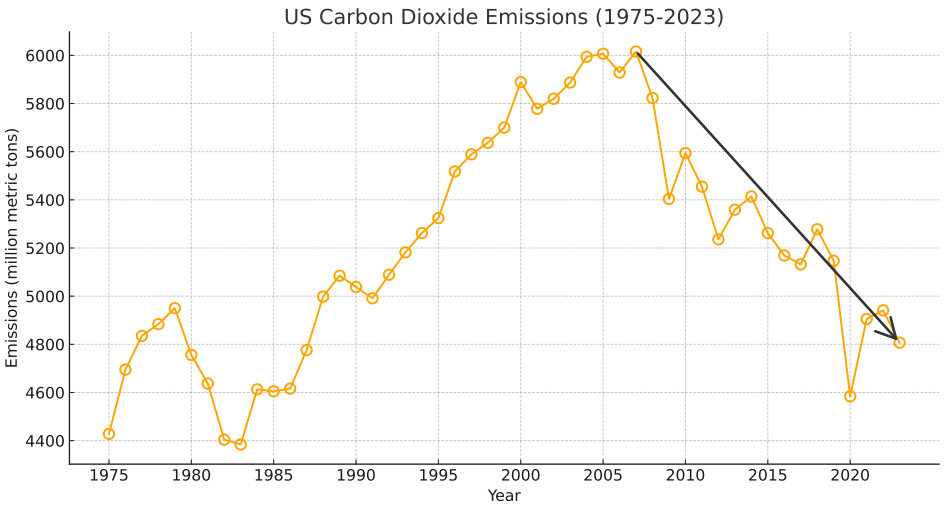
A Theory of Endogenous Degrowth and Environmental Sustainability

Aghion, Boppart, Peters, Schwartzman, Zilibotti (2024) - Discussion by Maarten De Ridder

Emissions are collapsing



This paper

Does it take policy to reduce emissions, or will they fall endogenously through preferences? Idea:

- As society becomes richer, demand shifts towards luxury goods, not just "more" goods
- Luxury involve more human inputs, less polluting manufacturing inputs
- Innovation in luxury goods centers around improving their quality (e.g. fancy restaurant)

Hence growth becomes quality-led: improvements in quality rather than quantity TFP drive growth

- Quality adjustment in price indices is imperfect, so quality-led growth causes underestimation
- Might explain the recent lack of measured productivity growth
- Have your cake and eat it: much less "true" degrowth required to avoid climate disaster

Discussion

Great paper offering new perspective on how directed technological change can prevent climate change

- Non-homothetic preferences could mean that transition to clean production is cheaper
- Additional motivation for loading climate policy predominantly on advanced economies
- Very complete: intuitive mechanism, rigorous implementation, backed by empirical evidence

Two comments:

1. Are emissions declining because of reallocation or within-sector drops in emissions?
2. Is endogeneous degrowth a plausible driver for the slowdown of productivity growth?

Comment 1: is production reallocating to low emission sectors?

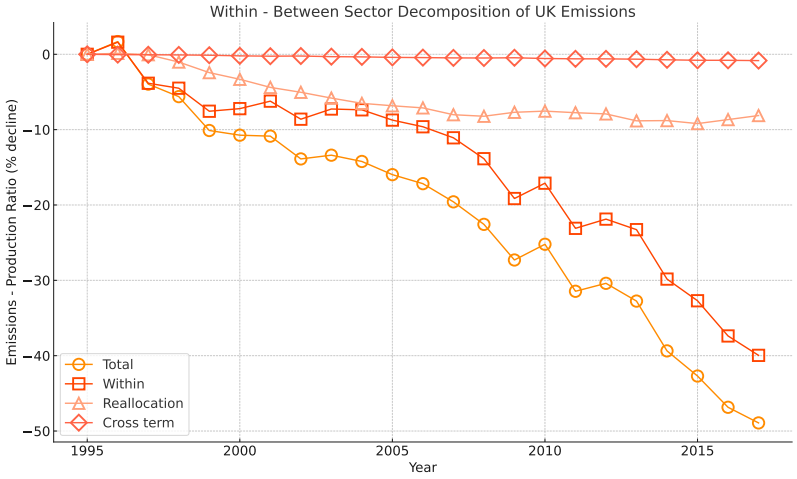
Is production reallocating to low-emission sectors, or are emissions falling within sectors?

- In the paper: key role for reallocation of economic activity towards low-emissions sectors
- Difficult to measure: need disaggregated data on production and emissions
- First attempt: broad economic sectors (industry, transportation, agriculture, utilities etc)

Decompose the decline in the emissions-to-gdp ratio (UK data, end-user emissions):

$$\Delta \frac{E_t}{Y_t} = \underbrace{\sum_{j \in J} s_{jt-1} \Delta \frac{E_{jt}}{Y_{jt}}}_{\text{within-sector}} + \underbrace{\sum_{j \in J} \Delta s_{jt} \frac{E_{jt-1}}{Y_{jt-1}}}_{\text{reallocation}} + \sum_{j \in J} \Delta s_{jt-1} \Delta \frac{E_{jt}}{Y_{jt}}$$

UK: within-sector drives most of decline in emissions



Transportation (e.g.): makes up a growing share of GDP in the UK, very polluting, getting cleaner

Comment 1: is production reallocating to low emission sectors?

Paper's mechanism is probably more important as there are *lots* of caveats on this plot:

- These are very broad industries: reallocation more important at disaggregated level
- Judgement calls on how to map emissions industries to production industries
- Authors can probably do much better with the National Emissions Inventory data vs UK

Proposal: rerun the decomposition for US data and match the contribution of reallocation in the model

Comment 2: endogenous degrowth to explain the productivity slowdown

New hypothesis: a rise in quality-led growth has increased measurement of TFP growth

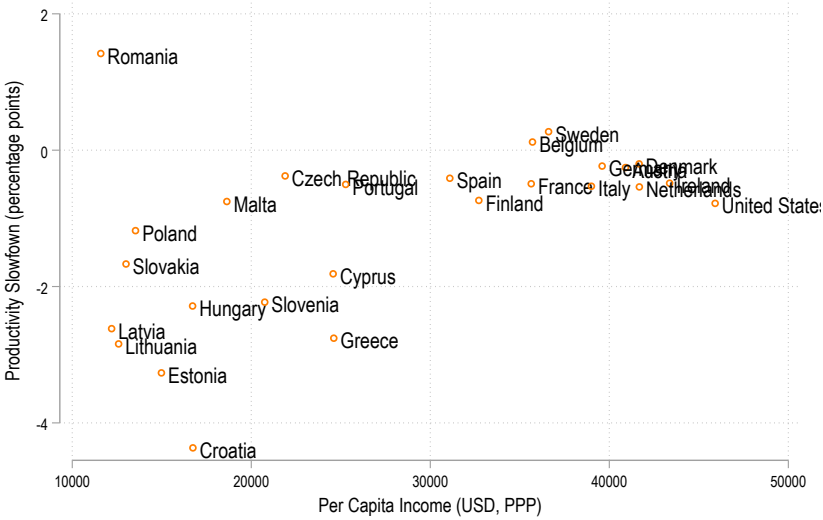
Prior work offers evidence against measurement as driver of the recent productivity slowdown:

- Measurement error in growth is sizable but hasn't increased much (ABBKL 2019, AER)
- No correlation of slowdown and seize of 'mismeasured sectors' such as IT (Syverson 2017, JEP)

But that doesn't rule out the mechanism that the authors propose!

- Counterargument: slowdown was remarkably synchronized across Europe & USA
- No positive correlation between slowdown of growth and level of development

Productivity slowdown by income level



Summary

This paper proposes non-homothetic preferences as a mitigator of climate change

- Luxury goods are labor rather than pollution intensive: consumption becomes sustainable
- But innovations in luxury goods are harder to measure: endogenous degrowth

Endogenous degrowth is a creative and compelling contributor to falling emissions and falling growth

It remains to be seen how quantitatively large the effect of endogenous degrowth will be