Package 'fixes'

July 7, 2025

Type Package

Title Tools for Creating and Visualizing Fixed-Effects Event Study Models

Version 0.5.0

Description Provides functions for creating, analyzing, and visualizing event study models using fixed-effects regression. Supports staggered adoption, multiple confidence intervals, flexible clustering, and panel/time transformations in a simple workflow.

Depends R (>= 4.1.0)

Imports dplyr, ggplot2, fixest, broom, tibble, rlang

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Encoding UTF-8

RoxygenNote 7.3.2

Suggests knitr, rmarkdown, haven, testthat

VignetteBuilder knitr

URL https://github.com/yo5uke/fixes

BugReports https://github.com/yo5uke/fixes/issues

NeedsCompilation no

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Repository CRAN

Date/Publication 2025-07-07 10:30:06 UTC

Contents

plot_es *Plot Event Study Results*

Description

plot_es() produces standard event study plots, showing estimated effects and confidence intervals across event time. Supports both ribbon and errorbar styles, multiple confidence levels, and several ggplot2 themes.

Usage

```
plot_es(
  data,
  ci_level = 0.95,
  type = "ribbon",
  vline_val = 0,
  vline_color = "#000",
  hline_val = 0,
  hline_color = "#000",
  linewidth = 1,
  pointsize = 2,
  alpha = 0.2,
  barwidth = 0.2,
  color = "#B25D91FF",
  fill = "#B25D91FF",
  theme_style = "bw"
)
```

Arguments

data	Data frame returned by run_es().
ci_level	Confidence level for intervals (numeric, e.g. 0.95). Must match columns like 'conf_low_95'.
type	Confidence interval style: "ribbon" (default) or "errorbar".
vline_val	X value for vertical reference line (default: 0).
vline_color	Color for vertical line.
hline_val	Y value for horizontal reference line (default: 0).
hline_color	Color for horizontal line.
linewidth	Width of estimate line or error bars.
pointsize	Point size for estimates.
alpha	Transparency for ribbon (default: 0.2).
barwidth	Width of error bars (if type = "errorbar").
color	Color for lines and points.
fill	Fill color for ribbon.
theme_style	ggplot2 theme: "bw" (default), "minimal", or "classic".

Details

Visualizes event study estimates and confidence intervals produced by `run_es()`.

Value

A ggplot2 object.

Author(s)

Yosuke Abe

See Also

`run_es`

Examples

```
## Not run:
result <- run_es(...)
plot_es(result, ci_level = 0.95, type = "ribbon")

## End(Not run)
```

`run_es` *Event Study Estimation for Panel Data*

Description

`run_es()` is a user-friendly event study wrapper for panel data, supporting both classic (universal timing) and staggered (unit-varying timing) settings. It generates lead/lag dummy variables around treatment, builds the regression formula, and returns tidy results with confidence intervals for arbitrary levels.

Usage

```
run_es(
  data,
  outcome,
  treatment,
  time,
  timing,
  fe,
  lead_range = NULL,
  lag_range = NULL,
  covariates = NULL,
  cluster = NULL,
  weights = NULL,
```

```
  baseline = -1,
  interval = 1,
  time_transform = FALSE,
  unit = NULL,
  staggered = FALSE,
  conf.level = 0.95
)
```

Arguments

data	A data.frame with panel data. Must contain all required variables.
outcome	Outcome variable (unquoted variable name or expression, e.g. log(y)).
treatment	Treatment indicator (unquoted; 0/1 or logical).
time	Time variable (unquoted; numeric or Date).
timing	Treatment timing: a numeric or Date for universal timing, or a variable (unquoted) for staggered.
fe	One-sided formula for fixed effects (e.g. ~ id + year).
lead_range	Number of pre-treatment periods to include (default: detected from data).
lag_range	Number of post-treatment periods to include (default: detected from data).
covariates	One-sided formula of additional controls (optional).
cluster	Cluster variable(s), as a one-sided formula or character vector (optional).
weights	Observation weights (formula, character, or unquoted variable).
baseline	Baseline period for normalization (default: -1, i.e., one period before treatment).
interval	Numeric; interval of the time variable (default: 1).
time_transform	Logical; if TRUE, converts time variable to consecutive integer within units (requires unit).
unit	Panel unit variable (required if time_transform = TRUE).
staggered	Logical; if TRUE, treats timing as variable (default: FALSE).
conf.level	Numeric vector of confidence levels (e.g. c(0.90, 0.95, 0.99); default: 0.95).

Details

Runs an event study regression on panel data, automatically generating lead/lag dummies around a treatment event.

The function does not require explicit formula specification; dummy variables and model formula are constructed internally. Baseline normalization (reference category) can be customized. Untreated units or units never treated are supported. Missing values in key variables result in an error.

Value

A data.frame with class "es_result", containing:

term Dummy variable name (leadX, lagY)

estimate, std.error, statistic, p.value Coefficient estimates, standard errors, test statistics, and p-values

conf_low_XX, conf_high_XX Confidence intervals at each requested level

relative_time Period relative to treatment (0 = event)

is_baseline Logical, is this the baseline period (estimate always 0)

Attributes: `lead_range`, `lag_range`, `baseline`, `interval`, `call`, `model_formula`, `conf.level`.

Key Features

- One-step event study: specify outcome, treatment, time, timing, and fixed effects directly.
- Supports both universal and staggered treatment timing.
- Flexible covariate, clustering, and weighting options.
- Customizable lead/lag window and baseline normalization.
- Returns a tidy `data.frame` (class `"es_result"`) with estimates and confidence intervals.

Author(s)

Yosuke Abe

See Also

`plot_es`

Examples

```
## Not run:
# Simulated example
result <- run_es(
  data       = panel_data,
  outcome    = y,
  treatment  = treated_1998,
  time       = year,
  timing     = 1998,
  fe         = ~ firm_id + year,
  cluster    = ~ state_id,
  lead_range = 3,
  lag_range  = 3,
  conf.level = c(0.90, 0.95, 0.99)
)
plot_es(result)

## End(Not run)
```

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