

# Package ‘waterfalls’

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**Type** Package

**Title** Create Waterfall Charts using 'ggplot2' Simply

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**Description** A not uncommon task for quants is to create 'waterfall charts'. There seems to be no simple way to do this in 'ggplot2' currently. This package contains a single function (waterfall) that simply draws a waterfall chart in a 'ggplot2' object. Some flexibility is provided, though often the object created will need to be modified through a theme.

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**Imports** ggplot2 (>= 2.0.0),

**LazyData** TRUE

**RoxygenNote** 5.0.1

**NeedsCompilation** no

**Repository** CRAN

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waterfall

*Create waterfall charts***Description**

Create waterfall charts

**Usage**

```
waterfall(.data = NULL, values, labels, rect_text_labels = values,
  rect_text_size = 1, rect_text_labels_anchor = "centre",
  put_rect_text_outside_when_value_below = 0.05 * (max(cumsum(values)) -
  min(cumsum(values))), calc_total = FALSE, total_axis_text = "Total",
  total_rect_text = sum(values), total_rect_color = "black",
  total_rect_text_color = "white", fill_colours = NULL,
  fill_by_sign = TRUE, rect_width = 0.7, rect_border = "black",
  draw_lines = TRUE, lines_anchors = c("right", "left"),
  linetype = "dashed", draw_axis.x = "behind", theme_text_family = "",
  print_plot = FALSE, ggplot_object_name = "mywaterfall")
```

**Arguments**

<code>.data</code>	a data frame containing two columns, one with the values, the other with the labels
<code>values</code>	a numeric vector making up the heights of the rectangles in the waterfall
<code>labels</code>	the labels corresponding to each vector, marked on the x-axis
<code>rect_text_labels</code>	(character) a character vector of the same length as values that are placed on the rectangles
<code>rect_text_size</code>	size of the text in the rectangles
<code>rect_text_labels_anchor</code>	(character) How should <code>rect_text_labels</code> be positioned. In future releases, we might have support for north or south anchors, or for directed positioning (negative down, positive up) etc. For now, only centre is supported.
<code>put_rect_text_outside_when_value_below</code>	(numeric) the text labels accompanying a rectangle of this height will be placed outside the box: below if it's negative; above if it's positive.
<code>calc_total</code>	(logical) should the final pool of the waterfall be calculated (and placed on the chart)
<code>total_axis_text</code>	(character) the text appearing on the axis underneath the total rectangle
<code>total_rect_text</code>	(character) the text in the middle of the rectangle of the total rectangle
<code>total_rect_color</code>	the color of the final rectangle

<code>total_rect_text_color</code>	the color of the final rectangle's label text
<code>fill_colours</code>	Colours to be used to fill the rectangles, in order. Disregarded if <code>fill_by_sign</code> is TRUE (the default).
<code>fill_by_sign</code>	(logical) should positive and negative values each have the same colour?
<code>rect_width</code>	(numeric) the width of the rectangle, relative to the space between each label factor
<code>rect_border</code>	the border around each rectangle. Choose NA if no border is desired.
<code>draw_lines</code>	(logical) should lines be drawn between successive rectangles
<code>lines_anchors</code>	a character vector of length two specifying the horizontal placement of the drawn lines relative to the preceding and successive rectangles, respectively
<code>linetype</code>	the linetype for the <code>draw_lines</code>
<code>draw_axis.x</code>	(character) one of "none", "behind", "front" whether to draw an x.axis line and whether to draw it behind or in front of the rectangles, default is behind
<code>theme_text_family</code>	(character) Passed to the text argument in <code>ggplot2::theme</code> .
<code>print_plot</code>	(logical) Whether or not the plot should be printed. By default, TRUE, which means it cannot be assigned.
<code>ggplot_object_name</code>	(character) A quoted valid object name to which ggplot layers may be added after the function has run. Ignored if <code>print</code> is FALSE.

**Author(s)**

Based on `grattan_waterfall` from the `grattanCharts` package (<https://github.com/HughParsonage/grattanCharts>).

**Examples**

```
waterfall(values = round(rnorm(5), 1), labels = letters[1:5], calc_total = TRUE)
waterfall(.data = data.frame(category = letters[1:5],
                             value = c(100, -20, 10, 20, 110)),
          fill_colours = colorRampPalette(c("#1b7cd6", "#d5e6f2"))(5),
          fill_by_sign = FALSE)
```

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