Austrian GHG Emissions

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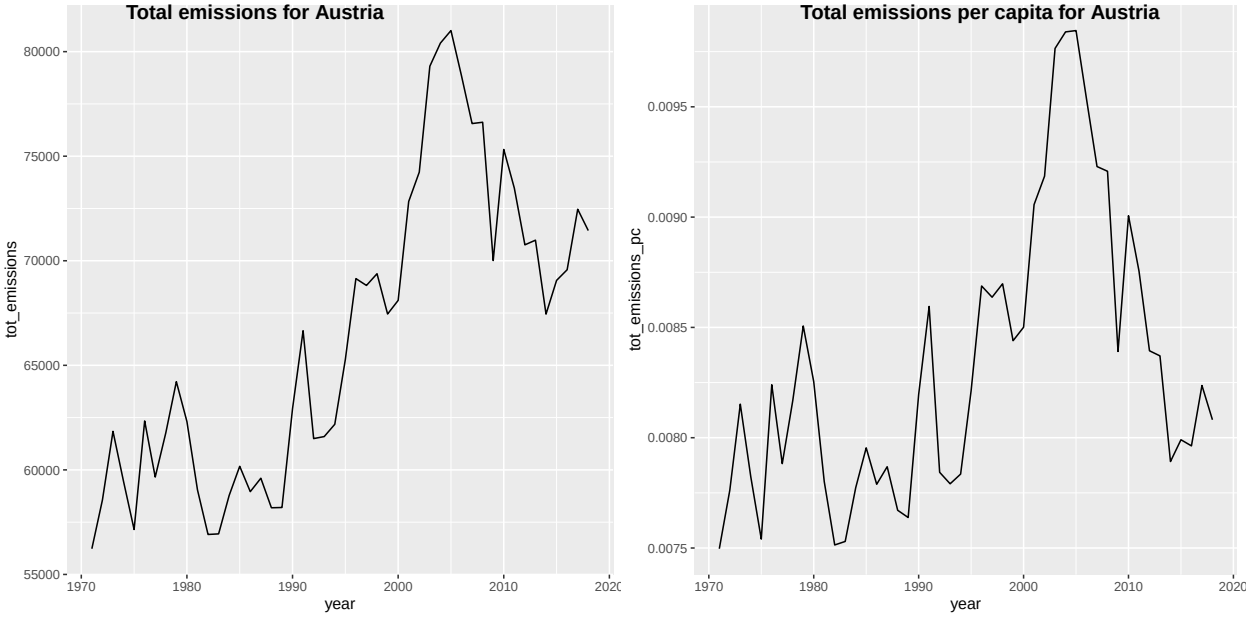
Motivation

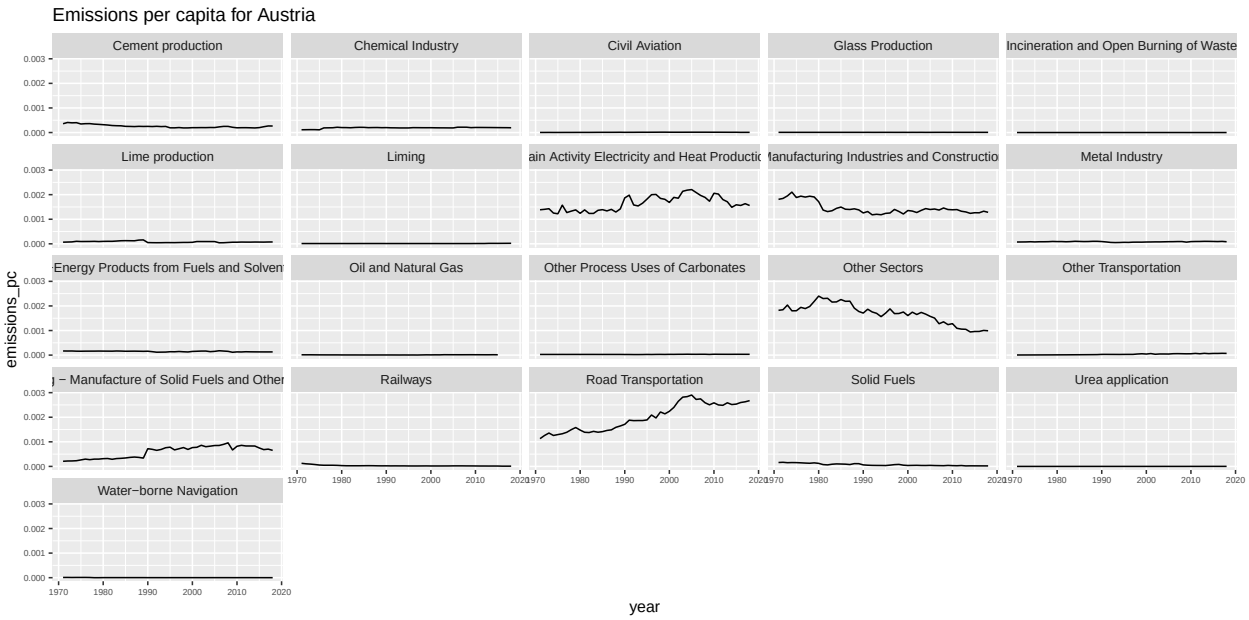
I seek to replicate the work of Koch et al. (2022) in *Attributing agnostically-detected large reductions in road CO2 emissions to policy mixes*, applying their 'causes-of-effects' searching method to determine effective emissions-reduction policy mixes across all sectors. I will then focus on the Austrian context to find effective policy mixes, in the context of informing the Climate Plan for Austria.

Austrian emissions: an exploration

First, I visualise the overall emissions of Austria to explore potential structural breaks in emissions.



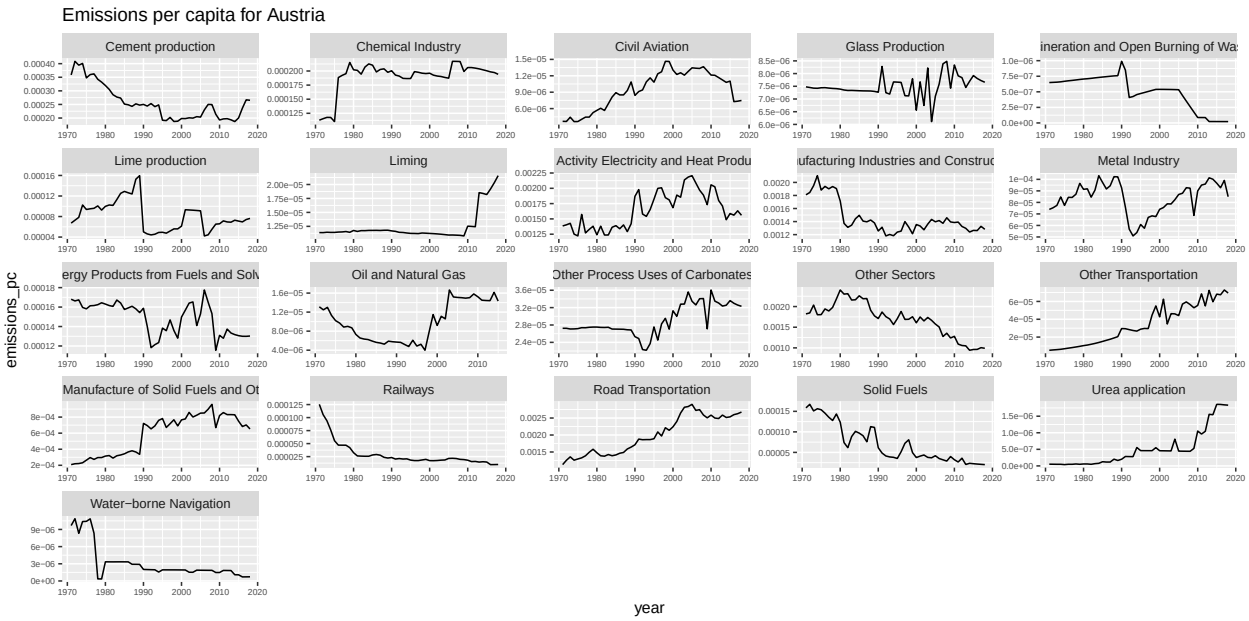
Then, I explore the emissions per capita time series plots for all different IPCC Emissions categories. These are based on the 2006 IPCC emissions categories.



We can see here that the IPCC categories with the highest emissions for Austria are:

- Main Activity Electricity and Heat Production
- Manufacturing Industries and Construction
- Petroleum Refining - Manufacture of Solid Fuels and Other Energy Industries
- Road Transportation
- Other Sectors, which refers to Fuel Combustion Activities from the Commercial/Institutional, Residential and Agriculture/Forestry/Fishing/Fish Farms sectors.

Next, I explore the variation in the time series by taking the log of per capita emissions and re-plotting the time series. I also allow the scale to vary between charts to see the individual variation in the plots.



From this analysis, we can see that there are significant variations in the emissions of all sectors. Thus, I conclude that it is worth evaluating structural breaks in emissions for all sectors for Austria. However, given the relatively large magnitude of the energy and heat, manufacturing and construction, refining, transport and other sectors, I will focus the policy evaluation in these sectors.

I follow the reverse