

Labour productivity dispersion and allocative efficiency in Luxembourg.

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Why the productivity slowdown?

Features of productivity in Luxembourg:

- Productivity dispersion: differences in productivity among similar businesses over time.
- Allocative efficiency: allocation of resources (labour) among firms.
- OECD: evidence from cross-country firm-level data highlights increasing dispersion and low firm dynamics as sources of productivity slowdown.
- Luxembourg?

Data and measures of productivity

- Firm-level data: Structural Business Statistics (SBS) data for 2005-2018.
- Analysis conducted for Manufacturing and Non-financial services in Luxembourg reveals differences across sectors.
- Labour Productivity (LP) at firm level is Value Added (VA) per person employed.

Productivity dispersion increases over time

- General fall in 2008-2009 and 2011-2013, compatible with Eurozone double dip recession.
- After 2013 faster rebound of frontier firms compared to medians.
- Persistent decline for laggards.
- à Laggards less resilient to downturns.
- à Overall evidence for increasing dispersion in recent years.
- à Recovery of frontier firms and protracted decline of laggards.



Allocative efficiency - based on OP decomposition

- Allocative efficiency is relationship between firm size and productivity -Aggregate productivity improves if more productive firms occupy a larger proportion of workers.
- Olley-Pakes (OP) productivity decomposition (1996, Econometrica) provides widely adopted empirical measure of allocative efficiency.
- Aggregate productivity level = firm average productivity + allocative efficiency.

Allocative efficiency improves after the recession

- Share of aggregate productivity attributed to allocative efficiency.
- Decreases to minimum levels during the financial crisis.
- Improves in subsequent years.
- Static measure.



Extension: business dynamics and productivity

- To evaluate role of business dynamism (entry, exit) in productivity.
- Dynamic OP productivity decomposition (Melitz and Polanec, 2015).
- Productivity change between two periods is decomposed into the contribution of Survivors, Exiters, Entrants.



Business dynamics in non-financial services

- Survivors account for a large portion of the aggregate productivity change.
- The contribution of exiters is positive for most periods (i.e. firms that exit the market have lower productivity than survivors).
- The contribution of entrants is negative throughout the period (but.. short time frame / smaller average size of entrants).



Extension: productivity and wages

- Extend firm-level analysis of labour productivity dispersion to wage dispersion and relation between the two.
- Based on work done at the OECD (Berlingieri, 2017).
- Correlation and statistical association between dispersion in the two variables.
- Positive and significant association between wages and productivity for both manufacturing and non-financial service.

à More productive firms tend to pay higher average wages.



Conclusions - features of labour productivity evolution in Luxembourg

- Increase in productivity dispersion detected for non-financial services in more recent years. Dispersion less pronounced for manufacturing.
- Positive evolution in allocative efficiency for both manufacturing and non-financial services in post-crisis period.
- Recovery associated with positive developments in allocative efficiency of survivors. Data also suggest contribution of market selection.



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THANK YOU/MERCI!

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