# Package 'parade'

July 23, 2019

**Type** Package

**Title** Pen's Income Parades

**Version** 0.1

**Date** 2019-07-19

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**Description** Tool for producing Pen's parade graphs, useful for visualizing inequalities in income, wages or other variables, as proposed by Pen (1971, ISBN: 978-0140212594). Income or another economic variable is captured by the vertical axis, while the population is arranged in ascending order of income along the horizontal axis. Pen's income parades provide an easy-to-interpret visualization of economic inequalities.

**License** GPL (>= 2)

**Imports** methods, stats

**LazyData** yes

**Collate** 'parade-internal.R' 'parade.R'

**NeedsCompilation** no

**Repository** CRAN

**Date/Publication** 2019-07-23 09:40:05 UTC

## R topics documented:

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chicago                          *Labor market and demographic data for employed Hispanic workers*
                                 *in metropolitan Chicago*

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**Description**

Data from a 2013 sample of employed Hispanic workers in metropolitan Chicago. It is a subset of
the 2013 Current Population Survey (CPS) Outgoing Rotation Groups (ORG) data set provided by
the Center for Economic and Policy Research in Washington, DC (CEPR, 2014).

**Usage**

```
data("chicago")
```

**Format**

A data frame containing 712 observations on 9 variables. The 9 variables contain labor market and
demographic information on a sample of employed Hispanic workers in the Chicago metropolitan
area.

| | | |
|---|---|---|
| [, 1] | age | the worker's age, expressed in years |
| [, 2] | female | an indicator for female gender |
| [, 3] | foreign.born | an indicator for foreign-born status |
| [, 4] | LTHS | an indicator for having completed less than a high school (LTHS) education |
| [, 5] | high.school | an indicator for having completed a high school education |
| [, 6] | some.college | an indicator for having completed some college education |
| [, 7] | college | an indicator for having completed a college education |
| [, 8] | advanced.degree | an indicator for having completed an advanced degree |
| [, 9] | ln.real.wage | the natural logarithm of the worker's real wage (in 2013 U.S. dollars) |

**Source**

Center for Economic and Policy Research (CEPR). 2014. CPS ORG Uniform Extracts, Version 1.9
. Washington, DC.

**Examples**

```
data("chicago")
summary(chicago)
```

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parade                           *Pen's Income Parades*

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## Description

`parade` produces Pen's parade graphs, useful for visualizing inequalities in income, wages or other variables. They were first proposed by Jan Pen in his well-known story of the "parade of dwarfs and a few giants" (Pen, 1971). In this story, income is captured by the vertical axis, while the population is arranged in ascending order of income ("height") along the horizontal axis. As such, Pen's income parades provide an easy-to-interpret visualization of economic inequalities (Cowell, 2000).

## Usage

```
parade(height, line.fun = NULL, line.col = "red", line.lty = 1, line.lwd = 2, ...)
```

## Arguments

| | |
|---|---|
| `height` | a vector of numerical values (e.g., incomes, wages) describing the vertical bars which make up the plot. |
| `line.fun` | a function whose result, when applied to the data in `height`, will determine the position of the horizontal line. If `NULL`, the horizontal line will occur at the value of the arithmetic mean of the `height` data. |
| `line.col` | a specification for the horizontal line color. This can be a character string giving the color name (e.g., "blue"). Colors can also be specified in terms of their RGB components with a string of the form "#RRGGBB", in which RR, GG and BB correspond to two hexadecimal digits. |
| `line.lty` | the horizontal line type. It can be specified as an integer (0=blank, 1=solid (default), 2=dashed, 3=dotted, 4=dotdash, 5=longdash, 6=twodash) or as one of the character strings `"blank"`, `"solid"`, `"dashed"`, `"dotted"`, `"dotdash"`, `"longdash"`, or `"twodash"`, where `"blank"` uses 'invisible lines' (i.e., does not draw them). |
| `line.lwd` | the horizontal line widths (a positive number). |
| `...` | additional (e.g., graphical) arguments that will be passed on to the `barplot` function. |

## Note:

No horizontal line will be drawn if any of the arguments `line.col`, `line.lty` or `line.lwd` are set to `NULL`.

## Please cite as:

Hlavac, Marek (2019). parade: Pen's Income Parades in R.
R package version 0.1. https://CRAN.R-project.org/package=parade

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## References

Cowell, Frank A. (2000). Measurement of Inequality. In: Atkinson, Anthony B. and Francois Bourguignon, *Handbook of Income Distribution*. North Holland, 87-166.

Pen, Jan. (1971). *Income Distribution*. Harmondsworth: Allen Lane.

## Examples

```
# load data set of Hispanic workers in Chicago
data("chicago")

# generate real wages from their logged versions
chicago$real.wage <- exp(chicago$ln.real.wage)

# simple Pen's parade with a blue, dashed, thin horizontal line at the mean
parade(chicago$real.wage, line.col = "blue", line.lwd = 1, line.lty = "dashed")
```