

# The Goldilocks problem (in two parts) Structural change and the knowledge infrastructure

# The goldilocks problem: transition



# The goldilocks problem (maintenance)

- *'If [a] place was to be a permanent forge of industry, fuel must be constantly added to the fire' (Honoré de Balzac)*
- But it is not enough simply to maintain. Global dynamics and competition means new fires must be started.

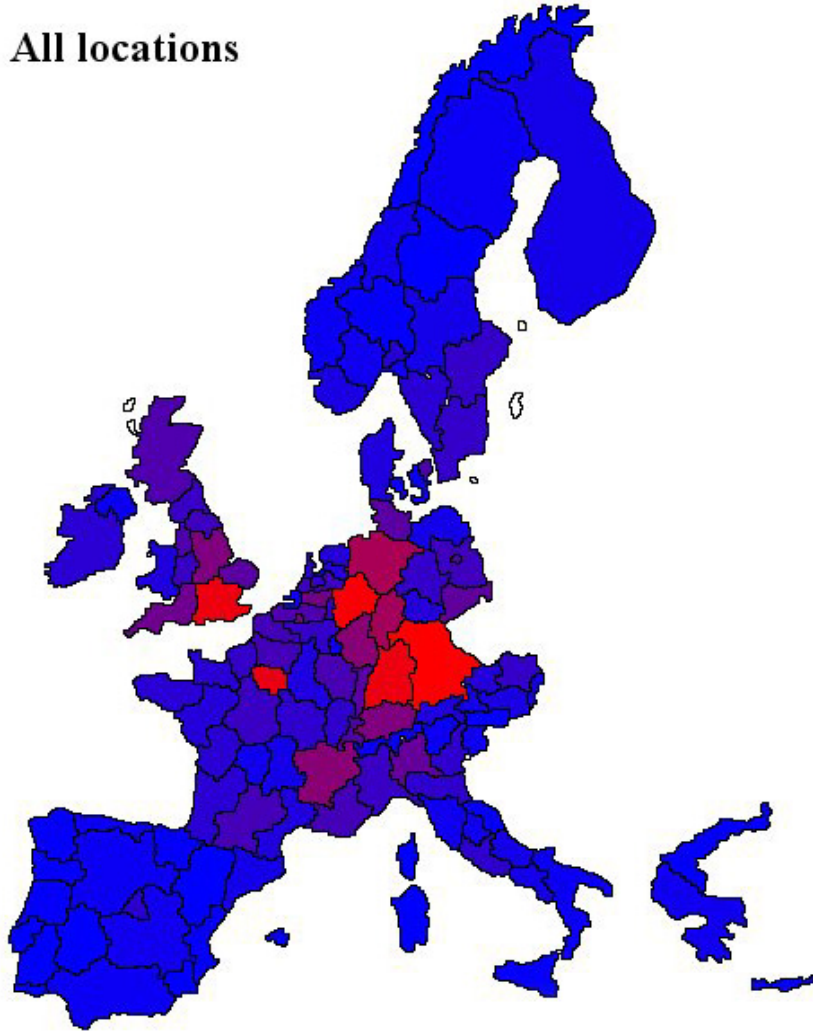
# what policies can best be used to pursue growth?

Responses will naturally be different for lower income countries than for high-income countries. However, all countries face:

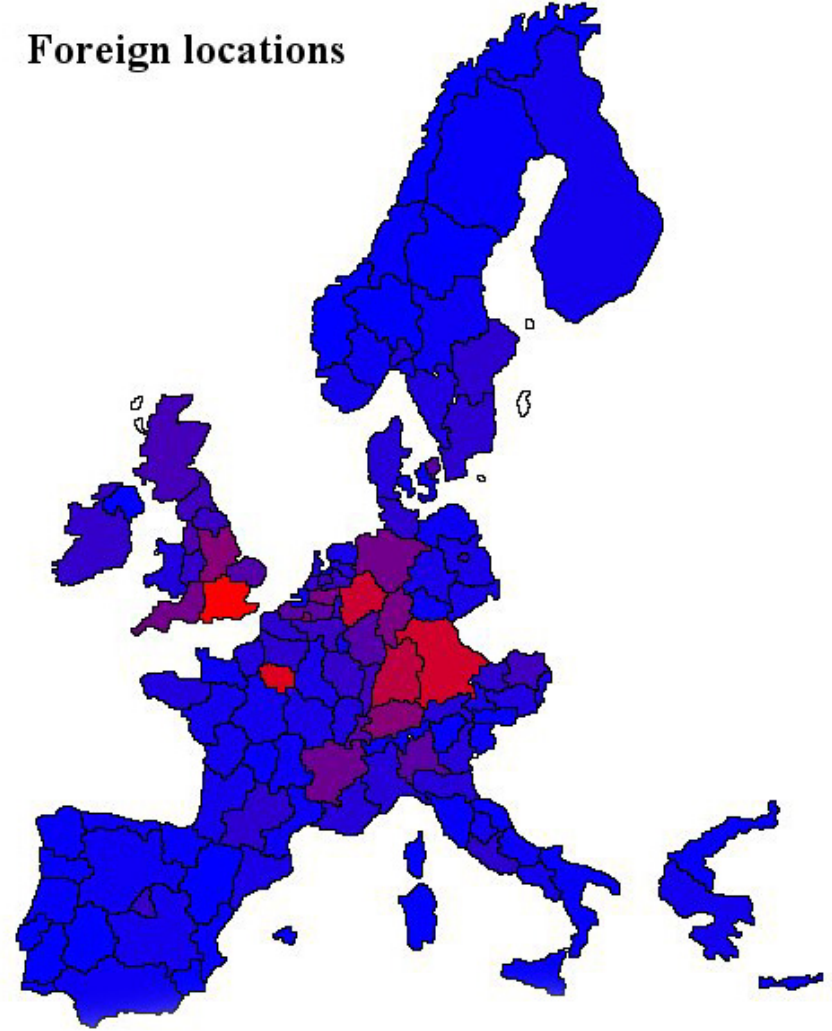
- limited resources (human, capital, technological), and multiple trajectory choices
- islands of excellence
- Global competition

# The R&D activities of firms stays concentrated in a few locations

All locations



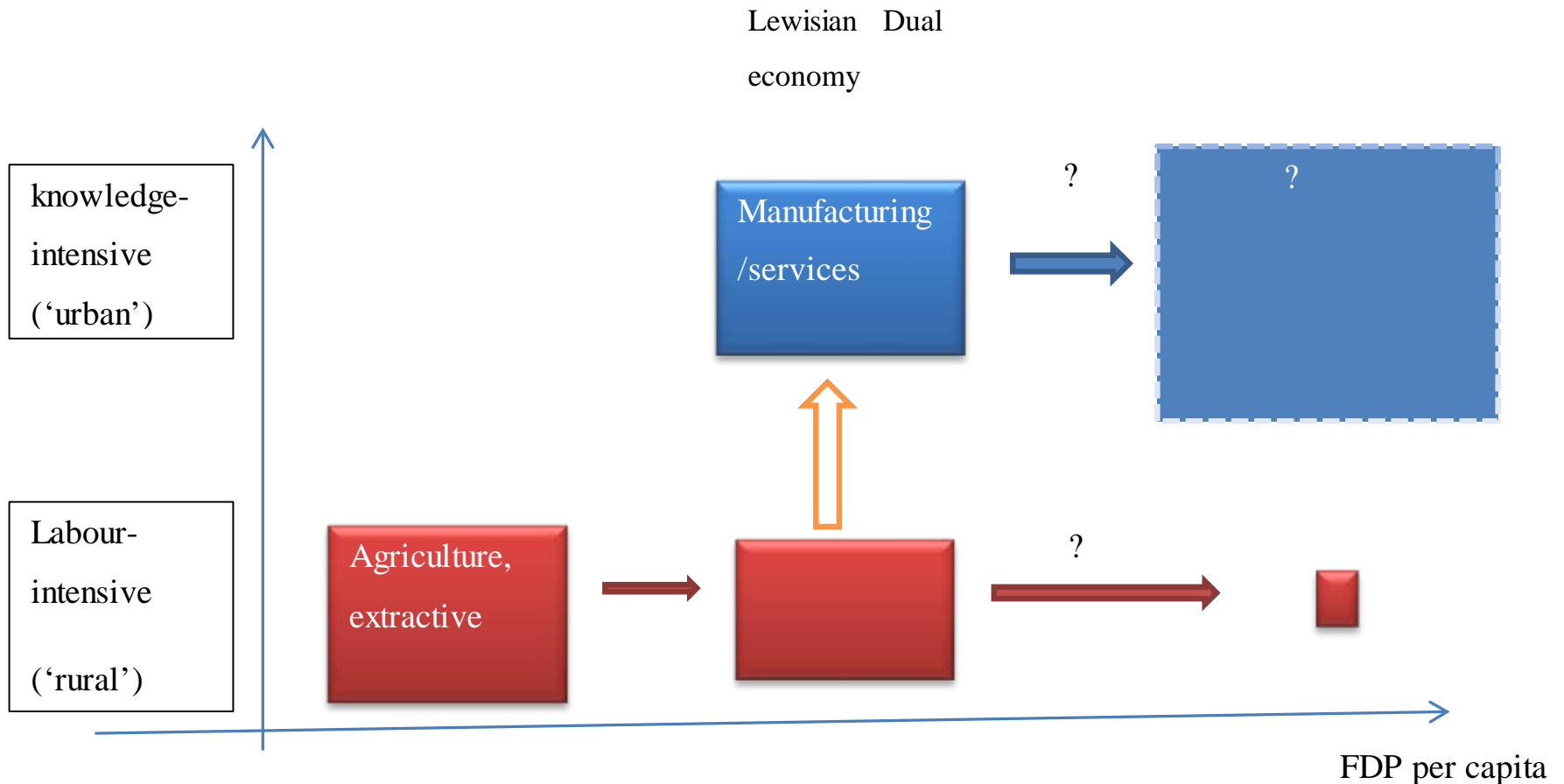
Foreign locations



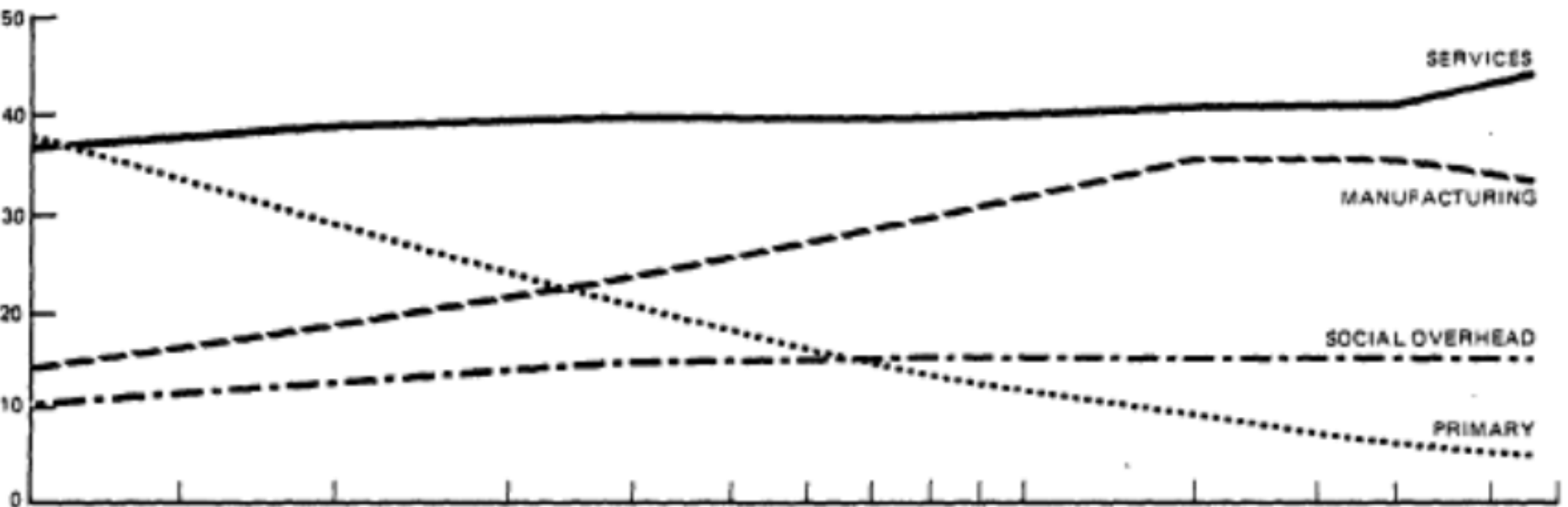
# Developing countries: Updating the Lewisian dual economy model

- a ‘traditional’ (and often informal) sector that reflects a high labour-intensity and a strong dependence on natural resources and agriculture. The ‘traditional’ sector focuses largely on local needs and is trade-extensive.
- a ‘modern’ urban economy which is engaged in knowledge-intensive, capital– and skills-dependent activities. The ‘modern’ economy has an international focus, and is intensively linked to the global actors.
  - Examining the prospects for the growth of developing countries requires us to acknowledge both these aspects

# The old school model



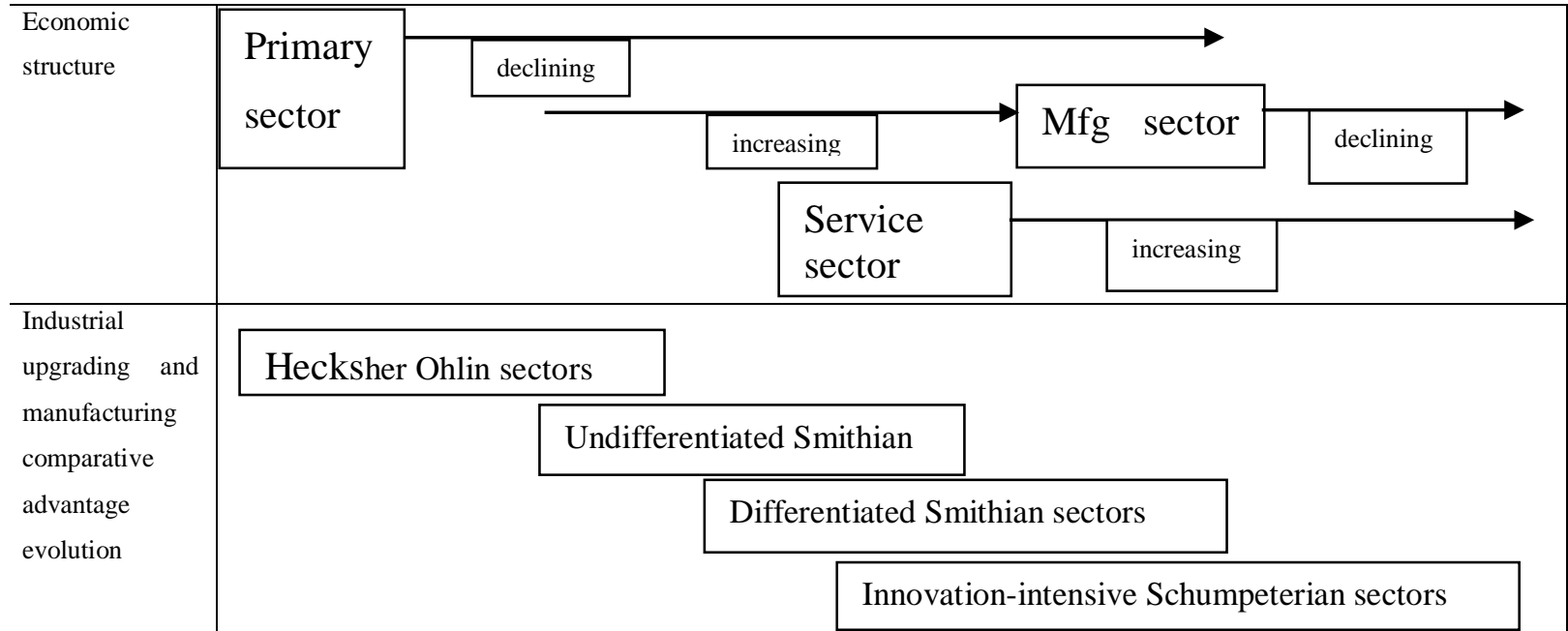
**A. VALUE ADDED**



Note that the average share of services is around 40%

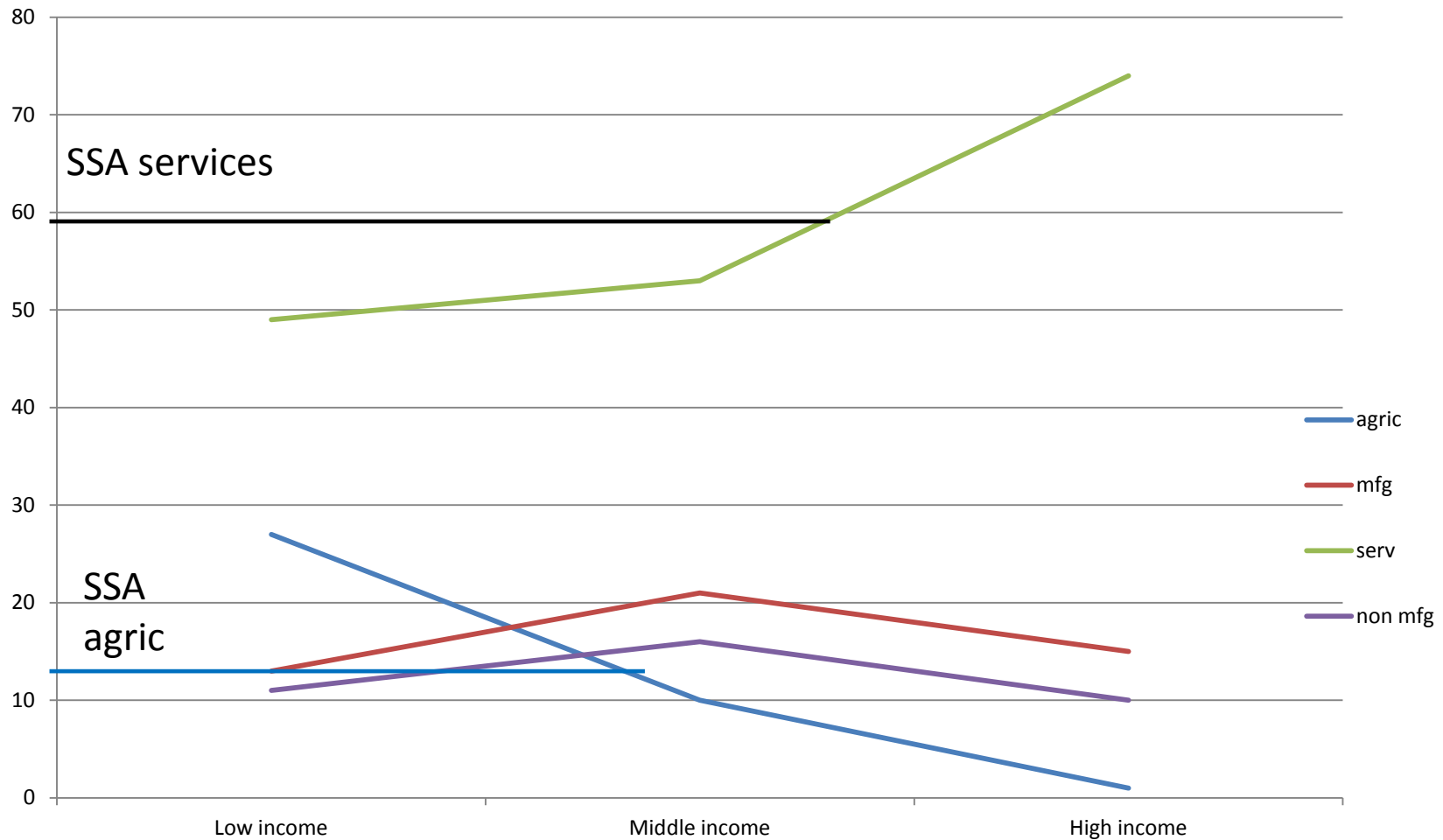


# Bringing in the 'flying geese' to Chenery.



Narula and Dunning 2010

# Structural change 2012



# manufacturing is not growing while services expands

- The low end of manufacturing is becoming more skills- and capital-intensive (and improved trade reduces opportunities, and crowding out results)
  - Fewer countries can engage in the low end without excellent institutions and knowledge infrastructure (in which case the MNEs will turn up anyway).
- Services growth? Either:
  - at the low end, and is non-tradable. Most growth happens in the informal sector
  - High productivity knowledge and capital (and scale and scope) intensive, so dominated by FDI (lack of both capital and expertise prevents entry of domestic actors). Only actor with the resources is the state.
    - High-productivity (tradable) segments of services cannot absorb as much labour as mfg
  - Both require higher skills than the farmers from the rural sector

# Primary sector is not necessarily better

- Also becoming capital and knowledge intensive.
- Rodrik: In Latin America, value added per worker in agriculture has increased substantially and the continent has emerged as a major agricultural exporter and yet agriculture has been shedding labor fast.

# Supposing there is a formal sector, what happens with comparative advantage change?

- Firms may not possess the capital, or the technological and managerial competences to operate in other sectors, or even to engage in to move up to other value added activities in the same industry. In short, firms cannot always adjust to changing factor prices, because of imperfect markets for capital and technology.
- transformation of resources between sectors is neither costless nor instantaneous. Agriculture workers cannot easily be trained to work in an assembly line, and engineers cannot easily be re-tasked to work as nurses

# But structural change /transformation requires resources

- who pays for the transformation of resources, and who determines the optimal direction in which to transform the resources? Growing informal sector is in response to poor infrastructure and regulation.
- Where does the revenue for transformation come from – taxes? Exports?
- requires a greater role for the state as a coordinator of these shifts, but where government failure is common it is unclear how longer-term resource reallocation can be implemented.
- FDI plays an implicit role where markets for knowledge and capital fail

Multiple economies will continue to persist (and for the lucky ones, this will be the middle-income trap)

- Multiple sectors that may be linked or disharmoniously work against each other
- Structural mismatch between what knowledge infrastructure provides and what the economic actors need. (policy priorities – the rural or the urban?) Multiple innovation systems needed! But the state cannot afford one, much less two.
- Inefficient institutions can retard the efficient accumulation and transfer of knowledge between economic actors
- Firms (both domestic and MNEs) may not have the capacity or skills (or the incentive) to respond by internalising role of state.

# Innovation system policies

- A dual economy requires dual (multiple) innovation systems, and dual sets of policies
- Addressing the classics: physical and knowledge infrastructure, and capital
  - the definition of public goods has to be revisited.
  - Human capital is much more complex (managerial, technical, minimum skill levels) – fine-tuning to demand



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- A dual economy requires dual innovation systems, and dual sets of policies (and the links between them)
- Services do not work the same way as mfg.
- Overcoming constraints due to institutions
  - Inertia and lock-in
  - Moving the economy from informal to formal

# Dual (or multiple) economies exist within Europe

- North-south, but also within countries.
- These countries have the resources (supposedly) to deal with them.
- Several (hundred) billion Euro in structural funds and framework programmes has not made a discernible dent in the geography of innovation in Europe.

# Europe has its own set of related but unique sets of issues

- Start dealing with the looming skills and reskilling problem
  - Again: education as a public good? Transferring the responsibility from the state to the private sector
  - Tertiary education  $\neq$  university!
  - Inequalities bound to rise without addressing this.
- case of over/under investment in innovation at an EU unit level
  - Increased international interactions and what this means for thinking in terms of ‘national’ innovation systems.

- New actors beyond Nation-States
  - Regions/cities
  - Multinational enterprises
  - NGOs