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The Global Innovation Index 2013

The Local Dynamics of Innovation



booz&co.

CII
Confederation of
Indian Industry



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The GII is a multi-stakeholder effort

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Four Knowledge Partners: Booz & Company, the Confederation of Indian Industry, du, and Huawei

Independent statistical audit by the Joint Research Centre of the European Commission

International advisory board



A tool for action around 84 metrics

Global Innovation Index
(average)

Innovation Efficiency Ratio
(ratio)

Innovation Input Sub-Index

Innovation Output Sub-Index

Institutions	Human capital & Research	Infrastructure	Market Sophistication	Business Sophistication	Knowledge & Technology Outputs	Creative Outputs
Political environment	Education	ICT	Credit	Knowledge workers	Knowledge creation	Intangible assets
Regulatory environment	Tertiary education	General infrastructure	Investment	Innovation linkages	Knowledge impact	Creative goods & services
Business environment	Research & development	Ecological sustainability	Trade & competition	Knowledge absorption	Knowledge diffusion	Online creativity

The GII 2013 – Main results

- **Innovation is a global game**

The GII 2013 rankings – Top 10

Input Sub-Index	Output Sub-Index	Efficiency Ratio	GII
<ol style="list-style-type: none"> 1. Singapore 2. Hong Kong (China) 3. United States of America 4. United Kingdom 5. Sweden 6. Finland 7. Switzerland 8. Denmark 9. Canada 10. Netherlands 	<ol style="list-style-type: none"> 1. Switzerland 2. Netherlands 3. Sweden 4. United Kingdom 5. Malta 6. Luxembourg 7. Iceland 8. Finland 9. Israel 10. Germany 	<ol style="list-style-type: none"> 1. Mali 2. Moldova, Rep. 3. Guinea 4. Malta 5. Swaziland 6. Indonesia 7. Nigeria 8. Kuwait 9. Costa Rica 10. Venezuela, Bolivarian Rep. 	<ol style="list-style-type: none"> 1. Switzerland 2. Sweden 3. United Kingdom 4. Netherlands 5. United States of America 6. Finland 7. Hong Kong (China) 8. Singapore 9. Denmark 10. Ireland

Top 3 by region and income group (GII rank)

Region/income group	1	2	3
Central & Southern Asia	India (66)	Kazakhstan (84)	Sri Lanka (98)
Sub-Saharan Africa	Mauritius (53)	South Africa (58)	Uganda (89)
Southeast Asia & Oceania	Hong Kong (China) (7)	Singapore (8)	New Zealand (17)
Latin America & the Caribbean	Costa Rica (39)	Chile (46)	Barbados (47)
Northern Africa & Western Asia	Israel (14)	Cyprus (27)	United Arab Emirates (38)
Europe	Switzerland (1)	Sweden (2)	United Kingdom (3)
Northern America	United States of America (5)	Canada (11)	
High income	Switzerland (1)	Sweden (2)	United Kingdom (3)
Upper-middle income	Malaysia (32)	Latvia (33)	China (35)
Lower-middle income	Moldova, Rep. (45)	Armenia (59)	India (66)
Low income	Uganda (89)	Kenya (99)	Tajikistan (101)

The GII 2013 – Main results

- Innovation is a global game
- **With a persistent innovation divide**

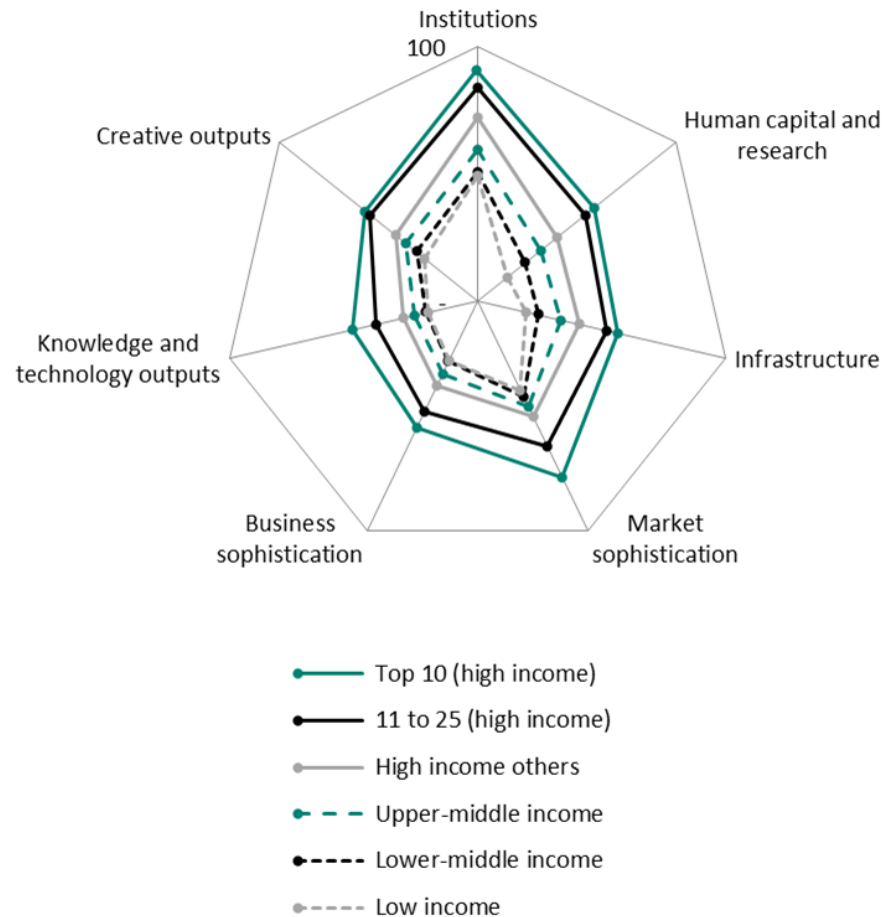
A persistent innovation divide

Striking pattern of stability at the top.

Switzerland comes 1st and Sweden 2nd since 2011. The top 10 or top 25 might swap rankings, but not a single country moved in or out this year.

Rankings remain strongly correlated with income levels.

The persistent innovation divide: Stability among the top 10 and top 25



The GII 2013 – Main results

- Innovation is a global game
- With a persistent innovation divide
- **A benchmarking tool for innovation policy**

A benchmark for policymakers

Measuring innovation is a moving target.

The GII helps identify targeted policies, good practices, and other levers to foster innovation.

Country profiles include strengths and weaknesses.

The GII rankings attract media attention, but they are not the main part of the GII.

Key indicators

Population (millions)	8.1
GDP (US\$ billions)	627.9
GDP per capita, PPP\$	45,285.8
Income group	High income
Region	Europe

	Score (0-100) or value (part data)	Rank
Global Innovation Index (out of 142)	66.6	1
Innovation Output Sub-Index	66.7	1
Innovation Input Sub-Index	66.5	7
Innovation Efficiency Ratio	1.0	12
Global Innovation Index 2012 (based on GI 2012 framework)	68.2	1

1 Institutions 87.3 16

1.1 Political environment	92.7	6
1.1.1 Political stability*	97.8	6
1.1.2 Government effectiveness*	90.2	6
1.1.3 Press freedom*	90.1	12
1.2 Regulatory environment	94.6	12
1.2.1 Regulatory quality*	92.3	12
1.2.2 Rule of law*	94.7	11
1.2.3 Cost of redundancy/dismissal, salary weeks	10.1	39
1.3 Business environment	74.6	31
1.3.1 Ease of starting a business*	86.0	61
1.3.2 Ease of resolving insolvency*	50.8	41
1.3.3 Ease of paying taxes*	87.0	17

2 Human capital & research 55.4 14

2.1 Education	57.5	56
2.1.1 Current expenditure on education, % GNI	4.8	47
2.1.2 Public expenditure/pupil, % GDP/cap	27.6	15
2.1.3 School life expectancy, years	15.7	26
2.1.4 PISA scales in reading, maths, & science	517.0	11
2.1.5 Pupil-teacher ratio, secondary	n/a	n/a
2.2 Tertiary education	44.1	32
2.2.1 Tertiary enrolment, % gross	54.8	45
2.2.2 Graduates in science & engineering, %	19.8	50
2.2.3 Tertiary inbound mobility, %	15.4	11
2.2.4 Gross tertiary outbound enrolment, %	2.5	39
2.3 Research & development (R&D)	64.8	9
2.3.1 Researchers, headcounts/mn pop	6,057.4	12
2.3.2 Gross expenditure on R&D, % GDP	2.9	7
2.3.3 QS university ranking, average score top 3*	82.8	6

3 Infrastructure 57.0 8

3.1 Information & communication technologies (ICTs)	67.2	20
3.1.1 ICT access*	88.9	2
3.1.2 ICT use*	78.4	2
3.1.3 Government's online service*	67.3	32
3.1.4 E-participation*	34.2	44
3.2 General infrastructure	42.9	23
3.2.1 Electricity output, kWh/cap	8,049.7	23
3.2.2 Electricity consumption, kWh/cap	8,074.6	18
3.2.3 Logistics performance*	70.0	16
3.2.4 Gross capital formation, % GDP	21.9	75
3.3 Ecological sustainability	61.0	5
3.3.1 GDP/unit of energy use, 2000 PPP\$/kg oil eq.	11.7	6
3.3.2 Environmental performance*	76.7	1
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	6.8	15

4 Market sophistication 77.5 6

4.1 Credit	81.1	11
4.1.1 Ease of getting credit*	81.3	22
4.1.2 Domestic credit to private sector, % GDP	169.4	12
4.1.3 Microfinance gross loans, % GDP	n/a	n/a

Switzerland

4.2 Investment	66.2	6
4.2.1 Ease of protecting investors*	31.9	133
4.2.2 Market capitalization, % GDP	141.4	3
4.2.3 Total value of stocks traded, % GDP	140.8	1
4.2.4 Venture capital deals/tr PPP\$ GDP	0.1	13
4.3 Trade & competition	85.1	11
4.3.1 Applied tariff rate, weighted mean, %	0.0	1
4.3.2 Non-agricultural mkt access weighted tariff, %	1.9	98
4.3.3 Intensity of local competition†	76.4	18

5 Business sophistication 55.3 4

5.1 Knowledge workers	78.7	2
5.1.1 Knowledge-intensive employment, %	42.8	8
5.1.2 Firms offering formal training, % firms	n/a	n/a
5.1.3 R&D performed by business, % GDP	2.1	6
5.1.4 R&D financed by business, %	68.2	5
5.1.5 GMAT mean score	574.4	20
5.1.6 GMAT test takers/mn pop. 20-34	385.6	11
5.2 Innovation linkages	51.5	8
5.2.1 University/industry research collaboration†	82.2	1
5.2.2 State of cluster development†	67.4	8
5.2.3 R&D financed by abroad, %	6.0	55
5.2.4 JV-strategic alliance deals/tr PPP\$ GDP	0.1	21
5.2.5 Patent families filed in 3+ offices/bn PPP\$ GDP	6.5	1
5.3 Knowledge absorption	35.8	34
5.3.1 Royalty & license fees payments, % service imports	37.6	1
5.3.2 High-tech imports less re-imports, %	15.1	18
5.3.3 Comm., computer & info. services imports, %	2.3	100
5.3.4 FDI net inflows, % GDP	0.1	134

6 Knowledge & technology outputs 61.5 1

6.1 Knowledge creation	87.3	1
6.1.1 Domestic resident patent ap/bn PPP\$ GDP	22.6	5
6.1.2 PCI resident patent ap/bn PPP\$ GDP	11.6	3
6.1.3 Domestic res utility model ap/bn PPP\$ GDP	n/a	n/a
6.1.4 Scientific & technical articles/bn PPP\$ GDP	65.4	3
6.1.5 Citable documents HI Index	537.0	9
6.2 Knowledge impact	54.2	10
6.2.1 Growth rate of PPP\$ GDP/worker, %	-0.1	99
6.2.2 New businesses/th pop. 15-64	2.5	41
6.2.3 Computer software spending, % GDP	0.7	4
6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	28.8	16
6.2.5 High- & medium-high-tech manufactures, %	61.3	3
6.3 Knowledge diffusion	55.8	5
6.3.1 Royalty & license fees receipts, % service exports	19.6	3
6.3.2 High-tech exports less re-exports, %	22.0	7
6.3.3 Comm., computer & info. services exports, %	1.6	124
6.3.4 FDI net outflows, % GDP	6.5	8

7 Creative outputs 71.8 2

7.1 Intangible assets	72.2	4
7.1.1 Domestic res trademark reg/bn PPP\$ GDP	88.7	9
7.1.2 Madrid trademark registrations/bn PPP\$ GDP	7.7	1
7.1.3 ICT & business model creation†	72.5	17
7.1.4 ICT & organizational model creation†	66.6	18
7.2 Creative goods & services	69.5	2
7.2.1 Audio-visual & related services exports, %	n/a	n/a
7.2.2 National feature films/mn pop. 15-69	15.0	6
7.2.3 Paid-for dailies, circulation, % pop. 15-69	38.3	7
7.2.4 Printing & publishing manufactures, %	3.8	14
7.2.5 Creative goods exports, %	5.0	14
7.3 Online creativity	73.5	6
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	88.8	9
7.3.2 Country-code TLDs/th pop. 15-69	78.8	3
7.3.3 Wikipedia monthly edits/mn pop. 15-69	73,737	20
7.3.4 Video uploads on YouTube/pop. 15-69	83.5	22

NOTE: ● Indicates a strength; ○ a weakness; * an index; † a survey question.

The GII 2013 – Main results

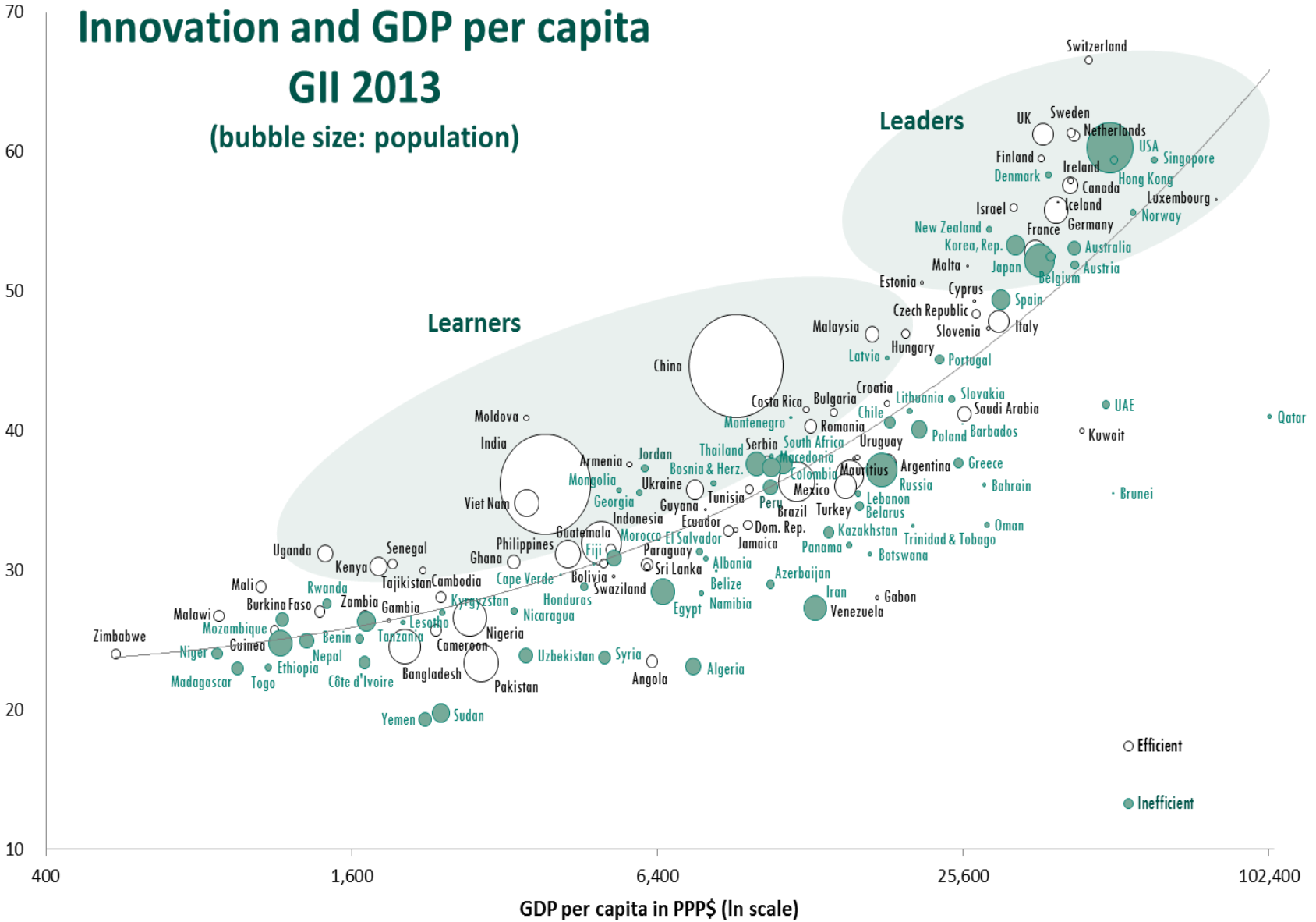
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- A benchmarking tool for innovation policy
- **Some nations out-perform**

Innovation and GDP per capita

GII 2013

(bubble size: population)

Global Innovation Index 2013 score

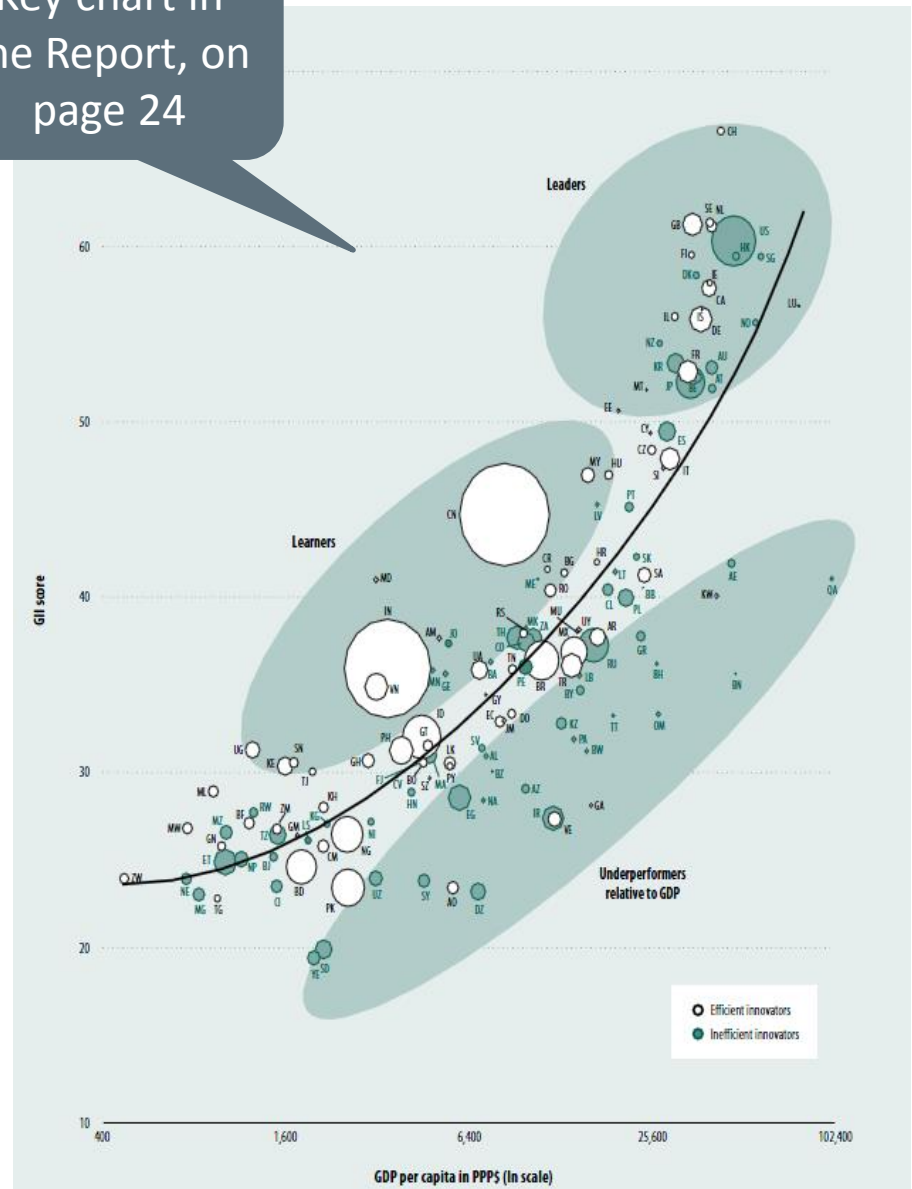


Innovation Leaders and Learners

Key chart in the Report, on page 24

Leaders are the top 25.

Learners are 18 countries out-performing their peers relative to GDP per capita: Moldova, China, India, Uganda, Armenia, Viet Nam, Malaysia, Jordan, Mongolia, Mali, Kenya, Senegal, Hungary, Georgia, Montenegro, Costa Rica, Tajikistan, and Latvia.



The GII 2013 – Main results

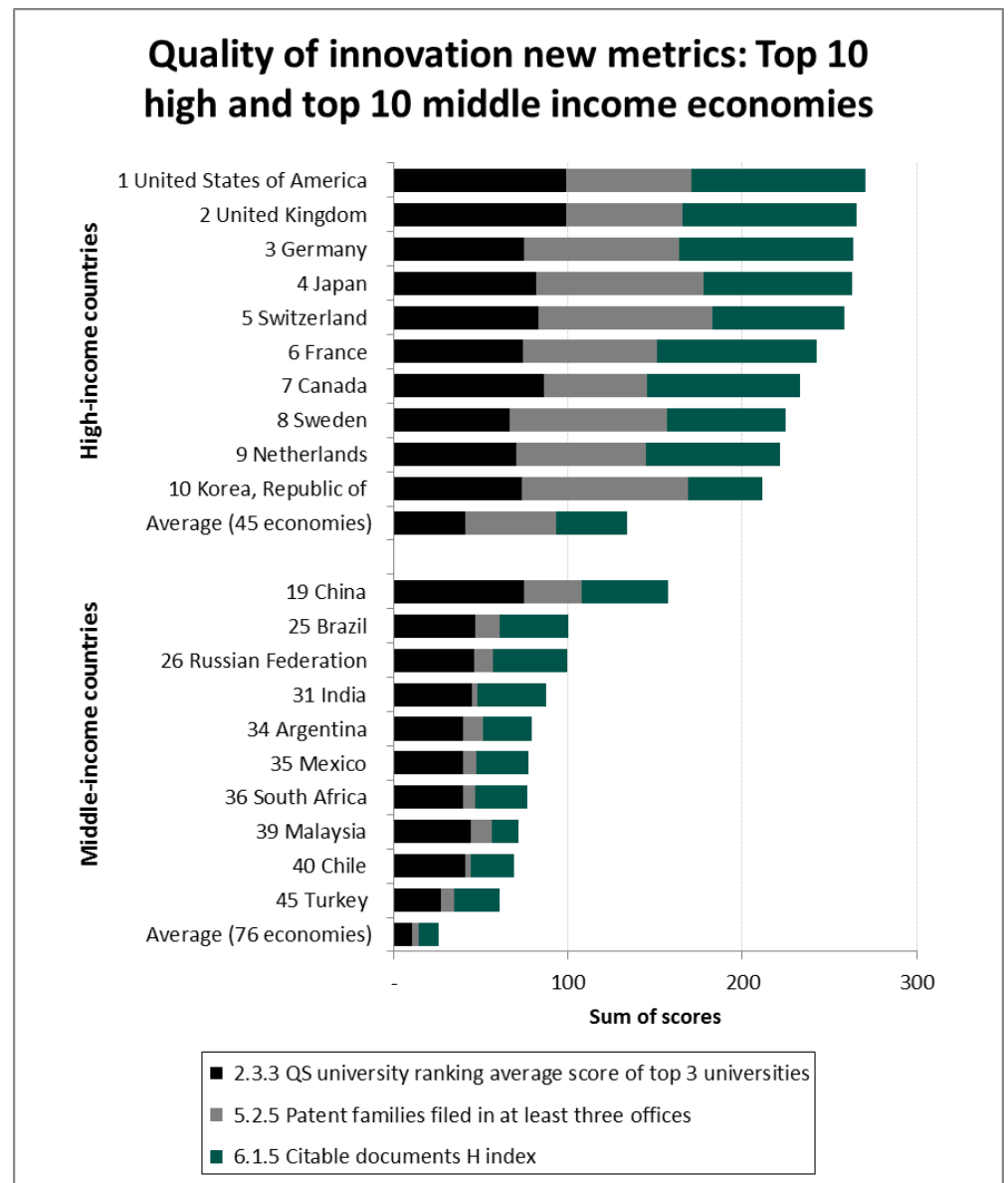
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- **Quality of innovation matters**

Quality matters for impact

Not all innovation inputs and outputs are of equal quality, and hence not all of them have the same impact.

BRICs are the best performers among middle-income countries on 3 key indicators included this year (top 3 universities, patent family applications, and publications citations).

The top 18 positions taken by high-income economies.



Policy implications

- **Innovation is a mindset** – It requires the identification and mobilization of multiple resources, and hence the engagement of a multiplicity of stakeholders.
- **Metrics are useful** to ‘bring everyone on the same page’ and provide a commonly accepted tool to monitor progress and identify priorities.
- The core ingredient behind innovation (before investment, research, and cooperation) is **talent**. Education is fundamental, as well as openness and appetite for change.
- The GII aims at providing a set of **feasible and ambitious objectives** to the global community, as well as a forum where policies and strategies can be discussed, compared and coordinated.

Strengths and weaknesses of the USA

(rank out of 142 countries)

Strengths

- **Input Sub-Index (3)**
- 2.2.1 Tertiary enrolment (2)
- **2.3 Research and development (R&D) (1)**
- 2.3.3 QS university ranking average score of top 3 universities (2)
- 3.1.3 Government's online service (1)
- **4 Market sophistication (4)**
- **4.1 Credit (4)**
- **4.2 Investment (2)**
- 4.2.4 Venture capital deals (3)
- **5 Business sophistication (2)**
- 5.1.6 GMAT test takers (1)
- **5.2 Innovation linkages (3)**
- 5.2.1 University/industry research collaboration (3)
- 6.1.5 Citable documents H index (1)
- 6.2.3 Total computer software spending (1)
- 7.3.1 Generic top-level domains (gTLDs) (1)
- 7.3.4 Video uploads on YouTube (4)

Weaknesses

- **Efficiency Ratio (86)**
- 2.2.2 Graduates in science and engineering (77)
- 2.2.4 Gross tertiary outbound enrolment (122)
- 3.2.4 Gross capital formation (123)
- 3.3.3 ISO 14001 environmental certificates (94)
- 5.3.4 Foreign direct investment net inflows (97)
- 6.2.1 Growth rate of GDP per person engaged (80)
- 6.2.4 ISO 9001 quality certificates (99)
- 6.3.3 Communications, computer and information services exports, % (84)
- **7.1 Intangible assets (38.4)**
- 7.1.1 National office resident trademark registrations (77)
- 7.1.2 Madrid system trademark registrations by country of origin (43)

Note: Cutoffs are calculated for each country on the basis of the 10th highest (strengths) and 10th lowest (weaknesses) percent ranks for that country, at the indicator level. Cutoffs are also applied to pillars, sub-pillars and indices (**in bold green**). 99.2% of countries have a lower tertiary enrolment than the USA. Switzerland (GII #1) has cutoffs at 98.2% and 59.2%; Yemen (GII #142) at 39.8% and 0.8%.



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Thank you!

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