

GII Regional Launch

Washington, D.C.

17 September 2014

Soumitra Dutta

Anne and Elmer Lindseth Dean and
Professor of Management
Johnson School of Management
Cornell Univesity

Alexandra L. Bernard
Project Manager
Global Innovation Index

Rafael Escalona Reynoso
Lead Researcher
Global Innovation Index

Soumitra Dutta
Founder and co-editor
Cornell University

Bruno Lanvin
Co-editor
INSEAD

Sacha Wunsch-Vincent
Co-editor
WIPO

The Global Innovation Index 2014

The Human Factor in Innovation

1. Introduction to the Global Innovation Index 2014
2. Main results of the GII 2014
3. The United States in the GII 2014

1 Introduction to the Global Innovation Index 2014

- 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



Exploring innovation: Themes of the GII

Some of the recent themes explored are:

- Accelerating growth and development (GII 2011)
- Stronger innovation linkages for global growth (GII 2012)
- The local dynamics of innovation (GII 2013)
- The Human Factor is the essential spark to innovation (GII 2014).

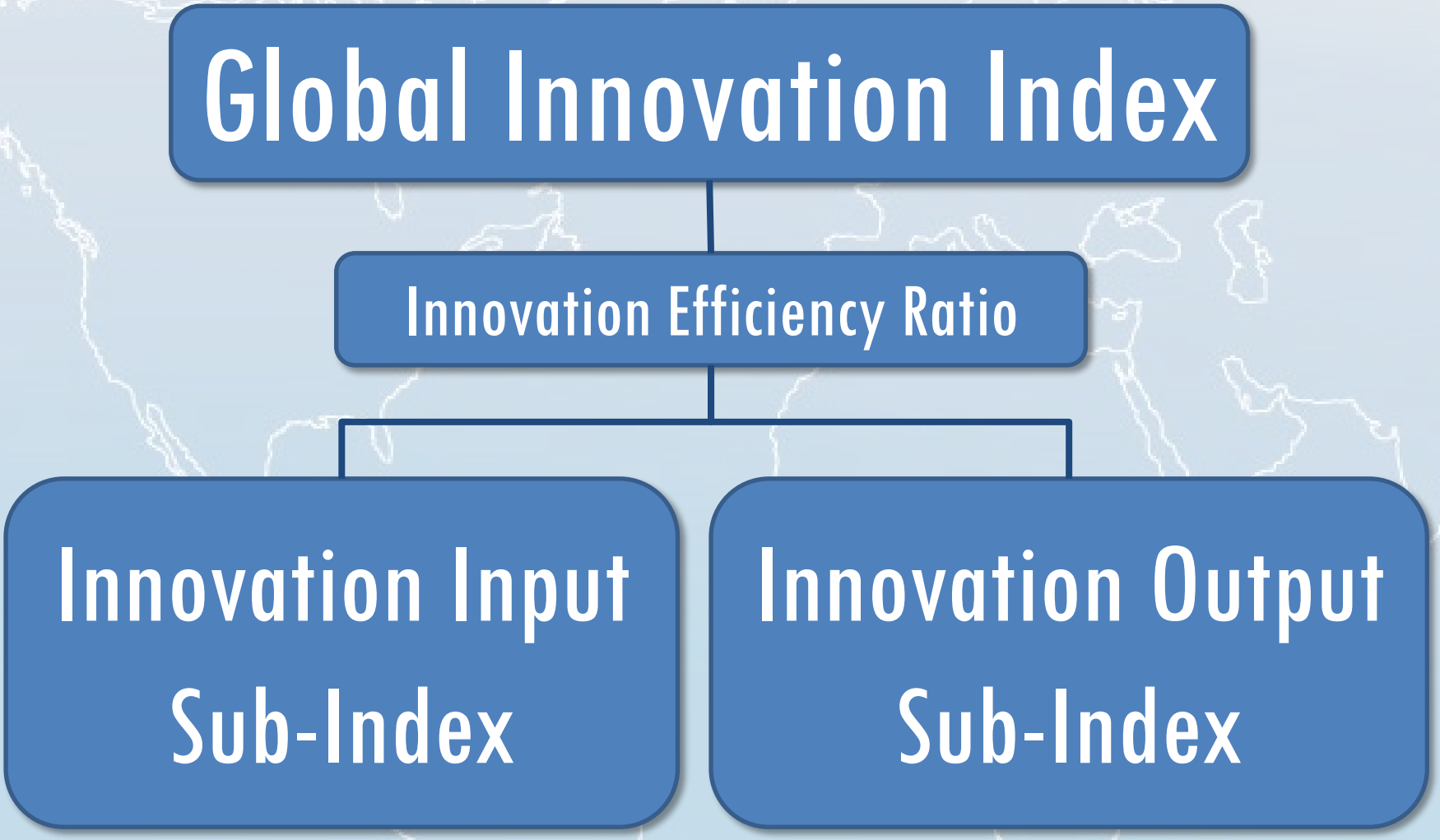
Measuring Innovation: some existing indexes

- OECD
  - Measuring Innovation
  - The Oslo Manual (The Eurostat & OECD)
  - Frascati Manual
  - The Measurement of Scientific and Technical Activities
  - Proposed Guidelines for Collecting and Interpreting Technological Innovation Data
    - Methodological guidelines for the collection of data on R&D expenditures, patents, R&D human resources and innovation . Includes some experimental indicators.
- European Union
  - Innovation Union Scoreboard
    - A comparative assessment and ranking of R&D and innovation performance (Member States and other selected non-members (Switzerland, China, USA, etc.).
    - 3 main types of indicators and 8 innovation dimensions, and a total 25 different indicators.

Measuring Innovation: some existing indexes (Cont'd)

- Bloomberg
  - Bloomberg Innovation Quotient
    - Ranks countries (0 to 100) on seven factors: R&D intensity, productivity, high-tech density, researcher concentration, manufacturing capability, tertiary efficiency and patent activity: 6th
- Asian Development Bank (ADB) & Economist Intelligence Unit (EIU)
  - Creative Productivity Index
    - Analyzes creativity and Innovation in Asia.
    - 36 input indicators measure innovation capacity and incentives including: top 500 universities, urbanization rate, R&D spending , IP protection, and corruption and bureaucracy.
    - 8 output indicators that include: number of patents filed, export sophistication, value added to agriculture, and the number of books and films produced.

Basic structure



Basic structure (Cont'd)

Innovation Input Sub-Index

1. Institutions
2. Human capital and research
3. Infrastructure
4. Market sophistication
5. Business sophistication

Innovation Output Sub-Index

6. Knowledge and technology outputs
7. Creative outputs

Both Sub-Indexes with equal weight .

Input Sub-Index: Sub-pillars

1. Institutions
   - Political environment
   - Regulatory environment
   - Business environment
2. Human capital and research
   - Education
   - Tertiary education
   - Research & development
3. Infrastructure
   - ICTs
   - General infrastructure
   - Ecological sustainability
4. Market sophistication
   - Credit
   - Investment
   - Trade & competition
5. Business sophistication
   - Knowledge workers
   - Innovation linkages
   - Knowledge absorption

Output Sub-Index: Sub-pillars

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

7. Creative outputs
   - Intangible assets
   - Creative goods and services
   - Online creativity

	Indicator
5	**Business sophistication**
5.1	*Knowledge workers*
5.1.1	Knowledge-intensive employment, %
5.1.2	Firms offering formal training, % firms
5.1.3	GERD performed by business, % GDP[a]
5.1.4	GERD financed by business, %[a]
5.1.5	GMAT test takers/mn pop. 20-34[a]
5.2	*Innovation linkages*
5.2.1	University/industry research collaboration[†a]
5.2.2	State of cluster development[†]
5.2.3	GERD financed by abroad, %
5.2.4	JV-strategic alliance deals/tr PPP$ GDP[a]
5.2.5	Patent families filed in 3+ offices/bn PPP$ GDP[a]
5.3	*Knowledge absorption*
5.3.1	Royaly & license fees pay'ts, % total trade[a]
5.3.2	High-tech imports less re-imports, %
5.3.3	Comm., comp. & info services imp., % tot. trade
5.3.4	FDI net inflows, % GDP

Note: (*) index, (†) survey question, (a) half weight, (b) higher values indicate

	Indicator
6	**Knowledge and technology outputs**
6.1	*Knowledge creation*
6.1.1	Domestic resident patent app/bn PPP$ GDP[a]
6.1.2	PCT resident patent app/bn PPP$ GDP[a]
6.1.3	Domestic res utility model app/bn PPP$ GDP
6.1.4	Scientific & technical articles/bn PPP$ GDP[a]
6.1.5	Citable documents H index[a]
6.2	*Knowledge impact*
6.2.1	Growth rate of PPP$ GDP/worker, %
6.2.2	New businesses/th pop. 15–64[a]
6.2.3	Computer software spending, % GDP[a]
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP[a]
6.2.5	High- & medium-high-tech manufactures, %[a]
6.3	*Knowledge diffusion*
6.3.1	Royalty & license fees receipts, % total trade[a]
6.3.2	High-tech exports less re-exports, %[a]
6.3.3	Comm., comp. & info. services exp., % tot. trade[a]
6.3.4	FDI net outflows, % GDP

Note: (*) index, (†) survey question, (a) half weight, (b) higher values indicate

	Indicator
7	**Creative outputs**
7.1	*Intangible assets*
7.1.1	Domestic res trademark app/bn PPP$ GDP
7.1.2	Madrid trademark applications/bn PPP$ GDP[a]
7.1.3	ICTs & business model creation[†]
7.1.4	ICTs & organizational model creation[†]
7.2	*Creative goods and services*
7.2.1	Cultural & creative services exp., % total trade[a]
7.2.2	National feature films/mn pop. 15–69[a]
7.2.3	Global ent. & media output/th pop. 15–69[a]
7.2.4	Printing & publishing manufactures, %
7.2.5	Creative goods exports, %
7.3	*Online creativity*
7.3.1	Generic TLDs/th pop. 15–69
7.3.2	Country-code TLDs/th pop. 15–69
7.3.3	Wikipedia monthly edits/mn pop. 15–69 19
7.3.4	Video uploads on YouTube/pop. 15–69

Note: (*) index, (†) survey question, (a) half weight, (b) higher values indicat

2 Main results of the GII 2014

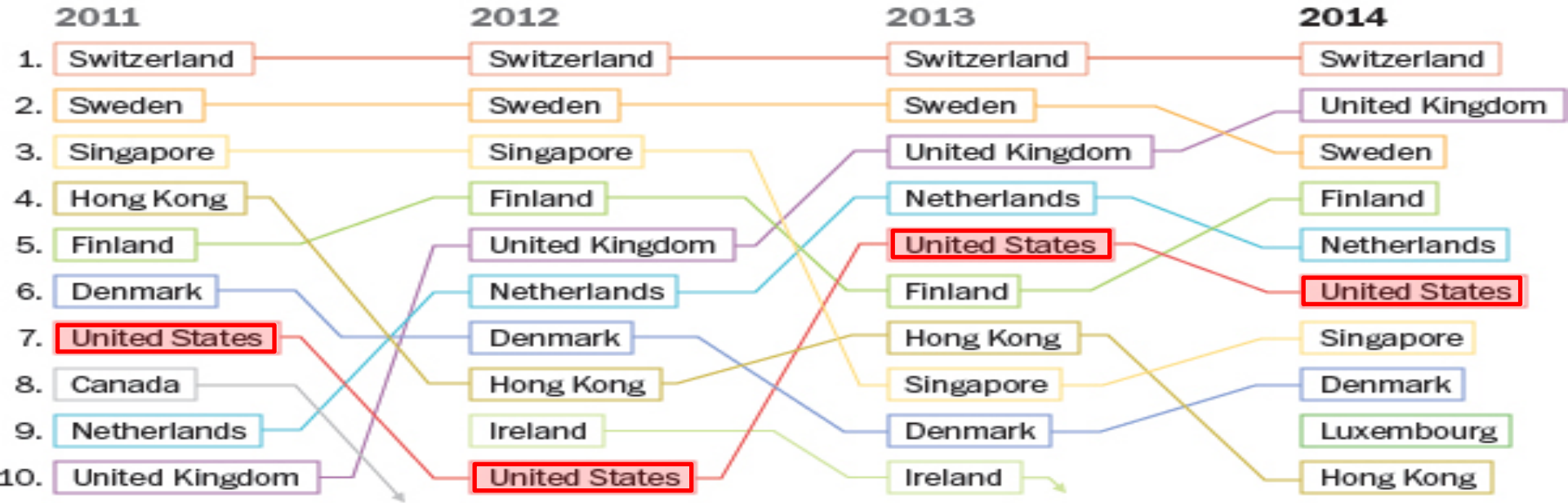
Input Sub-Index	Output Sub-Index	Efficiency Ratio
1. Singapore	1. Switzerland	1. Moldova
2. Hong Kong (China)	2. Netherlands	2. China
3. United Kingdom	3. Sweden	3. Malta
4. USA	4. United Kingdom	4. Indonesia
5. Finland	5. Luxembourg	5. Viet Nam
6. Sweden	6. Finland	6. Switzerland
7. Switzerland	7. USA	7. Venezuela
8. Canada	8. Germany	8. Nigeria
9. Denmark	9. Iceland	9. Luxembourg
10. Australia	10. Malta	10. Côte d'Ivoire

GII

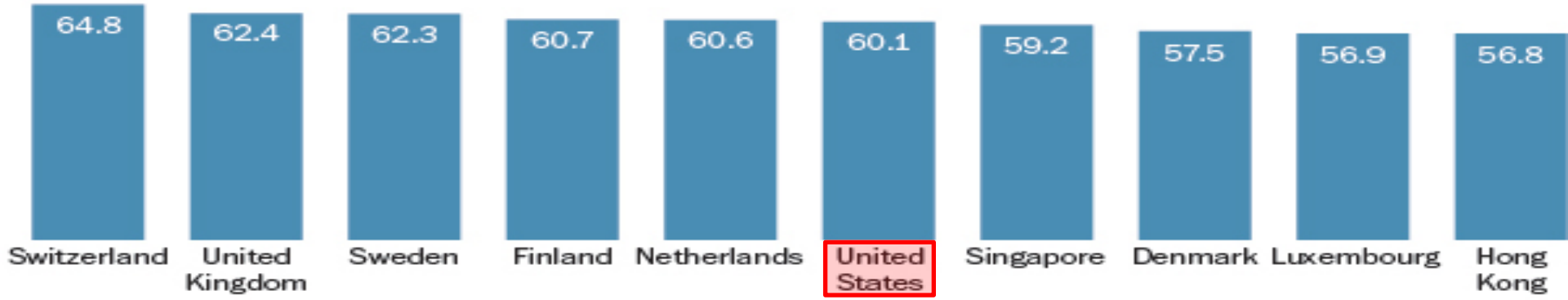
1. Switzerland
2. United Kingdom
3. Sweden
4. Finland
5. Netherlands
6. USA
7. Singapore
8. Denmark
9. Luxembourg
10. Hong Kong (China)

Top global innovators

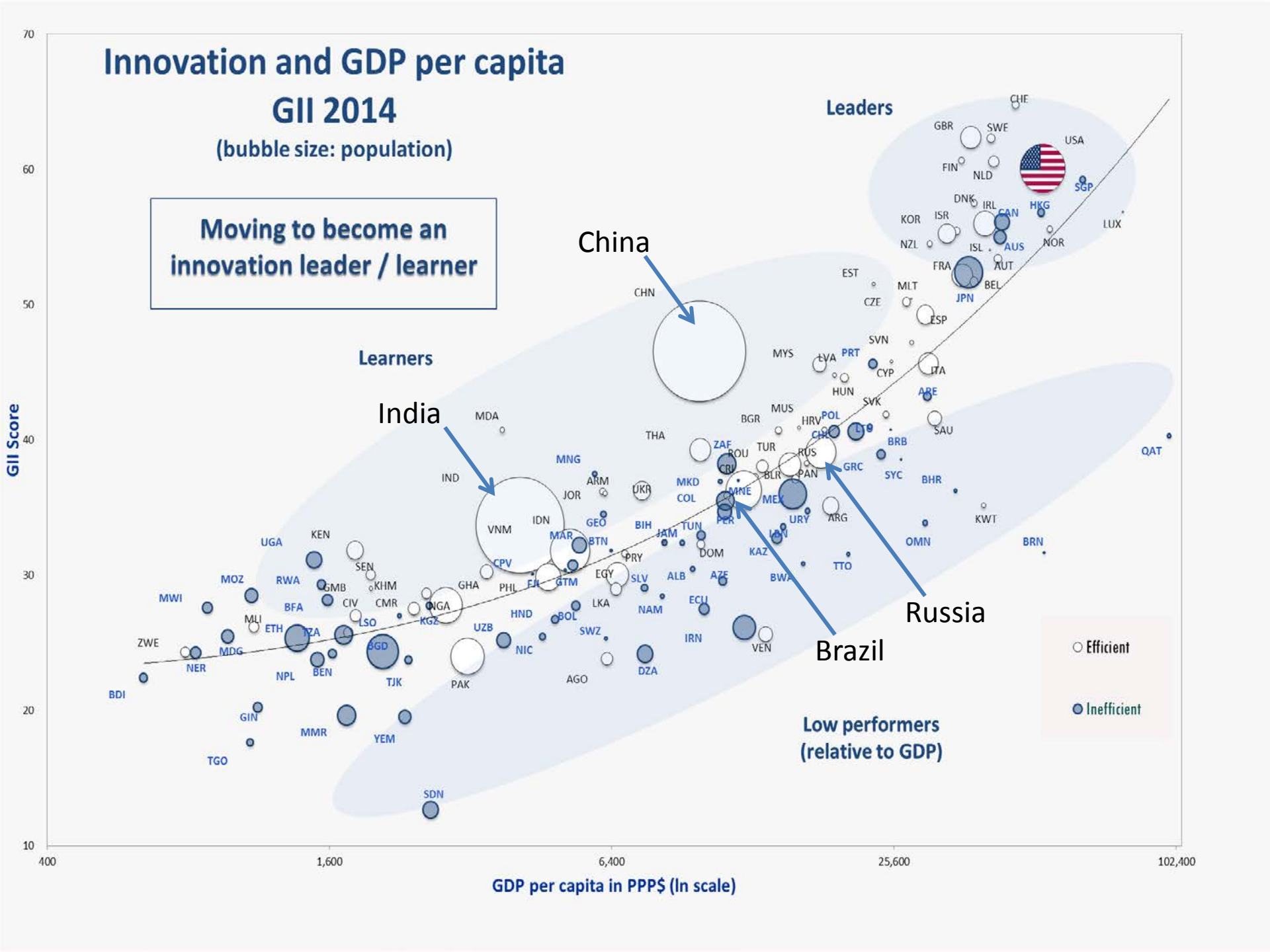
The top 10 from 2011 to 2014 by their ranking



Scores in 2014 for the top 10



Source: "The Global Innovation Index 2014," World Intellectual Property Organization, Cornell University and INSEAD.
Graphic: Tobey - The Washington Post.


Innovation and GDP per capita
GII 2014
(bubble size: population)
Moving to become an innovation leader / learner
Leaders
Learners
Low performers (relative to GDP)
China
India
Russia
Brazil
Efficient
Inefficient
GII Score
GDP per capita in PPP$ (ln scale)
70
60
50
40
30
20
10
400
1,600
6,400
25,600
102,400
CHE
GBR
SWE
USA
FIN
NLD
SGP
DNK
IRL
HKG
KOR
ISR
CAN
LUX
NZL
ISL
AUS
NOR
FRA
AUT
EST
MLT
BEL
JPN
CZE
ESP
SVN
MYS
LVA
PRT
CYP
ITA
HUN
ARE
SVK
MUS
BGR
HRV
POL
SAU
THA
ZAF
ROU
TUR
RUS
BRB
QAT
MNG
BLR
PAN
GRC
SYC
IND
ARM
MKD
MNE
BHR
JOR
UKR
COL
MEX
VNM
IDN
GEO
PER
URY
ARG
KWT
UGA
KEN
MAR
BIH
JAM
TUN
LAO
OMN
BRN
BTN
DOM
KAZ
SEN
CPV
PRY
TTO
EGY
SLV
ALB
AZE
BWA
MOZ
RWA
GMB
KHM
GHA
PHL
FJI
GTM
MWI
CIV
CMR
NGA
ECU
BFA
LKA
NAM
MLI
ETH
LSO
KGZ
HND
BOL
UZB
SWZ
IRN
VEN
ZWE
TZA
GGD
NIC
MDG
NER
NPL
BEN
TJK
PAK
AGO
DZA
BDI
GIN
MMR
YEM
TGO
SDN

Learners by region

Learners are 20 countries out-performing their peers relative to GDP per capita:

Sub-Saharan Africa

- Kenya
- Uganda
- Mozambique
- Rwanda
- Senegal
- Malawi
- Gambia
- Burkina Faso

Europe

- Czech Republic
- Armenia
- Ukraine
- Georgia
- Republic of Moldova

South East Asia and Oceania

- China
- Mongolia
- Viet Nam
- Malaysia
- Thailand

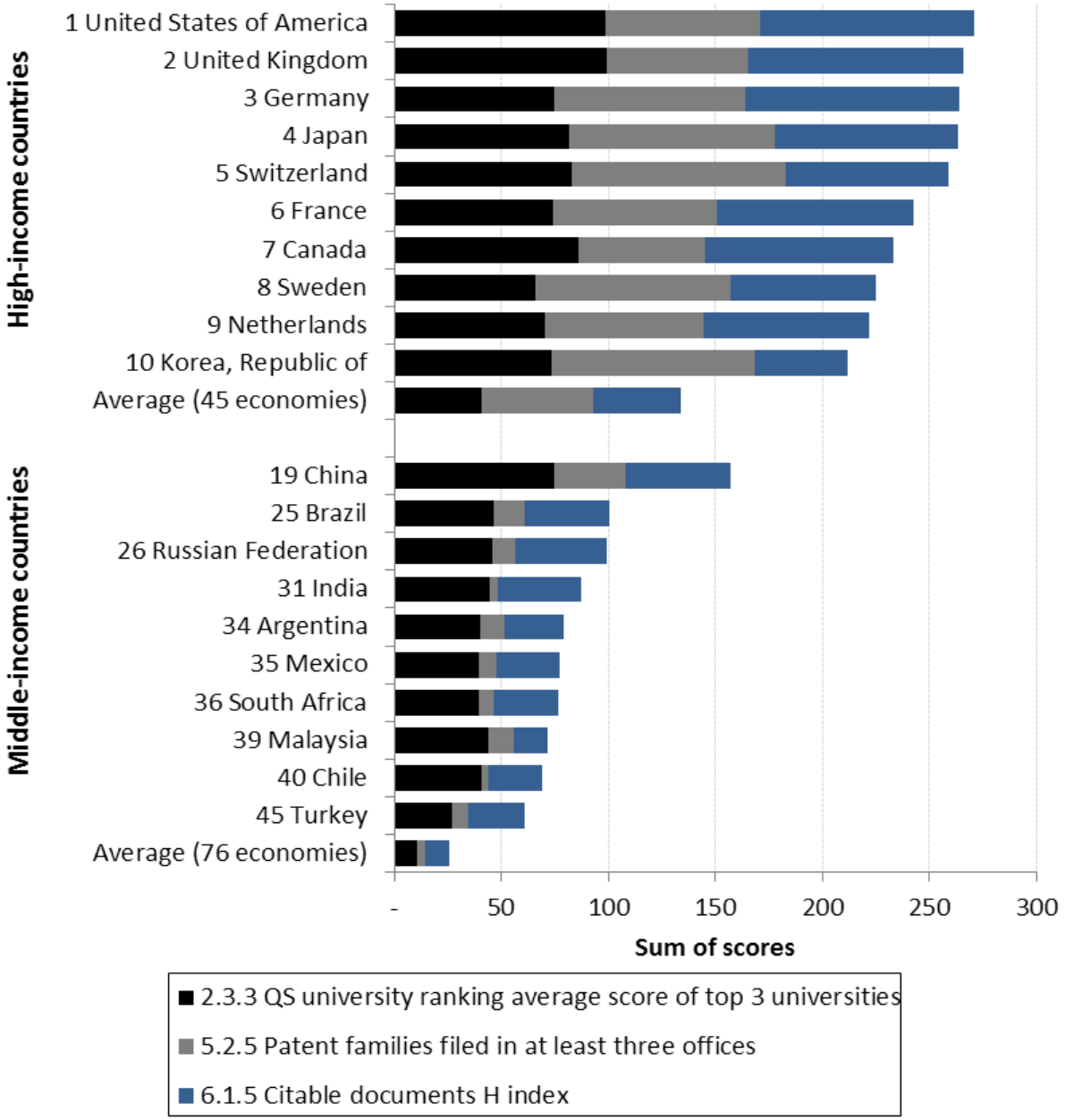
Central and Southern Asia

- India

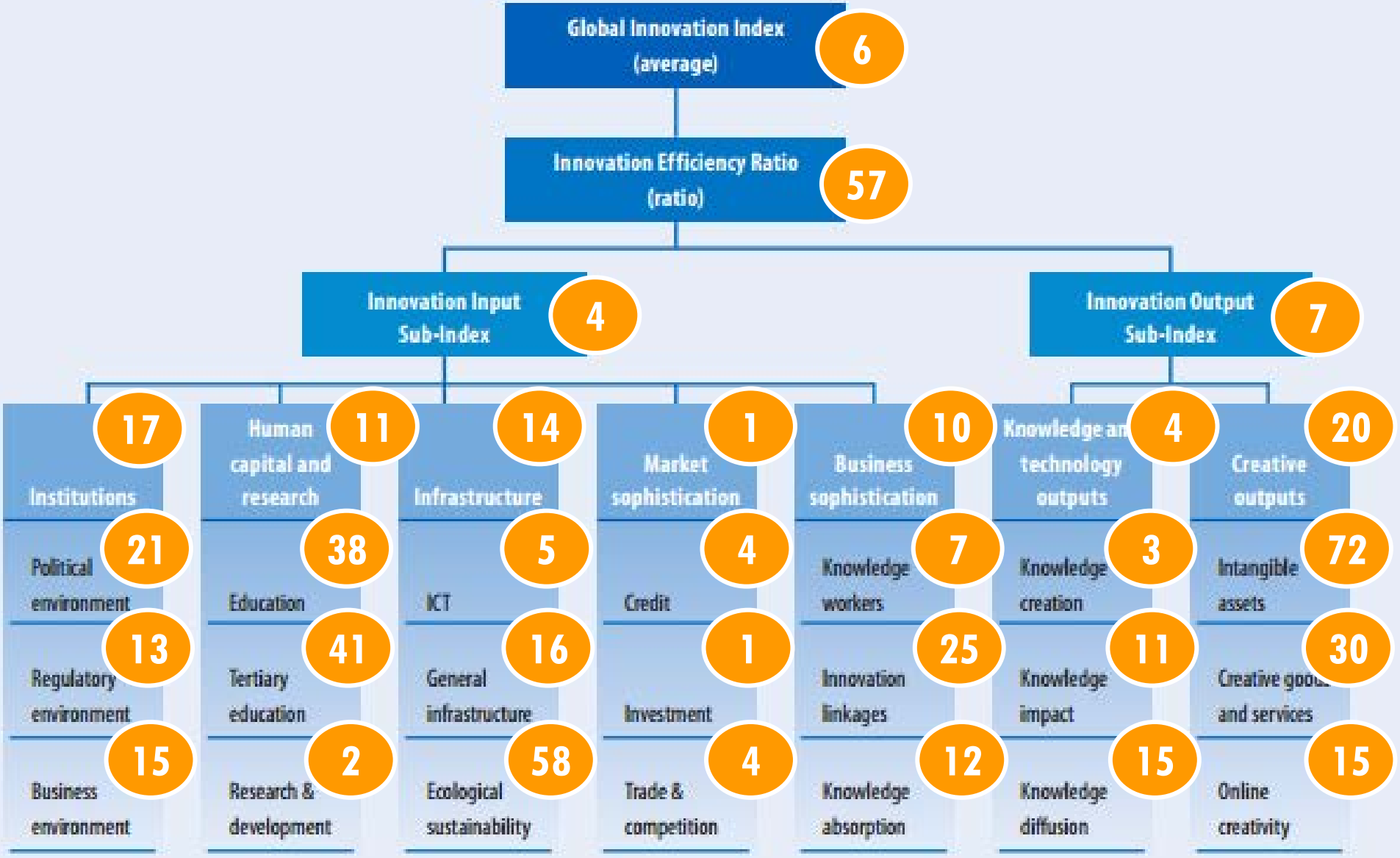
Northern Africa and Western Asia

- Jordan

Top 10 high and top 10 middle income economies



3 The United States in the GII 2014



The US: Standing at the top (among the top 5 economies)

Indicator
• 1.2.3 Cost of redundancy dismissal (1)
• 3.1.3 Government's online service index (1)
• 4.2.3 Stocks traded, total value (1)
• 4.2.4 Venture capital deals (1)
• 5.1.5 GMAT test takers (1)
• 6.1.1 National office patent applications (1)
• 6.1.5 Citable documents H index (1)
• 6.2.3 Computer software spending (1)
• 6.3.1 Royalties and license fees receipts (1)
• 7.3.1 gTLDs per thousand population (1)
• 7.3.4 Video uploads on YouTube (1)

The US: Standing at the bottom (among the top 5 economies)

Indicator

- 2.2.3 Inbound mobility rate (49)
- 3.3.1 GDP/TPES (59)
- 5.3.4 Foreign direct investment (107)
- 6.2.4 ISO 9001 certificates (110)
- 6.3.3 Communications, comp. and information services exports (77)
- 7.1.2 Madrid international registrations (47)
- 7.2.1 Audio-visual and related services exports (24)
- 7.2.2 National feature films (36)
- 7.2.4 Printing and publishing output (38)

USA: Room for Improvement

When contrasting the difference in scores between the USA and the top ranking economy in each of the 81 indicators, the following 10 indicators can be targeted to improve overall ranking:*

Indicator	USA GII Rank	USA score	Score of top	Top score holder
2.1.2 Public expenditure per pupil	46	25.06	39.88	FIN
2.1.3 School life expectancy	13	76.81	91.03	IRL
3.2.2 Logistics Performance Index score	8	92.06	100	SGP
3.2.3 Total investment	96	22.07	36.84	SGP
4.1.2 Domestic credit to private sector	5	63.10	67.60	DNK
4.3.1 Applied tariff rate	42	94.42	100	CHE
4.3.2 Non-agricultural market access weighted tariff	80	87.50	92.56	SGP
5.1.3 GERD - performed by Business	11	58.80	73.54	FIN
5.1.4 GERD - financed by Business	8	82.66	87.01	CHE
6.2.1 Growth rate of labour productivity	77	59.43	64.36	HKG

* With one exception, the data that is used to calculate these indicators comes neither from other indexes nor from the results of surveys.



GII Regional Launch

Washington, D.C.

17 September 2014

Thank You

Please visit:

http://www.globalinnovationindex.org

Soumitra Dutta
Founder and co-editor
Cornell University

Bruno Lanvin
Co-editor
INSEAD

Sacha Wunsch-Vincent
Co-editor
WIPO