

```

>
> library(tidyverse)
> library(nih.joinpoint)
>
> nih_sample_data %>% group_by(sex) %>% slice(1, 2, n()-1, n())
# A tibble: 12 x 4
# Groups:   sex [3]
  sex      year  rate    se
  <fct> <dbl> <dbl> <dbl>
1 Both   1975  59.5 0.622
2 Both   1976  61.4 0.626
3 Both   2008  44.7 0.395
4 Both   2009  42.6 0.382
5 Male   1975  68.4 1.07
6 Male   1976  71.7 1.08
7 Male   2008  51.0 0.639
8 Male   2009  48.2 0.614
9 Female 1975  53.6 0.770
10 Female 1976  54.1 0.767
11 Female 2008  39.5 0.500
12 Female 2009  38.1 0.488
>
> run_opt = run_options(model="ln", max_joinpoints=3, n_cores=3)
> export_opt = export_options()
>
> run_opt
[Session Options]
Model=ln
Maximum joinpoints=3
Num cores=3
> export_opt
[Export Options]
Models=best fit
Line delimiter=unix
Missing character=period
Field delimiter=comma
By-var format=quoted labels
Output by-group headers=FALSE
>
> reprex::reprex(session_info=TRUE)
x Install the styler package in order to use `style = TRUE`.
i Rendering reprex...
-\\|/ Error in `reprex_render()`:
! This reprex appears to crash R. Call `reprex()` again with
  `std_out_err = TRUE` to get more info.
Run `rlang::last_trace()` to see where the error occurred.
>
> jp = joinpoint(nih_sample_data, x=year, y=rate, by=sex, se=se,
+               run_opts=run_opt, export_opts=export_opt)
←[1mwrote←[0m ←[32m139.00B←[0m in ←[36m 0s←[0m, ←[32m6.94MB/s←[0m
                                     ←[1mwrote←[0m ←[32m2.15GB←[0m in ←[36m 0s←[0m, ←
[32m2.15GB/s←[0m
>
> names(jp)
[1] "aapc"          "apc"          "data_export"  "selected_model"
[5] "perm_test"    "report"
>
> jp_plot(jp) + patchwork::plot_layout(ncol=1)
Error in `mutate()`:
i In argument: `slope0 = na_if(apc, ".") %>% zoo::na.locf(fromLast =
  TRUE) %>% as_factor()`.
Caused by error:
! `slope0` must be size 105 or 1, not 0.
Run `rlang::last_trace()` to see where the error occurred.
>
> summary(jp)
i You can read the CLI files using `browse(jp_object)`
[Session Options]
Model=ln
Maximum joinpoints=3

```

Num cores=3

 Joinpoint Version Info

Program Name = C:\PROGRA~2\JOINPO~1\JPCOMM~1.EXE
 Program Version = V5.0.0.0.1
 Execution Time = 1 second

 Joinpoint Run Files

Run File = session_run.ini
 Session File = ini/session_ini.ini
 Data File = session_run.ini
 Session Options File = ini/run_opt_ini.ini
 Output Options File = ini/export_opt_ini.ini
 Joinpoint Output File = session_run.jpo

 Joinpoint Session Information

Total Cohorts: 3
 Cohorts That Couldn't Be Processed: 0

Model Specifications:

Independent Variable = year
 Shift Data Points by = 0.000000

Covid Exclusion = False

Dependent Variable:
 Calculated or Provided = Provided
 Type = Age-Adjusted Rate

Type of Change Point Model = Joinpoint
 Loglinear Model = Yes {ln(y) = xb}
 Heteroscedastic Errors Model = Standard Error (Provided)

By Variables:
 sex

Method = Grid Search
 Autocorrelation Errors = Uncorrelated

Minimum Number of Joinpoints = 0
 Maximum Number of Joinpoints = 3

Minimum Number Obs Before First Joinpoint = 2
 Minimum Number Obs Between Two Joinpoints = 2
 Number of Grid Points Between Data Points = 0

Model Selection Method = Weighted Bayesian Information Criterion (WBIC)

Seed for Randomly Permuting Data = 7160
 Joinpoint Significance Level = 0.0500
 APC Significance Level = 0.0500
 AAPC Significance Level = 0.0500
 Jump Value and CR Significance Level = Not Applicable

AAPC Confidence Interval Method = Empirical Quantile
 Number of Resamples = 1000

Jump Model / Comparability Ratio = Disable
 Jump Location = Not Applicable
 Comparability Ratio = Not Applicable
 Variance of CR = Not Applicable

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      Comparison Type           = None
      Pairwise Comparison       = Not Applicable
>
> str(jp)
List of 6
 $ aapc          : tibble [0 x 11] (S3: tbl_df/tbl/data.frame)
  ..$ sex          : logi(0)
  ..$ joinpoint_model : logi(0)
  ..$ aapc_index    : logi(0)
  ..$ start_obs     : logi(0)
  ..$ end_obs       : logi(0)
  ..$ aapc          : logi(0)
  ..$ aapc_c_i_low  : logi(0)
  ..$ aapc_c_i_high : logi(0)
  ..$ statistically_significant_0_no_1_yes: logi(0)
  ..$ test_statistic : logi(0)
  ..$ p_value       : logi(0)
  ..- attr(*, "variables")=List of 4
  .. ..$ x : chr "year"
  .. ..$ y : chr "rate"
  .. ..$ by: chr "sex"
  .. ..$ se: chr "se"
 $ apc           : tibble [0 x 11] (S3: tbl_df/tbl/data.frame)
  ..$ sex          : logi(0)
  ..$ model         : logi(0)
  ..$ segment       : logi(0)
  ..$ segment_start : logi(0)
  ..$ segment_end   : logi(0)
  ..$ apc           : logi(0)
  ..$ apc_95_lcl    : logi(0)
  ..$ apc_95_ucl    : logi(0)
  ..$ apc_significant: logi(0)
  ..$ test_statistic : logi(0)
  ..$ p_value       : logi(0)
  ..- attr(*, "variables")=List of 4
  .. ..$ x : chr "year"
  .. ..$ y : chr "rate"
  .. ..$ by: chr "sex"
  .. ..$ se: chr "se"
 $ data_export    : tibble [105 x 8] (S3: tbl_df/tbl/data.frame)
  ..$ sex          : chr [1:105] "Both" "Both" "Both" "Both" ...
  ..$ year         : num [1:105] 1975 1976 1977 1978 1979 ...
  ..$ rate         : num [1:105] 5.95e+10 6.14e+10 6.24e+10 6.20e+10 6.24e+10 ...
  ..$ model        : chr [1:105] "." "." "." "." ...
  ..$ standard_error : num [1:105] 6.22e+08 6.26e+08 6.26e+08 6.16e+07 6.12e+08 ...
  ..$ apc          : chr [1:105] "." "." "." "." ...
  ..$ joinpoints   : chr [1:105] "." "." "." "." ...
  ..$ final_selected_model: chr [1:105] "." "." "." "." ...
  ..- attr(*, "variables")=List of 4
  .. ..$ x : chr "year"
  .. ..$ y : chr "rate"
  .. ..$ by: chr "sex"
  .. ..$ se: chr "se"
 $ selected_model: tibble [0 x 2] (S3: tbl_df/tbl/data.frame)
  ..$ sex : logi(0)
  ..$ model: logi(0)
  ..- attr(*, "variables")=List of 4
  .. ..$ x : chr "year"
  .. ..$ y : chr "rate"
  .. ..$ by: chr "sex"
  .. ..$ se: chr "se"
 $ perm_test     : list()
  ..- attr(*, "variables")=List of 4
  .. ..$ x : chr "year"
  .. ..$ y : chr "rate"
  .. ..$ by: chr "sex"
  .. ..$ se: chr "se"
 $ report        : tibble [0 x 24] (S3: tbl_df/tbl/data.frame)
  ..$ sex          : logi(0)
  ..$ model        : logi(0)

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..$ x_obs          : logi(0)
..$ x_param        : logi(0)
..$ df             : logi(0)
..$ sse            : logi(0)
..$ mse            : logi(0)
..$ auto_corr      : logi(0)
..$ segment        : logi(0)
..$ joinpoint      : logi(0)
..$ joinpoint_95_lcl : logi(0)
..$ joinpoint_95_ucl : logi(0)
..$ intercept_estimate : logi(0)
..$ intercept_std_error : logi(0)
..$ intercept_test_statistic : logi(0)
..$ intercept_p_value : logi(0)
..$ slope_estimate : logi(0)
..$ slope_std_error : logi(0)
..$ slope_test_statistic : logi(0)
..$ slope_p_value : logi(0)
..$ slope_chg_estimate : logi(0)
..$ slope_chg_std_error : logi(0)
..$ slope_chg_test_statistic : logi(0)
..$ slope_chg_p_value : logi(0)
-- attr(*, "variables")=List of 4
.. ..$ x : chr "year"
.. ..$ y : chr "rate"
.. ..$ by: chr "sex"
.. ..$ se: chr "se"
- attr(*, "execution_time")= 'difftime' num 1.99877095222473
..- attr(*, "units")= chr "secs"
- attr(*, "options")=List of 2
..$ run_opts : 'glue' chr "[Session Options]\nModel=ln\nMaximum joinpoints=3\nNum cores=3"
..$ export_opts: 'glue' chr "[Export Options]\nModels=best fit\nLine delimiter=unix\nMissing character=period\nField delimiter=comma\nBy-var"| __truncated__
- attr(*, "run_summary")= chr "-----\r\nJoinpoint Version Info\r\n-----\r\nProgram Name = C:\\PROGRA~2\\JOIN"| __truncated__
- attr(*, "parameters")=List of 4
..$ x : chr "year"
..$ y : chr "rate"
..$ by: chr "sex"
..$ se: chr "se"
- attr(*, "directory")= chr "C:\\Users\\chkreis\\AppData\\Local\\Temp\\4\\RtmpUR00kc\\joinpoint
2023-06-16 15h11m36s"
- attr(*, "version")=Classes 'package_version', 'numeric_version' hidden list of 1
..$ : int [1:4] 0 1 0 9001
- attr(*, "class")= chr "nih.joinpoint"
>
> sessionInfo()
R version 4.2.3 (2023-03-15 ucrt)
Platform: x86_64-w64-mingw32/x64 (64-bit)
Running under: Windows Server x64 (build 17763)

Matrix products: default

locale:
 [1] LC_COLLATE=English_Switzerland.1252 LC_CTYPE=English_Switzerland.1252
 [3] LC_MONETARY=English_Switzerland.1252 LC_NUMERIC=C
 [5] LC_TIME=English_Switzerland.1252

attached base packages:
 [1] stats      graphics  grDevices  utils      datasets  methods    base

other attached packages:
 [1] nih.joinpoint_0.1.0.9001 lubridate_1.9.2      forcats_1.0.0
 [4] stringr_1.5.0           dplyr_1.1.2         purrr_1.0.1
 [7] readr_2.1.4             tidyverse_2.0.0     tibble_3.2.1
[10] ggplot2_3.4.2           tidyverse_2.0.0

loaded via a namespace (and not attached):
 [1] pillar_1.9.0      compiler_4.2.3    tools_4.2.3       bit_4.0.5
 [5] digest_0.6.31    evaluate_0.21     lifecycle_1.0.3   gtable_0.3.3

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[9] timechange_0.2.0 lattice_0.20-45 pkgconfig_2.0.3 rlang_1.1.1
[13] reprex_2.0.2 rstudioapi_0.14 cli_3.6.1 patchwork_1.1.2
[17] parallel_4.2.3 yaml_2.3.7 xfun_0.39 fastmap_1.1.1
[21] knitr_1.43 withr_2.5.0 janitor_2.2.0 fs_1.6.2
[25] generics_0.1.3 vctrs_0.6.2 hms_1.1.3 bit64_4.0.5
[29] grid_4.2.3 tidyselect_1.2.0 glue_1.6.2 snakecase_0.11.0
[33] R6_2.5.1 processx_3.8.1 fansi_1.0.4 vroom_1.6.3
[37] rmarkdown_2.22 callr_3.7.3 clipr_0.8.0 tzdb_0.4.0
[41] magrittr_2.0.3 ps_1.7.5 htmltools_0.5.5 scales_1.2.1
[45] colorspace_2.1-0 utf8_1.2.3 stringi_1.7.12 munsell_0.5.0
[49] crayon_1.5.2 zoo_1.8-12
>
>
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