Statistics/Data Analysis

Title

rdmc —— Analysis of Regression Discontinuity Designs with Multiple Cutoffs.

Syntax

rdmc *depvar runvar* [*if*] [*in*] [**, cvar(***string***) pooled_opt(***string***) hvar(***string***) bvar(***string***) pvar(***string***) kernelvar(***string***) fuzzy(***string***) plot graph_opt(***string***) verbose**]

Description

rdmc provides tools to analyze regression discontinuity designs with multiple cutoffs. Companion command is: rdmcplot for plots.

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 containing the RD cutoff for *indepvar* for each unit in the sample.

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.

verbose displays the output from **rdrobust** for estimating the pooled estimand.

Examples

Standard use of rdmc

```
. rdmc yvar xvar, c(cvar)
```

rdmc with plots of estimates and weights
. rdmc yvar xvar, c(cvar) plot

rdmc showing output from **rdrobust** and specifying uniform kernel
. rdmc yvar xvar, c(cvar) verbose pooled_opt(kernel(uniform))

Saved results

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

Scalars

e(tau)	pooled estimate
e(se_rb)	robust bias corrected s.e. for pooled estimate
e(pv_rb)	robust bias corrected p−value
e(ci_rb_l)	left limit of robust bias corrected confidence interval
e(ci_rb_r)	right limit of robust bias corrected confidence interval
e(h_l)	bandwidth to the left of the cutoff used to estimate pooled estimand
e(h_r)	bandwidth to the right of the cutoff used to estimate pooled estimand
e(N_l)	total sample size to the left of the cutoff used to estimate pooled estimand
e(N_r)	total sample size to the right of the cutoff used to estimate pooled estimand
e(N_h_l)	sample size within bandwidth to the left of the cutoff used to estimate pooled estimand
e(N_h_r)	sample size within bandwidth to the right of the cutoff used to estimate pooled estimand

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(weights)	vector of weights for each cutoff−specific estimate
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.