

Returns to Scale and Aggregate Productivity

Joel Kariel¹ and Anthony Savagar²

¹CMA and University of Kent ²University of Kent

12th CompNet Annual Conference
*Firms' performance in challenging times: Input costs,
Technology, Productivity, and Market Power*

Discussant: Riccardo Silvestrini

*European Commission, Brussels
19-20 October 2023*

Summary

This paper presents a theory of **rising returns to scale** and **stagnating productivity**:

→ recent technological advances can increase returns to scale, but why is productivity is stagnant?

Main results:

- Increase in RTS through lower marginal costs, which *should* boost TFP.
- Rise of markups exactly offsets the above, explaining the productivity slowdown.

A Nice Paper!

- Combine *known* facts to tell a new story: joint role of RTS, overhead costs, and markups for the evolution of TFP.

→ Can you exploit them more? You have sectoral RTS: use sectoral markups to check if TFP growth is consistent.
- Clean and robust empirical evidence, with a careful analysis in the model.
- Not US based! Key modern issues: magnitude and implications might be country-specific.

Open Questions - RTS and Markups

- The distinction between *total* and variable input RTS might be inconsistent when moving from the data to the model:
 - ① Why is the one in the data the variable RTS? In the data, you observe total employment: $l_{ikt}^{tot} = l_{ikt} + \phi$.

→ Robustness: restrict the sample to top $x\%$ firms, where the potential bias is smaller.
 - ② *The effect of a change in total labour input is [...]* but is overhead labor an input of production?
- Why markups? *Output tax*: $\mu \uparrow$, firms further away from optimal size, so TFP \downarrow with IRS? Or is it because of $N \downarrow$?

(Smaller) Comments

- The empirical firm-level TFP is an arithmetic average? Why not the model power mean? Because the latter changes with μ and ν .
- *With no fixed costs ($\phi = 0$) all labour is utilized for production ($u_t = 1$) and aggregate TFP reflects the power mean of firm-level productivity $TFP_t = \hat{A}_t$. Is it true? N?*
- Typo in equation 23.
- The baseline result is driven by μ and ν , but overhead costs should be a part of the story, too. Technological change moves both overhead and marginal costs.