Comments inspired by Ricardo Hausmann

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The future is hopelessly unpredictable and risky

- Forecasting how technology will evolve, impact on labor market, what goods to be in etc. is probably hopeless
- David’s 4 categories: pessimists, optimists, adaptionists, somebody else-
  - All proposed by really smart people but inconsistent.
  - Lay economists end to end....
  - Even extrapolating from past pattern of luddites being wrong is probably wrong.
Pasteur: “Fortune favors the prepared mind”

• History offers many cases of success and failure within same products
  • American South vs Japan with new textile technologies.
  • US (and Japan) vs. Chile with Bessemer process (copper)
  • Brazil: Retrogression in steel industry.

• Key difference in development experience is not WHAT they were producing, but how prepared they were to identify and adapt new technologies.
Problem: DCs are poorly prepared for adjusting to even “non-disruptive” technologies

• Potential gains from tech adoption dwarf aid or any other North-South transfers:

• Griffith et al. (2010) returns to R&D rise steeply with distance from the frontier.

• Extrapolating: should be about 300% for Africa

• Paradox: facing those returns, poor countries don’t innovate. Why?
Because they probably don’t get those returns—missing complementary factors

- Distorted product markets, close trade regimes.
- Missing markets for finance, etc.
- Weak firm capabilities (management quality)
- Weak human capital, S&T apparatus
- In general, more unaddressed market failures

- In sum: The National Innovation System is not up to the task of managing new technologies.
- We need to work on these in an integrated fashion.
The Extended National Innovation System (NIS)

**Government oversight, resolution of market and systemic failures, coordination**

**SUPPLY**
- Universities / think-tanks / technology extension centers
  - Human capital
  - Support to firm capability upgrading
    - Productivity/quality extension services
    - Process/best practice dissemination
    - Advanced consulting services
  - Domestic science and technology system
  - International NIS

**ACCUMULATION/ALLOCATION**
- K Physical capital
- H Human capital
- A Knowledge

**DEMAND**
- The firm
  - Incentives to accumulate
    - Macro context
    - Competitive structure
    - Trade regime and int. networks
  - Firm capabilities
    - Core competencies (management)
    - Production systems
    - Technological absorption and production

**Barriers to All Accumulation**
- Credit
- Entry/exit barriers
- Business/regulatory climate
- Rule of Law

**Barriers to knowledge accumulation**
- Rigidities (labor etc)
- Seed/venture capital
- Innovation externalities

*Source: Maloney 2017.*
The Innovation Paradox
Developing-Country Capabilities and the Unrealized Promise of Technological Catch-Up

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Coming soon!!!!