

Package ‘inters’

July 22, 2025

Version 0.2.0

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:10.1017/pan.2021.19](https://doi.org/10.1017/pan.2021.19)>.

License GPL (>= 2)

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

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

VignetteBuilder knitr

LazyData true

Encoding UTF-8

RoxygenNote 7.2.1

NeedsCompilation no

Author Matthew Blackwell [aut, cre] (ORCID:
<<https://orcid.org/0000-0002-3689-9527>>),
Olson Michael [aut]

Maintainer Matthew Blackwell <mblackwell@gov.harvard.edu>

Repository CRAN

Date/Publication 2023-01-10 20:10:02 UTC

Contents

post_ds_interaction	2
primary	3
remit	4

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

post_ds_interaction	<i>Post-double selection estimator for interactions</i>
---------------------	---

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](https://doi.org/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"
)
```

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>

remit

Cross-national data on remittances and protest

Description

A data set to replicate the findings of Escriv a-Folch, Meseguer, and Wright (2018). Data and data descriptions are from that paper's replication data, available at [doi:10.7910/DVN/TVZQG6](https://doi.org/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](https://doi.org/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](https://doi.org/10.1111/ajps.12382)

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

Index

* datasets

primary, [3](#)

remit, [4](#)

post_ds_interaction, [2](#)

primary, [3](#)

remit, [4](#)