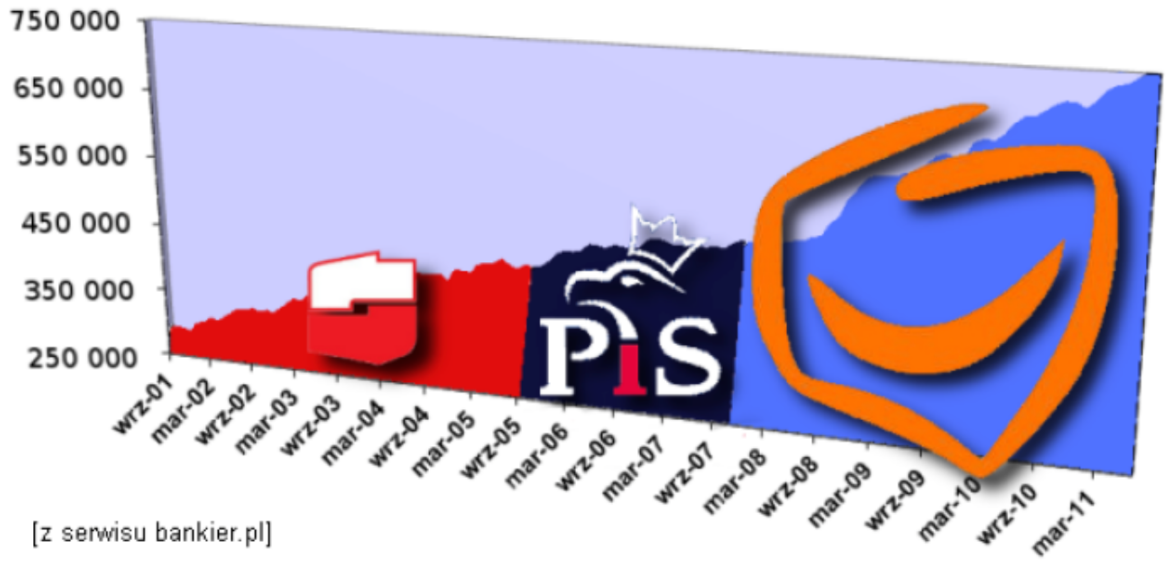
Exercises Assignment #5 – Bad Data Visualization Examples

The first example of bad graphical representation I would like to bring comes from bankier.pl, representing the growing debt of the State Treasury in Poland, presented for three leading parties in a particular period.

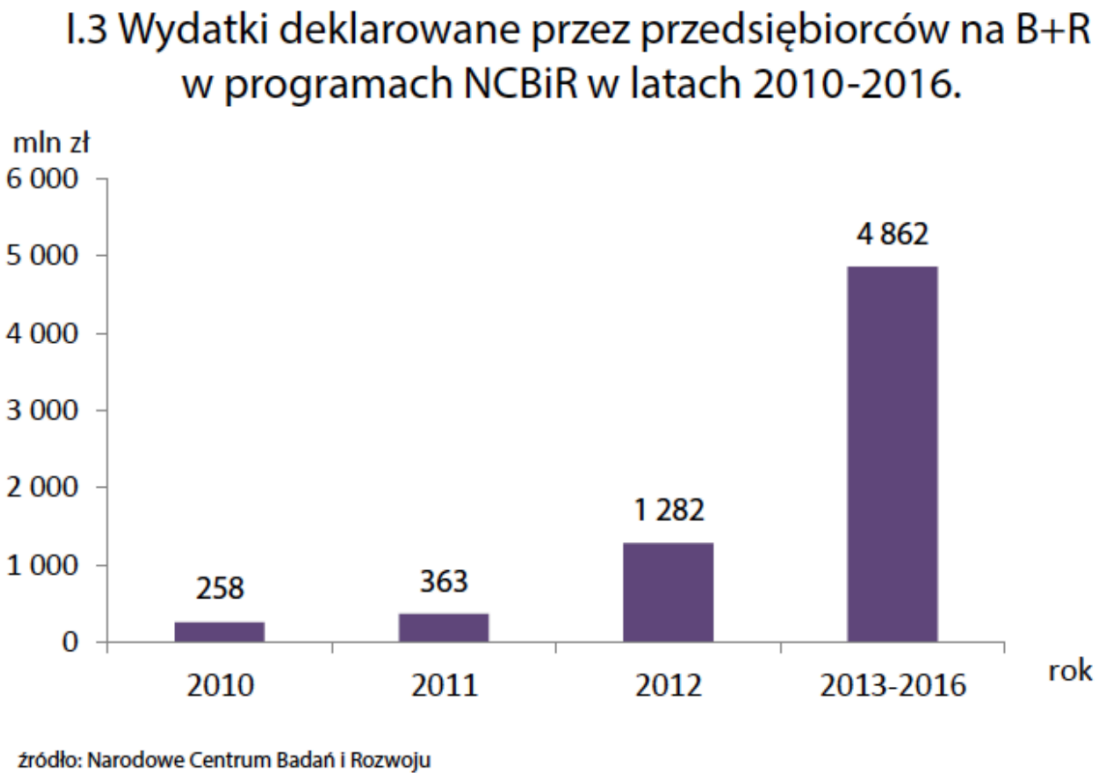


The biggest disadvantage of this chart is the useless 3D perspective, interfering with the perception and making the viewer unable to see when the debt rise was actually the biggest. Another pointless feature is using the parties' symbols, drawn in different sizes and overshadowing the actual trend line.

To improve this chart, I would flatten the perspective to normal 2D and remove big symbols from the top. Instead, they could be drawn smaller and in the same size, or parties could be distinguished by using a legend with their names. Additionally, I would consider clearing the background 'lilac' color and starting the Y-axis from 0 – with 250 000 as a benchmark it is hard to read the absolute debt values.

The second bad example comes from a report "Science in Poland" (2013) prepared by the Ministry of Science and Higher Education. The fact that it has actually won a poll for the worst graphic of 2013 speaks for itself.

This chart shows the expenditures declared by entrepreneurs on R&D within the Scientific Research and Development Center between 2010 and 2016.



At first glance, it shows significant increases in declared expenditures, which allows us to further speak of growing innovation in companies. However considering the last bar, the huge increase in spending is actually… an aggregate forecast of spending for the next four years (report was published in 2013). If we would want to divide this sum by four, we obtain mere 1215,5 M zloty for year, that is a decrease of about 5% compared to 2012. A simple aggregation has completely changed our perception of a non-existing tendency.

In order to improve this chart, a simple rule must be applied – the last bar should be split into four; one for every year. I would also consider using a different color for forecasting than for the known data from past years.

Inspiration for charts taken from: biecek.pl, a collection of neat essays on data visualization.