THE FUTURE OF DEVELOPMENT POLICY

Dani Rodrik
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The world will not be the same...

• Covid19 huge challenge, but merely exacerbates ongoing problems
• Existing models of globalization and development were unsustainable
  • globalization: “hyper-globalization”
  • development: “growth through integration in global economy”
• So a change in course was inevitable
• We should consider alternatives, instead of seeking to return to broken, unsustainable models
  • in globalization, a return to the spirit of Bretton Woods period is obvious alternative (though not clear if policy makers in U.S., China, and Europe will adapt as needed)
  • alternatives are harder to find for development policy, and we may have to resign ourselves to low/moderate growth (focused much more on domestic economy, jobs, and inclusion)
Pre-pandemic growth trends

Growth trends in developing regions since 1950 (per-capita GDP)

Growth trends in developing regions since 1950 (per-capita GDP)
### Pre-pandemic growth accelerations

<table>
<thead>
<tr>
<th>Country</th>
<th>Initial year of growth acceleration</th>
<th>growth in pre-accel’n period</th>
<th>growth in post-accel’n period</th>
<th>Differences in pre- &amp; post-accel’n periods</th>
<th>Whether GDP pc in post-accel’n period &gt;= max in pre-accel’n period</th>
<th>Growth after 7-years’ growth acceleration</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETH</td>
<td>2000</td>
<td>1.13</td>
<td>3.71</td>
<td>2.59</td>
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<td>7.95</td>
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<tr>
<td>GHA</td>
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<td>2.02</td>
<td>7.25</td>
<td>Exceeded in 1999</td>
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<td>5.11</td>
<td>Exceeded in 2006</td>
<td>0.35</td>
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<td>7.61</td>
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<td>SEN</td>
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<td>2.23</td>
<td>3.88</td>
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<tr>
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<tr>
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<td>3.77</td>
<td>3.13</td>
<td>Yes</td>
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<tr>
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<td>3.59</td>
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<td>Yes</td>
<td>4.93</td>
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<tr>
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<td>2.80</td>
<td>3.34</td>
<td>Yes</td>
<td>2.98</td>
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<tr>
<td>BRA</td>
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<td>3.00</td>
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<td>2.90</td>
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<td>CHL</td>
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<td>6.25</td>
<td>3.59</td>
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<td>COL</td>
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<td>3.66</td>
<td>4.45</td>
<td>Exceeded in 2003/04</td>
<td>3.19</td>
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<tr>
<td>MEX</td>
<td>1996</td>
<td>-0.12</td>
<td>2.28</td>
<td>2.40</td>
<td>Exceeded in 1997/98</td>
<td>0.92</td>
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<tr>
<td>PER</td>
<td>2002</td>
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<td>4.17</td>
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<tr>
<td>VEN</td>
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<td>4.20</td>
<td>5.31</td>
<td>Exceeded in 2005/06</td>
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<tr>
<td>BOL</td>
<td>2003</td>
<td>0.34</td>
<td>2.93</td>
<td>2.59</td>
<td>Yes</td>
<td>3.77</td>
</tr>
<tr>
<td>CRI</td>
<td>2002</td>
<td>2.59</td>
<td>4.76</td>
<td>2.17</td>
<td>Yes</td>
<td>3.23</td>
</tr>
</tbody>
</table>

Source: Diao, McMillan, and Rodrik (2017)
My talk is based on...

• “Africa's Manufacturing Puzzle: Evidence from Tanzanian and Ethiopian Firms” (with Xinshen Diao, Mia Ellis, and Margaret McMillan), CEPR Discussion Paper, January 2021.


All are available at https://drodrik.scholar.harvard.edu/research-papers
Is return to high growth possible?

• Why is industrialization key to rapid growth?
• What drove recent growth accelerations?
• Why is industrialization not playing a stronger role in low-income countries today?
• What will drive growth in the future?
A common feature of growth miracles: rapid industrialization
A clue: rapid and unconditional productivity convergence in (formal) manufacturing
(regardless of period, region, sector, or aggregation)

\[ \beta \approx -3\% \] \((t\text{-stat} \approx 7)\), implying a half-life for full convergence of 40-50 years!

Notes: Data are for the latest 10-year period available. On LHS chart, each dot represents a 2-digit manufacturing industry in a specific country; vertical axis represents growth rate of labor productivity (controlling for period, industry, and period \times industry fixed effects). Source: Rodrik (2014)
Why (formal) manufacturing is special

1. productivity dynamics
   • unconditional convergence

2. tradability
   • can expand without turning terms of trade against itself

3. labor absorption capacity
   • intensive in low-skill labor (traditionally)
Recent wave of growth accelerations is superficially similar

Decomposition of labor productivity growth
(annual growth rates, percentages)

Manufacturing employment shares

Source: Diao, McMillan, and Rodrik (2017)

Source: De Vries et al., Economic Transformation Database (2021)
But very small increase in formal manufacturing employment
Very different from traditional growth accelerations

Note: The vertical red line indicates the start of the country's growth acceleration
Traditional growth model

<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>
What’s going on in SSA

<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>

Arrows indicate the direction of change in SSA sectors.
Where has recent growth come from? (Diao et al., 2019)

• From the demand side, due to:
  • commodity booms
  • external transfers
  • public spending (e.g., investment in ETH)
  • demand-side effects of agricultural productivity

• Induced structural change amplifies growth

• But ultimately unsustainable
The demand-led growth model

- Investment demand → Direct effect on productivity → Low/moderate growth

- Increased demand for services → Induced structural change → Rapid growth through structural change

- Expansion of marginal services → Lagging productivity in expanding services
The demand-led growth model

- **Investment demand**
  - Direct effect on productivity
  - Low/moderate growth

- Increased demand for services
  - Induced structural change
  - Rapid growth through structural change

- Expansion of marginal services
  - Lagging productivity in expanding services
The demand-led growth model: limits

- Investment demand → Direct effect on productivity → Low/moderate growth
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Negative correlation between structural change and productivity growth outside of agriculture

Firm-level evidence on manufacturing in Ethiopia and Tanzania (from Diao et al., 2021)

• Ethiopia: modest labor productivity and employment growth in formal manufacturing firms; no productivity growth in firms with less than 10 employees but rapid employment growth

• Tanzania: rapid labor productivity growth in large and exporting firms but no employment growth in these firms; employment growth restricted to small firms where there is no labor productivity growth

• In short: large firms have good productivity performance, but little employment growth; small firms show rapid employment growth, but poor productivity performance
Conventional hypotheses on productive dualism in manufacturing

- Small firms are subject to market/govt failures that prevent expansion
  - but small firms are not more productive than large firms
  - no evidence of “missing middle” or bimodal distribution of firms

- High labor costs
  - but payroll shares extremely low

- Poor business dynamism or high costs of entry
  - entry/exit rates are high during growth booms (comparable to VNM)

- High corruption/poor business environment
  - but why do effects show up in employment and not productivity?
Excessive capital-intensity in TZA and ETH manufacturing
## Comparative capital-labor ratios in manufacturing, 2010-17 average
(value of total manufacturing capital-labor ratio for Czech Republic = 100)

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Food products, beverages, and tobacco</th>
<th>Rubber &amp; plastics products, and other non-metallic mineral products</th>
<th>Textiles, wearing apparel, leather</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tanzania</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>44.4</td>
<td>39.9</td>
<td>73.4</td>
<td>39.9</td>
</tr>
<tr>
<td>Small</td>
<td>25.4</td>
<td>35.3</td>
<td>18.6</td>
<td>13.1</td>
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<tr>
<td>Large</td>
<td>48.7</td>
<td>41.9</td>
<td>92.0</td>
<td>41.7</td>
</tr>
<tr>
<td>Foreign</td>
<td>46.8</td>
<td>39.6</td>
<td>127.0</td>
<td>44.9</td>
</tr>
<tr>
<td>Exporting</td>
<td>38.4</td>
<td>36.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top 10% large</td>
<td>228.8</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Middle 80% large</td>
<td>34.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom 10% large</td>
<td>12.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New large</td>
<td>55.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old large</td>
<td>43.0</td>
<td></td>
<td></td>
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</table>

|                     | Tanzania |                                              |                                                                   |                                   |
| Total               | 18.7 | 22.3                                  | 20.0                                                             | 18.4                              |
| Small               | 13.0 | 19.0                                  | 7.0                                                              | 19.5                              |
| Large               | 19.7 | 23.2                                  | 23.7                                                             | 18.4                              |
| Foreign             | 25.2 | 37.2                                  | 27.1                                                             | 18.7                              |
| Exporting           | 19.6 |                                       |                                                                   | 20.7                              |
| Top 10% large       | 71.5 |                                       |                                                                   |                                   |
| Middle 80% large    | 14.0 |                                       |                                                                   |                                   |
| Bottom 10% large    | 6.4  |                                       |                                                                   |                                   |
| New large           | 22.3 |                                       |                                                                   |                                   |
| Old large           | 16.2 |                                       |                                                                   |                                   |

**Notes:** 2010-2017 average capital-labor (K/L) ratios are calculated as $1,000 constant PPP per worker for TZA and ETH and Czech Republic. Firms with 10-49 employees are classified as small firms while firms with 50 or more employees are classified as large firms. The Tanzania employment numbers used in these calculations cover all workers, while the Ethiopia employment numbers are limited to permanent workers. Foreign firms are defined as those with foreign ownership for the majority of years or at least one year with data available only for two years. Exporters are firms reporting exports in every year.
Manufacturing and economy-wide capital-labor ratios, Tanzania, Ethiopia, and Czech Republic

Notes: Capital-labor (K/L) ratios are in $1,000 constant 2011 PPP $. The solid blue line represents the total economy while the dotted orange line represents manufacturing. In Ethiopia and Tanzania, the orange line only represents large manufacturing firms. PPP convertors differ for machinery & equipment and buildings & structures, and they are both from ICP. For buildings & structures, the PPP conversion for construction from ICP is used. 2010 PPP is calculated by using the growth rate between 2011 and 2017 PPPs from ICP, a similar approach used in WDI.
Excessive capital intensity: key points

- While K/L ratios in TZA and ETH manufacturing are lower than in much richer comparator nations, these ratios are still much higher than would be expected based on their relative labor abundance and low per-capita income levels.

- Focusing on the largest firms, K/L ratios in TZA and ETH are actually comparable to those in much richer OECD countries.

- Exporting firms or the traditionally labor-intensive textiles and clothing firms do not exhibit lower K/L ratios than other manufacturing firms on average.

- K/L ratios have increased much more rapidly in TZA and ETH manufacturing than in the economy as a whole.
Global employment generation capacity of manufacturing

Estimated coefficients on decade dummies from a regression where manufacturing shares are regressed on income, population (and their squares), country fixed effects, and period dummies.
It’s almost entirely due to loss in low-skilled jobs

Estimated year dummies, by labor skill type

GGDC data set (2014 update, employment)
Analytics of technology choice

Triple whammy on employment

- Direct employment loss due to reduction in output (due to reduction in comparative advantage)
- Additional employment loss due to shift in technique
- Reduction in employment elasticity to positive shocks (steeper cost curve) due to scarcity of capital and complements to capital (e.g. skills)
Alternatives: agriculture and services

Agriculture

- significant productivity gains possible in traditional agriculture
- possibilities in non-traditional agriculture
- but hard to imagine agriculture will absorb employment
  - where will labor go?

Services: two types

- high-productivity (tradable) segments of services cannot absorb as much labor
  - since they are typically skill-intensive
  - IT, FIRE, business services (IND, PHL)
- 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”
The dilemma of growth policy

• Advanced sectors are not labor-absorbing
  • manufacturing: premature de-industrialization
  • GVCs: not expanding or labor absorbing
  • tradable services: highly skill-intensive
  • non-traditional agriculture: capital intensive and labor-releasing
  • COVID19 deepens divide between skilled remote jobs and poor service jobs

• Where will the productive, middle-class jobs come from?
  • a growth problem as well as an equity problem

• [The populist response as symptom of middle-class squeeze and scarcity of good jobs]
What next?

- Successful growth strategies of the past will not work in light of previously-mentioned trends
- Robust growth and employment creation will depend on broad-based productivity growth at home (supply side) and expansion of middle class (demand side)
- A combination of
  - active labor market policies (skills, training focused on employers’ needs)
  - new forms of “industrial policy” (less top-down, and going beyond manufacturing)
  - directed innovation policies targeting labor-augmenting (rather than labor-replacing) technologies
- Sustainable growth miracles may become a thing of the past
Firms have access to two technologies, one L-intensive and the other K-intensive.

- Firms choose the former to produce $q_0$ at world prices $p_0$.
- Global technological innovation pushes costs down for K-intensive technology.
- This induces global prices to fall to $p_1$.
- But downward shift in costs for K-intensive technology in Africa is less than the shift in prices (either because of higher capital costs or tech transfer frictions).

Nevertheless, L-intensive technology is no longer competitive and firms have to shift to K-intensive technology.

Output falls to $q_1$. 