

APPENDIX TABLE 8-25 
Patent activity indexes for selected technologies for selected economies: 2014–16

(Patent activity index)

Technology	United States	EU	Japan	South Korea	Taiwan	China
ICT						
Basic communication processes	0.87	0.99	1.07	1.14	1.70	1.11
Computer	1.14	0.64	0.74	1.01	1.05	1.05
Digital communications	1.12	0.88	0.50	1.36	0.47	1.91
IT management	1.62	0.54	0.22	0.23	0.11	0.40
Semiconductors	0.64	0.58	1.51	2.46	3.52	1.11
Telecommunications	0.93	0.81	1.19	1.34	0.98	1.41
Testing, measuring, and control						
Analysis of biological materials	1.17	1.34	0.58	0.48	0.43	0.50
Control	1.24	0.91	0.72	0.53	0.64	0.58
Measurement	0.95	1.39	0.97	0.58	0.74	0.76
Optics	0.48	0.57	2.69	1.43	1.66	1.38
Chemistry and health						
Pharmaceuticals	1.19	1.35	0.34	0.37	0.40	0.71
Biotechnology	1.17	1.41	0.48	0.48	0.33	0.61
Basic material chemistry	0.98	1.34	1.01	0.50	0.30	0.79
Organic chemistry	0.96	1.74	0.63	0.47	0.31	1.21
Macromolecular chemistry	0.80	1.52	1.34	1.00	0.44	0.74
Chemical engineering	1.01	1.55	0.68	0.64	0.52	0.84
Medical technology	1.40	1.02	0.42	0.22	0.25	0.25
Materials and nanotechnology						
Materials and metallurgy	0.76	1.36	1.47	0.91	0.39	1.04
Microstructural and nanotechnology	0.97	0.99	0.90	1.18	1.62	1.32
Surface technology and coating	0.88	1.13	1.43	0.98	0.89	0.74



EU = European Union; ICT = information and communications technologies; IT = information technology.

Note(s)

Patents are allocated according to patent inventorship information. A patent activity index is the ratio of a country's share of a technology to its share of all patents. A patent activity index greater than 1.00 indicates that the country is relatively more concentrated in the technology area. An index less than 1.00 indicates that the economy is relatively less concentrated in the technology area. The EU includes 28 member countries. China includes Mainland China, Hong Kong, and Macau. Patents are classified under the World Intellectual Property Organization (WIPO) classification of patents, which classifies International Patent Classification (IPC) codes under 35 technical fields. IPC reformed codes take into account changes that were made to the WIPO classification in 2006 under the eighth version of the classification and were used to prepare these data. However, because PatentsView only provides the original IPC codes as they appeared on patents and not the IPC reformed codes, current Cooperative Patent Classification codes on patents were converted back to the most recent IPC classification to prepare these statistics. Fractional counts of patents were assigned to each technological field on patents to assign the proper weight of a patent to the corresponding technological fields under the classification. For instance, a patent that is classified under five different technological fields will see each of its technological fields receive a 0.2 count of the patent so that the patent accounts for a count of 1.0 across all technological fields. Patents are also fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. As such, data across regions, countries, or economies add up to the world total.

Source(s)

Science-Metrix; PatentsView and U.S. Patent and Trademark Office patent data, accessed April 2017.

Science and Engineering Indicators 2018