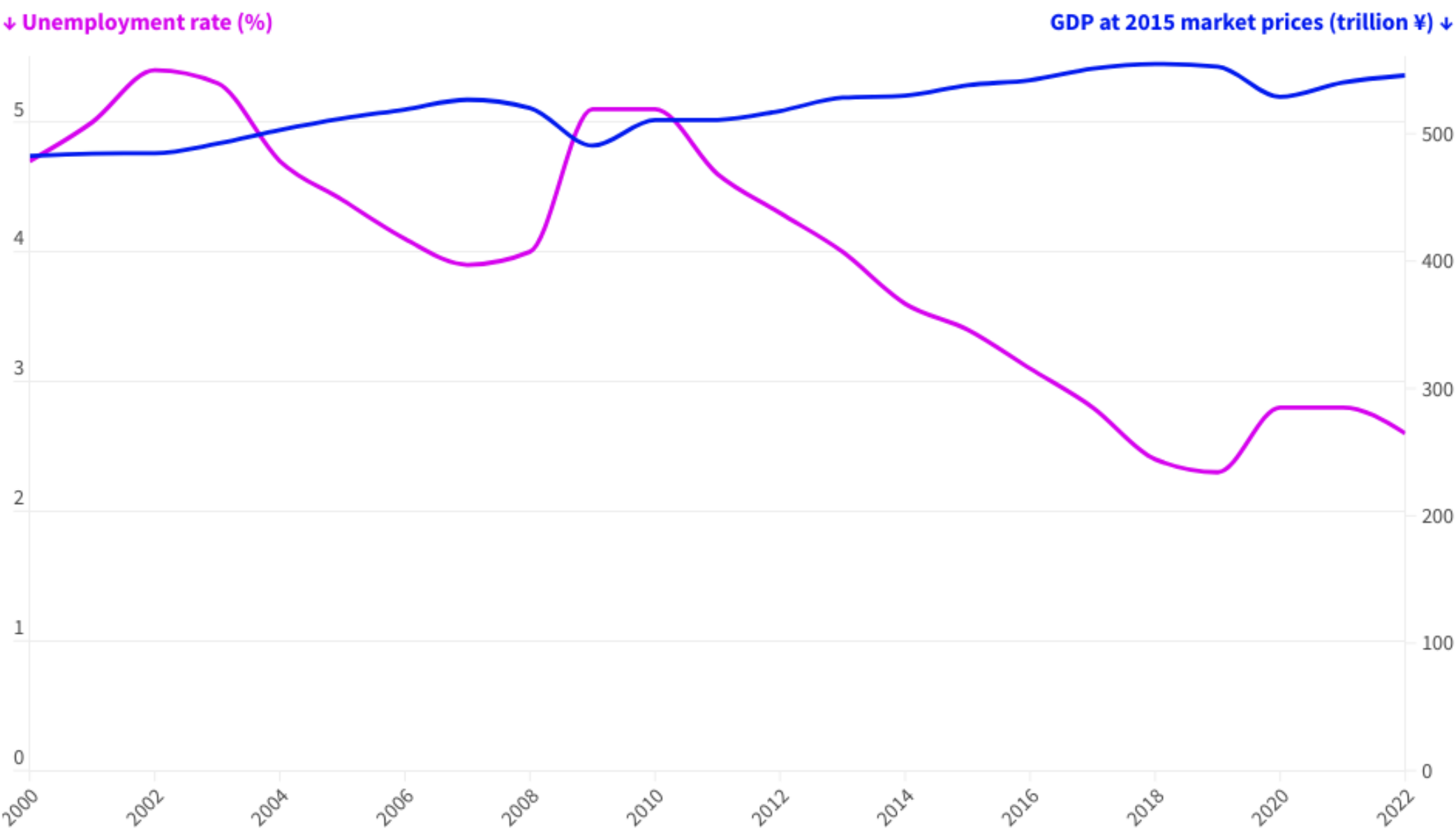


Dual Axis - yay or nay?

This chart shows the relationship between Japan's GDP and the unemployment rate from 2000 to 2022. It uses 2 y-axes. GDP is on the left axis, unemployment rate on the right axis.

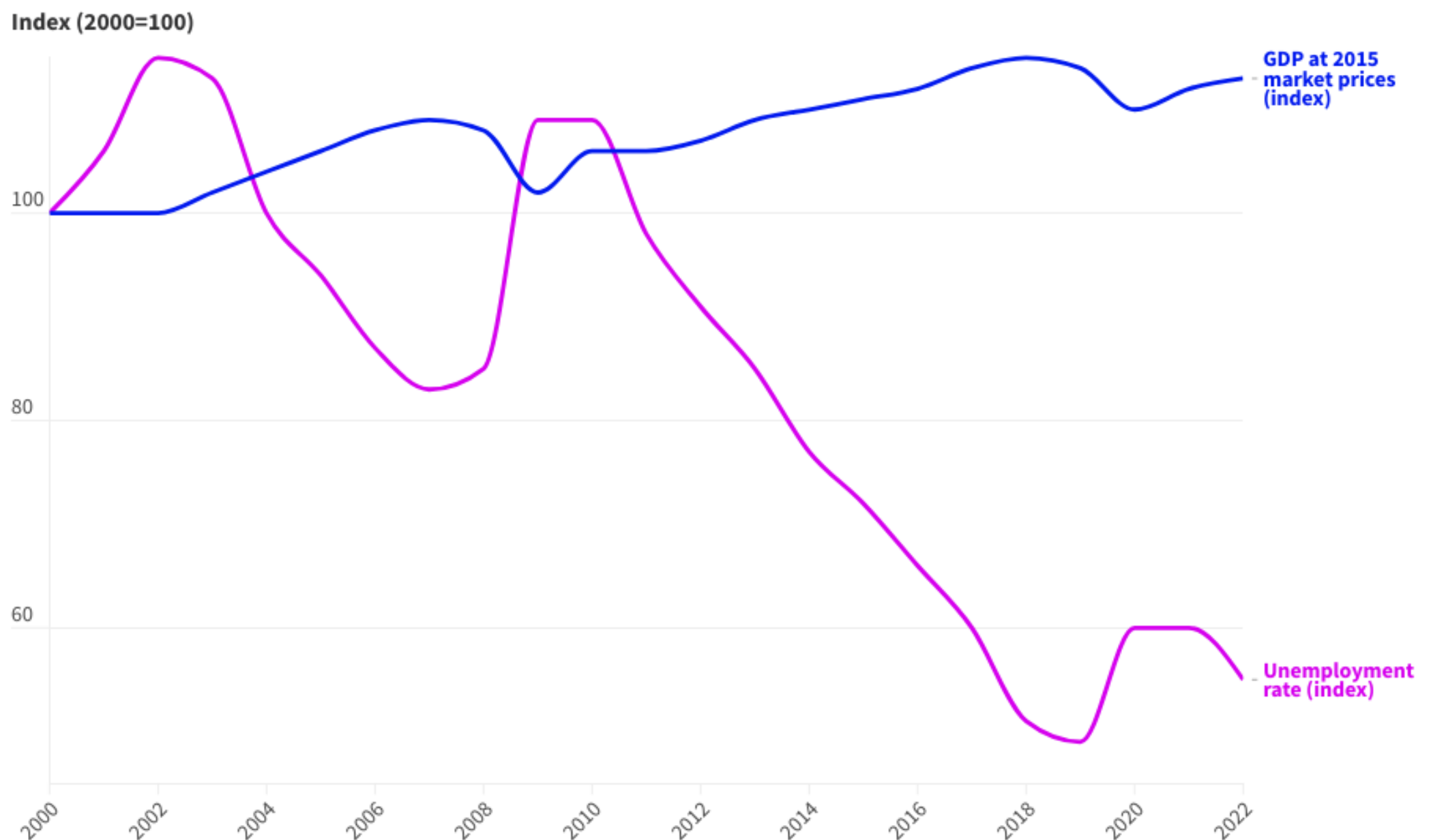
Japan's **unemployment rate** and **GDP** are strongly correlated



Index chart - with 2000 values as reference

In this chart, the values from 2000 are set to 100 and the values for all succeeding years are relative to that index. We can still see that an increase in the GDP is accompanied by a decrease in unemployment rate - but it's less pronounced.

Japan's **unemployment rate** and **GDP** are strongly correlated

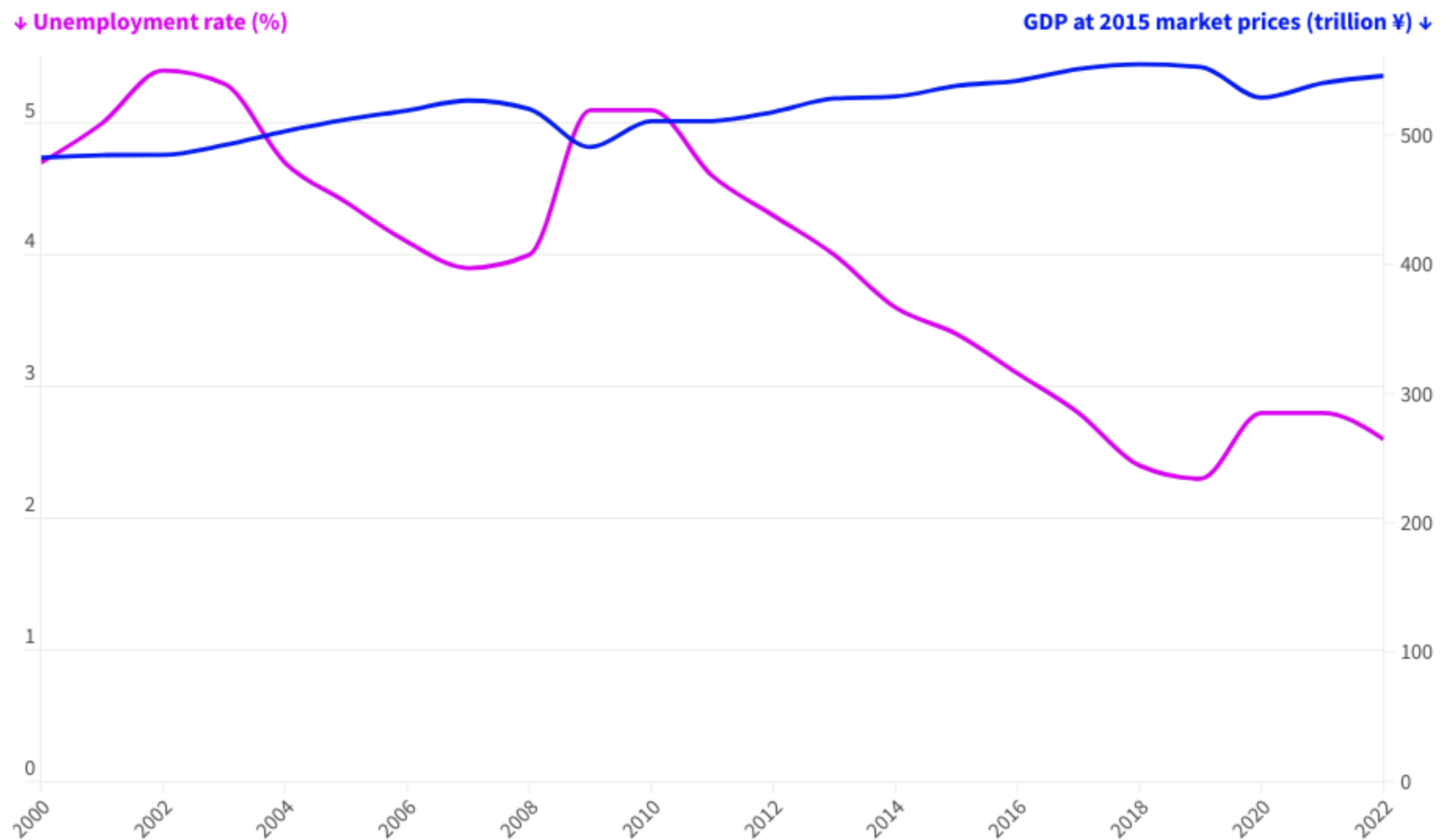


Dual Axis again

with both y-axes starting from zero

That shape looks very familiar to the index chart. But there is also lots of space at the bottom of the chart. And what would it mean for the Japanese economy if the GDP was zero after all!?

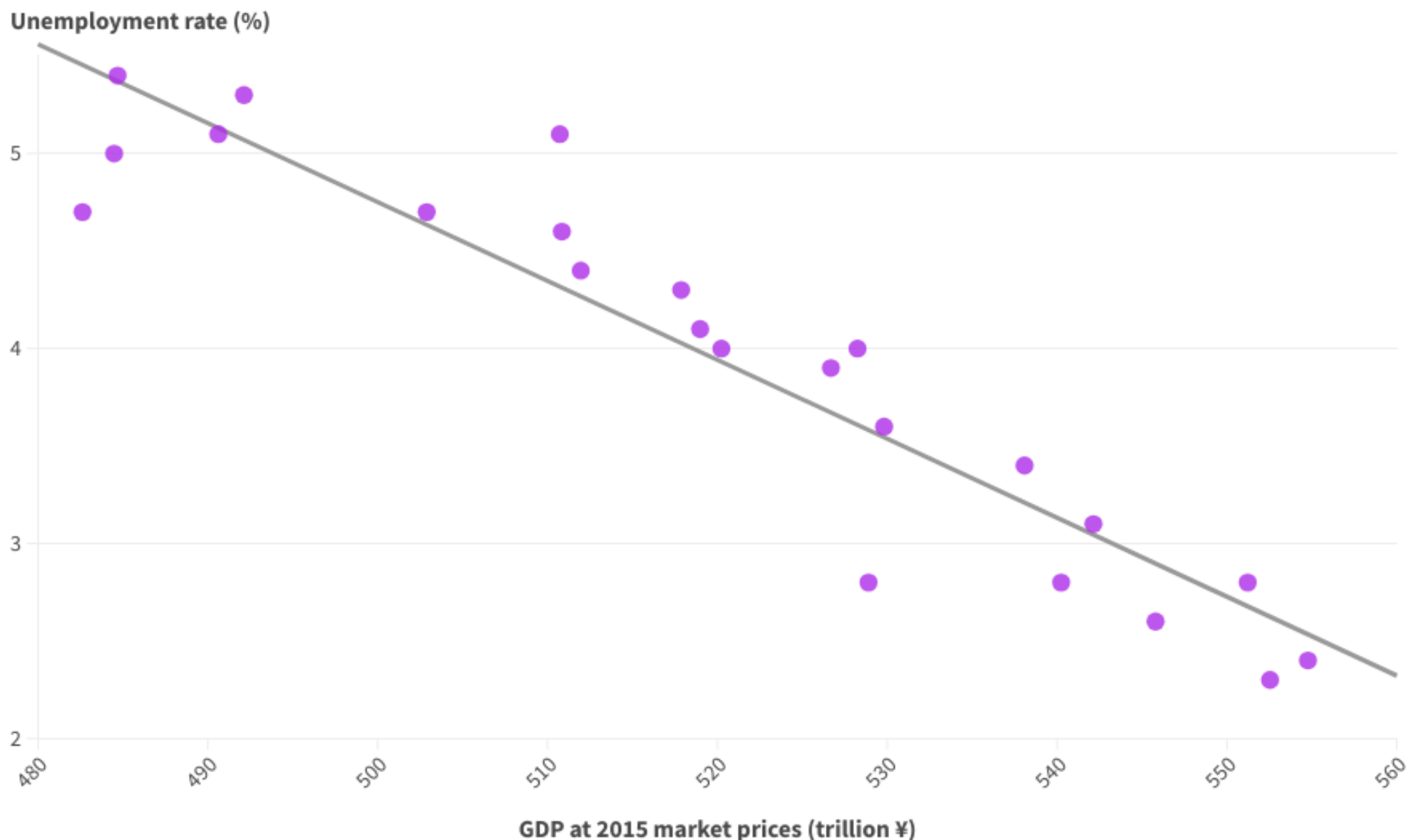
Japan's **unemployment rate** and **GDP** are strongly correlated



So what is the correlation after all?

In this scatterplot, we remove the temporal dimension and instead plot the GDP on the x-axis and unemployment rate on the y-axis. Pearson's correlation coefficient is **-0.93**, indicating a very strong relationship.

Japan's GDP and unemployment rate are strongly correlated



Source: Asian Development Bank / ERDI
Visualization: Ansgar Wolsing