Statistics/Data Analysis

Title

rdms —— Analysis of Regression Discontinuity Designs with Multiple Scores.

Syntax

rdms *depvar runvar1* [*runvar2 treatvar*] [*if*] [*in*] [**, cvar(***cvar1 [cvar2]***) range(***range1 [range2]***) xnorm(***string***) pooled_opt(***string***) hvar(***string***) bvar(***string***) pvar(***string***) kernelvar(***string***) fuzzy(***string***) plot graph_opt(***string***)**]

Description

rdms provides tools to analyze regression discontinuity designs with multiple scores. If only *runvar1* is specified, **rdms** analyzes an RD design with cumulative cutoffs in which a unit gets different dosages of a treatment depending on the value of *runvar1*. If *runvar1*, *runvar2* and *treatvar* are specified, **rdms** analyzes an RD design with two running variables in which units with *treatvar* equal to one are treated.

A detailed introduction to this command is given in Cattaneo, Titiunik and Gonzalo Vazquez-Bare (2018).

Companion R functions are also available here.

This command employs the Stata (and R) package rdrobust for underlying calculations. See Calonico, Cattaneo and Titiunik (2014) and Calonico, Cattaneo, Farrell and Titiunik (2017) for more details.

Related Stata and R packages useful for inference in RD designs are described in the following website:

https://sites.google.com/site/rdpackages/

Options

cvar(*string***)** specifies the numeric variable *cvar1* containing the RD cutoff for *indepvar* in a cumulative cutoffs setting, or the two scores *cvar1* and *cvar2* in a two-score setting.

range(*range1 [range2]***)** specifies the range of the running variable to be used for estimation around each cutoff. Specifying only one variable implies using the same range at each side of the cutoff.

xnorm(*string***)** specifies the normalized running variable to estimate pooled effect.

pooled_opt(*string***)** specifies the options to be passed to **rdrobust** to calculate pooled estimates. See **help rdrobust** for details.

hvar(*string***)** specifies the bandwidths to be passed to **rdrobust** to calculate cutoff-specific estimates. See **help rdrobust** for details.

bvar(*string***)** specifies the bandwidths for the bias to be passed to **rdrobust** to calculate cutoff-specific estimates. See **help rdrobust** for details.

pvar(*string***)** specifies the order of the polynomials to be passed to **rdrobust** to calculate cutoff-specific estimates. See **help rdrobust** for details.

kernelvar(*string***)** specifies the kernels to be passed to **rdrobust** to calculate cutoff-specific estimates. See **help rdrobust** for details.

fuzzy(*string***)** indicates a fuzzy design. See **help rdrobust** for details.

plot plots the pooled and cutoff-specific estimates and the weights given by the pooled estimate to each cutoff-specific estimate.

graph_opt(*string***)** options to be passed to the graph when **plot** is specified.

Examples

Standard use of rdms for cumulative cutoffs
```
. rdms yvar xvar, c(cvar)
```

rdms with plot
```
. rdms yvar xvar, c(cvar) plot
```

Standard use of rdms for multiple scores
```
. rdms yvar xvar1 xvar2 treatvar, c(cvar)
```

Saved results

rdms saves the following in **e()**:

Matrices

e(b)	bias corrected coefficient vector
e(V)	variance−covariance matrix of the estimators
e(coefs)	conventional coefficient vector
e(CI_rb)	bias corrected confidence intervals
e(sampsis)	vector of sample sizes at each cutoff
e(H)	vector of bandwidths at each cutoff

References

Calonico, S., M. D. Cattaneo, M. H. Farrell, and R. Titiunik. 2017. rdrobust: Software for Regression Discontinuity Designs. *Stata Journal* 17(2): 372−404.

Calonico, S., M. D. Cattaneo, and R. Titiunik. 2014. Robust Data−Driven Inference in the Regression−Discontinuity Design. *Stata Journal* 14(4): 909−946.

Authors

Matias D. Cattaneo, University of Michigan, Ann Arbor, MI. cattaneo@umich.edu.

Rocio Titiunik, University of Michigan, Ann Arbor, MI. titiunik@umich.edu.

Gonzalo Vazquez−Bare, University of Michigan, Ann Arbor, MI. gvazquez@umich.edu.