A framework: combining growth theory, convergence and dualism

- Economic dualism is endemic
- Traditional activities
  - traditional agriculture; small, informal firms
- Modern activities
  - high productivity, exhibiting (unconditional) productivity convergence
  - too small to produce significant aggregate effects (B)
- Economy-wide productivity requires steady accumulation of “fundamentals,” which is slow
  - human capital, institutions (A)
- Rapid growth possible nonetheless by expanding modern activities (C)
- Which requires policies that overlap with, but are not same as, fundamentals

\[
\hat{y} = \gamma (\ln y^*(\Theta) - \ln y) + \alpha_M \pi_M \beta (\ln y_M^* - \ln y_M) + (\pi_M - \pi_T) d\alpha_M
\]  

Standard convergence is augmented by two additional terms
# A typology of growth outcomes

<table>
<thead>
<tr>
<th>Investment in fundamentals</th>
<th>Structural transformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>low</td>
<td><strong>slow</strong></td>
</tr>
<tr>
<td>(1) no growth</td>
<td>(2) episodic growth</td>
</tr>
<tr>
<td>high</td>
<td>(3) slow growth</td>
</tr>
<tr>
<td>(4) rapid, sustained growth</td>
<td></td>
</tr>
</tbody>
</table>

- **slow** growth outcomes:
  - (1) No growth
  - (3) Slow growth

- **rapid** growth outcomes:
  - (2) Episodic growth
  - (4) Rapid, sustained growth
### A typology of growth outcomes

<table>
<thead>
<tr>
<th>Investment in Fundamentals</th>
<th>Structural Transformation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>slow</strong></td>
</tr>
<tr>
<td>low</td>
<td>(1) no growth</td>
</tr>
<tr>
<td>high</td>
<td>(3) slow growth: LAC in 1990s?</td>
</tr>
</tbody>
</table>

**Note:**
- (1) no growth
- (2) episodic growth
- (3) slow growth: LAC in 1990s?
- (4) rapid, sustained growth
A typology of growth outcomes

<table>
<thead>
<tr>
<th>Investment in fundamentals</th>
<th>Structural transformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>low</td>
<td>slow</td>
</tr>
<tr>
<td></td>
<td>(1) no growth</td>
</tr>
<tr>
<td></td>
<td>(2) episodic growth: ISI?</td>
</tr>
<tr>
<td>high</td>
<td>slow</td>
</tr>
<tr>
<td></td>
<td>(3) slow growth</td>
</tr>
<tr>
<td></td>
<td>(4) rapid, sustained growth</td>
</tr>
</tbody>
</table>
A typology of growth outcomes

<table>
<thead>
<tr>
<th>Investment in fundamentals</th>
<th>Structural transformation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>slow</td>
</tr>
<tr>
<td>low</td>
<td>(1) no growth</td>
</tr>
<tr>
<td>high</td>
<td>(3) slow growth</td>
</tr>
</tbody>
</table>
From mechanics to policies: how did successful countries promote structural change?

- macro “fundamentals”
  - *reasonably* stable fiscal and monetary policies
  - *reasonably* business-friendly policy regimes
  - steady investment in human capital and institutions
    - but more important for sustaining growth past middle income than launching it

- pragmatic, opportunistic, often “unorthodox” government policies to promote domestic manufacturing industries
  - protection of home market, subsidization of exports, managed currencies, local-content rules, development banking, special investment zones, … with specific form varying across contexts

- a development-friendly global context
  - access to markets, capital and technologies of advanced countries
  - benign neglect towards industrial policies in developing countries
Why the past may no longer be a good guide

- The uncertain prospects of industrialization
  - globalization and the division of labor
  - global demand patterns
  - technology and skill-intensity
- Recent evidence
The shrinking space for industrialization

Post-2000 decline in industrial employment share ≈ 2.4 % pts. (within country estimates)

MVA/GDP ≈ 1.8 % pts.
African manufacturing is lagging behind, even controlling for incomes.

Asia: Hong Kong, Indonesia, India, Japan, Korea, Malaysia, the Philippines, Singapore, Thailand, Taiwan, and Vietnam.
In fact, manufacturing appears to be shrinking, even in LICs
Premature industrialization

Peak manufacturing levels

- USA. 1953
- GER. 1970
- SWE. 1961
- UK. 1961
- KOR. 1989
- MEX. 1990
- BRA. 1986
- COL. 1970
- CHN. 1996
- IND. 2002

GDP per capita when peak reached (1990 international $)

peak share of manufacturing employment
Global value chains facilitate entry to manufacturing but diminish returns from it

| The Ratio of Value-Added to Gross Exports for the Top 20 Exporting Countries |
|-----------------------------|-----------------------------|-----------------------------|
| Germany                     | 0.69      | -0.10                   | -0.16                      |
| United States               | 0.78      | -0.05                   | -0.14                      |
| China                       | 0.75      | -0.09                   | -0.20                      |
| Japan                       | 0.80      | -0.12                   | -0.09                      |
| United Kingdom              | 0.78      | -0.01                   | -0.04                      |
| France                      | 0.71      | -0.08                   | -0.13                      |
| Italy                       | 0.73      | -0.07                   | -0.12                      |
| Netherlands                 | 0.62      | -0.06                   | -0.11                      |
| Canada                      | 0.76      | 0.02                    | -0.11                      |
| South Korea                 | 0.58      | -0.18                   | -0.18                      |
| Russia                      | 0.92      | 0.00                    |                            |
| Belgium                     | 0.53      | -0.07                   | -0.15                      |
| Spain                       | 0.69      | -0.09                   | -0.17                      |
| Taiwan                      | 0.51      | -0.16                   |                            |
| Mexico                      | 0.70      | -0.03                   | -0.21                      |
| India                       | 0.78      | -0.12                   | -0.20                      |
| Sweden                      | 0.66      | -0.08                   | -0.13                      |
| Australia                   | 0.84      | -0.04                   | -0.06                      |
| Brazil                      | 0.86      | -0.05                   | -0.10                      |
| Austria                     | 0.65      | -0.10                   | -0.17                      |
| Minimum                     | 0.51      | -0.18                   | -0.21                      |
| Median                      | 0.72      | -0.08                   | -0.14                      |
| Maximum                     | 0.92      | 0.02                    | -0.04                      |

Source: World Input-Output Database (WIOD) and author’s calculations, Johnson and Noguera (2014).

Source: Johnson (2014)
## Patterns of structural change

<table>
<thead>
<tr>
<th>informal</th>
<th>agriculture</th>
<th>manufacturing</th>
<th>services</th>
</tr>
</thead>
<tbody>
<tr>
<td>organized</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Patterns of structural change: East Asia and advanced countries

<table>
<thead>
<tr>
<th></th>
<th>agriculture</th>
<th>manufacturing</th>
<th>services</th>
</tr>
</thead>
<tbody>
<tr>
<td>informal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>organized</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Informal and organized activities are shown to have a transition towards services and manufacturing.
Patterns of structural change: low-income countries today

<table>
<thead>
<tr>
<th></th>
<th>agriculture</th>
<th>manufacturing</th>
<th>services</th>
</tr>
</thead>
<tbody>
<tr>
<td>informal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>organized</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Intermediate conclusions

• Promoting (re)industrialization will be difficult -- like swimming against the tide

• Alternative priorities:
  • raise productivity in services and reduce share of small, informal firms
  • this is one and the same challenge, since low productivity in services in large part result of long tail of unproductive firms

• What kind of IP, if at all, for services?
Is the rise of services really bad for growth?

Unconditional convergence in services (post-1990)

Source: Ghani and O’Connell (2014)
Is the rise of services really bad for growth?

Services (% of GDP)

Source: Ghani and O’Connell (2014)
Why services are not like manufactures

- High-productivity (tradable) segments of services cannot absorb as much labor
  - since they are typically skill-intensive
  - FIRE, business services
- Low productivity (non-tradable) services cannot act as growth poles
  - since they cannot expand without turning their terms of trade against themselves
  - continued expansion in one segment relies on expansion on others
  - limited gains from sectoral “winners”
  - back to slow accumulating fundamentals (rather than IP)
Dualism in services: across sectors

Tradable services have much higher productivity, but are also much more intensive in skills.

Labor productivity (2000 PPP$)

- Wholesale & retail trade, hotels & restaurants
- Community, social, personal, government services
- Transport, storage & communications
- Finance, insurance, real estate, and business services
Dualism in services: within sectors (I)

Dualism in services: within sectors (II)

Policies to address within-sector dualism

• A strategic choice:
  • Help small firms grow?
    • MGI: “Prescribing many of the measures that are needed to improve productivity in traditional enterprises is straightforward…”
  • Or support modern/large firms’ expansion?
    • With fixed costs of adopting new technologies, there are too many small firms
    • Informal firms are inherently unproductive; successful firms start large (LaPorta and Shleifer 2014)

• Deregulate?
  • allow entry (including FDI) and remove costly licensing/certification/regulatory requirements
  • but usual trade-off between competition and Schumpeterian rents

• Enforce formality?
  • by leveling the playing field in taxation, employment, social security policies
  • relieves competition for formal firms: is this good or bad?
A thorny problem: the employment-productivity trade-off in services

• Large part of the problem in services (e.g. retail trade) is preponderance of small, low-productivity firms that absorb excess supply of labor
• Where do people employed in small firms go?
Not many examples of productivity growth and employment expansion in services

Service sectors that have best productivity performance typically shed labor; labor absorbing sectors typically have worst productivity performance.

Source: Author’s calculations from GGDC data.
How did manufacturing avoid this problem?

- Key is tradability
- Higher-than-average productivity growth in a tradable sector of (small) open economy translates into greater output
  - and possibly higher employment even if productivity growth is driven by labor-replacing technology
- In non-tradable sectors, the output-boosting effect is attenuated by decline in relative price (and profitability)
Tradables versus non-tradables

How output responds to productivity shock $d\theta_j$:

$$\frac{dq_j}{q_j} \frac{dq_j}{d\theta_j} = \frac{dQ}{Q} \frac{dQ}{d\theta_j} - \varepsilon_j^d \frac{dp_j}{p_j} \frac{dp_j}{d\theta_j}$$

overall income growth  substitution

$q_j$: output of sector $j$
$Q$: aggregate real income
$\varepsilon_j^d$: price elasticity of demand faced by sector $j$ (absolute value)
    ($\rightarrow \infty$ for tradable good in small open economy)
$p_j$: sector $j$'s (relative) price
Tradables versus non-tradables

How output responds to productivity shock $d\theta_j$:

$$\frac{dq_j}{q_j} = d\frac{Q}{Q} - \varepsilon_j^d d\frac{p_j}{p_j}$$

overall income growth

$q_j$: output of sector $j$

$Q$: aggregate real income

$\varepsilon_j^d$: price elasticity of demand faced by sector $j$ (absolute value)

(→ $\infty$ for tradable good in small open economy)

$p_j$: sector $j$'s (relative) price
Tradables versus non-tradables

How output responds to productivity shock $d\theta_j$:

$$\frac{dq_j/q_j}{d\theta_j} = \frac{dQ/Q}{d\theta_j} - \varepsilon_j^d \frac{dp_j/p_j}{d\theta_j}$$

$q_j$: output of sector $j$
$Q$: aggregate real income
$\varepsilon_j^d$: price elasticity of demand faced by sector $j$ (absolute value)
($\to \infty$ for tradable good in small open economy)
$p_j$: sector $j$'s (relative) price

NT sector expansion requires much larger price decline
Implication for IP in services

• Services expansion requires simultaneous and complementary productivity gains across the board

• Producing sectoral “winners” yields much smaller benefits
  • much less room for selective policies, prioritization, and “strategic bets”
  • considerable need still for dialog to identify and remove sector-specific impediments, but such dialog has to be necessarily broad based (covering much of the economy)
Concluding comments

• Paradoxically, IP may become less relevant as its importance becomes better appreciated and countries are gearing up themselves better for it
• Growth in the future will have to come the hard way, through economy-wide improvement in capabilities
  • requiring broad-based investments in human capital and institutions
• Potential growth rates will be lower in the future