

NATURE PUBLISHING INDEX 2011

ASIA-PACIFIC

MONITORING ASIA-PACIFIC RESEARCH TRENDS

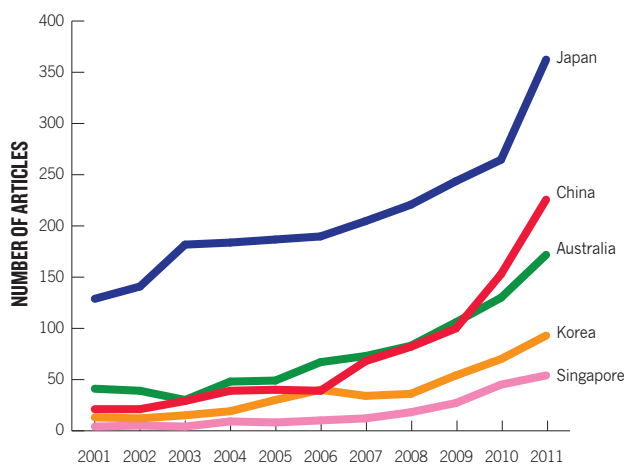
The twelve months of 2011 were, it could be argued, some of the most turbulent in the past decade. From the seismic upheaval in Japan to the continuing economic travails of many leading world economies, at times good news seemed to be rather thin on the ground. Viewed from the standpoint of the Nature Publishing Index, however, scientific research in the Asia-Pacific region continued to flourish.

The top five institutions in the Nature Publishing Index 2011 Asia-Pacific, and their position in the ranking, are the same as they were in 2010, with a still-dominant Japan leading China, followed by Australia, Korea and Singapore. Although all of the top five countries made gains in their publishing totals on their 2010 publishing totals, China is the real mover, increasing the proportion of the articles it publishes in Nature journals at the expense of the other four.

The Index has become a useful record of the publishing activity of countries and institutions in the Nature journals, based on the

affiliations of authors of primary research articles published. Data for the index stretching back over a decade, showing long-term trends in publication performance, is available and can be used to

help in analysing the most recent data for 2011. The graph and table of articles published charts China's rise, and shows Taiwan, India and New Zealand in a tussle for sixth place. At the top of the tree, seven of Japan's institutions make it into the index's Global Top 100 and the University of Tokyo alone boasts a higher output than all of the institutions in Korea, the region's fourth-ranked country. No evidence of impact from the March 2011 earthquake and tsunami, which caused more than US\$1 billion in damage to Japan's scientific infrastructure, can be seen. In fact, despite these severe events, Japan's scientists are publishing more papers than ever before.



NATURE PUBLICATIONS ASIA-PACIFIC

Even though the gap between Japan and China is substantial, China continues to increase the number of articles it publishes in

NATURE PUBLISHING INDEX ASIA-PACIFIC COUNTRIES

2011				2010			2009			Total 2009-2011		
RANK	COUNTRY/TERRITORY	CORRECTED COUNT	ARTICLES	RANK	CORRECTED COUNT	ARTICLES	RANK	CORRECTED COUNT	ARTICLES	RANK	CORRECTED COUNT	ARTICLES
1	Japan	214.49	361	1	170.70	264	1	147.94	243	1	533.57	868
2	China	110.03	225	2	68.07	152	2	42.57	99	2	220.68	476
3	Australia	64.63	172	3	39.60	129	3	42.16	105	3	146.38	406
4	Korea	40.99	92	4	24.80	69	4	28.95	53	4	94.75	214
5	Singapore	13.43	53	5	11.22	44	5	9.42	26	5	34.07	123
6	Taiwan	9.68	26	7	2.93	17	8	2.66	15	8	15.27	58
7	India	8.53	30	9	1.22	10	6	6.83	19	7	16.59	59
8	New Zealand	5.30	28	6	7.31	27	7	4.04	14	6	16.65	69
9	Indonesia	0.72	3	11	0.29	1	9	0.43	3	10	1.43	7
10	Vietnam	0.60	1	-	-	-	12	0.04	1	12	0.63	2
11	Thailand	0.50	5	10	0.49	8	10	0.36	5	11	1.35	18
12	Philippines	0.31	5	14	0.01	2	-	-	-	13	0.32	7
13	Malaysia	0.31	3	-	-	-	-	-	-	14	0.31	3
14	Bangladesh	0.31	2	8	1.38	3	-	-	-	9	1.69	5
15	Myanmar	0.25	1	-	-	-	-	-	-	15	0.25	1
16	Cambodia	0.07	1	13	0.11	1	-	-	-	16	0.18	2
16	Papua New Guinea	0.07	1	-	-	-	11	0.04	1	18	0.11	2

Corrected count is a measurement that takes into account the fractional contribution of a country/territory or institution (by author affiliation) to each published article. The fractional counts are then tallied for the designated period.

Nature journals at a faster average rate than any other country in the top five, year on year, and may reach Japan within the decade.

Following the two frontrunners, Australia has consolidated its third place in the Index as a result of a 33% increase in the number of articles contributed by its researchers compared with 2010 and Korea, firmly in fourth place, continues to open up the gap on Singapore in fifth. It is at this level, however, that the order of things begins to change, with Taiwan (sixth) and India (seventh and recovering from a fall in 2010) both recording large increases in their corrected counts from 2010 to 2011 and coming closer to challenging Singapore. New Zealand is comfortably positioned in eighth place, even though its contribution fell from 2010 to 2011. Below eighth place in the index come a further seven countries from south-east Asia each contributing a handful of articles to the Index. Their appearance in the Index is in many cases sporadic and their position in the rankings is highly fluid.

In 2011, 601 institutions from 17 Asia-Pacific countries published 856 individual articles in Nature-branded primary research journals, up from 637 articles from 424 institutions in 14 countries in 2010. These figures grow year by year as the Nature publication list grows, now including the journal *Nature Climate Change* launched in 2011. It is more important than ever, therefore, to look at relative performance and not just absolute numbers when identifying trends. Again, the Asia-Pacific increased its presence in Nature journals in 2011, in terms of both the proportion of articles with an Asia-Pacific author and the corrected count of Asia-Pacific authors (see table on p. 3).

Of interest is the observation that Asia-Pacific scientists make up a high (over 40% in 2011), and increasing, proportion of authors publishing in the multidisciplinary *Nature Communications*, launched in 2010, which publishes articles that represent important advances within specific scientific disciplines, but might not necessarily have the scientific reach of papers published in *Nature* and the Nature research journals. Despite the growth in output of papers from the Asia-Pacific as a percentage of the global total (see table on p. 3), the

Asia-Pacific institutions only maintained, or slightly improved, their rankings on a global scale in the Top 100. In 2010, five of the Global Top 50 institutions were from the Asia-Pacific — four from Japan and the Chinese Academy of Sciences (CAS). The figures and institutions were exactly the same in 2011. The University of Tokyo was stable in fifth place, and CAS rose from 32nd in 2010 to 23rd in 2011, but this was counterbalanced by the fall of the Japanese government research agency RIKEN from 23rd to 30th place. An additional three Japanese institutes, three from Australia, two from China and one from Korea, can be found in the index's Global Top 100.

By far the dominant publishing presence in Nature-branded primary research journals is the US, whose scientists contributed 2,031 articles with a corrected count of 1,508.01 to the Index in 2011, well ahead of the UK (575 articles, CC 283.35). The top-performing Asia-Pacific nation was Japan, which entered the Index in fourth place, ahead of France but behind Germany. Other Asia-Pacific countries come in at sixth (China), tenth (Australia), 13th (Korea) and 19th (Singapore), with Taiwan, India and New Zealand (not shown) also making the top 25 countries. Apart from Canada in seventh place, and Israel in 14th, the remaining countries in the top 25 are from continental Europe.

In 2011, scientists with an Asia-Pacific affiliation contributed a total of 856 articles to Nature-branded primary research journals, with a corrected count total of 470.99. This places it well behind North America and Europe in terms of impact in Nature journals. However, it must be borne in mind that Nature journals are largely publishing basic scientific research rather than applied research, and Asia's strengths in engineering and high-tech manufacturing may not be captured in this Index.

The strength of the Asia-Pacific economies, and the commitment of their governments to increase R&D funding as a proportion of GDP in coming years, are likely to result in Asia-Pacific countries increasing their global contribution in the future. ■

NATURE PUBLISHING INDEX GLOBAL TOP 20 COUNTRIES

2011			
RANK	COUNTRY/TERRITORY	CORRECTED COUNT	ARTICLES
1	USA	1508.01	2031
2	UK	283.35	575
3	Germany	251.81	538
4	Japan	214.49	361
5	France	127.58	307
6	China	110.03	225
7	Canada	108.50	264
8	Switzerland	84.31	203
9	Netherlands	63.88	190
10	Australia	63.63	171
11	Spain	54.71	170
12	Italy	51.34	171
13	Korea	40.99	92
14	Israel	29.60	75
15	Austria	27.29	86
16	Sweden	23.86	102
17	Belgium	23.50	92
18	Denmark	20.80	80
19	Singapore	13.43	53
20	Finland	10.98	54

NATURE PUBLISHING INDEX ASIA-PACIFIC IN GLOBAL TOP 100

2011				
RANK	INSTITUTION	COUNTRY	CORRECTED COUNT	ARTICLES
1	Harvard University	USA	129.92	291
2	Stanford University	USA	67.48	141
3	Max Planck Institutes	Germany	62.87	184
4	National Institutes of Health (NIH)	USA	58.11	212
5	The University of Tokyo	Japan	42.88	109
20	Kyoto University	Japan	23.98	56
23	Chinese Academy of Sciences (CAS)	China	22.43	62
30	RIKEN	Japan	19.96	70
35	Osaka University	Japan	17.31	48
52	Seoul National University	Korea	11.27	32
53	Tohoku University	Japan	11.01	29
64	The University of Melbourne	Australia	9.83	46
66	Nagoya University	Japan	9.67	26
71	National Institute of Advanced Industrial Science and Technology (AIST)	Japan	9.03	22
76	University of Science and Technology of China	China	8.58	17
86	The University of Queensland	Australia	7.70	34
94	Peking University	China	7.24	21
97	Australian National University	Australia	7.18	13

See page 28 for the full listing of the Nature Publishing Index Global Top 50