Some Schumpeterian Thoughts on Growth and Development

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Schumpeterian growth theory

• Long-run growth driven by innovations
• Innovations result from entrepreneurial activities motivated by prospect of innovation rents
• Creative destruction: new innovations displace old technologies
Outline

• Introduction

• Growth enigmas

• Growth meets development
Growth enigmas

• Competition and growth

• The debate on secular stagnation

• Innovation, inequality, and social mobility

• Firm dynamics
Competition and growth: theoretical prediction
Competition and growth: empirical relationship
Richard Blundell
Competition, growth and distance to frontier
Competition and growth: the inverted-U relationship
Growth enigmas

• Competition and growth

• The debate on secular stagnation

• Innovation, inequality, and social mobility

• Firm dynamics
Secular stagnation?

• Gordon and the fruit-bearing tree approach
Secular stagnation?

• Dale Jorgenson
• Missing Growth
Missing Growth from Creative Destruction
(Aghion, Bergeaud, Boppart, Klenow, Li; 2016)

• ABBKL argue that innovation involving creative destruction is not properly taken into account by current measures of TFP growth

• Typically, whenever old products in the PPI are replaced by new products, the statistical office (BLS) uses the price changes of surviving (incumbent) products to infer the overall inflation rate

• Using the Schumpeterian growth paradigm, we provide explicit expression for economy-wide missing growth from creative destruction
We use two different methods to calibrate missing growth from creative destruction:

- In the first exercise, we use micro data from the Longitudinal Business Database (US Census) on the employment/payroll shares of entrants, exiters, and continuers in all non-farm business sectors.
- In the second exercise, we use data on the flow and quality of patents (exploiting information on patent citations) to estimate the arrival rates and stepsizes of the various kinds of innovation.

The two exercises yield missing growth estimates of comparable magnitude, from 0.4 to 1 percentage point on average per year.
Growth enigmas

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Income shares at the very top over last 100 years:
US top 1% increases from 9% in 1978 to 22% in 2012

Source: Atkinson, Piketty & Saez; High Income Database
Main idea

• Innovation is a source of top income inequality which differs from other sources (entry barriers,..)
  • *Steve Jobs* versus *Carlos Slim*
Why innovation differs from other sources of top 1% increase?

• Generates growth (we know)
• But in addition:
  • Innovation does not seem to increase broad inequality
  • Innovation positively correlated with social mobility (creative destruction)
By contrast, lobbying...

• Increases top income inequality
• Increases inequality at large
• Reduces social mobility
• Does not enhance growth
Growth enigmas

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Firm dynamics

- The empirical literature has documented various stylized facts on firm size distribution and firm dynamics using micro firm-level data.
  - the firm size distribution is highly skewed;
  - firm size and firm age are highly correlated;
  - small firms exit more frequently, but the ones that survive tend to grow faster than the average growth rate.
Firm Size Distribution with Multiproduct Firms

Figure 1.4 Firm size distribution.
The diagram represents a quality level vs. product line relationship. The x-axis is labeled "product line" and ranges from 0 to 1, with "Firm f" indicated at the center. The y-axis is labeled "quality level" and includes a point labeled "A" at the origin. The graph shows vertical lines indicating the quality level for different product lines.
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Growth meet development

• Appropriate growth policy and the middle income trap

• Growth, development and firm dynamics
Competition, growth and distance to frontier

![Graph showing competition, growth and distance to frontier](image-url)
Fig. 3
Long-term growth effects of $1000 per person spending on education, US States

States at the frontier

States distant from frontier

Without mobility
With mobility

Research type education
Two years college education
Research type education
Two years college education

Source: Aghion, Bouson, Hoxby and Vandenbussche (2005)
Enhancing productivity growth in advanced countries

- Liberalization of product market
- Investment in higher education
- Liberalization of labor market
- Equity financing
Enhancing productivity growth in emerging market economies

• Foster technology transfers (Keller,...)
• Reallocate factors (Hsieh and Klenow,...)
• Improve management practices (Bloom and Van Reenen,...)
Growth meet development

• Appropriate growth policy and the middle income trap

• *Growth, development and firm dynamics*
Growth, development, and firm dynamics

• Hsieh and Klenow
• Akcigit, Alp and Peters
Link between the age and the size of firms
Distribution of firms productivity

INDIA

USA
Conclusion

• Schumpeterian growth theory is both, a new theory and also a new way to do growth theory, through continuous dialogue with micro-econometricians and micro-data

• The purpose is both, to better understand the growth process and also to rethink growth policy

• Addressing growth enigmas is useful, not only to satisfy our scientific curiosity, but also for society