + unemp,Produc,usaww,n=48,t=17,model="fe")
# fit the random function
```

```
summary(fx)
#fit the between function
be<-span(log(gsp) ~ log(pcap) + log(pc) + log(emp) + unemp,Produc,usaww,n=48,t=17,model="be")
summary(be)
# fit the random function
ran<-span(log(gsp) ~ log(pcap) + log(pc) + log(emp) + unemp,Produc,usaww,n=48,t=17,model="re")
summary(ran)
```

---

hausman *Hausman test*

Description

Hausman test

Usage

```
hausman(fixed, random)
```

Arguments

fixed	is the fixed effect object function
random	is the random effect object function

Value

Chisq the hausman statistic

P-value the probability value

df the degree of freedom

Examples

```
data(Produc)
data("usaww")
#fit the fixed function
fx<-span(log(gsp) ~ log(pcap) + log(pc) + log(emp) + unemp,Produc,usaww,n=48,t=17,model="fe")
# fit the random function
 ran<-span(log(gsp) ~ log(pcap) + log(pc) + log(emp) + unemp,Produc,usaww,n=48,t=17,model="re")
# the Hausman test
hausman(fx,ran)
```

Produc *US States Production*

Description

- statethe state
- yearthe year
- pcapprivate capital stock
- hwyhighway and streets
- waterwater and sewer facilities
- utilother public buildings and structures
- pcpublic capital
- gspgross state products
- emplabor input measured by the employement in non–agricultural payrolls
- unempstate unemployment rate

Usage

```
data(Produc)
```

Format

A data frame with 816 rows and 10 variables

span *method*

Description

method

Usage

```
span(x, ...)
```

Arguments

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

Author(s)

Zaghdoudi Taha

span.formula *formula*

Description

formula

Usage

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

Arguments

formula	log(gsp) ~ log(pcap) + log(pc) + log(emp) + unemp
data	the dataframe
w	is the contiguity matrix
n	the number of section
t	the time per section
model	"fe" for fixed effect "be" for between and "re" for random effect
...	not used

summary.span *Summary*

Description

Summary

Usage

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

Arguments

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

usaww *The contiguity matrix*

Description

The contiguity matrix

Usage

```
data(usaww)
```

Index

hausman, 3

Produc, 4

span, 4
span.formula, 5
spanel *(*spanel-package*)*, 2
spanel-package, 2
summary.span, 5

usaww, 6