



## Title

**rdmcpplot** — RD Plots for Regression Discontinuity Designs with Multiple Cutoffs.

## Syntax

```
rdmcpplot depvar runvar [if] [in], cvar(string) [ nbinsvar(string)
nbinsrightvar(string) binselectvar(string) scalevar(string)
scalerightvar(string) supportvar(string) supportrightvar(string) pvar(string)
hvar(string) hrightvar(string) kernelvar(string) weightsvar(string)
covsvar(string) covsevalvar(string) covsdropvar(string) binsoptvar(string)
lineoptvar(string) xlineoptvar(string) ci(cilevel) nobins nopoly noxline
nodraw genvars ]
```

## Description

**rdmcpplot** plots estimated regression functions at each cutoff in regression discontinuity (RD) designs with multiple cutoffs. For methodological background see [Calonico, Cattaneo and Titiunik \(2015a\)](#), [Calonico, Cattaneo and Titiunik \(2015a\)](#), [Keele and Titiunik \(2015\)](#), [Cattaneo, Keele, Titiunik and Vazquez-Bare \(2016\)](#), and [Cattaneo, Keele, Titiunik and Vazquez-Bare \(2021\)](#).

Companion commands are: **rdmc** for multi-cutoff RD estimation and inference, and **rdms** for multi-score RD estimation and inference.

A detailed introduction to this command is given in [Cattaneo, Titiunik and Vazquez-Bare \(2020\)](#).

This command employs the Stata (and R) package **rdrobust** for underlying calculations. See [Calonico, Cattaneo and Titiunik \(2014\)](#), [Calonico, Cattaneo and Titiunik \(2015b\)](#), 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://rdpackages.github.io/>

## Options

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Estimand

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**cvar**(*string*) specifies the numeric variable containing the RD cutoff for *indepvar* for each unit in the sample.

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Bin Selection

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**nbinsvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the number of bins for **rdplot**. When **nbinsrightvar** is specified, **nbinsvar** indicates the number of bins to the left of the cutoff. When **nbinsrightvar** is not specified, the same number of bins is used at each side. See [rdplot](#) for details.

**nbinsrightvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the number of bins to the right of the cutoff for **rdplot**. When **nbinsrightvar** is not specified, the number of bins in **nbinsvar** is used at each side. See [rdplot](#) for details.

**binselectvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the bins selection method for **rdplot**. See [rdplot](#) for details.

**scalevar**(*string*) a variable of length equal to the number of different cutoffs that specifies the scale for **rdplot**. When **scalerightvar** is specified, **nbinsvar** indicates the scale to the left of the cutoff. When **scalerightvar** is not specified, the same scale is used at each side. See [rdplot](#) for details.

**scalerightvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the scale to the right of the cutoff for **rdplot**. When **scalerightvar** is not specified, the scale in **scalevar** is used at each side. See [rdplot](#) for details.

**supportvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the support for **rdplot**. When **supportrightvar** is specified, **supportvar** indicates the support to the left of the cutoff. When **supportrightvar** is not specified, the same support is used at each side. See [rdplot](#) for details.

**supportrightvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the support to the right of the cutoff for **rdplot**. When **supportrightvar** is not specified, the support in **supportvar** are used at each side. See [rdplot](#) for details.

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### Polynomial Fit

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**pvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the order of the polynomials for **rdplot**. See [rdplot](#) for details.

**hvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the bandwidths for **rdplot**. When **hrightvar** is specified, **hvar** indicates the bandwidth to the left of the cutoff. When **hrightvar** is not specified, the same bandwidths are used at each side. See [rdplot](#) for details.

**hrightvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the bandwidths to the right of the cutoff for **rdplot**. When **hrightvar** is not specified, the bandwidths in **hvar** are used at each side. See [rdplot](#) for details.

**kernelvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the kernels for **rdplot**. See [rdplot](#) for details.

**weightsvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the weights for **rdplot**. See [rdplot](#) for details.

**covsvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the covariates for **rdplot**. See [rdplot](#) for details.

**covsevalvar**(*string*) a variable of length equal to the number of different cutoffs that specifies the evaluation points for additional covariates. See [rdplot](#) for details.

**covsdropvar**(*string*) a variable of length equal to the number of different cutoffs that specifies whether collinear covariates should be dropped. See [rdplot](#) for details.

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### Plot

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**binsoptvar**(*string*) a variable of length equal to the number of different cutoffs that specifies options for the bins plots.

**lineoptvar**(*string*) a variable of length equal to the number of different cutoffs that specifies options for the polynomial plots.

**xlineoptvar**(*string*) a variable of length equal to the number of different cutoffs that specifies options for the vertical lines indicating the cutoffs.

**ci**(*cilevel*) adds confidence intervals of level *cilevel* to the plot. Should be a number between 0 and 100 (e.g. **ci(95)** for 95% level).

**nobins** omits the bins plot.

**nopoly** omits the polynomial curve plot.

**noxline** omits the vertical lines indicating the cutoffs.

**nodraw** omits the plot.

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## Generate Variables

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**genvars** generates variables to replicate plots by hand. Variable labels indicate the corresponding cutoff.

**rdmcplot\_hat\_y\_c** predicted value of the outcome variable given by the global polynomial estimator in cutoff number *c*.

**rdmcplot\_mean\_x\_c** sample mean of the running variable within the corresponding bin for each observation in cutoff number *c*.

**rdmcplot\_mean\_y\_c** sample mean of the outcome variable within the corresponding bin for each observation in cutoff number *c*.

**rdmcplot\_ci\_l\_c** lower end value of the confidence interval for the sample mean of the outcome variable within the corresponding bin for each observation in cutoff number *c*.

**rdmcplot\_ci\_r\_c** upper end value of the confidence interval for the sample mean of the outcome variable within the corresponding bin for each observation in cutoff number *c*.

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## Examples

Standard use of `rdmcplot`

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

`rdmcplot` without bins plot

```
. rdmcplot yvar xvar, c(cvar) nobins
```

## Saved results

**rdmcplot** saves the following in `r()`:

### Scalars

<b>r(p)</b>	order of the polynomial
<b>r(cnum)</b>	number of cutoffs

### Macros

<b>r(cvar)</b>	cutoff variable
<b>r(clist)</b>	cutoff list

### Matrices

<b>r(c_failed)</b>	vector of cutoffs at which <code>rdplot</code> encountered problems
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## 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.
- Calonico, S., M. D. Cattaneo, and R. Titiunik. 2015. [rdrobust: An R Package for Robust Nonparametric Inference in Regression-Discontinuity Designs](#). *R Journal* 7(1): 38-51.
- Cattaneo, M. D., L. Keele, R. Titiunik, and G. Vazquez-Bare. 2016. [Interpreting Regression Discontinuity Designs with Multiple Cutoffs](#). *Journal of Politics* 78(4): 1229-1248.
- Cattaneo, M. D., L. Keele, R. Titiunik, and G. Vazquez-Bare. 2021. [Extrapolating Treatment Effects in Multi-Cutoff Regression Discontinuity Designs](#). *Journal of American Statistical Association*, forthcoming.
- Cattaneo, M. D., R. Titiunik, and G. Vazquez-Bare. 2020. [Analysis of Regression Discontinuity Designs with Multiple Cutoffs or Multiple Scores](#). *Stata Journal*, forthcoming.

Keele, L., and R. Titiunik. 2015. Geographic Boundaries as Regression Discontinuities.  
*Political Analysis* 23(1): 127-155.

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