Adapting development strategy in Africa to the 4IR

China-Africa Joint Research and Exchange Programme Webinar Series

Session 3: Harnessing the 4IR for Economic Development

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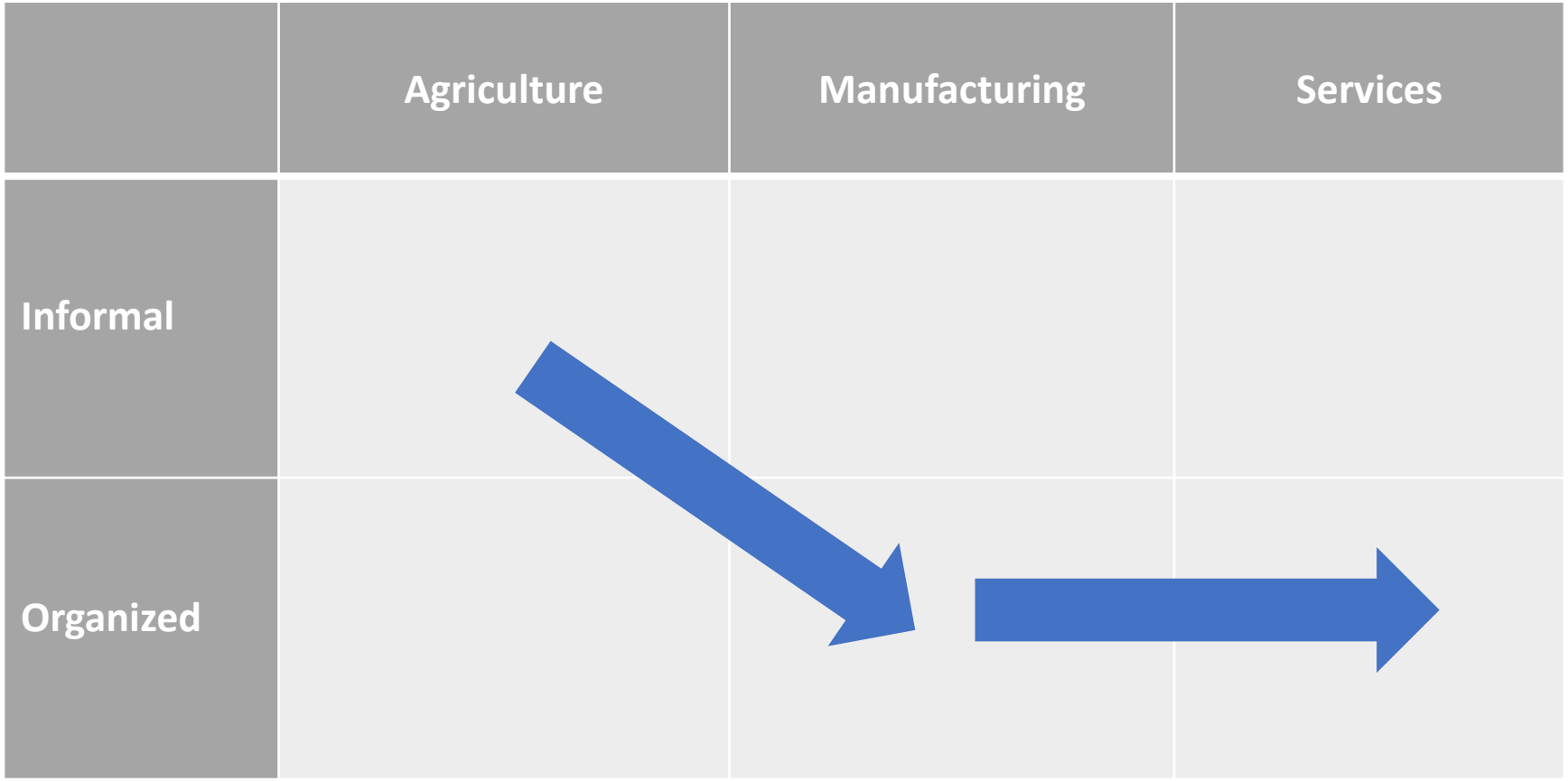
The shift from low-productivity agriculture to high-productivity industry lies at the heart of economic development historically



Rodrik 2014

Why is manufacturing so important (and unique)?

- Manufacturing exhibits unconditional convergence across countries
  - Manufacturing sectors that are further away from the technological frontier experience higher productivity growth, regardless of policies, institutions, or geography
  - Hence, manufacturing serves as a productivity "escalator"
- Manufacturing can create many jobs that do not require sophisticated skills (i.e. low-skilled, labor intensive)
- Manufacturing produces tradable goods
  - Consequently, manufacturing activities can grow without turning the terms of trade (i.e. real exchange rate) against themselves

Importantly, from a state capability perspective, **government can focus narrowly** due to escalator properties, and this narrower focus **eases policy challenges of broad reform** across the economy

The 4IR poses threats to the traditional development pathway as well as opportunities for new avenues

Threats

Possible effects of robotization, IoT, and 3D printing

- Reduction in total stock of manufacturing jobs
- Direct labor displacement
- Reshoring
- Higher skill requirements for manufacturing jobs
- Servicification of manufacturing activities

Important caveats

- These effects are not materializing at scale yet
- Effects may vary by sector
- Nature and pace of technology adoption matters

Opportunities

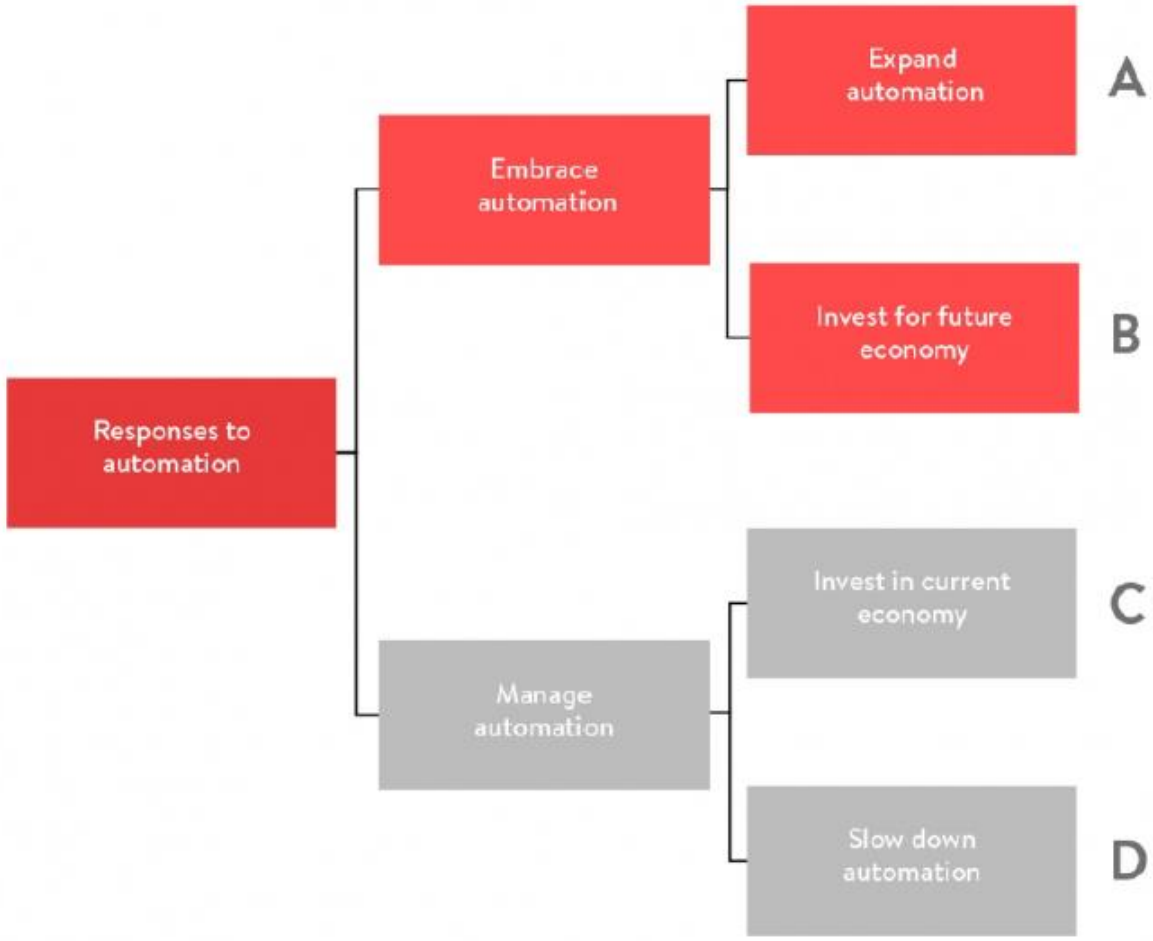
- Manufacturing
  - Lower production costs resulting from new technologies can generate knock-on effects within manufacturing and in related sectors
- Productivity gains in other sectors
  - Precision agriculture
  - Various service sectors, e.g. education, health

Important caveats

- Very few—if any—services sectors meet all three criteria listed on the previous slide
- Many services themselves are not immune to the employment effects listed on the left

Akileswaran and Hutchinson 2019

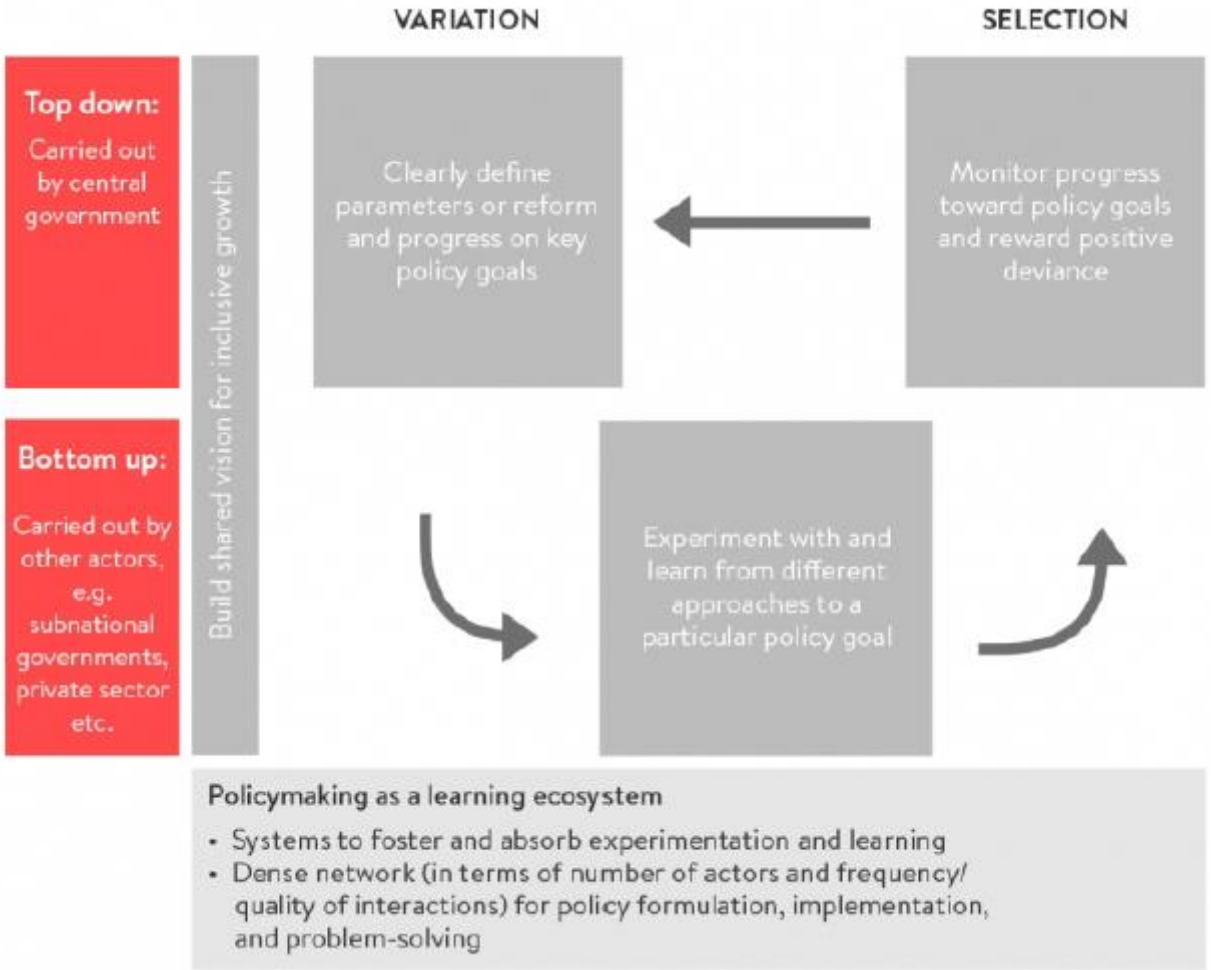
African governments will likely have to pursue multiple options in parallel, that aim to embrace and to manage automation…



Akileswaran and Hutchinson 2019

- Governments can embrace automation and the opportunities of 4IR technologies
  - Decentralized manufacturing, focus on services
  - Complementary investments in human capital to prepare for an alternative development pathway
  - May be more critical for countries for whom the traditional industrialization model is less feasible regardless of the 4IR
    - E.g. Mozambique
- Governments can also try to manage the impact of automation to enable efforts to pursue the traditional development pathway
  - Need the right endowments, such as connectivity, access to markets and inputs, appropriately skilled and competitive labor, etc.
  - Though the window of opportunity for the traditional model isn't closed, it may be closing…so this can only be one element of a broader strategy
  - May be more relevant for countries already pursuing the traditional pathway
    - E.g. Ethiopia

…but doing so will require a more adaptive approach to governance



Akileswaran and Hutchinson 2019

- This plethora of policy choice is not new to governments when it comes to promoting inclusive growth…but both early and late industrialisers could focus their energies on a **proven** model for inclusive growth
- Given uncertainty about what will work, African governments will have to start with what they already have, experiment and learn from multiple policy responses, and promote the measures that most effectively foster inclusive growth over time
- **Staggered portfolio approach to reform**
  - Set clear, relevant goals and identify/track progress
  - Encourage bottom-up experimentation, particularly in ways that are “reversible”
  - Foster a policy learning ecosystem
- Examples
  - Liberia: Partnership Schools for Liberia
  - Ethiopia: Industrial park strategy