Package 'inters'

April 22, 2022

Version 0.1

Title Flexible Tools for Estimating Interactions

Imports stats, fixest, glmnet

Depends R (>= 3.0.0)

Suggests knitr, ggplot2, lmtest, rmarkdown

Description

A set of functions to estimate interactions flexibly in the face of possibly many controls. Implements the procedures described in Blackwell and Olson (2022) <doi:10.1093/restud/rdt044>.

License GPL (>= 2)

URL https://mattblackwell.github.io/inters/

BugReports https://github.com/mattblackwell/inters/issues

VignetteBuilder knitr

LazyData true

Encoding UTF-8

RoxygenNote 7.1.2

NeedsCompilation no

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Repository CRAN

Date/Publication 2022-04-22 09:00:08 UTC

R topics documented:

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post_ds_interaction   *Post-double selection estimator for interactions*

Description

`post_ds_interaction` applies post-double selection to the estimation of an interaction in a linear model.

Usage

```
post_ds_interaction(
  data,
  treat,
  moderator,
  outcome,
  control_vars,
  panel_vars = NULL,
  moderator_marg = TRUE,
  cluster = NULL,
  method = "double selection"
)
```

Arguments

`data`	data.frame to find the relevant variables.
`treat`	string with the name of the treatment variable.
`moderator`	string with the name of the moderating variable.
`outcome`	string with the name of the outcome variable.
`control_vars`	vector of strings with the names of the control variables to include.
`panel_vars`	vector of strings with the names of categorical variables to include as fixed effects.
`moderator_marg`	logical indicating if the lower-order term of the moderator should be included ()
`cluster`	string with the name of the cluster variable.
`method`	string indicating which method to use. The default is `"double selection"` selects variables based on the outcome and treatment/interaction variables and `"single selection"` only selects on the outcome.

Details

The `post_ds_interaction` implements the post-double selection estimator of Belloni et al (2014) as applied to interactions, which was proposed by Blackwell and Olson (2019). Variables passed to `panel_vars` are considered factors for fixed effects and whose "base effects" are removed by demeaning all variables by those factors. Interactions between the moderator and all variables (including the factors generated by `panel_vars`) are generated and passed to the post-double selection procedure. Base terms for the treatment, moderator, and control variables are forced to be included in the final post-double selection OLS. The `cluster` argument adjusts the lasso

Value

Returns an object of the class `lm` with an additional `clustervcv` object containing the cluster-robust variance matrix estimate when `cluster` is provided.

References

Alexandre Belloni, Victor Chernozhukov, Christian Hansen, Inference on Treatment Effects after Selection among High-Dimensional Controls, The Review of Economic Studies, Volume 81, Issue 2, April 2014, Pages 608-650, doi: 10.1093/restud/rdt044

Matthew Blackwell and Michael Olson.. "Reducing Model Misspectation and Bias in the Estimation of Interactions." Political Analysis, 2021.

Examples

```
data(remit)

controls <- c("l1gdp", "l1pop", "l1nbr5", "l12gr", "l1migr",
"elec3")

post_ds_out <- post_ds_interaction(
  data = remit, treat = "remit",
  moderator = "dict", outcome = "Protest",
  control_vars = controls,
  cluster = "caseid"
)
```

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primary	*Data on the direct primary in US congressional elections*

Description

A data set on the presence of the direct primary in U.S. congressional elections and the vote shares for the Democratic, Republican, and third parties. Based on ICPSR Study 6985

Usage

```
primary
```

Format

A data frame with 1164 observations and the following 7 variables:

state name of the state

year year of the congressional election

dem_share percentage of the total vote cast for the Democratic candidate, 0-100

rep_share percentage of the total vote cast for the Republican candidate, 0-100

other_share percentage of the total vote cast for other parties, 0-100

primary binary variable indicating if the state had the direct primary (=1) or not (=0)

south binary variable indicating if the state is in the South (=1) or not (=0)

Source

<https://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/6895>

References

David, Paul T., and Claggett, William. Party Strength in the United States: 1872-1996. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2008-09-10. https://doi.org/10.3886/ICPSR06895.v1

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remit	*Cross-national data on remittances and protest*

Description

A data set to replicate the findings of Escrib\'a-Folch, Meseguer, and Wright (2018). Data and data descriptions are from that paper's replication data, available at doi: 10.7910/DVN/TVZQG6

Usage

```
remit
```

Format

A data frame with 2429 observations and 14 variables:

Protest standardized measure of latent protest from Chenoweth et al. (2014)

remit natural log of the 2-year lagged moving average of total remittances received in constant US dollars

dict binary indicator of autocracy or democracy from Geddes, Wright, and Frantz (2014)

l1gdp natural log of one-period lagged gdp per capita

l1pop natural log of one-period lag of population

l1nbr5 lagged mean latent level of protest in countries with capital cities within 4000km of the target country's capital

l12gr two-year lagged moving average of GDP per capita growth (in percent)

l1migr natural log of lagged net migration in millions

elec3 indicator for multiparty election in that year, year prior, or year after

cowcode country code from correlates of war dataset

period six ordinal time periods

caseid numerical code for autocratic regime case name

year year

Source

doi: 10.7910/DVN/TVZQG6

References

Escrib\'a-Folch, A., Meseguer, C. and Wright, J. (2018), Remittances and Protest in Dictatorships. American Journal of Political Science, 62: 889-904. doi: 10.1111/ajps.12382

Wright, Joseph, 2018, "Replication Data for: Remittances and Protest in Dictatorships", doi: 10.7910/DVN/TVZQG6, Harvard Dataverse, V1, UNF:6:IE6OqUb3EB5AIDYKI28mgA== [fileUNF]

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