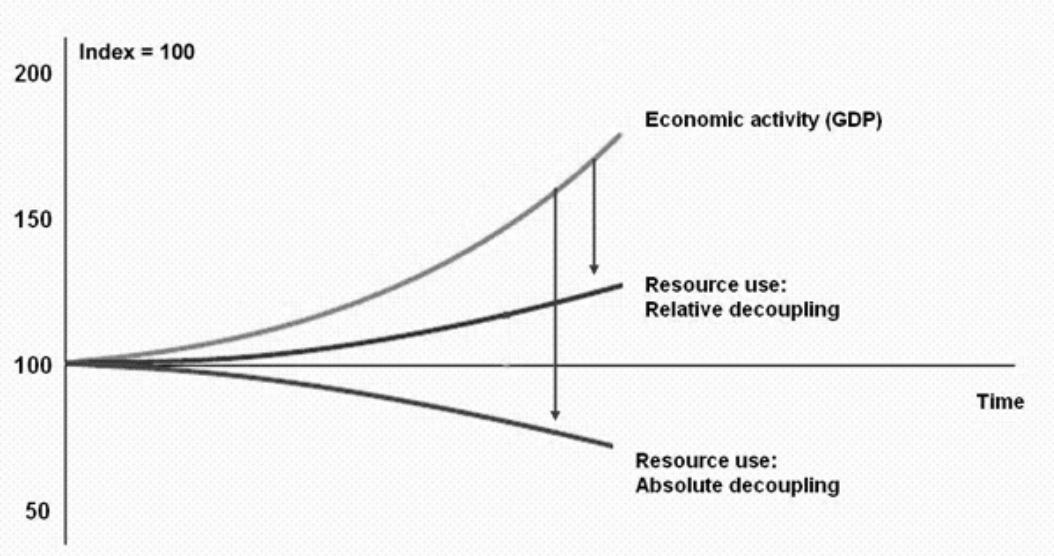
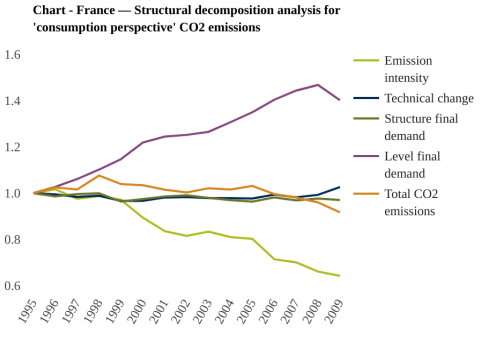
Conceptual exercises

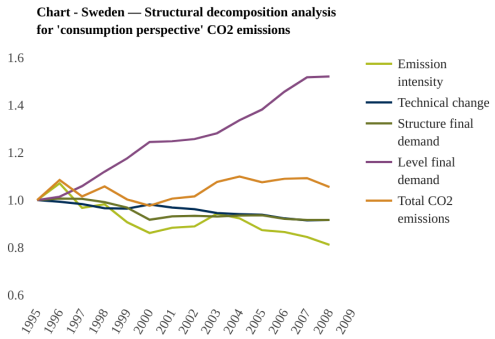
Part 1: Understanding absolute and relative decoupling

Draw a graph depicting i) relative decoupling and ii) absolute decoupling of economic activity and resource use. The y-axis of the graph can represent an index of economic activity and resource use where 100 indicates the base year. The x-axis can represent time.



Part 2: Interpreting SDA results





a. Between 2002 and 2003 what was the relative change in consumption-based CO2 emissions in France and Sweden

France: Around 2% increase: 1.003-> 1.021

Sweden: Around 6% increase: 1.016-> 1.076

b. Which factor(s) were responsible for these observed trends

Increased emissions intensity and level of final demand.

c. To what extent is relative and absolute decoupling of emissions and economic growth achieved in both countries?

France shows evidence of strong relative decoupling and mild absolute decoupling. Sweden shows evidence of mild relative decoupling but no absolute decoupling

d. Identify three other factors not listed above that may influence the emissions footprint of economic activity and could be incorporated into SDA

E.g. breakdown by spatial region (e.g. urban/rural), emissions intensity of imports vs domestic production, by gender-based consumption, by service-based consumption (e.g. restaurants and recreation), private vs public transport. *Any breakdown of final demand (e.g. by sector or socio-demographic group), production layer, production structure, or resource waste recycling.

e. How might rebound effects offset the emissions savings of energy efficiency gains?

1) Reduced cost of energy increases consumption
2) Savings from cost reduction spent elsewhere in the economy
3) Move away from fossil fuels reduces their cost for other nations