Facets of Innovation and Stages of Development

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Innovation, broadly speaking

- "The *implementation* of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations."
- May be *adopted*, e.g. from a developed economy

Productivity growth: Solow residual

- Consists of two components, namely technical change plus efficiency change
- An economy may grow by shifting the production possibility frontier or by *catching up* with the frontier

Role of competition in the two components of productivity growth

- Neoclassical economists:

  Competition is good
- Schumpeter:

  Monopoly power is the source of profit,

  the main funding for R&D
- ten Raa and Mohnen (JEBO 2008):

  It depends who gets the rent

Another separation: Distance to the frontier

- Schumpeterian argument pertains more to technical change component of productivity growth and the neoclassical argument to the efficiency change component
- Acemoglu, Aghion and Zilibotti (JEEA 2006) document that R&D is more important in industries or countries closer to the world technology frontier

The role of free trade

The efficiency change component of productivity growth can be decomposed:

- the elimination of waste (X-inefficiency)
- reallocations of resources to better companies
- comparative advantage gains.

Free trade puts *competitive pressure* on local producers. It forces weak domestic companies out of business and frees resources to more efficient ones. This competitive role is particularly important to inefficient economies.

UK evidence
Rizov and Walsh (2007)

- 80% correlation between export intensity and productivity
- between 2000-01 non-exporters show 1% productivity change and exporters 4.5%
- For non-exporters it is company change, while for exporters the bulk (some 2/3rds) is the market share effect
- Both are efficiency effects!

Implications for developing economies

- At least in principle, non-competitive conditions may foster technical change
- The *other* components of productivity growth are important to developing countries
- Impediments to free trade not only harm consumers—who buy unnecessarily expensive home produce—but also reduce the pressure on developing countries companies to compete and thus to reduce inefficiency

Schneider: Trade and growth

- Domestic innovation is a significant source of growth *for developed countries only*
- Main sources: physical capital accumulation and high-technology imports (both per capita)
- Intellectual property rights have *distinct* effects on developed versus developing countries
- Even human capital and R&D are less pronounced in the developing world, especially when infrastructure enters the regression equation.

Conclusion

- Market failures plague the eye catching facet of innovation—the pushing out of the technological frontier—but not the other facets—corporate catch-up and the market share effect
- Developing countries innovate more through the latter channels and stand to gain from free trade
- My policy recommendation would be to link the protection of intellectual property rights to free access to the developed markets

Note

- Traditional sources of innovation seem less potent in developing countries
- Infrastructure is a key sector and its development deserves full attention (spillovers)
- One of the impediments has been the lack of public funding. Luckily this problem is overcome by computer based technologies, which facilitate direct payments by users of the infrastructure