

A new ranking of the world's most innovative countries

An Economist Intelligence Unit report
Sponsored by Cisco





Preface

A new ranking of the world's most innovative countries is an Economist Intelligence Unit report, sponsored by Cisco. The Economist Intelligence Unit ranked countries' innovation capacity and analysed the data. The findings and views expressed in the report do not necessarily reflect the views of the sponsor.

The research was conducted by Josef Lazar and the analysis by Laza Kekic. The editor was Katherine Dorr Abreu, and Mike Kenny was responsible for the design. The Economist Intelligence Unit thanks all those who contributed their time and insight to this project.

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Introduction

In 2007 the Economist Intelligence Unit, sponsored by Cisco, developed an innovation index that ranked 82 countries based on their innovation capacity from 2002 to 2006, and forecast their performance through to 2011. The ranking was part of a broader study, *Innovation: Transforming the way business creates*, that investigated what makes countries and companies innovative.

Innovation is defined as the application of knowledge in a novel way, primarily for economic benefit. Companies deem it vitally important as a competitive tool. Government policymakers see it as essential for economic growth.

How the Economist Intelligence Unit ranks countries

To rank countries, the Economist Intelligence Unit distinguishes between “innovation output” (performance) and “innovation inputs” (enablers).

Innovation output is measured by the sum of patents granted by three major government patent offices: the European Patent Office (EPO), the Japanese Patent Office (JPO) and the US Patent and Trademark Office (USPTO). The data are averaged over four-year periods, and normalised as number of patents per million to create an index on a 1-10 scale. The 2007 index is based on data from the 2002-05 period; the 2009 index uses data from 2004 to 2007.

Innovation inputs include both direct drivers and the broad economic, social and political context, or innovation environment. They are based on the scores from the Economist Intelligence Unit’s Business Environment Ranking (BER) model averaged

over five-year periods: 2002-06 for the original ranking and 2004-08 for the update.

The five-year forecasts (2007-11 and 2009-13, respectively) are based on the BER model. The model itself is based on historical conditions and expectations of conditions

over the next five years. (For a detailed description of the methodology used in developing the ranking and the Economist Intelligence Unit’s BER model that underlies our forecasts, please go to www.eiu.com/sponsor/cisco/innovationindex09).

Innovation inputs

Direct innovation inputs (0.75 weight)

Research and development (R&D) as % of gross domestic product (GDP)

Quality of local research infrastructure

Education of workforce

Technical skills of workforce

Quality of information technology (IT) and communications infrastructure

Broadband penetration

Innovation environment (0.25 weight)

Political environment

Market opportunities

Policy towards free enterprise and competition

Policy towards foreign investment

Foreign trade and exchange controls

Taxes

Financing

The labour market

Infrastructure



The main findings of *Innovation: Transforming the way business creates* include:

- innovation is beneficial to both national economies and corporate performance, but its impact is more visible at the microeconomic than the macroeconomic level;
- innovative companies tend to outperform their peers;
- firms connected to high-tech clusters tend to outperform their peers;
- technical skills of the workforce and IT/telecommunications infrastructure are critical to innovation;
- small countries have an advantage; and
- return on investment (ROI) is higher in middle-income countries than in rich countries.

In February 2009, the Economist Intelligence Unit updated the innovation index. The new rankings largely confirm the forecasts of the original research, although some countries, including China, rose more quickly than expected. The forecast for 2009-13 has been affected by the severe business downturn and the global economic crisis, which will have a negative impact on countries' long-term ability to innovate. While developed countries will continue to top the list of innovators in the medium term, poor business conditions will sap their innovation capacity. But China and India are among the countries that will continue to gain ground.

Innovation at a global level is now expected to advance at a significantly slower pace over the next five years than was previously forecast. The current financial turmoil will affect a variety of the innovation inputs that directly drive innovation. It is likely to result in a reduction of investment in research and development (R&D), spending on training and education, and the quality of information and communications technology (ICT) infrastructure. The economic crisis will also have a negative impact on certain aspects of the environment that enable innovation—access to finance for firms, conditions for entrepreneurship, and economic and political stability.

A significant slowdown in the pace of innovation would harm the long-term prospects for economic growth around the world.



The picture today: a few shifts at the top

Japan, Switzerland, the United States, Sweden and Finland remain at the top of the index, although their relative positions have changed. Japan and Switzerland are still ranked 1st and 2nd respectively. Finland, however, rises from 5th to 3rd position, while the US slips from 3rd to 4th place. Sweden drops from 4th to 5th position.

The high rank for three small wealthy European states reflects the fact that their economic, social and political conditions favour innovation. In addition, there are specific factors that stimulate innovation, including highly skilled labour forces, a long-standing policy support for ICT and R&D, and specialisation

Japan maintains top position in global innovation ranking

	2002-06		2004-08		Change in rank 2004-08/2002-06
	Index	Rank	Index	Rank	
Japan	10.00	1	10.00	1	0
Switzerland	9.71	2	9.71	2	0
Finland	9.43	5	9.50	3	2
US	9.48	3	9.50	4	-1
Sweden	9.45	4	9.44	5	-1
Germany	9.38	6	9.40	6	0
Taiwan	9.28	8	9.37	7	1
Netherlands	9.12	9	9.16	8	1
Israel	9.10	10	9.13	9	1
Denmark	9.29	7	9.08	10	-3
South Korea	8.78	15	8.94	11	4
Austria	8.91	11	8.93	12	-1
France	8.90	12	8.88	13	-1
Canada	8.84	13	8.87	14	-1
Belgium	8.80	14	8.79	15	-1
Singapore	8.72	17	8.76	16	1
Norway	8.73	16	8.73	17	-1
UK	8.72	18	8.72	18	0
Ireland	8.46	19	8.50	19	0
Australia	8.37	21	8.50	20	1
Hong Kong	8.16	23	8.44	21	2
Italy	8.41	20	8.44	22	-2
New Zealand	8.17	22	8.24	23	-1
Slovenia	7.68	24	7.74	24	0
Cyprus	7.34	26	7.62	25	1



in innovation-intensive industries such as telecommunications, biopharmaceuticals, and machine tools and precision instruments. The rise of Finland in the ranking reflects these factors as well as the significant improvements in its business environment in recent years.

The slippage of the US confirms the gradual erosion in recent years of the country's traditional position as the world's technological leader—a trend we expect to continue. To some extent, the erosion in the US's position reflects the fact that other countries are catching up. But it is also a result of the weakening US innovation environment—and this is likely to be accentuated by the current economic crisis.

China is rising strongly in the global innovation performance ranking (from 59th two years ago to its current position of 54th), in contrast to the modest improvement in India's position (from 58th to 56th). In the other large emerging markets, Brazil falls one rung in the ranking compared with two years ago, and Russia declines by two places.

The new ranking closely tracks our medium-term predictions made in 2007. After just two years, the expected changes in the drivers of innovation have already had an impact on innovation performance, as measured by patents data. These changes have affected both winners, such as China and Lithuania, and losers, such as Bulgaria, Jordan and Thailand.

Innovation efficiency

Not all countries use their innovation inputs with equal efficiency. A comparison of a country's rank on its innovation performance with its ranking on direct innovation inputs can provide an insight into its level of innovation efficiency. A large discrepancy in the two rankings suggests either a high level of efficiency (high innovation output relative to inputs) or a high degree of inefficiency if the direct inputs rank exceeds significantly a country's ranking on innovation performance.

Japan is highly efficient: it is top-ranked in innovation performance in 2004-08, but only 11th in the index that measures the environmental factors that are conducive to innovation. Japanese innovators are therefore swimming upstream. Japan is a resource-poor economy with a greying population that has long taken an "innovate or die" approach. The country invests heavily in R&D, and more of this R&D is carried out by industry than in the US or EU. The country has more scientific researchers per head than the US and scores well in terms of the standard of higher education. It has a large share of high-tech activities and scores high in Internet penetration. The economy has a high concentration of high-tech companies, which tend to be more innovation-intensive. Another feature is the symbiotic relationship between these companies and webs of associated small and medium-sized enterprises, which are under strong pressure to innovate.

The central and east European countries, in contrast, achieve unusually low returns on their direct innovation inputs. This may be partly because these countries had highly educated workforces and large scientific establishments under socialism, and partly because these scientists and researchers have not moved with the times by integrating into the global economy. This has resulted in a poor innovation performance.



Within an overall slowdown, future shines bright for some

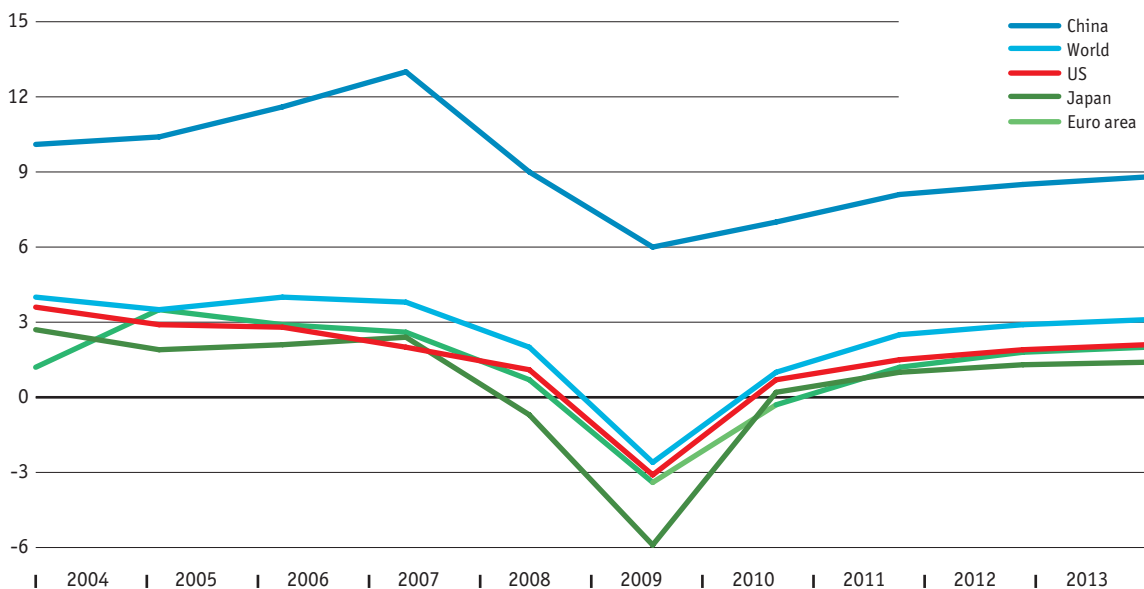
The current economic crisis will have a strong impact on innovation performance in the next five years. The Economist Intelligence Unit now expects only a 2% increase in innovation performance on average between 2004-08 and 2009-13 for the 82 economies in the ranking. This is less than the previous forecast of a 6% average increase between 2007 and 2011.

We now forecast a more modest increase in both direct and indirect inputs for innovation over the medium term compared with two years ago. The recession will constrain both public and private R&D spending. It will also limit governments' spending on education and training as well as support for innovation activities.

The most important expected changes in the environment include poor conditions for financing investment; a deterioration in macroeconomic and political stability and in fiscal conditions in many countries; and unfavourable developments in institutional and regulatory environments. The forecast is not based on a worst-case scenario, and a more gloomy outcome that hampers innovation still

Global economy lurches into the next decade as GDP growth crashes

Real GDP growth (%)



Source: Economist Intelligence Unit forecasts at market exchange rates as of March 13, 2009.



further remains a possibility.

Trends will vary among countries. Because so many emerging markets start from a low base, their overall innovation performance is still likely to improve, but at a slower pace than previously expected. By contrast, a few developed countries are expected to record a decline in innovation inputs and performance. The UK has been hit exceptionally hard by the global crisis, which has hampered the country's innovation environment.

Shifts in medium-term rankings

Under our forecast, there are some shifts among the top countries in 2009-13 compared with 2004-08. Japan, Switzerland and Finland remain the first-, second- and third-ranked countries respectively. Germany rises to 4th from its previous 6th position, pushing the US to 5th place and Sweden out of the top five.

Current and forecast innovation index

	2004-08		2009-13		Change in rank 2009-13/2004-08
	Index	Rank	Index	Rank	
Japan	10.00	1	10.00	1	0
Switzerland	9.71	2	9.70	2	0
Finland	9.50	3	9.53	3	0
US	9.50	4	9.44	5	-1
Sweden	9.44	5	9.42	7	-2
Germany	9.40	6	9.49	4	2
Taiwan	9.37	7	9.44	6	1
Netherlands	9.16	8	9.16	9	-1
Israel	9.13	9	9.20	8	1
Denmark	9.08	10	9.06	10	0
South Korea	8.94	11	9.05	11	0
Austria	8.93	12	8.98	12	0
France	8.88	13	8.96	13	0
Canada	8.87	14	8.83	15	-1
Belgium	8.79	15	8.89	14	1
Singapore	8.76	16	8.75	16	0
Norway	8.73	17	8.75	17	0
UK	8.72	18	8.58	19	-1
Ireland	8.50	19	8.57	20	-1
Australia	8.50	20	8.61	18	2
Hong Kong	8.44	21	8.46	22	-1
Italy	8.44	22	8.46	21	1
New Zealand	8.24	23	8.40	23	0
Slovenia	7.74	24	7.80	24	0
Cyprus	7.62	25	7.72	25	0



Changes also occur lower down the ranking. In 2007 Mexico was forecast to record a significant improvement in its rank in the medium term, but its proximity to the US will set the country back. Mexico's innovation performance is expected to remain virtually unchanged in the medium term, and its rank to remain at 48th.

Among the big losers, unsurprisingly, are emerging markets suffering from major political and/or macroeconomic instability. These include Venezuela, Ukraine and Ecuador (which decline by 9, 8 and 7 positions, respectively, between 2004-08 and 2009-13).

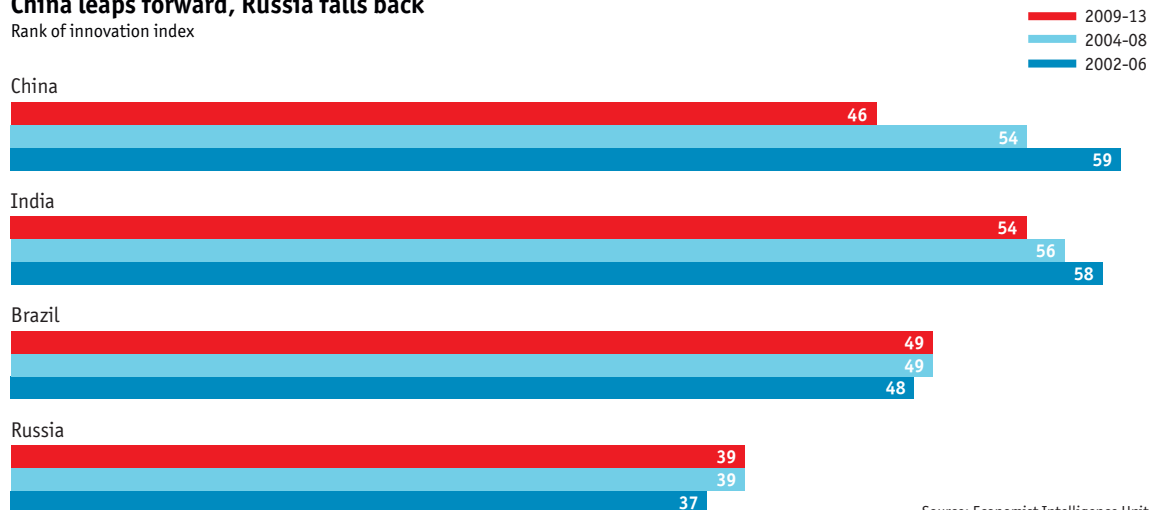
Although EU countries rank high in the index—five are among the top ten innovation performers in 2009-13 and ten are in the top 20—their gains are not significant. Six EU countries are expected to record a decline in innovation performance and the average (unweighted) innovation performance index for the 25 EU countries in our sample improves only slightly, from 7.6 in 2004-08 to 7.7 in 2009-13 (Malta and Luxembourg are not covered in the index). Despite the EU's efforts to boost innovation performance and a small expected decline in US performance, the region will make little progress in closing the innovation gap with Japan and the US over the next five years.

The rise and rise of China

China is the biggest gainer among all economies, developed and emerging. Its innovation performance will improve by 11% and it will rise from 54th to 46th place between 2004-08 and 2009-13. India will move up four places, whereas the rankings for the two other BRIC countries, Brazil and Russia, remain unchanged.

China leaps forward, Russia falls back

Rank of innovation index



Source: Economist Intelligence Unit.



In fact, China's ascent up the rankings is picking up pace. Two years ago, we forecast that it would rise to 54th place in the 2007-11 ranking. Instead, it has already climbed to this position and is expected to jump a further eight places over the next five years.

One reason for the jump is that China is making a concerted effort to build a more innovative economy. The country is investing heavily in R&D and education, and its innovation environment is improving. According to the OECD, China's R&D spending (public and private) reached US\$87bn in 2006. This is below the level of Japan (US\$139bn) and around one-third of that of the EU (US\$243bn), but it is growing rapidly. In real terms, China's R&D spending grew by 19% per year in 2001-06, and R&D as a share of GDP reached 1.4% in 2006. The government's target is to reach 2% by 2010. Based on its recent progress, China will reach this target—if not in 2010, then soon after.

China now leads the world in the number of people engaged in science and technology. The country accounted for 6% of the number of scientific articles published worldwide in 2005, up from 1.6% in 1995, and it is ranked fifth globally. University graduates with degrees in science and engineering represent 40% of the total, almost twice the OECD average and far above the 15% recorded in the US. Much of China's FDI will continue to target innovation-intensive sectors, and foreign companies have been opening research centres in the country.

The prospects for China are not entirely positive; it also faces barriers to innovation. Weak protection of intellectual property (despite improvements in recent years) stands out.

The erosion of the US position

The US will remain an innovation powerhouse and retain its significant lead over the EU as a whole, even though its position is slipping. Its innovation performance in 2009-13 is forecast to decline slightly compared with the average in the previous five years. R&D as a share of GDP has declined from 2.8% in 1996 to 2.6% in 2006, but is still almost double the ratio in China, according to the OECD. In the same period, the growth in patent filings by US residents has slowed, while other countries continue to catch up. The US share of total OECD technology exports has also fallen. In 2005 it accounted for 15.6% of OECD high- and medium-high technology exports, compared with 18.4% in 1996. Growth in the number of researchers has slowed relative to China and some EU countries, and a smaller proportion of graduates obtain degrees in science and engineering than in those countries.

The US National Science Board recently expressed concern about weakening trends in several areas of US science and technology. Fewer articles have been published in scientific and technical journals (from 34.2% of the world's scientific articles in 1995 to 28.9% in 2005); inflation-adjusted government support for academic R&D fell in 2006 for the first time in a quarter of a century. According to the Board, "the confluence of these indicators raises important questions about implications for the future of US competitiveness in international markets and for the future existence of highly skilled jobs at home."



R&D as % of GDP: Sweden tops list of OECD countries

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Sweden	–	3.605	–	4.169	–	3.848	3.624	3.795	3.741	3.634
Finland	2.864	3.16	3.344	3.302	3.355	3.43	3.448	3.479	3.449	3.473
Japan	3.005	3.021	3.043	3.123	3.165	3.199	3.167	3.323	3.394	–
South Korea	2.342	2.252	2.393	2.59	2.532	2.631	2.847	2.98	3.225	–
US	2.61	2.664	2.746	2.761	2.66	2.656	2.587	2.619	2.658	2.684
Germany	2.272	2.395	2.454	2.461	2.49	2.52	2.486	2.485	2.536	2.528
Denmark	2.045	2.177	–	2.387	2.508	2.575	2.485	2.452	2.463	2.538
Austria	1.781	1.9	1.941	2.067	2.14	2.258	2.255	2.443	2.456	2.565
France	2.139	2.159	2.148	2.197	2.23	2.168	2.15	2.099	2.097	2.081
Canada	1.758	1.795	1.912	2.088	2.041	2.031	2.051	2.014	1.941	1.893
Belgium	1.863	1.938	1.972	2.076	1.943	1.885	1.865	1.838	1.885	1.893
United Kingdom	1.785	1.856	1.848	1.823	1.821	1.779	1.71	1.757	1.779	–
Netherlands	1.895	1.959	1.825	1.804	1.724	1.756	1.782	1.737	1.732	1.727

Source: OECD, 2008.

The current economic crisis is likely to exacerbate these downward trends in innovation. However, under the Obama administration in the US, the focus on long-term investments in such areas as environmental technology and education as set forth in the economic recovery plan may help at least to slow the decline.



Conclusion

Two years after the Economist Intelligence Unit's innovation ranking was first published, the global economic and financial crisis is altering the landscape of innovation. By hampering innovation performance worldwide, the global crisis will also weaken the prospect for future growth.

The impact will not be uniform worldwide, however. China, which is poised to benefit from its relative economic strength, is emerging as a model for other countries that want to move up in the world. By emulating China's concerted effort to improve its technology base through significant investments in R&D and education, other emerging economies may also be able to climb the innovation ladder.

Appendix: Innovation index

2004–2008	Innovation performance			Innovation enablers						
	Patents per m	Innovation performance index	Rank	Direct inputs index	Rank	Innovation environment index	Rank	Aggregate innovation enablers index	Rank	
Japan	1,274.533	10.00	1	9.81	9	7.11	23	9.14	11	
Switzerland	505.839	9.71	2	9.94	2	8.54	6	9.59	4	
Finland	363.298	9.50	3	9.94	2	8.60	3	9.60	3	
USA	359.840	9.50	4	9.88	8	8.47	8	9.52	5	
Sweden	330.980	9.44	5	10.00	1	8.49	7	9.62	2	
Germany	310.695	9.40	6	9.94	2	8.07	13	9.47	6	
Taiwan	293.642	9.37	7	9.50	11	7.46	22	8.99	15	
Netherlands	212.411	9.16	8	9.56	10	8.45	9	9.28	8	
Israel	199.801	9.13	9	9.94	2	6.83	27	9.16	10	
Denmark	184.985	9.08	10	9.94	2	8.70	1	9.63	1	
South Korea	148.704	8.94	11	9.50	11	6.30	44	8.70	18	
Austria	147.317	8.93	12	9.06	17	7.57	18	8.69	19	
France	136.223	8.88	13	9.94	2	7.51	21	9.33	7	
Canada	132.635	8.87	14	9.50	11	8.25	11	9.19	9	
Belgium	116.899	8.79	15	9.06	17	7.88	17	8.77	17	
Singapore	111.307	8.76	16	8.81	19	8.66	2	8.77	16	
Norway	106.668	8.73	17	8.81	19	7.95	14	8.60	20	
UK	105.211	8.72	18	9.25	15	8.54	5	9.07	13	
Ireland	73.814	8.50	19	9.19	16	8.60	4	9.04	14	
Australia	73.511	8.50	20	9.50	11	7.92	16	9.11	12	
Hong Kong	67.328	8.44	21	8.13	24	8.30	10	8.17	22	
Italy	66.909	8.44	22	7.88	27	6.41	39	7.51	27	
New Zealand	48.740	8.24	23	8.25	21	8.13	12	8.22	21	
Slovenia	22.040	7.74	24	8.25	21	6.29	45	7.76	26	
Cyprus	18.237	7.62	25	6.06	40	7.03	24	6.31	36	
Spain	15.367	7.51	26	7.94	25	7.51	20	7.83	24	
Hungary	9.061	7.18	27	7.69	28	6.78	28	7.46	28	
Czech Republic	5.533	6.87	28	8.19	23	6.55	34	7.78	25	
Croatia	5.116	6.82	29	6.50	34	5.51	58	6.25	37	
Estonia	4.704	6.76	30	7.94	25	7.55	19	7.84	23	
Malaysia	4.237	6.70	31	6.44	36	6.55	35	6.46	33	
Greece	3.856	6.64	32	5.88	42	6.23	47	5.96	43	
Portugal	3.612	6.60	33	7.00	31	6.92	26	6.98	30	
South Africa	3.496	6.58	34	5.56	48	6.23	46	5.73	47	
Costa Rica	2.429	6.35	35	5.88	42	6.54	36	6.04	42	
Slovakia	1.836	6.17	36	7.31	29	6.72	29	7.16	29	
Kuwait	1.794	6.16	37	4.75	56	6.01	48	5.06	57	
Lithuania	1.563	6.07	38	6.56	32	6.40	40	6.52	31	
Russia	1.460	6.03	39	7.13	30	4.61	74	6.50	32	
UAE	1.329	5.97	40	5.88	42	6.94	25	6.14	40	
Argentina	1.322	5.96	41	6.13	38	5.94	52	6.08	41	

Note: Patents data are averaged over 2004-07 and expressed as patents per million population for each country. The innovation enablers indexes are based on the average for 2004-08.

2009–2013	Innovation performance				Innovation enablers					
	Expected innovation performance index	Rank	Growth expected during the next 5 years (%)	Expected change in rank	Expected direct inputs index	Rank	Expected innovation environment index	Rank	Expected aggregate innovation enablers index	Rank
Japan	10.00	1	0.0	0	9.94	9	6.97	28	9.20	11
Switzerland	9.70	2	-0.2	0	10.00	1	8.28	7	9.57	4
Finland	9.53	3	0.3	0	10.00	1	8.52	3	9.63	1
USA	9.44	5	-0.6	-1	10.00	1	7.86	14	9.47	6
Sweden	9.42	7	-0.2	-2	10.00	1	8.41	6	9.60	3
Germany	9.49	4	1.0	2	10.00	1	8.25	8	9.56	5
Taiwan	9.44	6	0.7	1	9.63	10	7.34	21	9.05	14
Netherlands	9.16	9	-0.1	-1	9.63	10	8.22	10	9.27	8
Israel	9.20	8	0.8	1	10.00	1	6.93	31	9.23	9
Denmark	9.06	10	-0.2	0	10.00	1	8.44	4	9.61	2
South Korea	9.05	11	1.2	0	9.50	13	6.73	35	8.81	17
Austria	8.98	12	0.6	0	9.19	18	7.39	20	8.74	19
France	8.96	13	0.9	0	10.00	1	7.66	17	9.42	7
Canada	8.83	15	-0.4	-1	9.50	13	8.10	11	9.15	12
Belgium	8.89	14	1.2	1	9.25	15	7.73	16	8.87	16
Singapore	8.75	16	-0.1	0	8.88	19	8.43	5	8.76	18
Norway	8.75	17	0.2	0	8.88	19	7.82	15	8.61	20
UK	8.58	19	-1.6	-1	9.25	15	7.93	13	8.92	15
Ireland	8.57	20	0.9	-1	9.25	15	8.74	1	9.12	13
Australia	8.61	18	1.4	2	9.63	10	8.05	12	9.23	10
Hong Kong	8.46	22	0.2	-1	8.06	23	8.57	2	8.19	22
Italy	8.46	21	0.3	1	7.94	26	6.31	45	7.53	28
New Zealand	8.40	23	2.0	0	8.44	21	8.22	9	8.38	21
Slovenia	7.80	24	0.9	0	8.25	22	6.58	37	7.83	24
Cyprus	7.72	25	1.4	0	6.13	43	7.21	23	6.40	38
Spain	7.50	26	-0.1	0	8.00	24	7.28	22	7.82	25
Hungary	7.28	27	1.5	0	7.81	28	6.86	33	7.57	27
Czech Republic	6.79	31	-1.0	-3	7.94	26	6.98	26	7.70	26
Croatia	7.16	28	5.1	1	6.75	32	6.07	54	6.58	34
Estonia	6.82	30	0.9	0	8.00	24	7.64	18	7.91	23
Malaysia	6.57	35	-1.9	-4	6.38	37	6.22	48	6.34	40
Greece	6.75	33	1.7	-1	6.00	45	6.26	46	6.06	45
Portugal	6.79	32	2.9	1	7.25	29	6.98	27	7.18	30
South Africa	6.94	29	5.5	5	5.94	47	6.39	44	6.05	48
Costa Rica	6.69	34	5.4	1	6.19	42	6.94	30	6.37	39
Slovakia	6.19	38	0.3	-2	7.19	31	7.20	24	7.19	29
Kuwait	6.25	36	1.6	1	4.81	60	6.15	52	5.15	58
Lithuania	6.14	40	1.1	-2	6.63	35	6.50	40	6.59	33
Russia	6.14	39	1.9	0	7.25	29	4.74	69	6.62	32
UAE	6.07	44	1.7	-4	6.06	44	6.79	34	6.25	42
Argentina	6.08	42	2.0	-1	6.31	40	5.86	58	6.20	44

2004–2008	Innovation performance			Innovation enablers					
	Patents per m	Innovation performance index	Rank	Direct inputs index	Rank	Innovation environment index	Rank	Aggregate innovation enablers index	Rank
Saudi Arabia	1.270	5.94	42	4.88	55	4.65	72	4.82	61
Latvia	1.158	5.88	43	5.38	51	6.55	33	5.67	49
Poland	1.039	5.81	44	6.38	37	6.70	30	6.46	34
Cuba	1.008	5.79	45	6.50	34	3.43	80	5.73	46
Chile	1.004	5.79	46	5.69	45	7.94	15	6.25	38
Bulgaria	0.913	5.73	47	6.56	32	5.71	56	6.35	35
Mexico	0.901	5.72	48	5.50	49	6.34	43	5.71	48
Brazil	0.880	5.71	49	5.69	45	6.59	32	5.91	45
Venezuela	0.846	5.68	50	4.75	56	5.26	60	4.88	59
Qatar	0.588	5.45	51	6.13	38	6.42	38	6.20	39
Turkey	0.554	5.42	52	4.75	56	5.95	51	5.05	58
Ukraine	0.535	5.39	53	5.50	49	4.07	77	5.14	53
China	0.529	5.39	54	5.63	47	5.78	54	5.66	50
Serbia	0.494	5.34	55	5.13	53	4.94	66	5.08	55
India	0.467	5.31	56	5.00	54	5.53	57	5.13	54
Romania	0.463	5.30	57	5.94	41	5.93	53	5.94	44
Thailand	0.457	5.30	58	4.44	62	5.99	49	4.83	60
Jordan	0.365	5.15	59	4.75	56	6.36	42	5.15	52
Bahrain	0.345	5.12	60	5.31	52	6.60	31	5.63	51
Philippines	0.287	5.00	61	4.38	63	5.97	50	4.77	63
Ecuador	0.227	4.85	62	3.94	69	5.07	65	4.22	69
Tunisia	0.198	4.77	63	4.69	60	5.18	61	4.81	62
Colombia	0.183	4.72	64	4.63	61	6.39	41	5.07	56
Kenya	0.169	4.67	65	3.00	77	4.89	68	3.47	77
El Salvador	0.150	4.59	66	3.94	69	6.45	37	4.56	65
Dominican Republic	0.146	4.58	67	3.63	74	5.08	64	3.99	73
Peru	0.144	4.57	68	3.94	69	5.72	55	4.38	67
Kazakhstan	0.132	4.51	69	3.69	73	4.62	73	3.92	74
Azerbaijan	0.119	4.44	70	4.00	67	4.74	70	4.19	70
Sri Lanka	0.087	4.25	71	4.31	64	5.42	59	4.59	64
Egypt	0.078	4.18	72	4.00	67	5.15	62	4.29	68
Morocco	0.076	4.17	73	4.31	64	5.15	63	4.52	66
Indonesia	0.057	3.98	74	3.38	76	4.68	71	3.70	75
Iran	0.033	3.65	75	4.19	66	3.46	79	4.00	72
Algeria	0.023	3.42	76	3.56	75	3.74	78	3.61	76
Pakistan	0.015	3.13	77	2.38	79	4.42	76	2.89	78
Vietnam	0.012	3.00	78	3.94	69	4.90	67	4.18	71
Nigeria	0.002	2.01	79	1.50	81	4.75	69	2.31	81
Bangladesh	0.002	1.92	80	2.31	80	4.56	75	2.87	79
Angola	0.001	1.44	81	1.25	82	3.03	82	1.70	82
Libya	0.000	1.44	81	2.44	78	3.40	81	2.68	80
World average		6.28		6.31		6.30		6.31	

Note: The world average is the arithmetic average of the innovation index for each of the 82 countries

2009–2013	Innovation performance				Innovation enablers					
	Expected innovation performance index	Rank	Growth expected during the next 5 years (%)	Expected change in rank	Expected direct inputs index	Rank	Expected innovation environment index	Rank	Expected aggregate innovation enablers index	Rank
Saudi Arabia	6.21	37	4.5	5	5.06	56	4.99	68	5.04	60
Latvia	6.02	45	2.4	-2	5.56	51	6.54	39	5.81	51
Poland	6.13	41	5.4	3	6.75	32	7.00	25	6.81	31
Cuba	6.08	43	4.9	2	6.75	32	3.84	80	6.02	49
Chile	5.93	47	2.4	-1	6.00	45	7.61	19	6.40	37
Bulgaria	5.84	50	1.9	-3	6.63	35	6.02	56	6.47	36
Mexico	5.91	48	3.3	0	5.69	50	6.54	38	5.90	50
Brazil	5.85	49	2.5	0	5.94	47	6.44	42	6.06	46
Venezuela	5.34	59	-6.1	-9	4.69	62	4.20	78	4.56	68
Qatar	5.71	53	4.7	-2	6.38	37	6.87	32	6.50	35
Turkey	5.81	51	7.3	1	5.19	55	6.15	51	5.43	54
Ukraine	5.30	61	-1.8	-8	5.25	54	4.45	76	5.05	59
China	5.98	46	11.0	8	6.38	37	6.07	55	6.30	41
Serbia	5.66	54	5.9	1	5.38	52	5.43	64	5.39	55
India	5.72	52	7.7	4	5.31	53	6.23	47	5.54	52
Romania	5.56	55	4.9	2	6.25	41	6.18	50	6.23	43
Thailand	5.48	57	3.5	1	4.63	63	6.12	53	5.00	62
Jordan	5.32	60	3.3	-1	4.94	58	6.49	41	5.32	56
Bahrain	5.49	56	7.3	4	5.94	47	6.41	43	6.05	47
Philippines	5.39	58	7.8	3	4.81	60	6.19	49	5.16	57
Ecuador	4.58	69	-5.7	-7	3.75	75	4.63	70	3.97	75
Tunisia	4.99	63	4.7	0	4.88	59	5.55	62	5.04	61
Colombia	5.09	62	7.8	2	5.06	56	6.70	36	5.47	53
Kenya	4.51	70	-3.4	-5	2.94	77	4.58	74	3.35	77
El Salvador	4.81	65	4.6	1	4.06	71	6.95	29	4.78	64
Dominican Republic	4.95	64	8.1	3	3.88	73	5.67	59	4.32	71
Peru	4.76	67	4.2	1	4.13	68	5.91	57	4.57	67
Kazakhstan	4.77	66	5.8	3	4.00	72	4.62	71	4.15	73
Azerbaijan	4.51	71	1.4	-1	4.13	68	4.60	72	4.24	72
Sri Lanka	4.47	72	5.2	-1	4.56	64	5.65	60	4.83	63
Egypt	4.60	68	10.0	4	4.44	65	5.61	61	4.73	65
Morocco	4.26	73	2.1	0	4.38	67	5.36	65	4.62	66
Indonesia	4.12	74	3.5	0	3.38	76	5.23	66	3.84	76
Iran	3.94	75	8.0	0	4.44	65	4.05	79	4.34	70
Algeria	3.76	76	10.0	0	3.88	73	4.31	77	3.98	74
Pakistan	3.42	77	9.1	0	2.69	78	4.58	73	3.16	78
Vietnam	3.20	78	6.7	0	4.13	68	5.51	63	4.47	69
Nigeria	2.20	79	9.3	0	1.88	81	4.52	75	2.54	81
Bangladesh	1.85	80	-3.6	0	2.00	80	5.09	67	2.77	80
Angola	1.56	81	8.9	0	1.31	82	3.51	82	1.86	82
Libya	1.51	82	5.3	-1	2.56	79	3.62	81	2.83	79
	6.41		2.1		6.46		6.41		6.45	

Whilst every effort has been taken to verify the accuracy of this information, neither the Economist Intelligence Unit Ltd. nor the sponsor can accept any responsibility or liability for reliance by any person on this report or any of the information, opinions or conclusions set out herein.

全球最具创新力国家最新排名

经济学人信息部报告
由思科系统公司赞助





序

“全球最具创新力国家最新排名”是在思科系统公司赞助下由经济学人信息部撰写完成的一份专题调查报告。其中经济学人信息部对大量的相关数据加以了细致分析，在此基础上对有关国家的创新能力进行了评估排名。该份报告得出的结论和表达的观点并不一定反映报告赞助方的看法。

报告涉及的调研和分析工作分别由Josef Lazar和Laza Kekic两位承担。Katherine Dorr Abreu和Mike Kenny则分别负责该报告的编辑和设计工作。在此经济学人信息部谨对为此调研项目贡献出宝贵时间和真知灼见的所有人士表示诚挚的谢意。

2009年4月



前言

2007年在思科系统公司的赞助下，经济学人信息部创立了创新指数体系，并依据这一体系对全球82个国家2002至2006年间的创新力状况加以了评估排名，并对其2011年前创新力方面的发展前景进行了预测。该项排名构成了主题为“创新转变企业产出模式”、探索国家及企业创新力来源的这一宽泛调研课题的一个组成部分。

所谓创新是指以新颖方式对知识加以运用、并以获取经济收益为主要目的的活动。创新被众多企业视为一个至关重要的竞争手段，而政府的决策者们则将其看作是推动经济增长的一个不可或缺的因素。

经济学人信息部国家创新力排名的评估方法

经济学人信息部通过“创新产出”（创新绩效）和“创新投入”（创新驱动）两个指标来对各国的创新能力进行评估排名。

由欧洲专利局（EPO）、日本专利局（JPO）和美国专利和商标局（USPTO）这三大全球官方专利机构颁发的专利的数量是确定创新产出的依据。各国四年间每百万人口专利数的平均值构成了1至10之间的指数。2007年的该项指标是依据各国2002至2005年的数据计算得出的；而2009年的指数则是在2004至2007年间的数据库上统计得出的。

创新投入涵盖了直接驱动力和整个经济、社会、政治形势或者说“创新环境”这两大因素。它所依据的是经济学人信息部“经商环境排名”（BER）模

型五年间的平均数据：原始排名依据的是2002至2006年的数据，更新后的排名依据的则是2004至2008年的数据。

五年期预测（分别为2007至2011年和2009至2013年）依据的是“经商环境排名”（BER）模型，而模型本身则

是在历史状况和未来五年的预期形势基础上构建的。（欲了解排名方法及预测所依据的经济学人信息部“经商环境排名”模型的详细情况，请登陆以下网址：www.eiu.com/sponsor/cisco/innovationindex09。）

创新投入

直接创新投入（权重为0.75）	创新环境（权重为0.25）
研发（R&D）投入在GDP中所占比例（%）	政治环境
当地研发基础设施的质量	市场机遇
劳动力的教育水平	自由企业和竞争领域的政策
劳动力的技能水平	对于外国投资的政策
信息技术和通信基础设施的品质	对外贸易和交流的管制
宽带普及率	税收
	融资
	劳动力市场
	基础设施



“创新转变企业产出模式”这一调研课题所得出的主要结论如下：

- 创新既有利于各国的国民经济，又有助于提高企业绩效，但其微观经济方面的影响相对宏观经济层面的影响要更为显著；
- 更具创新力的企业的发展要优于其同业；
- 与高科技产业集群联姻的企业的经营和发展往往要好于同行企业；
- 员工的技术能力及企业信息技术/电信基础设施对其创新力具有至关重要的意义；
- 小国相对更具优势；
- 中等收入国家创新方面的投资回报率（ROI）要高于富裕国家。

2009年2月，经济学人信息部对创新指数加以了更新。新出笼的排名在很大程度上印证了原始研究所得出的预测结论，不过包括中国在内的一些国家排名的上升速度却超过了预期。商务活动的急剧下滑和全球经济危机对2009至2013年的五年期预测产生了一定影响，并将对各国长期内的创新能力造成负面冲击。发达国家中期内仍将继续占据创新力排名的上游位置，尽管如此，经商环境的恶化将会削弱其创新能力。而与之相比，中国和印度的创新力排名则将会持续攀升。

未来五年内全球范围的创新力的提升速度预计将大大低于此前的预期。当前的金融动荡形势将对直接推动创新的多种创新投入产生不利影响。这很可能将导致研发（R&D）投资下降、教育培训投入减少、信息和通信技术（ICT）基础设施质量下滑的后果。同时经济危机还将对驱动创新的某些环境因素——包括企业融资渠道、创业条件、政治和经济形势的稳定性等——造成负面冲击。

创新力提升速度的显著下降将对全世界长期的经济增长前景产生不利的影晌。



创新诸强的排名已悄然出现变化

日本、瑞士、美国、瑞典和芬兰位居该项指数排名的前列，但其彼此间的相对位置却也出现了一些变化。日本和瑞士仍分别雄踞排名榜的头名和次席，芬兰的名次从第五位攀升至第三位，而美国则从第三名下滑一位名列第四，瑞典的名次也下降了一位至第五名。

三个富裕的欧洲小国排名如此之高反映出其国内的经济、社会和政治环境均有助于推动创新。此外，鼓励创新的具体因素还包括高技能的劳动力队伍、对信息通信技术和研发活动长期不懈的政策支持、着力发展电信、生物制药、机床、精密仪器等创新密集型产业等。排名中芬兰名次的上升同样得益于这些因素，同时近年来其国内经商环境的显著改善也是个中的

日本牢牢占据全球国家创新力排名的榜首位置

	2002-06		2004-08		2004-08与2002-06区间 相比各国名次的变化状况
	指数	排名	指数	排名	
日本	10.00	1	10.00	1	0
瑞士	9.71	2	9.71	2	0
芬兰	9.43	5	9.50	3	2
美国	9.48	3	9.50	4	-1
瑞典	9.45	4	9.44	5	-1
德国	9.38	6	9.40	6	0
中国台湾	9.28	8	9.37	7	1
荷兰	9.12	9	9.16	8	1
以色列	9.10	10	9.13	9	1
丹麦	9.29	7	9.08	10	-3
韩国	8.78	15	8.94	11	4
奥地利	8.91	11	8.93	12	-1
法国	8.90	12	8.88	13	-1
加拿大	8.84	13	8.87	14	-1
比利时	8.80	14	8.79	15	-1
新加坡	8.72	17	8.76	16	1
挪威	8.73	16	8.73	17	-1
英国	8.72	18	8.72	18	0
爱尔兰	8.46	19	8.50	19	0
澳大利亚	8.37	21	8.50	20	1
中国香港	8.16	23	8.44	21	2
意大利	8.41	20	8.44	22	-2
新西兰	8.17	22	8.24	23	-1
斯洛文尼亚	7.68	24	7.74	24	0
塞浦路斯	7.34	26	7.62	25	1



重要原因。

美国名次的下滑则充分表明过去几年中该国作为世界技术领导者的传统地位逐步动摇——我们预计这一趋势仍将持续下去。美国地位的式微从某种意义上说也反映出其他国家正在奋起直追的现实。但同时这也是美国国内创新环境逐步疲弱的结果——当前的经济危机很可能会进一步加剧这种趋势。

中国在全球创新绩效排名中的名次出现强势上升（从两年前的第59名攀升至目前的第54名），这与印度名次的小幅上行（从第58名升至第56名）形成了鲜明的对比。在其他大型新兴市场国家中，巴西的排名与两年前相比下降了一位，而俄罗斯更是下滑了两位。

当前这一最新排名基本印证了我们2007年所作的中期预测。在短短两年时间里，以专利数据来衡量，预期中创新驱动因素的变化就已对创新绩效产生了影响。受这些变化影响的既有中国和立陶宛这样的春风得意者，也有保加利亚、约旦、泰国这样的黯然失意者。

创新效率

各国创新投入的使用效率也不尽相同。将一个国家的创新绩效排名与其在创新直接投入指标上的排名作一比较，我们便可从中管窥到它的创新效率如何。如两项排名存在很大差距，而创新产出又高于创新投入，那么这就意味着这个国家具有较高的创新效率，反之，如果直接创新投入排名大大高于其创新绩效排名，那相关国家的创新效率就是极为低下。

日本的创新效率处于很高的水平：2004-08年，其在创新绩效排名中独占鳌头，而在推进创新的环境因素指标中的名次则仅为第11名。日本的创新者们从这个意义上说是在逆流而上。日本这个东瀛岛国资源贫乏，人口老龄化现象日益严重，这迫使它长期以来形成了一种“不创新、毋宁死”的心态。日本大力投资于研发活动，其中由行业承担的研发业务比例超过了美国和欧盟。按人口规模计算，日本的科研工作者人数比例也高于美国，其高等教育质量也非同凡响。除此之外，日本高科技研发活动也十分活跃，因特网普及率达到很高的水平。创新密集性突出的高科技企业数量众多是日本经济的一大特点。另一特色在于这类企业与相关联的、密如蛛网、承受巨大创新压力的中小型企业形成了一种共生关系。

相比之下，中、东欧国家在创新方面的投入回报率却低得惊人。其中的部分原因可能在于这些国家在实行社会主义制度时劳动力的教育水平较高并拥有庞大的科研架构，而另一方面其科研工作者们却没能做到与时俱进，融入整个全球经济。这最终导致这些国家的创新绩效乏善可陈。



一些国家在当前总体暗淡的创新发展前景中却已看到属于自己的那线曙光

当前世界正在遭受的这轮经济危机势必将对未来五年的创新绩效产生显著的影响。经济学人信息部目前的预测是参与排名的82个国家2004-08年至2009-13年这一区间的创新绩效平均值仅会出现2%的增长。这要低于此前预测的2007至2011年平均6%的增幅。

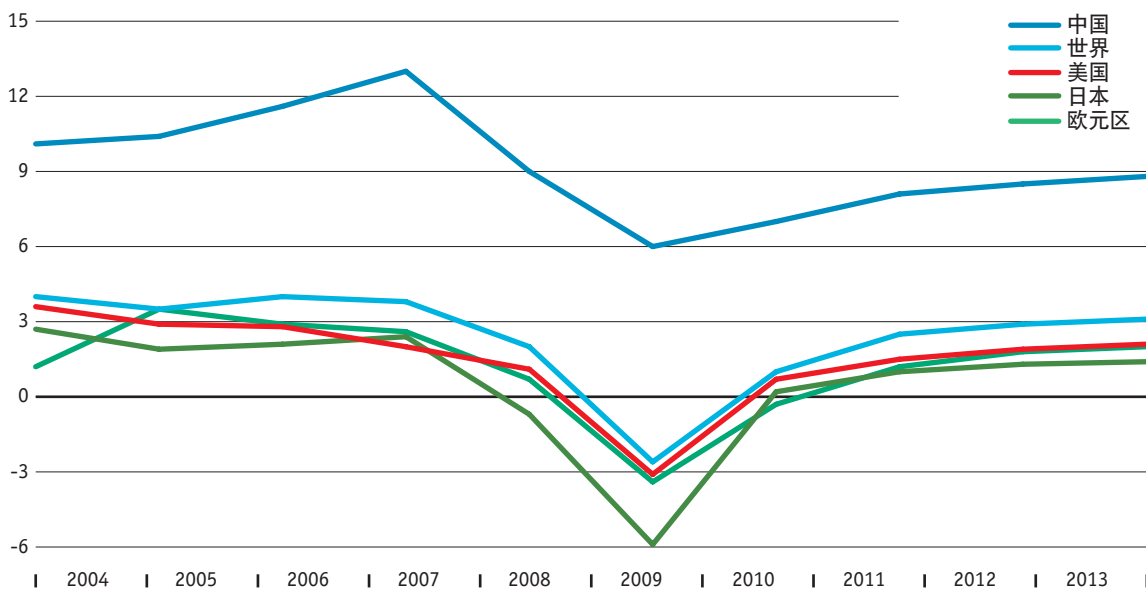
根据我们目前的预测，与两年前相比，未来中期内直接和间接性创新投入都不会出现较大幅度的增长。经济萧条将抑制公共和私营部门对于研发的投入。同时它也将限制政府在教育、培训方面的投资和对创新活动的支持力度。

预期中创新环境方面最为重要的变化包括融资难、宏观经济和政治形势出现恶化、多个国家的财政状况日益恶劣、体制和监管环境呈现消极的发展态势等。这一预测并不是依据最坏想定作出的，因此仍存在情况继续恶化、进一步抑制创新的可能性。

各个国家的创新发展势头也不尽相同。由于众多新兴市场国家的起点较低，因此它们的整体创新绩效仍可能得到进一步改善，不过其前进的步伐则要慢于此前的预期。相比之下，少数发达国家的创新投入和创新绩效预计则将出现下滑。这在英国表现得尤为突出，全球性危机对

随着GDP增速的急坠，未来10年全球经济的发展将举步维艰

实际GDP增幅(%)



来源：经济学人信息部预测使用的是截至2009年3月13日的市场汇率。



其产生了非同一般的冲击，其创新环境也因此受到了很严重的影响。

中期内的排名变化

根据我们的预测，与2004-08年区间相比，2009-13年这个五年内排名领先的国家的具体名次将会出现一些变化。日本、瑞士、芬兰将分列第一、二、三位。德国的名次将从此前的第六上升至第四，美国的排名由此将下滑至第五位，而瑞典则更将跌出前五名。

排名较低的国家的名次也会出现变化。2007年我们预测认为墨西哥中期内的创新排名将会出现大幅上升，但与其与美国比邻而居的密切关系眼下对其而言则是一大不利因素。墨西哥中期内的创新绩效预计将大体保持不变，而其排名也会停留在第48位。

饱受政局及/或宏观经济形势动荡之苦的新兴市场国家无疑将成为最大的输家。委内瑞拉、乌克兰、厄瓜多尔等国均属这一类别（2004-08年至2009-13年区间它们的名次将分别下降

当前各国创新指数排名及其前景预测

	2004-08		2009-13		2009-13与2004-08区间 相比各国名次的变化状况
	指数	排名	指数	排名	
日本	10.00	1	10.00	1	0
瑞士	9.71	2	9.70	2	0
芬兰	9.50	3	9.53	3	0
美国	9.50	4	9.44	5	-1
瑞典	9.44	5	9.42	7	-2
德国	9.40	6	9.49	4	2
中国台湾	9.37	7	9.44	6	1
荷兰	9.16	8	9.16	9	-1
以色列	9.13	9	9.20	8	1
丹麦	9.08	10	9.06	10	0
韩国	8.94	11	9.05	11	0
奥地利	8.93	12	8.98	12	0
法国	8.88	13	8.96	13	0
加拿大	8.87	14	8.83	15	-1
比利时	8.79	15	8.89	14	1
新加坡	8.76	16	8.75	16	0
挪威	8.73	17	8.75	17	0
英国	8.72	18	8.58	19	-1
爱尔兰	8.50	19	8.57	20	-1
澳大利亚	8.50	20	8.61	18	2
中国香港	8.44	21	8.46	22	-1
意大利	8.44	22	8.46	21	1
新西兰	8.24	23	8.40	23	0
斯洛文尼亚	7.74	24	7.80	24	0
塞浦路斯	7.62	25	7.72	25	0



9位、8位、7位)。

尽管欧盟国家在创新绩效指标方面的排名仍将居于领先地位——2009-13年期间，创新绩效排名前10的国家中，欧盟国家就有5个；而前20名国家中，欧盟国家占了整整10席——但其进步幅度则并不明显。欧盟各国中有6个的创新绩效预计将会出现下滑，在我们的统计样本中，欧盟25国的创新绩效指数平均值（未加权）仅会出现微幅增长，从2004-08年区间的7.63上升至2009-13年区间的7.7（指数统计中不含马耳他和卢森堡两国）。尽管欧盟在提高创新绩效方面付出了诸多努力，尽管美国的创新绩效预计将会出现小幅下滑，但未来五年内欧洲在拉近自身与日本、美国的创新力差距方面并不会出现显著突破。

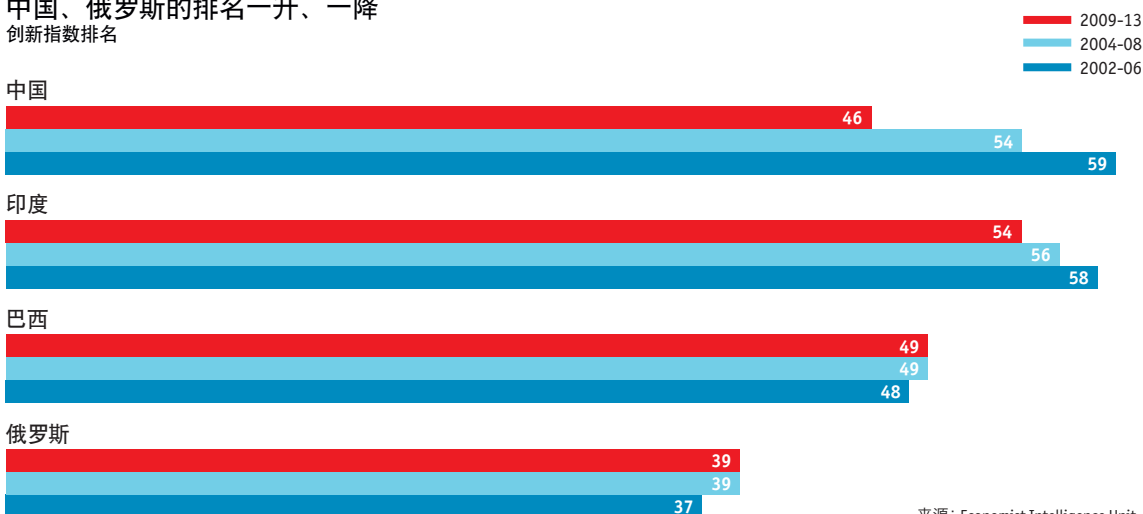
中国的崛起

在包括发达和新兴市场在内的所有经济体中，中国无疑是创新方面的最大赢家。2004-08年至2009-13年区间，该国的创新绩效指数将上升11%，名次也将从第54位跃升至第46位。印度的名次也将上浮四位，“金砖四国”中的另两个成员巴西和俄罗斯的排名则将保持不变。

事实上，中国的排名正呈加速上升态势。两年前，我们所做的预测认为该国2007-11年期间的排名将上升至第54位。而实际的情况则是，目前它已实现了这一目标，未来五年中其名次预计将再前进8位。

中国排名突飞猛进的原因之一在于该国举国上下正努力推动创新型经济的发展。在研发和教育领域，中国的投入可谓不惜血本，其国内的创新环境正在不断得到改善。据经济合作与发展组织（OECD）提供的数据显示，2006年中国研发方面的投入（包括公共和私营部门两个渠道的投入）达到了870亿美元，尽管这仍低于日本的水平（后者这方面的投入高达1390亿美

中国、俄罗斯的排名一升、一降
创新指数排名



来源：Economist Intelligence Unit.



元)，并仅相当于欧盟的三分之一左右（欧盟的研发投入达2430亿美元），但其增长速度却相当惊人。2001-06年期间，中国研发方面的投入年均实际增幅达到19%，其在GDP中所占比例2006年上升到1.4%。中国政府设定的目标是2010年将研发投入占GDP的百分比提升至2%。照其眼下的进度，中国即便2010年无法实现这一目标，其延迟的时间也不会很长。

目前单以科技工作者人数而论，中国位居世界第一。2005年世界科技论文发表总数中，中国所占份额从1995年的1.6%上升至6%，全球排名达到第五位。该国理工科大学毕业生占了全世界总数的40%，几乎是经济合作与发展组织成员国平均值的两倍，远远高于美国15%的份额。中国吸收的外国直接投资（FDI）中很大一部分将继续流入创新密集型行业，外国企业也竞相在中国建设自己的研发中心。

中国的创新前景也并非一片光明；它同样面临着阻碍创新的诸多痼疾，知识产权保护不力（尽管近些年这方面的工作有所起色）便是其中的一大突出问题。

美国的领先优势逐步削弱

即便美国在创新领域的地位有所下降，但它仍将是世界一大创新强国，并会继续保持其相对于作为一个整体的欧盟的显著创新优势。2009-13年期间美国的创新绩效与前一个五年的平均数据相比预计将出现小幅下滑。2006年其研发投入在GDP中所占的比例已从1996年的2.8%降至2.6%，即便如此，由经济合作与发展组织（OECD）提供的信息显示，这一数字仍几乎是中国的两倍。同期，美国公民专利申请数的增长势头也已趋缓，而其他国家仍在继续着它们奋起直追的步伐。美国在经济合作与发展组织国家（OECD）技术出口总额中所占的比例也有所下降。2005年，其在该组织成员国高端和中高端技术出口总额中所占的比例为15.6%；与之相

以研发投入在GDP中所占比例而论，瑞典位列经济合作与发展组织（OECD）国家之首。

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
瑞典	-	3.605	-	4.169	-	3.848	3.624	3.795	3.741	3.634
芬兰	2.864	3.16	3.344	3.302	3.355	3.43	3.448	3.479	3.449	3.473
日本	3.005	3.021	3.043	3.123	3.165	3.199	3.167	3.323	3.394	-
韩国	2.342	2.252	2.393	2.59	2.532	2.631	2.847	2.98	3.225	-
美国	2.61	2.664	2.746	2.761	2.66	2.656	2.587	2.619	2.658	2.684
德国	2.272	2.395	2.454	2.461	2.49	2.52	2.486	2.485	2.536	2.528
丹麦	2.045	2.177	-	2.387	2.508	2.575	2.485	2.452	2.463	2.538
奥地利	1.781	1.9	1.941	2.067	2.14	2.258	2.255	2.443	2.456	2.565
法国	2.139	2.159	2.148	2.197	2.23	2.168	2.15	2.099	2.097	2.081
加拿大	1.758	1.795	1.912	2.088	2.041	2.031	2.051	2.014	1.941	1.893
比利时	1.863	1.938	1.972	2.076	1.943	1.885	1.865	1.838	1.885	1.893
英国	1.785	1.856	1.848	1.823	1.821	1.779	1.71	1.757	1.779	-
荷兰	1.895	1.959	1.825	1.804	1.724	1.756	1.782	1.737	1.732	1.727

来源：经济合作与发展组织，2008年数据。



比，1996年的这一比例则高达18.4%。与中国和一些欧盟国家相比，美国国内科研人员人数的增速也相对较低，大学毕业生中理工科专业学生的比例也低于这些国家。

最近美国国家科学委员会对美国若干科技领域发展势头渐趋疲软的现象表示出了关切。科技期刊发表的论文数量出现下降（其占世界科技论文发表总数的比例从1995年的34.2%滑落至2005年的28.9%）；去除通货膨胀因素之后，2006年政府对于学术研究活动提供的资金支持25年来首次出现下降。国家科学委员会指出：“这种种指标叠加在一起便使我们不得不对其对未来美国在国际市场中的竞争力和国内高端技术岗位前景的影响打上一个大大的问号。”

眼下的经济危机很可能将进一步加剧美国创新下滑的疲弱态势。然而，当前美国奥巴马政府已将环境技术、教育等领域的长期投资作为了其新近提出的经济振兴方案的重点，这至少有助于减缓美国创新力下滑的势头。



结语

距经济学人信息部首次推出创新力国家排名已过去了两年，在全球经济和金融危机的影响下，世界创新格局正在发生着变化。这场席卷全球的危机势必将阻碍世界各国创新绩效的提高，为未来的增长前景投上一层阴影。

不过各个国家遭受经济危机冲击的严重程度也不尽一致。得益于其强大的经济实力，中国正在发展成为渴望提升自身世界地位的国家的典范。通过效仿中国举国上下为加大研发和教育投入从而完善其技术基础而付出的努力，其他新兴经济体或许也能在攀登世界创新之梯的进程中取得新的进展。

附录: 创新指数

2004-2008	创新绩效			创新驱动动力					
	每百万人口 专利数	创新绩效指数	排名	直接投入指数	排名	创新环境指数	排名	创新驱动动力 综合指数	排名
日本	1,274.533	10.00	1	9.81	9	7.11	23	9.14	11
瑞士	505.839	9.71	2	9.94	2	8.54	6	9.59	4
芬兰	363.298	9.50	3	9.94	2	8.60	3	9.60	3
美国	359.840	9.50	4	9.88	8	8.47	8	9.52	5
瑞典	330.980	9.44	5	10.00	1	8.49	7	9.62	2
德国	310.695	9.40	6	9.94	2	8.07	13	9.47	6
台湾	293.642	9.37	7	9.50	11	7.46	22	8.99	15
荷兰	212.411	9.16	8	9.56	10	8.45	9	9.28	8
以色列	199.801	9.13	9	9.94	2	6.83	27	9.16	10
丹麦	184.985	9.08	10	9.94	2	8.70	1	9.63	1
韩国	148.704	8.94	11	9.50	11	6.30	44	8.70	18
奥地利	147.317	8.93	12	9.06	17	7.57	18	8.69	19
法国	136.223	8.88	13	9.94	2	7.51	21	9.33	7
加拿大	132.635	8.87	14	9.50	11	8.25	11	9.19	9
比利时	116.899	8.79	15	9.06	17	7.88	17	8.77	17
新加坡	111.307	8.76	16	8.81	19	8.66	2	8.77	16
挪威	106.668	8.73	17	8.81	19	7.95	14	8.60	20
英国	105.211	8.72	18	9.25	15	8.54	5	9.07	13
爱尔兰	73.814	8.50	19	9.19	16	8.60	4	9.04	14
澳大利亚	73.511	8.50	20	9.50	11	7.92	16	9.11	12
香港	67.328	8.44	21	8.13	24	8.30	10	8.17	22
意大利	66.909	8.44	22	7.88	27	6.41	39	7.51	27
新西兰	48.740	8.24	23	8.25	21	8.13	12	8.22	21
斯洛文尼亚	22.040	7.74	24	8.25	21	6.29	45	7.76	26
塞浦路斯	18.237	7.62	25	6.06	40	7.03	24	6.31	36
西班牙	15.367	7.51	26	7.94	25	7.51	20	7.83	24
匈牙利	9.061	7.18	27	7.69	28	6.78	28	7.46	28
捷克共和国	5.533	6.87	28	8.19	23	6.55	34	7.78	25
克罗地亚	5.116	6.82	29	6.50	34	5.51	58	6.25	37
爱沙尼亚	4.704	6.76	30	7.94	25	7.55	19	7.84	23
马来西亚	4.237	6.70	31	6.44	36	6.55	35	6.46	33
希腊	3.856	6.64	32	5.88	42	6.23	47	5.96	43
葡萄牙	3.612	6.60	33	7.00	31	6.92	26	6.98	30
南非	3.496	6.58	34	5.56	48	6.23	46	5.73	47
哥斯达黎加	2.429	6.35	35	5.88	42	6.54	36	6.04	42
斯洛伐克	1.836	6.17	36	7.31	29	6.72	29	7.16	29
科威特	1.794	6.16	37	4.75	56	6.01	48	5.06	57
立陶宛	1.563	6.07	38	6.56	32	6.40	40	6.52	31
俄罗斯	1.460	6.03	39	7.13	30	4.61	74	6.50	32
阿联酋	1.329	5.97	40	5.88	42	6.94	25	6.14	40
阿根廷	1.322	5.96	41	6.13	38	5.94	52	6.08	41

注: 涉及专利数据为各国2004-07年的平均值, 按每百万人口专利数计。 创新驱动动力指数系2004-08年的平均值。

2009-2013	创新绩效				创新驱动动力					
	预期 创新绩效指数	排名	未来5年 的预期 增幅 (%)	预期排名 变化	预期直接 投入指数	排名	预期创新 环境指数	排名	预期创新驱 动力综合指数	排名
日本	10.00	1	0.0	0	9.94	9	6.97	28	9.20	11
瑞士	9.70	2	-0.2	0	10.00	1	8.28	7	9.57	4
芬兰	9.53	3	0.3	0	10.00	1	8.52	3	9.63	1
美国	9.44	5	-0.6	-1	10.00	1	7.86	14	9.47	6
瑞典	9.42	7	-0.2	-2	10.00	1	8.41	6	9.60	3
德国	9.49	4	1.0	2	10.00	1	8.25	8	9.56	5
台湾	9.44	6	0.7	1	9.63	10	7.34	21	9.05	14
荷兰	9.16	9	-0.1	-1	9.63	10	8.22	10	9.27	8
以色列	9.20	8	0.8	1	10.00	1	6.93	31	9.23	9
丹麦	9.06	10	-0.2	0	10.00	1	8.44	4	9.61	2
韩国	9.05	11	1.2	0	9.50	13	6.73	35	8.81	17
奥地利	8.98	12	0.6	0	9.19	18	7.39	20	8.74	19
法国	8.96	13	0.9	0	10.00	1	7.66	17	9.42	7
加拿大	8.83	15	-0.4	-1	9.50	13	8.10	11	9.15	12
比利时	8.89	14	1.2	1	9.25	15	7.73	16	8.87	16
新加坡	8.75	16	-0.1	0	8.88	19	8.43	5	8.76	18
挪威	8.75	17	0.2	0	8.88	19	7.82	15	8.61	20
英国	8.58	19	-1.6	-1	9.25	15	7.93	13	8.92	15
爱尔兰	8.57	20	0.9	-1	9.25	15	8.74	1	9.12	13
澳大利亚	8.61	18	1.4	2	9.63	10	8.05	12	9.23	10
香港	8.46	22	0.2	-1	8.06	23	8.57	2	8.19	22
意大利	8.46	21	0.3	1	7.94	26	6.31	45	7.53	28
新西兰	8.40	23	2.0	0	8.44	21	8.22	9	8.38	21
斯洛文尼亚	7.80	24	0.9	0	8.25	22	6.58	37	7.83	24
塞浦路斯	7.72	25	1.4	0	6.13	43	7.21	23	6.40	38
西班牙	7.50	26	-0.1	0	8.00	24	7.28	22	7.82	25
匈牙利	7.28	27	1.5	0	7.81	28	6.86	33	7.57	27
捷克共和国	6.79	31	-1.0	-3	7.94	26	6.98	26	7.70	26
克罗地亚	7.16	28	5.1	1	6.75	32	6.07	54	6.58	34
爱沙尼亚	6.82	30	0.9	0	8.00	24	7.64	18	7.91	23
马来西亚	6.57	35	-1.9	-4	6.38	37	6.22	48	6.34	40
希腊	6.75	33	1.7	-1	6.00	45	6.26	46	6.06	45
葡萄牙	6.79	32	2.9	1	7.25	29	6.98	27	7.18	30
南非	6.94	29	5.5	5	5.94	47	6.39	44	6.05	48
哥斯达黎加	6.69	34	5.4	1	6.19	42	6.94	30	6.37	39
斯洛伐克	6.19	38	0.3	-2	7.19	31	7.20	24	7.19	29
科威特	6.25	36	1.6	1	4.81	60	6.15	52	5.15	58
立陶宛	6.14	40	1.1	-2	6.63	35	6.50	40	6.59	33
俄罗斯	6.14	39	1.9	0	7.25	29	4.74	69	6.62	32
阿联酋	6.07	44	1.7	-4	6.06	44	6.79	34	6.25	42
阿根廷	6.08	42	2.0	-1	6.31	40	5.86	58	6.20	44

2004-2008	创新绩效			创新驱动动力					
	每百万人口专利数	创新绩效指数	排名	直接投入指数	排名	创新环境指数	排名	创新驱动动力综合指数	排名
沙特阿拉伯	1.270	5.94	42	4.88	55	4.65	72	4.82	61
拉脱维亚	1.158	5.88	43	5.38	51	6.55	33	5.67	49
波兰	1.039	5.81	44	6.38	37	6.70	30	6.46	34
古巴	1.008	5.79	45	6.50	34	3.43	80	5.73	46
智利	1.004	5.79	46	5.69	45	7.94	15	6.25	38
保加利亚	0.913	5.73	47	6.56	32	5.71	56	6.35	35
墨西哥	0.901	5.72	48	5.50	49	6.34	43	5.71	48
巴西	0.880	5.71	49	5.69	45	6.59	32	5.91	45
委内瑞拉	0.846	5.68	50	4.75	56	5.26	60	4.88	59
卡塔尔	0.588	5.45	51	6.13	38	6.42	38	6.20	39
土耳其	0.554	5.42	52	4.75	56	5.95	51	5.05	58
乌克兰	0.535	5.39	53	5.50	49	4.07	77	5.14	53
中国	0.529	5.39	54	5.63	47	5.78	54	5.66	50
塞尔维亚	0.494	5.34	55	5.13	53	4.94	66	5.08	55
印度	0.467	5.31	56	5.00	54	5.53	57	5.13	54
罗马尼亚	0.463	5.30	57	5.94	41	5.93	53	5.94	44
泰国	0.457	5.30	58	4.44	62	5.99	49	4.83	60
约旦	0.365	5.15	59	4.75	56	6.36	42	5.15	52
巴林	0.345	5.12	60	5.31	52	6.60	31	5.63	51
菲律宾	0.287	5.00	61	4.38	63	5.97	50	4.77	63
厄瓜多尔	0.227	4.85	62	3.94	69	5.07	65	4.22	69
突尼斯	0.198	4.77	63	4.69	60	5.18	61	4.81	62
哥伦比亚	0.183	4.72	64	4.63	61	6.39	41	5.07	56
肯尼亚	0.169	4.67	65	3.00	77	4.89	68	3.47	77
萨尔瓦多	0.150	4.59	66	3.94	69	6.45	37	4.56	65
多米尼加共和国	0.146	4.58	67	3.63	74	5.08	64	3.99	73
秘鲁	0.144	4.57	68	3.94	69	5.72	55	4.38	67
哈萨克斯坦	0.132	4.51	69	3.69	73	4.62	73	3.92	74
阿塞拜疆	0.119	4.44	70	4.00	67	4.74	70	4.19	70
斯里兰卡	0.087	4.25	71	4.31	64	5.42	59	4.59	64
埃及	0.078	4.18	72	4.00	67	5.15	62	4.29	68
摩洛哥	0.076	4.17	73	4.31	64	5.15	63	4.52	66
印度尼西亚	0.057	3.98	74	3.38	76	4.68	71	3.70	75
伊朗	0.033	3.65	75	4.19	66	3.46	79	4.00	72
阿尔及利亚	0.023	3.42	76	3.56	75	3.74	78	3.61	76
巴基斯坦	0.015	3.13	77	2.38	79	4.42	76	2.89	78
越南	0.012	3.00	78	3.94	69	4.90	67	4.18	71
尼日利亚	0.002	2.01	79	1.50	81	4.75	69	2.31	81
孟加拉	0.002	1.92	80	2.31	80	4.56	75	2.87	79
安哥拉	0.001	1.44	81	1.25	82	3.03	82	1.70	82
利比亚	0.000	1.44	81	2.44	78	3.40	81	2.68	80
世界平均值		6.28		6.31		6.30		6.31	

世界平均值为统计涉及的82个国家创新指数的算术平均值。

2009-2013	创新绩效				创新驱动动力					
	预期创新绩效指数	排名	未来5年的预期增幅 (%)	预期排名变化	预期直接投入指数	排名	预期创新环境指数	排名	预期创新驱动力综合指数	排名
沙特阿拉伯	6.21	37	4.5	5	5.06	56	4.99	68	5.04	60
拉脱维亚	6.02	45	2.4	-2	5.56	51	6.54	39	5.81	51
波兰	6.13	41	5.4	3	6.75	32	7.00	25	6.81	31
古巴	6.08	43	4.9	2	6.75	32	3.84	80	6.02	49
智利	5.93	47	2.4	-1	6.00	45	7.61	19	6.40	37
保加利亚	5.84	50	1.9	-3	6.63	35	6.02	56	6.47	36
墨西哥	5.91	48	3.3	0	5.69	50	6.54	38	5.90	50
巴西	5.85	49	2.5	0	5.94	47	6.44	42	6.06	46
委内瑞拉	5.34	59	-6.1	-9	4.69	62	4.20	78	4.56	68
卡塔尔	5.71	53	4.7	-2	6.38	37	6.87	32	6.50	35
土耳其	5.81	51	7.3	1	5.19	55	6.15	51	5.43	54
乌克兰	5.30	61	-1.8	-8	5.25	54	4.45	76	5.05	59
中国	5.98	46	11.0	8	6.38	37	6.07	55	6.30	41
塞尔维亚	5.66	54	5.9	1	5.38	52	5.43	64	5.39	55
印度	5.72	52	7.7	4	5.31	53	6.23	47	5.54	52
罗马尼亚	5.56	55	4.9	2	6.25	41	6.18	50	6.23	43
泰国	5.48	57	3.5	1	4.63	63	6.12	53	5.00	62
约旦	5.32	60	3.3	-1	4.94	58	6.49	41	5.32	56
巴林	5.49	56	7.3	4	5.94	47	6.41	43	6.05	47
菲律宾	5.39	58	7.8	3	4.81	60	6.19	49	5.16	57
厄瓜多尔	4.58	69	-5.7	-7	3.75	75	4.63	70	3.97	75
突尼斯	4.99	63	4.7	0	4.88	59	5.55	62	5.04	61
哥伦比亚	5.09	62	7.8	2	5.06	56	6.70	36	5.47	53
肯尼亚	4.51	70	-3.4	-5	2.94	77	4.58	74	3.35	77
萨尔瓦多	4.81	65	4.6	1	4.06	71	6.95	29	4.78	64
多米尼加共和国	4.95	64	8.1	3	3.88	73	5.67	59	4.32	71
秘鲁	4.76	67	4.2	1	4.13	68	5.91	57	4.57	67
哈萨克斯坦	4.77	66	5.8	3	4.00	72	4.62	71	4.15	73
阿塞拜疆	4.51	71	1.4	-1	4.13	68	4.60	72	4.24	72
斯里兰卡	4.47	72	5.2	-1	4.56	64	5.65	60	4.83	63
埃及	4.60	68	10.0	4	4.44	65	5.61	61	4.73	65
摩洛哥	4.26	73	2.1	0	4.38	67	5.36	65	4.62	66
印度尼西亚	4.12	74	3.5	0	3.38	76	5.23	66	3.84	76
伊朗	3.94	75	8.0	0	4.44	65	4.05	79	4.34	70
阿尔及利亚	3.76	76	10.0	0	3.88	73	4.31	77	3.98	74
巴基斯坦	3.42	77	9.1	0	2.69	78	4.58	73	3.16	78
越南	3.20	78	6.7	0	4.13	68	5.51	63	4.47	69
尼日利亚	2.20	79	9.3	0	1.88	81	4.52	75	2.54	81
孟加拉	1.85	80	-3.6	0	2.00	80	5.09	67	2.77	80
安哥拉	1.56	81	8.9	0	1.31	82	3.51	82	1.86	82
利比亚	1.51	82	5.3	-1	2.56	79	3.62	81	2.83	79
	6.41		2.1		6.46		6.41		6.45	

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