“Schumpeterian Thoughts on Growth and Development”

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Summary

• Schumpeterian view yields insights for:
  • relationship between competition and innovation
  • secular stagnation
  • increase in top income inequality
  • firm dynamics

• Schumpeterian view has implications for development policy
  • appropriate institutions to avoid middle income trap
  • HRV growth diagnostics vs Schumpeterian growth diagnostics
  • policy variation as identification strategy
Basic Premise: “\(A\)” is a big deal

• Standard neoclassical production function relates output per capita (\(y\)) to physical capital per capita (\(k\)), human capital per capita (\(h\)), and productivity (\(A\))

\[ y = Af(k, h) \]

• In steady state of Solow/Ramsey economy, increases in \(A\) are the only source of growth
• Early cross-country “development accounting” exercises suggested cross-country differences in \(A\) are large

• If \(A\) is “knowledge” and \(\dot{A}\) is “innovation”, i.e. increments to knowledge, then Schumpeterian view delivers many useful insights on incentives for innovation
Outline of Comments

• Is $A$ a big deal? i.e. are changes in $A$ over time and differences in $A$ across countries as important as they seem?
  • Are poor countries poor because $A_{POOR} \ll A_{RICH}$ or because (well-measured) $k_{POOR} \ll k_{RICH}$ and $h_{POOR} \ll h_{RICH}$?

• What is inside $A$? i.e. does $A_{POOR} \ll A_{RICH}$ imply shortage of Schumpeterian creative destruction – or a shortage of other things?

• What does this imply for development policy?, i.e. particularly in the poorest countries?
  • Innovation and competition policies versus other policies?
Is “$A$” really such a big deal?

- “Naive” development accounting exercises suggest yes:

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• But the devil is in the details:
  • measurement of factors of production, especially human capital
  • nature of technological progress
  • in both levels across countries, and changes within countries over time (move freely between the two in examples below)
Is “$A$” really such a big deal? Remembering the Tigers

- Influential old literature by Alwyn Young reminded us that most of growth in the most successful (formerly-) developing countries had relatively little to do with $\dot{A}$

<table>
<thead>
<tr>
<th>Country</th>
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Is “A” really such a big deal? Different Human Capital Aggregators

• Measurement of stocks of human capital traditionally use observed wage differences to compute “unskilled-worker-equivalents” of different skill levels
  • implicit assumption is that different skills are perfectly substitutable – if an engineer make 10 times as much as a high-school dropout, 10 high school dropouts can still produce what an engineer produces -- $\frac{h_{RICH}}{h_{POOR}} \approx 1.5$

• Jones (2014) proposes a more realistic human capital aggregator that reflects less-than-perfect substitutability between skill types
  • having only unskilled workers, or only skilled workers, is very bad
  • $\frac{h_{RICH}}{h_{POOR}} \approx 20$ for modest elasticity of substitution
Is “$A$” really such a big deal? Differences in Quality of Human Capital

• Manuelli and Seshadri (2014) model human capital accumulation decisions in which:
  • quality of education matters
  • early childhood education and on-the-job training

• Calibrating the model to cross-country data suggests that these are a very big deal
  • low human capital in poor countries in part reflects rational response to low quality of education
  • poorest countries now have levels of $A$ that are 60-70% those of richest countries i.e. $\frac{A_{RICH}}{A_{POOR}} \approx 1.3$, not 3~8
What is inside “$A$”? 

$$\frac{y_{RICH}}{y_{POOR}} = \frac{A_{RICH}}{A_{POOR}} \frac{f(k_{RICH}, h_{RICH})}{f(k_{POOR}, h_{POOR})}$$

• Despite previous several slides, unlikely these forces are strong enough that we can get to the point where $\frac{A_{RICH}}{A_{POOR}} = 1$.

• However, “policies” aimed at $A$ or $\dot{A}$ need to be informed by knowledge of what is inside $A$
  • misallocation?
  • incompetence?
  • innovation?
What is inside “A”? Misallocation

• Differences in levels of $A$ and changes in $A$ over time have an important *misallocation* component
  • many policy-induced distortions prevent equalization of marginal products of factors across sectors/firms
  • may be conceptually distinct from “innovation” as the creation of new products

• Recent work by Hsieh and Klenow (QJE 2008) suggests this is a very big deal
  • China, India could double aggregate $A$ in manufacturing simply by eliminating misallocation of resources across firms *within four-digit industries*
  • Much older literature on growth accounting has emphasized importance of declining misallocation to growth in $A$
What is inside “A”? Managerial Incompetence

Source: Bloom, et. al. (QJE 2012) “Does Management Matter?”
What is inside “A”? Schumpeterian Dynamics in the US

• Difficult to argue that $\frac{\dot{A}}{A}$ is not important in understanding US growth
  • but is it Schumpeterian dynamics, or something else?

• Recent evidence from US manufacturing in Garcia-Macia, Hsieh and Klenow (2016) suggests the latter
  • most of growth is within incumbent firms, not from new firms replacing old ones
  • improvements of existing products seems more important than emergence of new products
  • and this in an economy that is quite likely to be at the “frontier”?
Implications for Development Policy

• Discounting HRV approach
  • current prices and quantities reflect current state of the economy, not necessarily prospects for future growth
  • over-reliance on somewhat haphazard and unidentified assertions that “P is high” or “Q is low”

• Pillars of Schumpeterian growth policy
  1. liberalize entry and encourage competition
  2. liberalize labour markets
  3. invest in autonomous university that can do R&D
  4. market-based finance to compensate financiers for risk inherent in innovation
Implications for Development Policy

• Schumpeterian growth policy priorities are very sensible, but...

• To what extent do they require “Schumpeterian” justifications? e.g.
  • liberalization of entry and labour markets also are important tools for reducing misallocation
  • property rights protection benefits not just property in the form of new ideas, but also all other forms
  • equity finance is good for risk sharing in general, not just risks inherent in innovation

• To what extent are they priorities relative to other policies, particularly for very poor countries?
  • supporting autonomous universities to encourage innovation versus keeping kids alive and getting them into schools where they learn something useful
Implications for Development Policy

• Schumpeterian growth policy priorities are very sensible, but...

• To what extent are they politically feasible?
  • key Schumpeterian force is that incumbent firms need to innovate in order to escape competition
  • but there are plenty of other ways to escape competition, particularly when incumbent firms also are the ones with political power
  • e.g. Rijkers, Freund, Nucifora (2014) show that in Tunisia, sectors with a larger proportion of Ben Ali family-affiliated firms had higher policy-induced entry barriers
Escaping competition through other means

Source: Rijkers, Freund and Nucifora (2014), Table 8