Middle-income countries and innovation

Innovation and Access to Medical Technologies

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Overview

- What are middle income countries?
- Middle income countries and innovation
- The Global Innovation Index
- Concluding thought
What are middle income countries?

- Precise answer:
  
  “As of 1 July 2014, [...] middle-income economies are those with a GNI per capita of more than $1,045 but less than $12,746 [...]”

  Source: World Bank website

- Wide range, diverse set of countries
For example

<table>
<thead>
<tr>
<th>Country</th>
<th>GNI per capita ($)</th>
<th>Total population (millions)</th>
<th>Below 2$ a day poverty threshold (%)</th>
<th>Urban population (%)</th>
<th>Agriculture (% of GDP)</th>
<th>Mobile phones (% of population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>4,900</td>
<td>1,344.13</td>
<td>18.61</td>
<td>50.57</td>
<td>10.04</td>
<td>72.07</td>
</tr>
<tr>
<td>India</td>
<td>1,450</td>
<td>1,221.16</td>
<td>60.57</td>
<td>31.28</td>
<td>17.86</td>
<td>73.20</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>1,090</td>
<td>6.52</td>
<td>n/a</td>
<td>34.25</td>
<td>29.52</td>
<td>84.05</td>
</tr>
<tr>
<td>Hungary</td>
<td>12,720</td>
<td>9.97</td>
<td>0.17</td>
<td>69.35</td>
<td>n/a</td>
<td>116.94</td>
</tr>
<tr>
<td>Mexico</td>
<td>9,000</td>
<td>119.36</td>
<td>n/a</td>
<td>78.12</td>
<td>3.35</td>
<td>79.24</td>
</tr>
<tr>
<td>Senegal</td>
<td>1,030</td>
<td>13.33</td>
<td>60.31</td>
<td>42.50</td>
<td>15.65</td>
<td>70.16</td>
</tr>
</tbody>
</table>

Source: World Bank World Development Indicators, data refer to 2011
Middle income countries & innovation

In 2009, 57 percent of middle income R&D took place in China.

*Source: WIPO estimates, based on data from UNESCO Institute for Statistics, Eurostat and OECD, September 2011*
Evolution of patent filings

Source: WIPO Statistics Database
Distribution of patent filings in 2012

- China: 28%
- Rest of the world: 8%
- High-income economies: 64%

Source: WIPO Statistics Database
The Global Innovation Index 2014
The Human Factor in Innovation
Introduction to the Global Innovation Index 2014

- Measuring innovation across more than 140 economies.
- Macro analysis tool based on country comparison
- Recognizes multifaceted nature of innovation & complexity of innovation systems
- A ‘tool for action’ for decision makers with the goal of improving countries’ innovation performances.
The GII is a multi-stakeholder effort

- Co-published by Cornell University, INSEAD and WIPO
- Three Knowledge Partners: the Confederation of Indian Industry, du, and Huawei
- Independent statistical audit by the Joint Research Centre of the European Commission
- International advisory board
The GII model
## GII 2014 rankings – Top 10

<table>
<thead>
<tr>
<th>Input Sub-Index</th>
<th>Output Sub-Index</th>
<th>Efficiency Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Singapore</td>
<td>1. Switzerland</td>
<td>1. Moldova</td>
</tr>
<tr>
<td>2. Hong Kong (China)</td>
<td>2. Netherlands</td>
<td>2. China</td>
</tr>
<tr>
<td>4. USA</td>
<td>4. United Kingdom</td>
<td>4. Indonesia</td>
</tr>
<tr>
<td>5. Finland</td>
<td>5. Luxembourg</td>
<td>5. Viet Nam</td>
</tr>
<tr>
<td>7. Switzerland</td>
<td>7. USA</td>
<td>7. Venezuela</td>
</tr>
<tr>
<td>10. Australia</td>
<td>10. Malta</td>
<td>10. Côte d'Ivoire</td>
</tr>
</tbody>
</table>

- **GII**
  1. Switzerland
  2. United Kingdom
  3. Sweden
  4. Finland
  5. Netherlands
  6. USA
  7. Singapore
  8. Denmark
  9. Luxembourg
  10. Hong Kong (China)
GII 2014 rankings – Top 3 per region and per income group

Top 3 Per Region

1. India
2. Kazakhstan
3. Bhutan

Top 3 Per Region

1. United States of America
2. Canada
3. Singapore

Top 3 Per Region

1. Switzerland
2. United Kingdom
3. Sweden

Top 3 Per Income Group

High Income
1. Switzerland
2. United Kingdom
3. Sweden

Upper Middle Income
1. China
2. Malaysia
3. Hungary

Lower Middle Income
1. Republic of Moldova
2. Mongolia
3. Ukraine

Low Income
1. Kenya
2. Uganda
3. Rwanda
Innovation and GDP per capita
GII 2014
(bubble size: population)

Moving to become an innovation leader / learner

Low performers (relative to GDP)
Concluding thought

- One of the most important driving forces of growing world trade: production fragmentation and vertical specialization

- Is there a similar ‘fragmentation’ of innovation?
  - Open innovation & growing technology trade
  - Growing internationalization of R&D
  - Example: pharmaceutical industry

- Opportunities for middle income countries
  - New entry possibilities for specialized firms?
  - Increased scope for knowledge spillovers?
Thank you!

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