

1. Given a brief rationale for your design. What choices have you made? Is there something we need to know to interpret it?
  1. Because my goal is to demonstrate the “trend” of each country over time, I create a line plot with x-axis being the year and y-axis being the sum amount of all the aids within each year. The rationale of this choice is that position encodings are the most effective encodings, and should be used for the most important dimensions, which in this case is the time and the aid amount.
  2. The reason that I fit a linear regression line for each country is that I want to show the “overall” trend of the aid amount. The regression line summarizes the trend and makes it easy to spot deviations (e.g., peaks or valleys) from the general trend.
  3. To make it easy to compare the absolute values across countries, I enforce the same scale for both the x-axis and the y-axis.
  4. To make it easy to compare the trends across countries, I order the country by the slope of the regression line.
  5. To make it clear that countries fall into two categories in the reduced dataset, I color-code the line, dots, and the title. I chose red for those who are receivers because red is implicitly associated with the concept of alertness and caution, which is compatible with the fact that these countries need aid.
  6. Each dot represents the sum amount of a given year if the amount is greater than 0. In other words, if there are no records in a given year, there will be no dot on the line plot. This is to avoid missing values from distorting the trend.
2. How have you adapted your initial design based on the feedback that you have gotten?
  1. One of the critiques correctly pointed out that the lack of axis ticks for each subplot makes it hard to read the trend for each country. Therefore, I added the axis title and axis ticks for each of the subplot. Note that now the viewers can read the trend of each country without the need to scrolling to the left or to the button to align the axes.
  2. Following with the previous issue about readability, I removed unnecessary grids in the background. Because the y-axis variable is log-transformed, the minor horizontal lines (e.g., the line in the middle of  $10^5$  and  $10^6$ , which denotes  $10^{5.5}$ ) are hard for people to understand. Therefore, I remove these minor horizontal lines to reduce distracting pieces in the graph.

3. The critiques for my Q2 design correctly pointed out that it could be difficult for lay people to understand the exponential notations, so I changed the y-axis labels from exponents ( $10^5$ ,  $10^6$ ,...) to character expression (K, M, B). I hope this would improve the readability for those who don't know exponents.
  4. To address another critique about that I didn't make it clear I was using the reduced dataset, I added the description both in the caption and in the title that I was using the reduced set. This highlights the fact that the data shown is only a subset of the complete dataset.
  5. To emphasize that it is not a mistake that these countries fall into two categories – those who only donate and those who only receive, I color-coded and enlarge the titles to make this dichotomy clear.
3. How did you make it (tell us the specific tools - especially if you did some programming). How faithful is your design to the actual data? (this might be anything from “it's completely a sketch based on my impressions from a quick look at the data” to “it was computed from the actual data” or anything in between - please be specific)
1. I used R with the package “tidyverse” to transform the data and with the package “ggplot2” to visualize the reduced data set. The design is computed from the actual data. The output is then embedded into a word document in which I added the caption. I then convert the word document into a pdf file.