

Industrial contributions to productivity growth

627th meeting of the EPC
9 and 10 October 2024

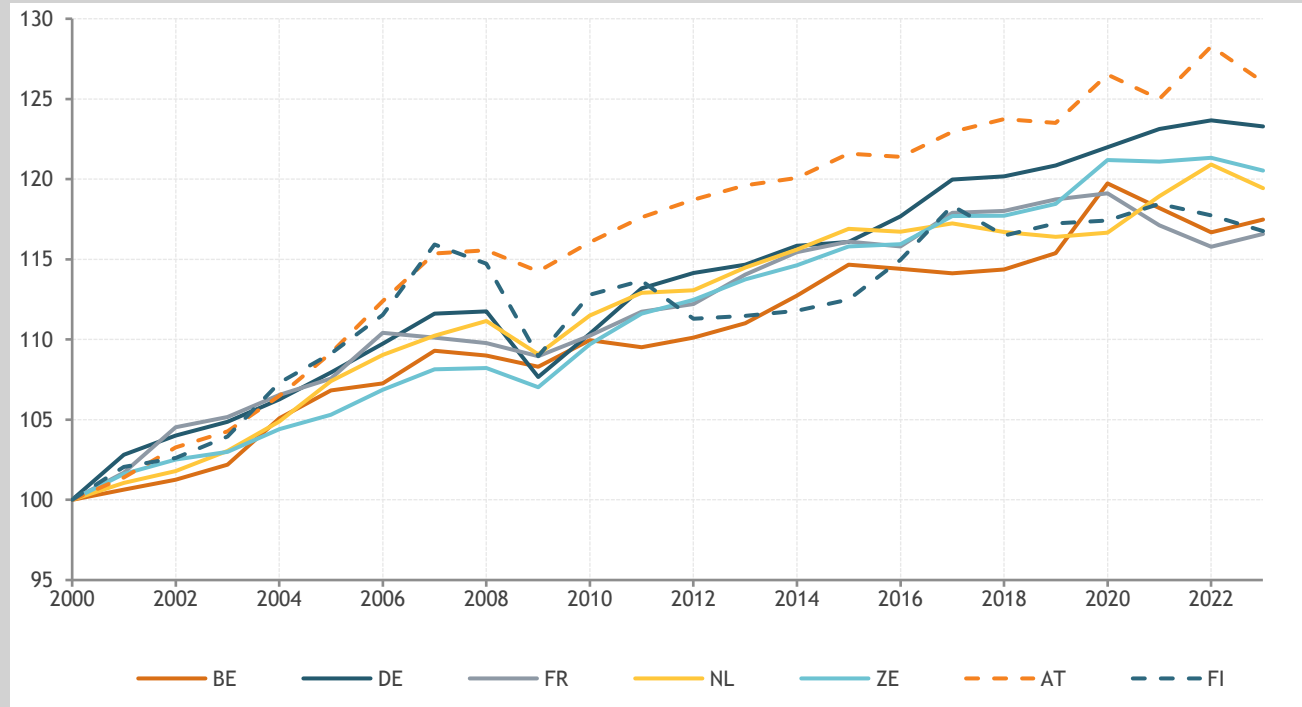


National Productivity Board



Productivity evolution in Belgium in comparison with EA and main partners

Hourly labour productivity, total economy, 2000 = 100



- Structural slowdown of productivity growth after financial economic crisis;
- Increasing divergences between MS.

Source: Eurostat and NAI, September 2024

Generalised Exactly Additive Decomposition (Tang and Wang 2004)

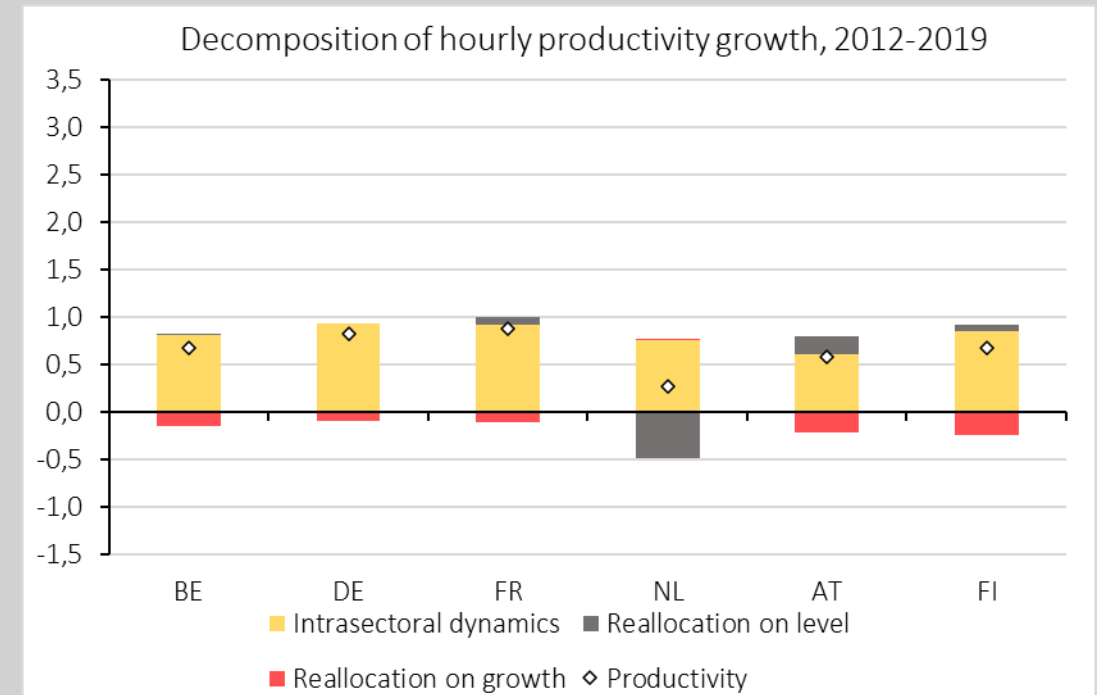
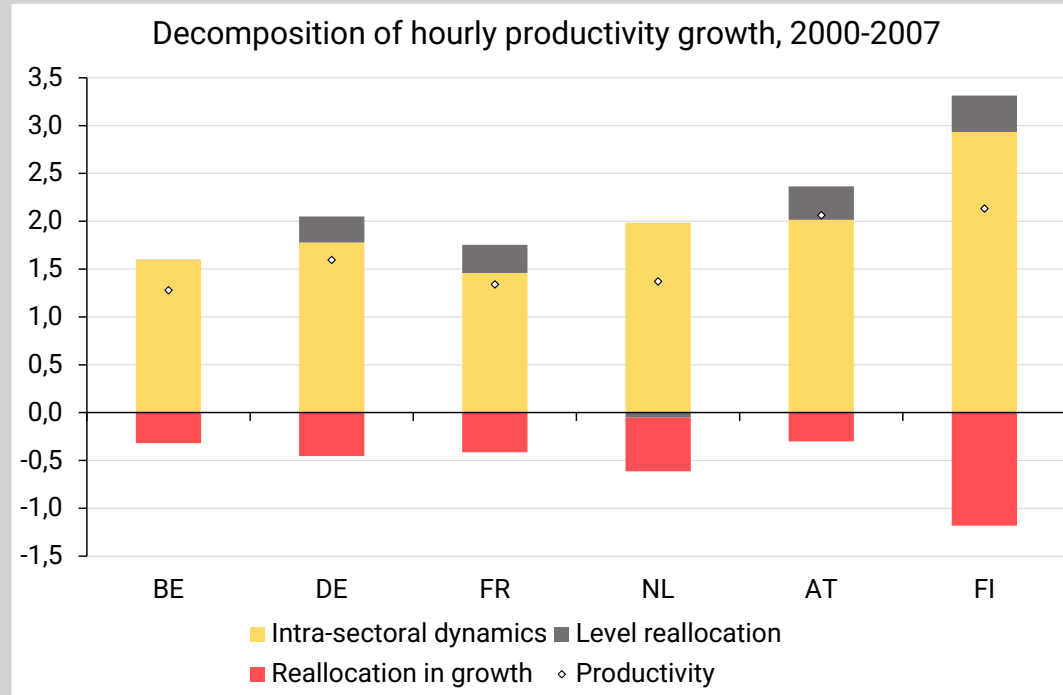
Aggregate productivity = weighted sum of sectoral productivity

- breakdown in 38 industries;
- weight of industry equals relative size of industry in the economy.

Aggregate productivity growth = the sum of

- a **pure effect of productivity growth** within each industry, reflecting **intra-sectoral** productivity dynamics;
- an effect due to the change in the relative size of the industry reflecting the **impact of input movements between industries with different productivity levels** (Denison effect);
- an interaction effect between productivity growth and change in the relative size of the industry reflecting the **impact of input movements between industries with different productivity growths** (Baumol effect).

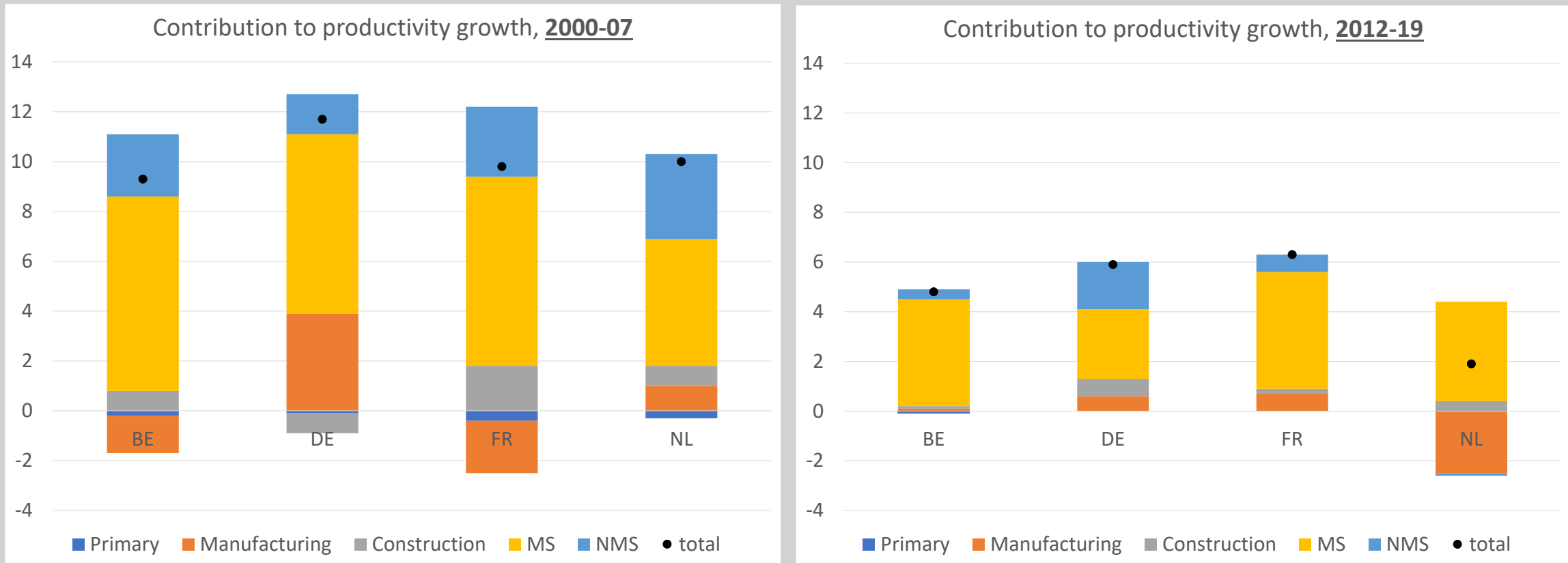
What explains slowdown after financial crisis?



Source: Eurostat, September 2022 and NAI, October 2022

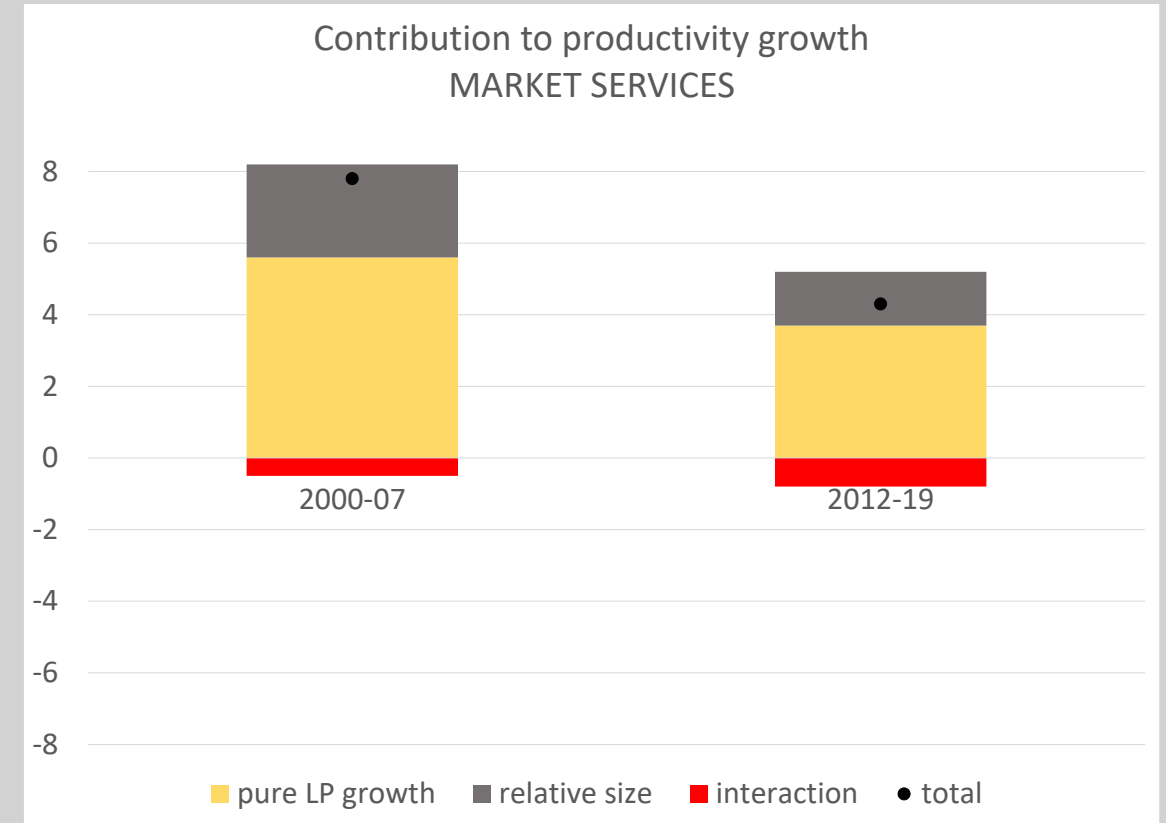
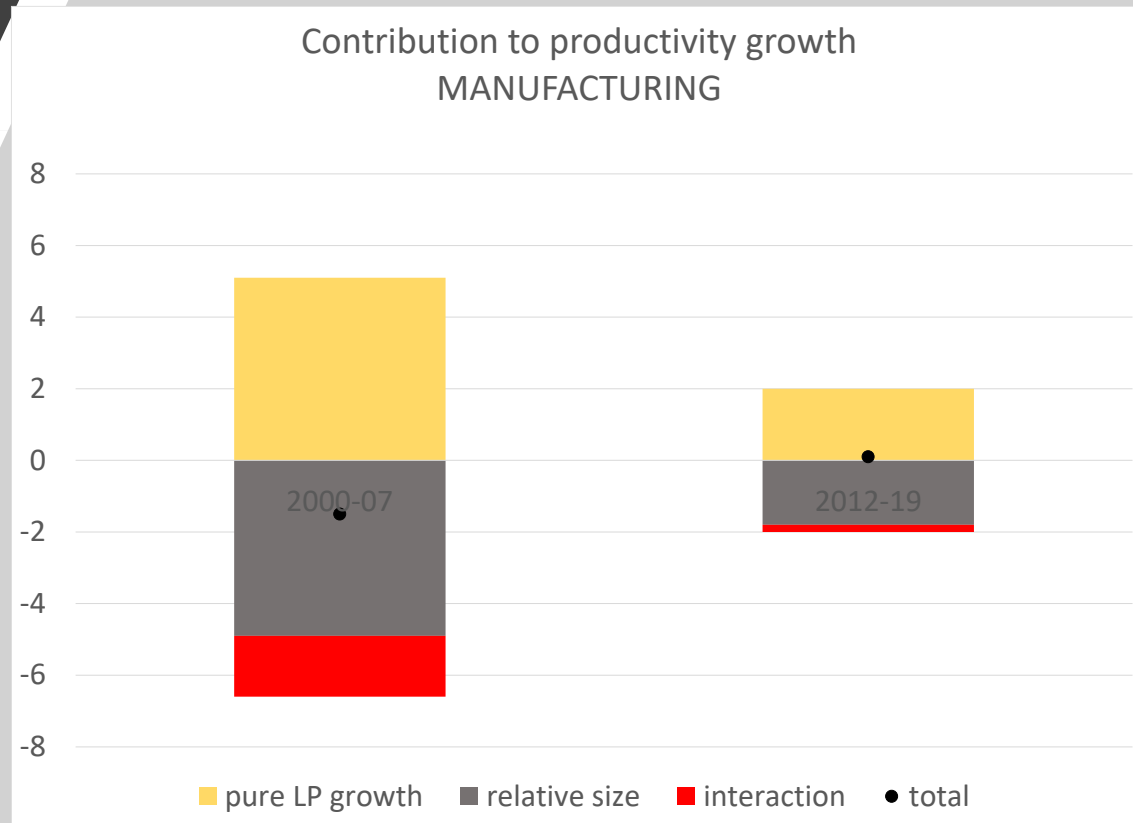
Internal productivity dynamics (at constant economic structure) explain the largest part of aggregate productivity growth and of the productivity slowdown.

What explains slowdown after financial crisis?



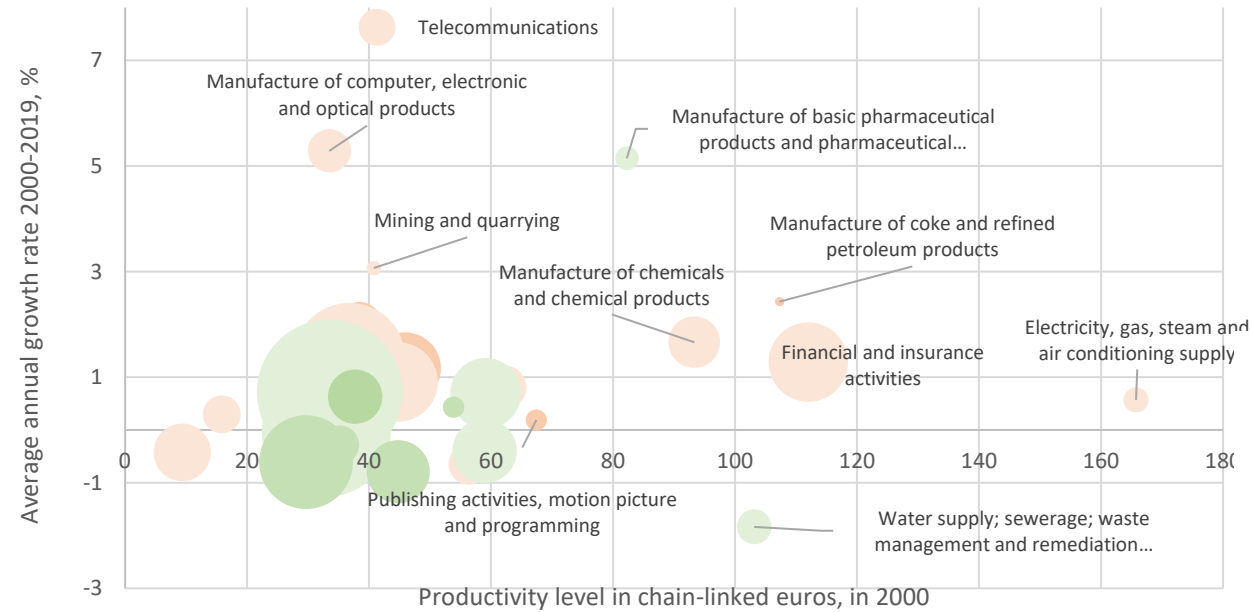
Source: Eurostat, September 2022 and NAI, October 2022.

What explains slowdown after financial crisis?

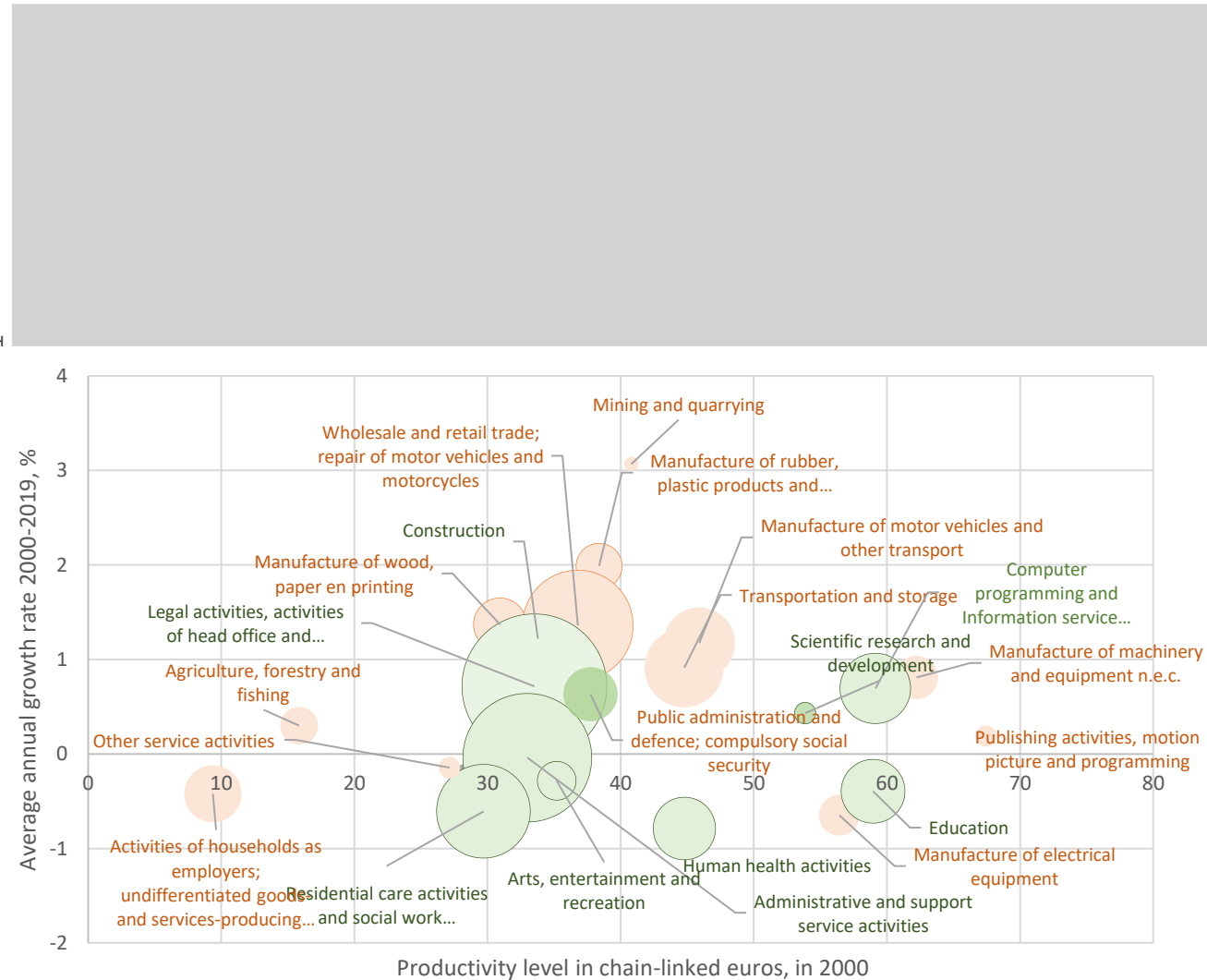


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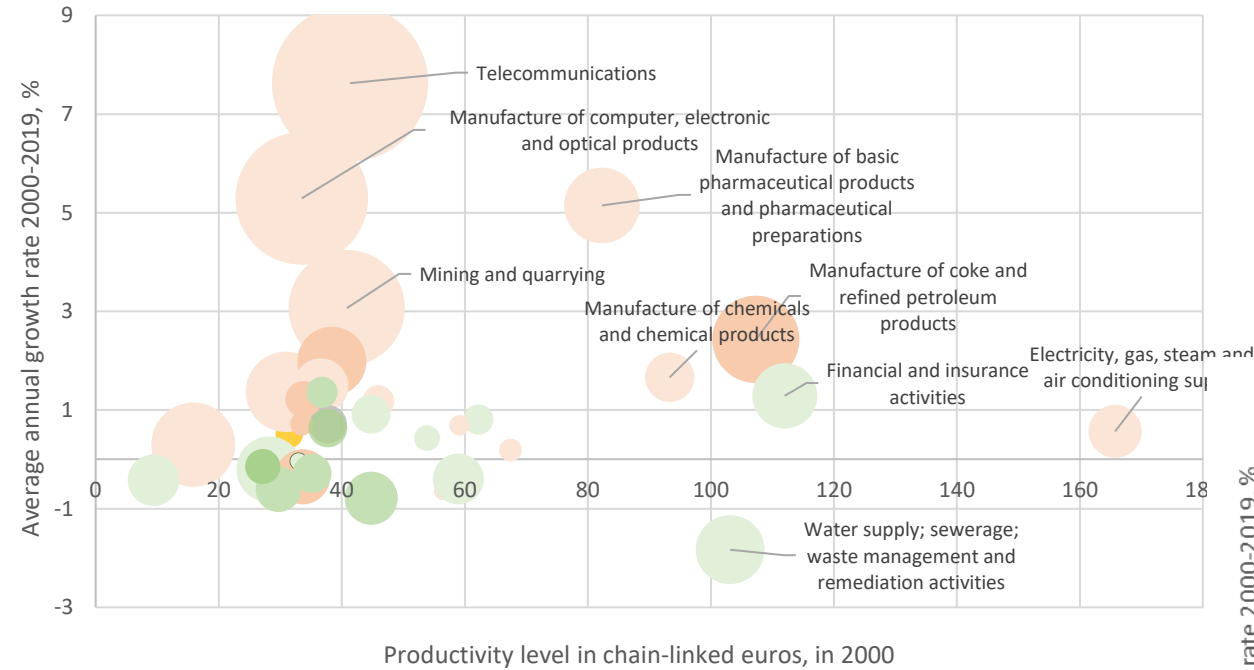
Relative size : hours worked



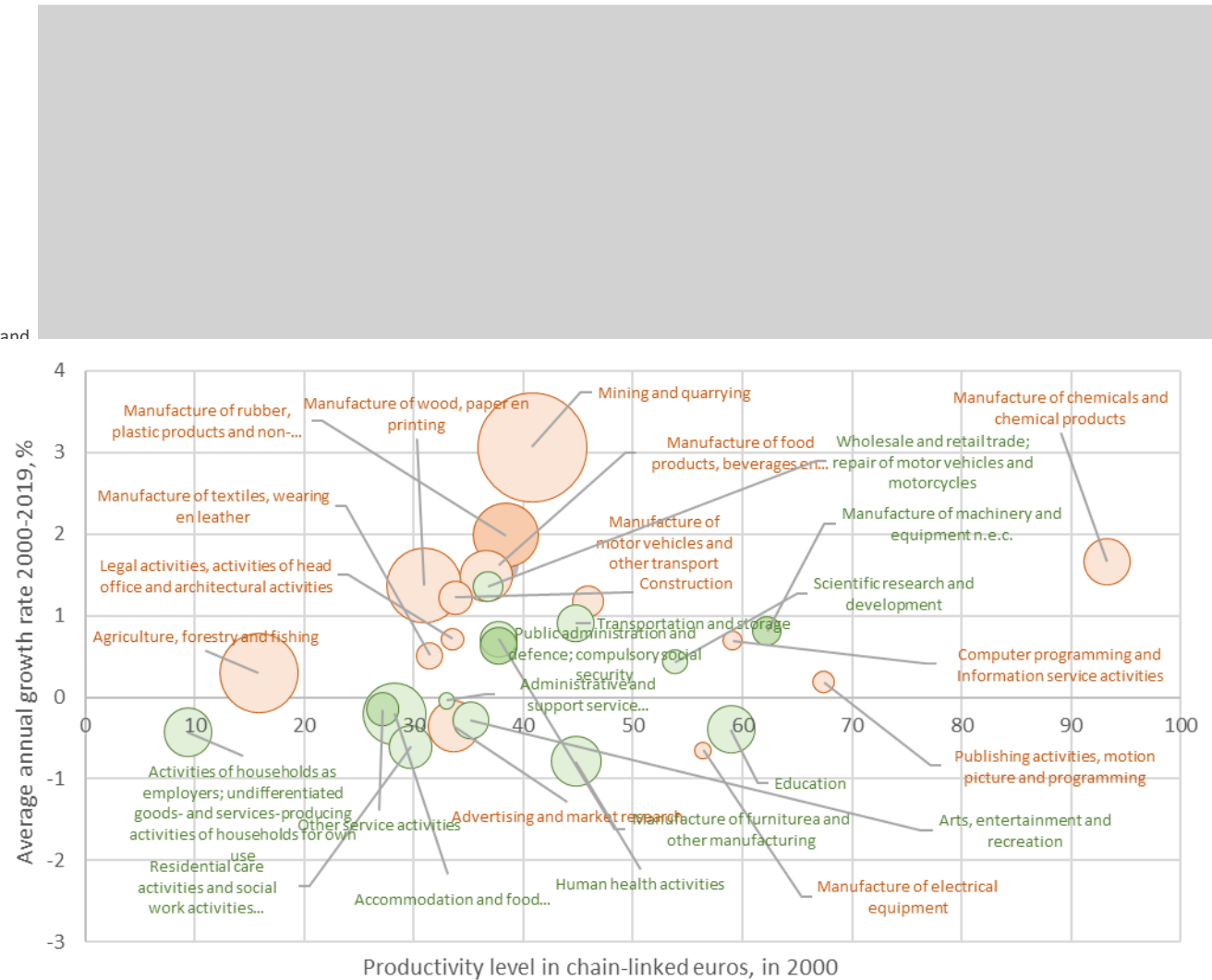
Green bubble: increase in share of hours worked in total hours worked
 Red bubble: decrease of share of hours worked in total hours worked
 Size of bubble : relative importance (in pp) of the increase or decrease.



Relative size : relative deflator



Green bubble: increase in relative deflator
 Red bubble: decrease of relative deflator
 Size of bubble : relative importance (in pp) of the increase or decrease.



Conclusion

In Belgium (as in other studied countries):

Productivity dynamics at industry level largely explain productivity growth of total economy;
Reallocation of inputs between industries with different productivity levels (positive effect) and with different productivity growth rates (negative effect) very limited and decreasing role.

Market services - particularly those which serve intermediate consumption - are the main contributors to productivity growth of total economy;

Industries with higher productivity growth rates recorded a decline of their share in the total volume of employment and a deflator increase slower than the total economy. These findings confirm a Baumol effect.