The Circular Relationship Between Productivity Growth and Real Interest Rate

SUERF-OeNB Workshop: « How to raise r*? »
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Large input from Bergeaud, Cette and Lecat (2019), BdF working paper n° 734
1. Before the crisis: A general productivity slowdown

Average annual growth rate of labor productivity per hour
In the US
Smoothing indicator (HP filter, $\lambda = 500$) - Whole economy – 1891-2019 – In %
Source: Bergeaud, Cette and Lecat (2016) - See: [www.longtermproductivity.com](http://www.longtermproductivity.com)

- Productivity growth levels at the lowest
- Productivity slowdown except during the short decade 1995-2005
1. Before the crisis: A general productivity slowdown

Average annual growth rate of labor productivity per hour
In the main advanced economic areas
Smoothed indicator (HP filter, $\lambda = 500$) - Whole economy – 1891-2019 – In %
Source: Bergeaud, Cette and Lecat (2016) - See: www.longtermproductivity.com

- Productivity growth levels: everywhere at the lowest outside war periods
- Except in the US during the short decade 1995-2005, productivity slowdown in all areas for 4 decades
- Need of common factors to explain this general slowdown
- Productivity puzzle: productivity gains from digitalization are not yet s visible at the global level
2. One of the possible suspects: decreasing financial constraints

- Numerous explanations of this productivity slowdown
- This long run productivity slowdown is universal, whatever the institutions, the productivity level, the ICT and technological diffusion... Common factors?
- Aghion, Bergeaud, Cette, Lecat and Maghin (ABCLM, 2019) and Bergeaud, Cette and Lecat (BCL, 2020): at least a part of the explanation could be the decrease in financial constraints

- The story:
  - Decrease in real interest rates and more widely in financial constraints...
  - ... Allows inefficient incumbent firms to remain on the market...
  - ... May discourage potentially more efficient firms from entering the market...
  - ... Allocation (cleansing) mechanisms linked to financial constraints
    Increasing mis-allocation of production factors and General productivity slowdown

- An ‘anthropogenic’ circular relationship: ↘ r → ↘ g and ↘ g → ↘ r
  - ↘ financial constraints → ↘ growth (from productivity slowdown)
  - ↘ growth → ↘ real interest rates and ↘ financial constraints
2. One of the possible suspects: decreasing financial constraints

Quartiles and median of real long-term interest rates – In %
10-yr government bond yields) over 17 developed countries - Whole economy – 1950-2017
Source: Bergeaud, Cette and Lecat (2019)

- Long term general decrease of real interest rates and of financial constraints
- Could be a common factor to explain at least partly the general productivity slowdown
3. Two opposite mechanisms at play

- On individual data, results apparently contrasted in the literature regarding the impact of financial constraints/high real interest rates on average productivity growth
  - **Favorable impact**
    Through cleansing mechanisms (closing of low-productivity firms and reallocation of their labour and capital to more productive firms)
    Gropp, Rocholl and Saadi (2017); ...  
  - **Detrimental impact**
    Through IT investment, R&D, innovation, management quality...
    Aghion *et al.* (2012); Duval, Hong and Timmer (2017); Manarasi and Pierri (2018); ...
3. Two opposite mechanisms at play

- ABCLM (2019) estimate these two mechanisms in a unifying framework, on a dataset of French firms
  - Test this formally using information on productivity and credit access of French firms
  - Show that a credit easing shock has the two opposite effects:
    - It increases the productivity of the incumbents
    - It reduces the exit (the cleansing), particularly for the least productive firms
  - **Use of a natural experiment to confirm these effects:**
    - Euro area banks may use corporate loans as collateral in their refinancing operations with the ECB
    - Unanticipated announcement at the end of 2011 of an enlargement of credit quotation to be eligible from the beginning of 2012
    - Exogenous positive shock of access to credit for numerous companies
    - Appear that:
      Default risk decreased for firms which were hit by the eligibility shock
      This effect is stronger for low-productivity firms
3. Two opposite mechanisms at play

- If the two mechanisms coexist, **which one dominates currently (before the COVID crisis) at the macro level?**
- **Seems to be the first one** (favourable impact)
- **Productivity impact of financial constraints at the aggregate level:**
  An inverted U curve
  We would currently be at the left part of the curve
3. Two opposite mechanisms at play

➢ Productivity level of the frontier firms and of the laggard French firms

Source: Bouche, Cette & Lecat, 2019 - Large panel of French firms
Productivity frontier: Overall (cross-sectorial) fixed number of the most productive firms in each sector (10% in average of the observation number)
Median by category – log in Base 0 in 1991

➢ Growing distance between productivity frontier and laggard firms
➢ Allocation problem observed in France as in other advanced countries (see Andrew et al. 2015, 2016, ...)
➢ Could contribute to explain at least partly the general low productivity growth
4. What to expect from the COVID crisis in the medium term?

- **Again, two mechanisms at play**, in the context of the COVID-19 pandemic:
  - **Dramatic financial constraints decrease** from both:
    - More expansive monetary policy
    - Large fiscal support to firms
    - Reduces the exits (the cleansing Symptom: huge observed decrease of firm failures and bankruptcies
    - Negative impact on productivity growth
  - **Huge acceleration of the digitalization**
    - Positive impact on productivity growth

- **Which one of the two mechanisms will dominate** in the medium term?
  - Open question

- **Exit strategies: two risks**
  - Not to support performant firms enough → Bankruptcies and not good allocations
  - To support unperformant firms too much and too long → No bankruptcies and bad allocation