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Japan comes back up to twelfth position in the Potential Competitiveness Ranking for 50 countries

Introduction

JCER has developed a ranking of potential competitiveness for 50 countries. Potential competitiveness is a measure of a country's ability to increase per-capita GDP over the next ten years; it is defined not as an outcome of economic growth, but as an ability to be competitive in future. High-level education and good infrastructure mean strong potential competitiveness. The ranking was developed on the basis of results from data in 1980, 1990 and 2000. Since the 2004 survey, potential competitiveness was computed by using the latest data available at the time of each survey. The latest ranking is based on data collected in the 2006 survey.

1. Ranking method

* Defining per-capita GDP growth as competitiveness

In this project, we have used per-capita GDP increment as an overall competitiveness indicator. The greater the per-capita capital and the higher the productivity for a given period, the greater the growth of per-capita income. A competitive country is one that can provide products or services to domestic or foreign markets efficiently. An appropriate comprehensive indicator that measures such competitiveness should be based on per-capita output.

* Determining factor for competitiveness and Ranking

We have selected factors that increase the per-capita increment of GDP pursuant to economic theory. Based on eight determinants of competitiveness: (1) internationalization, (2) enterprise, (3) education, (4) finance, (5) government, (6) science and technology, (7) infrastructure, and (8) IT (information technology), we have generated overall potential competitiveness indices using Principal Component Analysis.

Table 1 Indicators adopted for each item

Item	Indicator			
Internationalization	Export of goods and services (ratio to GDP and absolute amount)	Import of goods and services (ratio to GDP and absolute amount)	Outflow of direct investment (ratio to GDP and absolute amount)	Inflow of direct investment (ratio to GDP and absolute amount)
Enterprise	Ratio of combined exports & imports to GDP (adjustment of GDP factor)	Labor productivity of manufacturing industry	Developing country dummy	
Education	Rate of enrollment in higher education	TOEFL scores	Average years of school attendance	Ratio of government education expenditure to GDP
Finance	Ratio of bank liquidity reserves to its assets (opposite sign)	Ratio of credit to private sector to total domestic credit	Ratio of stock market capitalization to nominal GDP	
Government	Ratio of customs duties to tax revenue (opposite sign)	Ratio of budget balance to GDP	Inflation (opposite sign)	
Science	Cumulative number of patents granted to U.S.	Number of R&D researchers per population		
Infrastructure	Aircraft departures per capita	Containers handled per capita	Rate of power transmission/distribution loss	Ratio of paved roads
IT	Rate of fixed-line phone diffusion	Rate of PC diffusion	Rate of cell phone diffusion	Rate of Internet diffusion
	Rate of Internet host diffusion	Rate of broadband diffusion		

Note: The above indicators have been used to compute competitiveness for the latest period.

2. Rankings results

* In overall competitiveness, Hong Kong comes in first place

The latest ranking of potential competitiveness keeps Hong Kong in first place for the second consecutive year (see Table 2), followed by Singapore in second place and the United States in third.

Hong Kong is placed high generally, making single-digit places for all items except for “education” and “science” and

Table 2 Rankings of the top three countries

	Hong Kong	Singapore	United States
Overall	1 (1)	2 (2)	3 (3)
Internationalization	1 (1)	3 (3)	2 (2)
Enterprise	2 (8)	1 (6)	4 (7)
Education	15 (24)	33 (31)	3 (4)
Finance	1 (1)	2 (3)	17 (10)
Government	8 (14)	2 (1)	27 (23)
Science	25 (25)	21 (21)	1 (1)
Infrastructure	2 (2)	1 (1)	10 (13)
IT	10 (7)	11 (12)	1 (1)

Note: Numbers in parentheses are 2005 rankings

technology”. The region ranks first in “internationalization” and “finance”, and second in “enterprise” and “infrastructure”. Hong Kong shows improvements from the previous year’s measurement for many items, moving up to eighth from fourteenth in “government” due to its improved fiscal balance.

The United States has fallen in terms of government and finance. By item, the United States comes in first only for science and technology and IT. The lower ranking for government is attributable to its ever-worsening fiscal deficits.

Singapore, placed second in the overall ranking, is first in “enterprise” and “infrastructure”.

China, which moved up to 37th place in 2000 from 41st in 1990, stood at 35th place in the 2006 survey, unchanged from the previous year. China’s low overall ranking compared with its strong presence in international trade is attributable to the measurement of national economic strength, which covers not only the rapidly developing coastal regions but also the inland regions that are lagging behind in terms of economic development.

* Japan comes back up to twelfth

Japan ranks in 12th place in terms of overall competitiveness (see Table 3), moving up by three slots from the 2005 survey. By item, Japan’s deviation scores improved for “enterprise” and “internationalization”,

but declined in “government” and “finance”, areas afflicted by structural problems. The higher deviation score in enterprise is attributable to the accelerated international trades mainly based on exports.

Japan’s ranking rose despite the decline in its overall deviation scores because some higher-ranking countries moved down. Denmark, Finland and Norway ranked lower than Japan in 2006. This is because these countries received fewer benefits from the accelerated international trades around Asia and the United States.

By item, Japan ranks second for “science and technology” and fifth for “enterprise”, but it placed tenth or lower for all other items. In particular, Japan finds itself in a fairly low 30th place for “government.”

* Japan’s ranking is moving up, but the country faces structural problems

Japan’s ranking will likely rise in the future, but it cannot be expected to advance significantly unless its structural problems are resolved. Japan’s ratio of exports or

Table 3 Japan’s ranking

	Deviation			Ranking		
	2005	2006	Change	2005	2006	Change
Overall	57.9	57.8	0.0	15	12	-3
Internationalization	49.9	50.1	0.2	17	17	0
Enterprise	64.3	65.9	1.6	4	5	1
Education	58.4	58.5	0.1	11	11	0
Finance	47.4	46.5	-0.8	27	31	4
Government	52.5	52.3	-0.2	28	30	2
Science	68.2	68.7	0.5	2	2	0
Infrastructure	49.5	49.2	-0.3	27	27	0
IT	57.6	56.4	-1.2	17	18	1

Note: — (minus) indicates a rise in ranking.

imports to GDP continues to rise and this is likely to contribute to improved competitiveness in terms of “internationalization” and “enterprise”. Rising stock prices should increase market capitalization of Japanese companies and serve to boost Japan’s ranking in “finance”.

On the other hand, it is unlikely that there will be any improvement in indicators that reflect structural problems. The ratio of fiscal deficits to GDP, one of the indicators that comprise the “government” score, is improving, but the deficits remain large. No signs of improvement are seen in “TOEFL scores”, “direct domestic investment” or “IT-related indicators”. Since there has been no improvement in competitiveness in terms of international logistics, Japan’s “infrastructure” ranking will likely remain poor.

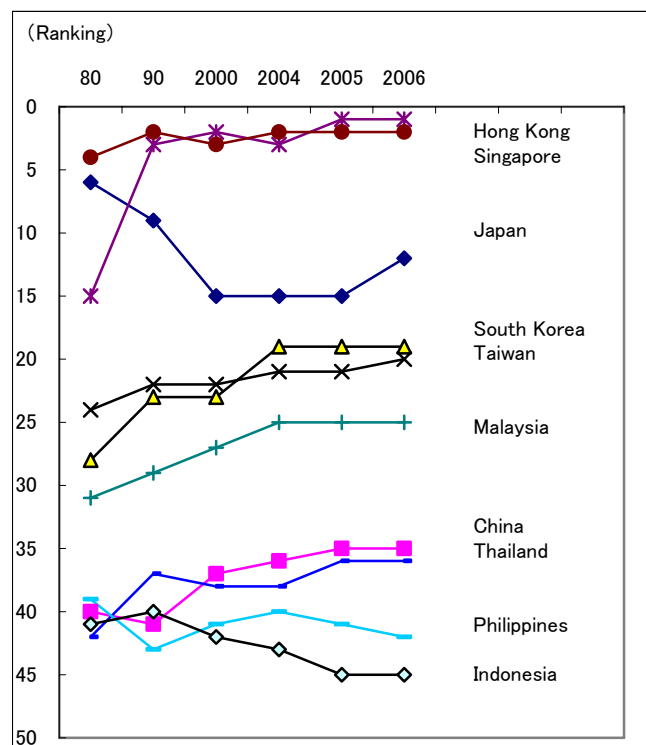
* Indonesia and the Philippines wavering and remain low in Asia

In Asian countries or regions, Hong Kong stands highest in the latest measurement of potential competitiveness (see Figure 1), with Singapore also faring well in second place. They are followed by Japan, South Korea and Taiwan in that order.

South Korea takes 19th place for overall competitiveness. It places highest for “education” (5th) and IT (6th), while it ranks low for “internationalization”, “enterprise” and “government”. Taiwan’s overall position is 20th. It ranks sixth for “infrastructure” and seventh for “science and technology”.

Among the Association of Southeast Asian Nations (ASEAN), the highest ranking nation is Singapore, followed by Malaysia, Thailand, the Philippines and Indonesia in that order. The Philippines is slipping in the ranking, while Indonesia remains subdued. The gap is widening between two countries and Malaysia & Thailand.

Figure 1 Rankings of Potential Competitiveness in Asian countries or regions



3. Significance of Potential Competitiveness

Competitiveness is measured in different ways. This project discusses “potential competitiveness”, which is defined not as an outcome of economic growth, but as an ability to be competitive in future.

The measure primarily seeks to determine if a country is equipped with the necessary groundwork for future improvement in competitiveness. High-level education and good infrastructure mean strong potential competitiveness.

One of the existing, representative competitiveness indicators is provided by The World Competitiveness Yearbook, published by the International Institute for Management Development (IMD) in Switzerland. The IMD develops rankings of competitiveness using a variety of different indicators but does not give reasons for its selection of such indicators. While the IMD uses questionnaire surveys, our present project features quantitative analyses based on available socio-economic data.

4. Time relationship between potential competitiveness and per-capita GDP increment

Potential competitiveness computed using various indicators shows the potential capabilities of a country at a given moment to compete over the next ten years. For instance, the potential competitiveness indicator as of 1980 indicates a country's ability to increase per-capita GDP during the 1980s (Table 4).

Table4 Relationship between potential competitiveness and realized competitiveness

Potential competitiveness as of '80 → influential on competitiveness in the 1980s
Potential competitiveness as of '90 → influential on competitiveness in the 1990s
Potential competitiveness as of the latest period → will be influential on competitiveness over the next 10 years

A look at the relationship between potential competitiveness and realized competitiveness as of '80 and '90 finds a correlation coefficient of 0.77 for the 1980s and of 0.73 for the 1990s.

Potential competitiveness and realized competitiveness do not correspond completely because potential competitiveness indicators are based on data provided at the initial point in time of the period under measurement and the possibility of unforeseen events occurring over the next ten years needs to be acknowledged. For example, Japan's potential competitiveness, which ranked ninth as of '90, resulted in realized competitiveness falling to 14th place as measured by the '90-'98 per-capita GDP because of the collapsed financial bubble and the delayed disposal of subsequent bad loans.

Appendix Table 1 Overall Rankings

	1980		1990		2005		2006	
1	United States	73.0	United States	70.1	Hong Kong	71.3	Hong Kong	74.6
2	Switzerland	66.4	Singapore	64.8	Singapore	68.7	Singapore	71.6
3	Sweden	63.6	Hong Kong	63.1	United States	67.7	United States	68.3
4	Singapore	63.0	United Kingdom	62.9	Switzerland	62.7	Switzerland	60.5
5	Germany	62.6	Germany	62.8	Sweden	61.0	Belgium	60.1
6	Japan	62.0	Norway	62.5	Germany	60.6	Netherlands	60.0
7	Netherlands	61.9	Switzerland	62.1	United Kingdom	60.5	United Kingdom	59.8
8	Denmark	61.4	Netherlands	61.6	Netherlands	60.3	Sweden	59.7
9	Canada	61.0	Japan	61.5	Canada	59.8	Germany	59.5
10	Norway	60.5	Sweden	61.1	Ireland	58.9	Canada	58.6
11	United Kingdom	60.5	Canada	61.0	Belgium	58.6	Ireland	58.3
12	Finland	60.0	France	59.7	Denmark	58.2	Japan	57.8
13	France	59.9	Belgium	59.4	Finland	58.0	Denmark	57.7
14	Austria	59.3	Denmark	58.7	Norway	57.9	Norway	57.7
15	Hong Kong	59.0	Ireland	57.9	Japan	57.9	France	57.3
16	Australia	57.8	Finland	57.7	France	57.4	Finland	57.1
17	Belgium	57.2	Australia	57.5	Australia	56.7	Australia	56.2
18	Italy	55.3	New Zealand	57.2	New Zealand	56.1	Israel	54.8
19	New Zealand	54.9	Austria	55.0	South Korea	55.4	South Korea	54.3
20	Czech Rep.	53.7	Israel	53.9	Austria	55.3	Taiwan	54.3
21	Ireland	52.8	Italy	53.3	Taiwan	54.8	Austria	54.2
22	Russia	52.3	Taiwan	53.3	Israel	54.6	New Zealand	53.8
23	Israel	50.4	South Korea	51.3	Spain	53.6	Spain	53.1
24	Taiwan	50.2	Spain	51.0	Italy	53.1	Italy	52.8
25	Spain	49.4	Russia	49.5	Malaysia	49.5	Malaysia	51.0
26	Greece	49.0	Czech Rep.	48.8	Czech Rep.	48.2	Czech Rep.	49.4
27	South Africa	48.1	Saudi Arabia	47.6	Greece	48.1	Russia	47.8
28	South Korea	47.4	South Africa	47.5	Hungary	47.5	Greece	47.6
29	Hungary	47.1	Malaysia	47.1	Russia	47.1	Hungary	47.6
30	Portugal	45.8	Greece	46.9	Portugal	46.4	Poland	46.9
31	Malaysia	45.6	Hungary	45.4	Poland	46.1	Portugal	46.9
32	Argentina	44.4	Portugal	45.1	South Africa	45.7	Saudi Arabia	45.9
33	Saudi Arabia	44.2	Poland	44.6	Saudi Arabia	44.9	Chile	45.9
34	Poland	42.6	Mexico	43.6	Chile	44.5	South Africa	45.3
35	Venezuela	42.4	Chile	43.3	China	44.2	China	43.5
36	Mexico	41.9	Argentina	42.9	Thailand	43.7	Thailand	43.2
37	Chile	41.8	Thailand	42.1	Mexico	42.7	Argentina	42.3
38	Brazil	41.7	Venezuela	41.7	Argentina	41.7	Mexico	41.8
39	Philippines	40.6	Turkey	41.5	Brazil	40.5	Brazil	40.5
40	China	39.9	Indonesia	41.2	Venezuela	39.7	Venezuela	39.7
41	Indonesia	39.4	China	39.7	Philippines	38.5	Peru	38.6
42	Thailand	39.2	Brazil	39.5	Peru	38.0	Philippines	38.3
43	Turkey	37.9	Philippines	38.8	Turkey	37.9	Colombia	37.8
44	Peru	37.8	Egypt	38.2	Colombia	37.5	Turkey	37.7
45	Iran	37.6	Iran	36.9	Indonesia	37.5	Indonesia	36.9
46	Egypt	36.9	Colombia	36.4	India	35.1	Vietnam	35.9
47	India	36.8	Peru	34.5	Vietnam	34.9	India	35.8
48	Vietnam	36.6	India	33.9	Egypt	34.8	Egypt	35.2
49	Colombia	35.5	Vietnam	32.5	Iran	34.2	Iran	34.9
50	Pakistan	31.8	Pakistan	31.6	Pakistan	32.1	Pakistan	31.5

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Appendix Table 2 Potential Competitiveness Rankings for 2006
2006

Overall	Internationalization	Enterprise	Education	Finance	Government	Science	Infrastructure	IT									
Hong Kong	74.6	Hong Kong	88.8	Singapore	77.2	Norway	68.5	Hong Kong	95.6	Norway	60.2	United States	71.5	Singapore	99.2	United States	68.5
Singapore	71.6	United States	81.3	Hong Kong	71.8	Sweden	67.5	Singapore	67.3	Singapore	59.7	Japan	68.7	Hong Kong	79.7	Sweden	64.4
United States	68.3	Singapore	73.6	Ireland	70.0	United States	65.8	Switzerland	66.1	Denmark	59.7	Germany	65.2	Ireland	62.7	Denmark	63.9
Switzerland	60.5	United Kingdom	65.3	United States	67.9	New Zealand	63.7	South Africa	64.0	Spain	58.2	United Kingdom	62.7	Norway	58.4	Netherlands	63.4
Belgium	60.1	Germany	63.6	Japan	65.9	South Korea	63.0	Belgium	61.6	Finland	57.8	France	62.5	New Zealand	57.4	Switzerland	62.8
Netherlands	60.0	Netherlands	62.3	Germany	64.5	Denmark	60.9	Saudi Arabia	59.4	Sweden	57.8	Canada	61.8	Taiwan	57.3	South Korea	62.1
United Kingdom	59.8	Belgium	59.3	Belgium	63.6	Finland	60.4	Malaysia	58.6	Ireland	57.5	Taiwan	61.1	Belgium	56.7	Australia	61.4
Sweden	59.7	France	58.3	Netherlands	60.3	Canada	59.9	United Kingdom	57.8	Hong Kong	57.1	Sweden	61.0	Netherlands	55.9	Canada	60.4
Germany	59.5	Ireland	56.6	Switzerland	58.3	Russia	59.2	Australia	56.2	Belgium	56.8	Switzerland	60.9	Denmark	53.9	Finland	60.3
Canada	58.6	Switzerland	54.4	Canada	57.8	Poland	59.2	Chile	56.0	Germany	56.3	South Korea	59.6	United States	52.9	Hong Kong	60.3
Ireland	58.3	Canada	53.4	France	57.0	Japan	58.5	Sweden	54.7	United Kingdom	56.3	Finland	58.9	Finland	52.9	Singapore	60.2
Japan	57.8	Malaysia	52.7	Sweden	57.0	Israel	58.4	Netherlands	54.6	Austria	56.1	Netherlands	58.6	Malaysia	52.7	Israel	59.9
Denmark	57.7	China	52.4	Austria	56.9	Australia	57.8	Israel	54.5	Australia	55.5	Australia	57.7	Israel	52.1	Taiwan	59.9
Norway	57.7	Spain	51.5	United Kingdom	55.4	Switzerland	57.7	Canada	54.3	France	55.4	Belgium	57.2	Switzerland	52.1	United Kingdom	59.4
France	57.3	Sweden	50.8	Finland	55.2	Hong Kong	55.4	Finland	54.0	New Zealand	55.3	Italy	57.2	Germany	52.1	Austria	58.7
Finland	57.1	Italy	50.7	Norway	54.6	Taiwan	54.5	Spain	52.6	Italy	55.2	Denmark	56.9	United Kingdom	52.0	Norway	58.2
Australia	56.2	Japan	50.1	Denmark	54.6	Germany	54.0	United States	52.6	Netherlands	55.2	Austria	56.5	Austria	51.8	France	57.1
Israel	54.8	Taiwan	49.3	Australia	54.1	Hungary	53.8	Taiwan	52.4	Portugal	55.2	Russia	55.7	Canada	51.6	Japan	56.4
South Korea	54.3	Czech Rep.	48.7	Italy	53.8	Saudi Arabia	53.7	France	51.7	Norway	55.2	Norway	55.0	Spain	51.6	Germany	56.2
Taiwan	54.3	Hungary	48.4	Spain	52.5	United Kingdom	53.3	Ireland	51.4	Czech Rep.	54.7	Israel	55.0	South Korea	51.2	Belgium	56.0
Austria	54.2	Denmark	48.0	Malaysia	51.9	Malaysia	53.0	Denmark	50.8	Greece	54.5	Singapore	53.6	France	51.1	New Zealand	55.8
New Zealand	53.8	Vietnam	47.9	Israel	51.3	Czech Rep.	53.0	Russia	50.4	Switzerland	54.1	Spain	53.1	Greece	50.9	Spain	53.0
Spain	53.1	Thailand	47.7	Iran	48.4	Belgium	52.8	South Korea	50.4	Israel	54.1	New Zealand	51.9	Italy	50.5	Italy	52.7
Italy	52.8	Austria	47.5	New Zealand	47.8	France	52.7	New Zealand	49.8	Chile	53.8	Ireland	51.0	Portugal	49.8	Portugal	52.6
Malaysia	51.0	South Korea	47.1	Taiwan	47.5	Greece	52.4	Norway	49.6	Poland	53.7	Hong Kong	50.5	Australia	49.7	Ireland	52.4
Czech Rep.	49.4	Australia	46.9	Greece	46.6	Netherlands	52.2	Portugal	49.3	Saudi Arabia	53.4	Hungary	50.2	Czech Rep.	49.3	Czech Rep.	50.5
Russia	47.8	Mexico	46.4	Thailand	46.4	Austria	51.5	Thailand	48.4	United States	53.3	Czech Rep.	50.0	Japan	49.2	Hungary	49.8
Greece	47.6	Finland	46.1	Czech Rep.	45.3	Argentina	50.5	Italy	47.3	Malaysia	53.2	China	47.7	Thailand	48.7	Greece	47.1
Hungary	47.6	Portugal	45.5	South Korea	45.1	Ireland	50.0	Greece	47.2	Argentina	52.6	Poland	46.9	Sweden	48.6	Poland	46.4
Poland	46.9	Norway	45.5	Hungary	45.0	Italy	49.9	Germany	46.8	Japan	52.3	South Africa	46.7	China	47.2	Chile	45.8
Portugal	46.9	Russia	45.4	Vietnam	44.8	Spain	48.0	Japan	46.5	Indonesia	52.0	Argentina	45.8	Saudi Arabia	46.3	Malaysia	45.3
Saudi Arabia	45.9	Israel	45.2	Portugal	44.2	Chile	47.8	Austria	46.5	South Africa	51.8	Greece	45.2	Poland	45.7	Russia	43.2
Chile	45.9	Chile	45.0	Brazil	43.4	Singapore	46.1	Czech Rep.	45.5	Brazil	51.6	Mexico	45.0	Egypt	45.4	Argentina	42.9
South Africa	45.3	Poland	44.6	Philippines	42.8	South Africa	44.8	Poland	45.0	Mexico	50.4	Brazil	44.8	Chile	45.1	Turkey	41.7
China	43.5	Philippines	44.3	Saudi Arabia	42.7	Thailand	44.8	India	44.5	Russia	49.8	Portugal	44.2	Russia	45.0	Venezuela	41.2
Thailand	43.2	New Zealand	43.9	Chile	42.4	Philippines	44.6	Hungary	44.5	Hungary	49.6	Philippines	43.8	Hungary	43.7	Saudi Arabia	41.1
Argentina	42.3	Brazil	43.6	Turkey	42.4	Mexico	44.4	Vietnam	43.4	South Korea	48.7	India	43.5	Iran	43.3	Mexico	40.8
Mexico	41.8	Saudi Arabia	43.5	Mexico	41.8	Peru	44.1	Iran	43.2	China	48.2	Malaysia	41.2	South Africa	43.2	Brazil	40.8
Brazil	40.5	Venezuela	43.3	Argentina	41.3	Venezuela	41.9	China	42.6	Colombia	46.7	Venezuela	41.2	Indonesia	43.1	China	39.9
Venezuela	39.7	South Africa	43.2	Venezuela	40.8	China	40.8	Peru	42.4	Peru	46.3	Chile	40.1	Mexico	42.1	South Africa	39.7
Peru	38.6	Turkey	43.1	Poland	40.8	Portugal	39.4	Venezuela	41.0	Venezuela	45.4	Thailand	38.9	Peru	42.0	Colombia	39.7
Philippines	38.3	Argentina	42.9	China	40.4	Egypt	39.4	Colombia	41.0	Thailand	44.7	Egypt	38.6	Turkey	42.0	Peru	38.5
Colombia	37.8	Egypt	42.3	South Africa	39.8	Colombia	38.9	Pakistan	41.0	Taiwan	43.8	Turkey	38.2	Argentina	41.9	Iran	38.2
Turkey	37.7	Greece	42.1	Russia	39.6	Iran	38.4	Philippines	40.7	Turkey	37.3	Saudi Arabia	37.4	Vietnam	41.5	Thailand	37.9
Indonesia	36.9	Indonesia	42.0	Colombia	39.0	Turkey	36.8	Brazil	40.5	Pakistan	36.6	Iran	36.8	Philippines	41.1	Vietnam	36.8
Vietnam	35.9	Iran	41.6	Indonesia	38.9	Brazil	34.9	Indonesia	38.7	India	34.2	Peru	36.3	Pakistan	40.3	Philippines	36.4
India	35.8	India	41.6	Egypt	38.8	Vietnam	34.1	Turkey	38.6	Philippines	30.5	Colombia	36.1	Brazil	40.0	Egypt	36.2
Egypt	35.2	Colombia	41.5	Peru	38.0	India	33.2	Mexico	37.7	Vietnam	28.1	Indonesia	35.8	Colombia	39.9	Indonesia	35.4
Iran	34.9	Peru	40.8	India	37.8	Indonesia	32.1	Egypt	37.2	Egypt	25.9	Vietnam	31.5	India	39.9	India	34.3
Pakistan	31.5	Pakistan	39.9	Pakistan	36.6	Pakistan	22.2	Argentina	34.1	Iran	8.2	Pakistan	30.3	Venezuela	39.7	Pakistan	34.1