THE GLOBAL INNOVATION INDEX

Presentation at the JRC European Commission –

Comparing Indicators and Scoreboards:
Sharing Best Practices
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The Global Innovation Index 2015
Effective Innovation Policies for Development

1. The vision...

2. The making of.....and JRC...

3. Results and use of the GII
First, innovation increasingly seen as critical driver of economic growth and well-being.

Second, move beyond one-dimensional innovation metrics & capture innovation in developed and emerging economies.

Third, manage to capture policy-makers attention with sound framework.
Impact and responsibility

UN Secretary-General stressed that the GII is a ‘unique tool for refining innovation policies …’, and for assessing where more efforts are urgently needed’
What is innovation and how do you measure it?

- Measuring innovation is complex and a moving target.
  
  No magic formula.

1) Difficulty of right data selection
2) Difficulty of right scaling (large country problem)
3) Difficulty of right aggregation
4) Keeping model constant vs. continual adaptation?
What is innovation and how do you measure it?

The making of.....

Global Innovation Index (average)

Innovation Efficiency Ratio (ratio)

Innovation Input Sub-Index

Institutions
- Political environment
- Regulatory environment
- Business environment

Human capital and research
- Education
- Tertiary education

Infrastructure
- ICTs
- General infrastructure
- Ecological sustainability

Market sophistication
- Credit
- Investment
- Trade & competition

Business sophistication
- Knowledge workers
- Innovation linkages
- Knowledge absorption

Innovation Output Sub-Index

Knowledge and technology outputs
- Knowledge creation
- Knowledge impact
- Knowledge diffusion

Creative outputs
- Intangible assets
- Creative goods and services
- Online creativity
Statistical strategies to ensure robustness

• A critical element of success and credibility has been annual audit conducted by the JRC – 5 year cooperation.
  – Problematic indicators = identified and treated
  – Sensitivity and uncertainty analysis conducted
  – Most importantly: JRC is sparring partner when experimenting and – last year – analysis of outperformers

• Recognition that measuring innovation is a journey.

• GII team continually tests the model for relevance to better reflect an improved understanding of innovation.
What the GII is good at and what one should be careful about?

- Strong tool to benchmark relative performance to other countries in given year & analyse national innovation system
- Powerful tool to incentivise the collection of data.
- Headline rankings is not right to assess innovation performance over time – variables do good job at that
# Overall results and Japan in the GII

## GII Rankings — Top 10

<table>
<thead>
<tr>
<th>Input Sub-Index</th>
<th>Output Sub-Index</th>
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<tbody>
<tr>
<td>1. Singapore</td>
<td>1. Switzerland</td>
</tr>
<tr>
<td>2. Switzerland</td>
<td>2. Luxembourg</td>
</tr>
<tr>
<td>3. Finland</td>
<td>3. Netherlands</td>
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<tr>
<td>4. Hong Kong (China)</td>
<td>4. Sweden</td>
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<tr>
<td>5. USA</td>
<td>5. United Kingdom</td>
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<td>6. United Kingdom</td>
<td>6. Iceland</td>
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<td>7. Sweden</td>
<td>7. Ireland</td>
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<td>8. Denmark</td>
<td>8. Germany</td>
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<tr>
<td>9. Canada</td>
<td>9. USA</td>
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<tr>
<td>10. Australia</td>
<td>10. Finland</td>
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- Germany, Japan and Korea move up, Japan due to output

### GII

- 1. Switzerland
- 2. United Kingdom
- 3. Sweden
- 4. Netherlands
- 5. USA
- 6. Finland
- 7. Singapore
- 8. Ireland
- 9. Luxembourg
- 10. Denmark

19. Japan
Innovation and GDP per capita
GII 2015
(bubble size: population)

China, Viet Nam, Senegal, Malaysia, India, Thailand, Morocco.

LI: Mozambique, Rwanda, Kenya, Mali, Burkina Faso, Cambodia, Uganda
Sub-Saharan Africa: A region of innovation learners

- Five African economies: **Burkina Faso**, **Gambia**, **Malawi**, **Mozambique**, and **Rwanda** became part of the group of economies defined as ‘innovation learners.’

- The **Sub-Saharan African region** makes up nearly 50% of the innovation learner economies.

Sub-Saharan Africa now accounts for almost 50% of countries with the status of “innovation learner”—more than any other region.
INNOVATION DIVIDE WITH SOME CLOSING GAP; and some strongly overperforming

- Stability in the top 20 - An innovation divide persists

- China and Malaysia show performance similar to that of top 25 (human capital development, R&D funding)

- Differences eroding between champions of middle-income countries & lower tier of high-income
Example of various country use of GII

- Use of the GII within the UN system
- National Innovation Roundtables with innovation stakeholders, statisticians and Minister
  - Identification of missing data points & opportunities
  - Establishment of an action plan
  - Second Roundtable assessing the results at later point

- **Japan: Prime Minister’s Office, Dec. 2015**
  - Ministers, CEO of Toyota, Sharp
- **Brazil: S&T Minister, October 2015**
- **India: Commerce and S&T Ministers, 2013 and 2015**
- **Morocco: Minister for Industry, 2 roundtables, 2014/15**
Japan: A balanced profile with one exception in creative outputs

<table>
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<tr>
<th>Creative outputs</th>
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<td>43</td>
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Global Innovation Index: 19
Institutions: 17
Business sophistication: 16
Knowledge and technology outputs: 14
Human capital and research: 13
Market sophistication: 12
Infrastructure: 5

Best ranking

Intangible assets:
- Domestic and international brands
- ICT and business-model creation
- Software spending (6.2.3)
- Cultural & creative services exports.

3 Infrastructure
3.1 Information & communication technologies (ICTs) ........4
3.1.1 ICT access* ..........................................................14
3.1.2 ICT use* .............................................................7
3.1.3 Government’s online service* ....................................4
3.1.4 E-participation*........................................................4
2 Human capital & research

2.1 Education

2.1.1 Expenditure on education, % GDP

2.1.4 PISA scales in reading, maths, & science

2.1.5 Pupil-teacher ratio, secondary

2.2 Tertiary education

2.2.2 Graduates in science & engineering, %

2.2.3 Tertiary inbound mobility, %

2.3 Research & development (R&D)

2.3.1 Researchers, FTE/mn pop.

2.3.2 Gross expenditure on R&D, % GDP

2.3.3 QS university ranking, average score top 3*
The GII has seen wide uptake and impact – but we continue on the path of caution and responsibility.

The JRC audit has been a critical component of GII.

The contribution that JRC makes to statistics and to innovation policy in this way is significant.

Thank you for this!

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