

Package ‘ivpanel’

February 20, 2015

Type Package

Title Instrumental Panel Data Models

Version 1.0

Date 2015-02-08

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

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Imports Formula

NeedsCompilation no

Repository CRAN

Date/Publication 2015-02-09 01:20:56

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ivpanel-package	<i>Instrumental Panel Data Models</i>
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Description

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

Details

Package: ivpanel
 Type: Package
 Version: 1.0
 Date: 2015-02-08
 License: GPL-3

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

Author(s)

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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 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<-ivpan(t~p+int|p+np,mdata,n=6,t=3,model="fe")
summary(fx)
#fit the between function
be<-ivpan(t~p+int|p+np,mdata,n=6,t=3,model="be")
summary(be)
# fit the random function
ran<-ivpan(t~p+int|p+np,mdata,n=6,t=3,model="re")
summary(ran)
```

hausman	<i>Hausman test</i>
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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

```
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<-ivpan(t~p+int|p+np,mdata,n=6,t=3,model="fe")
# fit the random function
ran<-ivpan(t~p+int|p+np,mdata,n=6,t=3,model="re")
# the Hausman test
hausman(fx,ran)
```

ivpan	<i>method</i>
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Description

method

Usage

```
ivpan(x, ...)
```

Arguments

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

Author(s)

Zaghdoudi Taha

ivpan.formula	<i>formula</i>
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Description

formula

Usage

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

Arguments

formula	PIB~INF+TIR Cap+m2r " " rhs is the instrumental variables
data	the dataframe
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.ivpan	<i>Summary</i>
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Description

Summary

Usage

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

Arguments

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

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