Trade, Technology and Economic Growth

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“Fast growth is accompanied by increases in trade spurred by reduction in trade barriers and costs.”

World Trade Report 2014
Empirically, trade correlates with economic growth...

Real per capita GDP growth and merchandise export volume growth, 2001-2017

Note: Average annual growth rates
Source: World Development Indicators and WTO Secretariat calculations.
... independently of the level of economic development

Real per capita GDP growth and merchandise export volume growth, LLDCs 2001-2017

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Trade and real income *growth*

- Policy makers have long emphasised the pro-growth aspects of international integration.
  - That is, the effects on real income *growth* (as opposed to its level).

- Growth in real income requires improvements in how a country uses its resources => growth in productivity

*Trade can boost income growth in the long-run only if it enhances technological progress*
Trade can fuel technological progress by enhancing:

**Incentives to innovate**
- The market size effect of increased access to a large foreign market increases investment in technology and innovation.

**Technology diffusion and adoption**
- Contact with large sophisticated buyers facilitates access to, and motivates absorption of new technologies and know-how.
- Local suppliers to foreign-owned firms can benefit from knowledge and know-how that is directly communicated to ensure smooth functioning of the supply chain.
- Technology can be embodied in intermediate inputs that are imported from advanced economies.
And yet, income convergence is not universal

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• Good news – technology diffusion across borders has been steadily accelerating over the past 200 years
Adoption lags of major technologies have steadily declined

Source: Comin and Mestieri (2018).
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• Good news – technology diffusion across borders has been steadily accelerating over the past 200 years.

• Bad news – technology diffusion within borders has diverged.
Penetration of major technologies has also declined

Source: Comin and Mestieri (2018).
Technology is sticky

• The receiving party needs to understand the technology to fully benefit

• The production process needs to be compatible with the new technology
  • Technological compatibility
  • Management practices, labour contracts, ...

• Not all knowledge can be codified
  • Tacit knowledge and know-how may be crucial but they need to be communicated and therefore diffuse slowly across borders
Successful technology transfer requires:

- Adaptation of technology to local conditions
- Expensive investment by the receiving party in absorptive capacity
- Active cooperation of the parties possessing the knowledge
- Prior mastery of more basic knowledge and skills, a cumulative process

• Technology transfer tends to be more successful in countries with sufficient size, economic dynamism, and the necessary complementary skills to learn deeply from the global stock of knowledge

• International supply chains can facilitate diffusion of tacit knowledge and know-how by intensifying interaction between producers across borders and giving incentives to increase absorptive capacity.
Thank you.

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