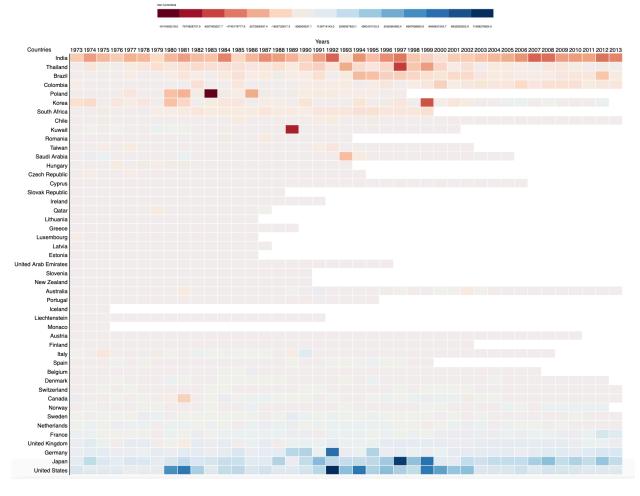
## Mini Project 2 (Kundan Patel – kap675)

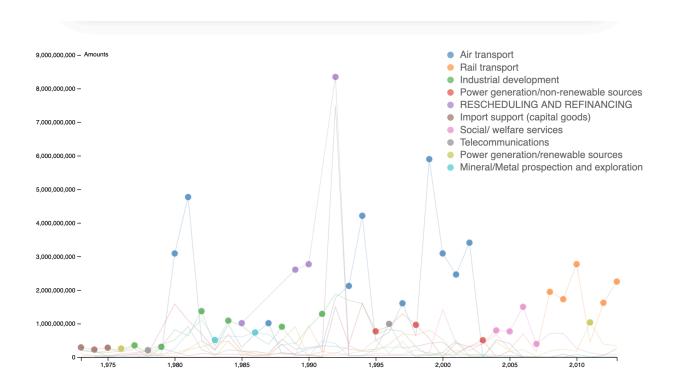
## **Visualization 1:**

I used heatmap for visualization where the y axis represents the countries and the x axis represents the time. I have used a diverging scale with two hues (each representing net positive and net negative donations). Each country has a box for each year which is colored with a different intensity of one of the two hues depending on whether it donated more or received more (net positive value or net negative value respectively). This representation clearly answers all the questions. It shows how the amount donated vs. amount received change over time across all countries. It also shows if there are countries that mostly send or mostly receive and countries that have a similar amount of donations they receive and send. If there is a country that has a shade of one hue and shade of different hue after few years, it answers the third question and shows countries that change their role over time. We can also easily spot countries that drastically change their donating or receiving pattern by spotting sudden increase or drop of the intensities of colors.



## **Visualization 2:**

I used a line chart for visualization here. There are 10 lines that represent each of the top ten purposes. Along with this, I have also added dots to mark the maximum amounts donated in each year and the color of the dot represents the purpose associated with that donation. This visualization answers the question as the amounts for each of the purposes can be easily compared over time if we use x axis to represent time and y axis to represent the amounts.



## Visualization 3:

In the third question, we need a way to represent how donations shift geographically over time. As there are a large number of years, I have decided to group the years in groups of 10. The donations by each country is represented on a choropleth map for each group of 10 years. This is the reason I decided to use faceting to make it easier to compare the donations for each country after 10 years. This representation also answers if the donations tend to be always in the same regions of the world over the years or they have been shifting over time as I have used color intensities to encode the amount of donations in each of the maps.

