

[Description](#) [Also see](#)

Description

This manual documents commands that use observational data to estimate the effect caused by getting one treatment instead of another. In observational data, treatment assignment is not controlled by those who collect the data; thus some common variables affect treatment assignment and treatment-specific outcomes. Observational data is sometimes called retrospective data or nonexperimental data, but to avoid confusion, we will always use the term “observational data”.

When all the variables that affect both treatment assignment and outcomes are observable, the outcomes are said to be conditionally independent of the treatment, and the `teffects`, `stteffects`, `telasso`, `didregress`, and `xtdidregress` estimators may be used.

When not all of these variables common to both treatment assignment and outcomes are observable, the outcomes are not conditionally independent of the treatment, and `eteffects`, `etpoisson`, or `etregress` may be used.

`teffects` and `stteffects` offer much flexibility in estimators and functional forms for the treatment-assignment models. `teffects` provides models for continuous, binary, count, fractional, and nonnegative outcome variables. `stteffects` provides many functional forms for survival-time outcomes. See [\[TE\] `teffects` intro](#), [\[TE\] `teffects` intro advanced](#), and [\[TE\] `stteffects` intro](#) for more information. `telasso` provides models for continuous, binary, count, and nonnegative outcome variables, and allows for selection of covariates via lasso methods; see [\[TE\] `telasso`](#). `didregress` also provides models for continuous outcomes and is useful when treatment and control groups follow parallel trends before the treatment occurs. Beyond this, `xtdidregress` allows treatment-effect estimation when working with longitudinal or panel data. See [\[TE\] `DID` intro](#) and [\[TE\] `didregress`](#) for information on these commands.

`eteffects`, `etpoisson`, and `etregress` offer less flexibility than `teffects` because more structure must be imposed when conditional independence is not assumed. `eteffects` is for continuous, binary, count, fractional, and nonnegative outcomes and uses a probit model for binary treatments; see [\[TE\] `eteffects`](#). `etpoisson` is for count outcomes and uses a normal distribution to model treatment assignment; see [\[TE\] `etpoisson`](#). `etregress` is for linear outcomes and uses a normal distribution to model treatment assignment; see [\[TE\] `etregress`](#).

Treatment effects

[TE] teffects aipw	Augmented inverse-probability weighting
[TE] teffects ipw	Inverse-probability weighting
[TE] teffects ipwra	Inverse-probability-weighted regression adjustment
[TE] teffects nnmatch	Nearest-neighbor matching
[TE] teffects psmatch	Propensity-score matching
[TE] teffects ra	Regression adjustment
[TE] telasso	Treatment-effects estimation using lasso
[TE] didregress	Difference-in-differences estimation
[XT] xtdidregress	Fixed-effects difference-in-differences estimation

Survival treatment effects

[TE] stteffects ipw	Survival-time inverse-probability weighting
[TE] stteffects ipwra	Survival-time inverse-probability-weighted regression adjustment
[TE] stteffects ra	Survival-time regression adjustment
[TE] stteffects wra	Survival-time weighted regression adjustment

Endogenous treatment effects

[TE] eteffects	Endogenous treatment-effects estimation
[TE] etpoisson	Poisson regression with endogenous treatment effects
[TE] etregress	Linear regression with endogenous treatment effects

Treatment effects with sample selection, endogenous covariates, and random effects

[ERM] eregress	Extended linear regression
[ERM] eintreg	Extended interval regression
[ERM] eprobit	Extended probit regression
[ERM] eoprobit	Extended ordered probit regression

Postestimation tools

[TE] tebalance	Check balance after teffects or stteffects estimation
[TE] tebalance box	Covariate balance box
[TE] tebalance density	Covariate balance density
[TE] tebalance overid	Test for covariate balance
[TE] tebalance summarize	Covariate-balance summary statistics
[TE] teoverlap	Overlap plots
[TE] eteffects postestimation	Postestimation tools for eteffects
[TE] etpoisson postestimation	Postestimation tools for etpoisson
[TE] etregress postestimation	Postestimation tools for etregress
[TE] stteffects postestimation	Postestimation tools for stteffects
[TE] telasso postestimation	Postestimation tools for telasso
[TE] didregress postestimation	Postestimation tools for didregress and xtdidregress

Also see

[U] [1.3 What's new](#)

[TE] [teffects intro](#) — Introduction to treatment effects for observational data

[TE] [teffects intro advanced](#) — Advanced introduction to treatment effects for observational data

[TE] [teffects multivalued](#) — Multivalued treatment effects

[TE] [stteffects intro](#) — Introduction to treatment effects for observational survival-time data

[TE] [Glossary](#)