ASIA-PACIFIC

CHINA

Innovation Index in 2018

The China Innovation Index, the barometer of the country's innovation capability, rose at a faster pace in 2018, official data showed. The index surged 8.6 percent to 212 points last year, the highest growth rate since the calculation was introduced in 2005, according to data from the National Bureau of Statistics (NBS).

Comprising four sub-indices, the index measures the innovation environment, input, output and effects. The sub-index for the innovation environment jumped 10.9 percent to 225.8. The country raised fiscal expenditure on science and technology by 13.5 percent year on year to 951.8 billion yuan (about 134.5 billion U.S. dollars) last year and cut taxes for relevant enterprises.

The innovation input index stood at 194.1, surging 6 percent from the previous year. The research and development (R&D) intensity, or the proportion of R&D expenditure to GDP, reached 2.19 percent, 0.04 percentage points higher than the previous year. Spending per researcher on fundamental research rose 6.3 percent to 358,000 yuan in 2018, while the total R&D expenditure of enterprises reached 1.52 trillion yuan, up 11.5 percent year on year.

The innovation output saw a robust growth of 11.7 percent to 264.1. The number of domestic patents granted last year surged 37.5 percent to 2.34 million, while 346,000 were invention patents. The sub-index for the innovation effects increased 4 percent to 164.1 points last year.

One indicator of the effects relates to the sale of high-tech products. In 2018, the export of high-tech products expanded rapidly, with the trade volume up 10.8 percent to 743.04 billion dollars, accounting for 29.9 percent of the total exports of goods.

Another indicator is energy consumption as innovation promotes green development. Last year, energy consumption per unit of GDP declined 3.1 percent. The consumption of coal accounted for 59 percent, edging down 1.4 percentage points, while that of clean energy such as natural gas, hydropower and nuclear power went up 1.3 percentage points to 22.1 percent.

The index readings reflect the success of China's innovation-driven development strategy, said Deng Yongxu, an NBS chief statistician, noting that the continued improvement in the innovation capability and efficiency has refined the quality of the Chinese economy.

http://www.xinhuanet.com

Patent filings in 2018

China's intellectual property office received a record number of 1.54 million patent applications in 2018, making it the biggest filer and accounting for 46.4 % of the total patent filings globally as the country pushes ahead with a self-reliance drive in core technology. Patent filing activity in China grew by 11.6% last year and its number of filings was roughly equal to the combined total of countries ranked two through 11, as the country seeks to fend off US pressure over trade and tech.

The US came in second with 597,141 filings, followed by Japan (313,567), South Korea (209,992), and the European Patent Office (174,397), according to a report published by the World Intellectual Property Organization (WIPO).

China has three types of patent: invention, utility model, and design. There were 1.39 million domestic invention patent applications in 2018, making up about 90% of total patents filed last year, according to an annual report published by China's National Intellectual Property Administration (CNIPA) in May. Tech companies had the most invention patents granted last year, based on CNIPA's report.

Chinese telecommunication gear provider Huawei Technologies ranked No. 1 with 3,369 invention patents granted. Other tech companies in the top 10 were Chinese smartphone maker Oppo, LCD panel maker BOE Technology, appliance manufacturer Gree Electric Appliances, computer maker Lenovo Group, gaming giant Tencent Holdings, and telecom equipment maker ZTE Corp. The other two companies on the list were state-owned Sinopec and PetroChina. Although the filing numbers do not necessarily correspond with dramatic advances in innovation, the rising total indicates that the country is taking its leadership's call for greater self-sufficiency in core tech seriously.

https://www.techinasia.com

Spending on research and development

China's spending on research and development rose by 11.8 per cent last year to 1.97 trillion yuan (US$275 billion), its third consecutive double-digit annual rise, Beijing said. Businesses were the main driver of the growth, accounting for more than 77 per cent of the total, followed by the government and its affiliated bodies, and universities, according to a report published on Friday by the National Bureau of Statistics (NBS) and the ministries of finance, and science and technology.

Despite the strong headline growth figure, spending as a proportion of the country's gross domestic product – known as the "intensity" – increased only marginally in 2018, to 2.19 per cent, from 2.15 per cent a year earlier. Faced with slowing economic growth, Beijing in March set a target to increase the intensity figure to 2.5 per cent this year as it seeks to reduce its dependence on manufacturing and heavy industry, and become a centre for hi-tech under the "Made in China 2025" plan.

Spending on basic research (11.8 per cent), applied research (18.5 per cent) and experimental development (10.9 per cent) all rose significantly in 2018, the report said. On a geographical level, the provinces of Guangdong and Jiangsu topped the spending charts, followed by Beijing municipality in third.

The report said that because of its slower economic growth in the year, China's research and development (R&D) intensity figure actually rose in 2017 – to 2.13 per cent from 2.11 per cent a year earlier – but continued to lag the average (2.37 per cent) for the group's 36 member nations. Based on recent trends, "China would no longer be converging in R&D intensity with the OECD average within the next

decade," it said. Nonetheless, the country overtook the combined intensity figure for the 28 members of the European Union in 2013 and was closing in on France, it said.

https://www.scmp.com

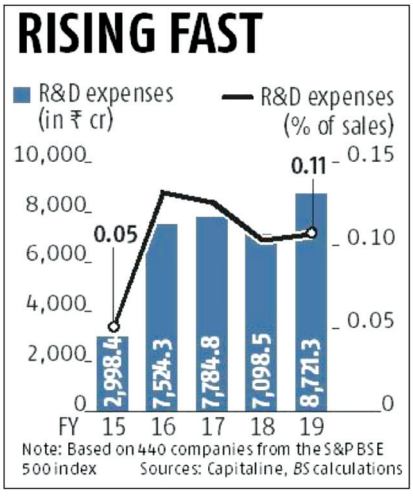
INDIA

R&D spending in FY19

Research and development (R&D) spending by India Inc increased in 2018-19 (FY19) over the previous years (led by automobile and pharmaceutical sectors). But, it was still a small percentage of the total sales. In FY19, India Inc spent Rs 8,721.3 crore under the R&D head — nearly a fifth more than the amount in 2017-18 (FY18), which was Rs 7,098.5 crore.

The details of these expenses are available in the annual reports of companies, usually published by the end of the second quarter of the next financial year. This analysis looked at 440 companies for whom the continuous data is available for the past 10 years. Even though the R&D expenditure has increased, it is still a small percentage of the total sales.

The total R&D spending is about 11 basis points (bps) as a percentage of net sales. It was 10 bps in FY18. It was about 13 basis points in FY16 and FY17 for the sample under consideration, showed the data. Also, a large part of it is driven by a single company which accounted for nearly half (48.4 per cent) of the total expenditure for the companies in the sample.



The biggest spender was Tata Motors, with Rs 4,224.6 crore assigned under the R&D head. That's about 1.4 per cent of its net sales. A lot of it is because of its foreign subsidiary.

"I'm not surprised that Tata Motors tops the charts among all the companies. It is largely due to Jaguar Land Rover. The company has been pumping large amounts into the subsidiary," said Mahantesh Sabarad, head of retail research at SBICAPS Securities.

Since acquiring JLR in 2008, Tata Motors has been incurring a capital expenditure in excess of £S2.8 billion every year (over Rs 25,000 crore at the current exchange rate). Of this, a big chunk is accounted for by R&D.

Tata Motors' focus areas include developing clean technology vehicles and implementing required safety features, as well as emission standards under Bharat Stage VI (BSVI), said the company in a response to an email.

The health care sector has been amongst the biggest spenders on R&D traditionally. The sector spent Rs 1,740 crore in FY19. Biocon is among them. It spent Rs 320.6 crore this year. It is up 67.2 per cent over the previous year. It had spent Rs 191.8 crore in FY18.

https://www.business-standard.com

INDONESIA

Regulation on R&D tax deductions

The Finance Ministry is in the process of writing up regulations for the implementation of tax deductions for research and development (R&D) and labor-intensive industries. The head of the state revenue department at the Finance Ministry's Fiscal Policy Agency, Syarif Ibrahim, said in Jakarta on Tuesday that the ministry should carefully formulate the regulations to ensure companies would not use loopholes to avoid paying taxes. "We have to be careful to avoid a moral hazard," he told the press. He expressed hope the drafting of the R&D regulation could be completed by next year. Meanwhile, a ministerial regulation on tax deductions in labor-intensive industries will also be issued by year-end.

The tax incentives, which policymakers refer to as super tax deductions, are stipulated in Government Regulation (PP) No. 45/2019 on the calculation of taxable income and income tax payments in the current year, which was issued in June, this year.

Under Article 29A of the regulation, investors who open a new business or expand their existing businesses in labor-intensive sectors are allowed to offset 60 percent of the capital they invest from their taxable net income.

Under Article 29B, companies that provide training programs, internships and/or educational activities to develop human resources in certain competencies can cut the their taxable gross income by up to 200 percent of the funds they spend on the activities.

Meanwhile, under Article 29C of the new regulation, companies that conduct R&D in Indonesia are allowed to cut their taxable income by up too 300 percent of the cost of their R&D activities. Such deductions would significantly reduce their tax payments.

https://www.thejakartapost.com

MALAYSIA

R&D investment

A joint report by Malaysia's Ministry of Education, Department of Higher Education, Elsevier, a global information analytics business specializing in science and health, and QS Quacquarelli Symonds shows that Malaysia's Gross Expenditure on Research & Development (GERD) has increased by nearly $4 billion USD to reach over $12 billion in 2018, representing 1.4 percent of the country's GDP in that year. From 2014 to 2018, Malaysian researchers produced a cumulative research output of over 150,000 publications – articles and reviews – which grew at a five-year CAGR[1] of 4.9 percent.

The volume of Malaysia's top 10 percent most-cited publications grew at an even faster pace – with a five-year CAGR of 12.7 percent – accounting for a relatively high

number of top 10 percent publications produced per million of GERD dollars. Taken together, the findings suggest that Malaysia is realizing a return-on-research investment dollars and is one of the most productive nations in comparison to five other Asian nations and territories analyzed in the report.[2]

In the QS World University Rankings (WUR), Malaysian universities have registered improvement in academic performance: one university is ranked amongst the world top 100; four amongst the top 200; and seven amongst the top 500. Overall, Malaysia's higher education institutions have shown positive trends across all indicators in the three recent editions of the QS WUR.

https://www.prnewswire.co.uk

NEPAL

National Innovation Centre inaugurated

National Innovation Centre, a centre to promote entrepreneurship among youths and carry out research and development works, commenced its official operation from Friday. Established under the initiation of Mahabir Pun, a social activist, the centre aims to help capitalise entrepreneurial ideas of youths, work in research and development activities and contribute to national economy. Pun said the centre, along with promoting entrepreneurship and innovation works in the country, will also give due priority to expanding internet services across rural parts of Nepal.

Set up at the premises of Tribhuvan University with an investment of almost Rs 80 million, the centre is currently working on 20 different projects. Pun, who is also the chairman of the centre, said he was able to establish the centre through donations and financial support from public and some foreigners.

https://thehimalayantimes.com

PAKISTAN

New startup portal

The Securities and Exchange Commission of Pakistan has launched an exclusive startup portal to encourage technology innovation in Pakistan. It was inaugurated by SECP Information System and Technology Commissioner Shauzeb Ali during the *'Startup Grind Pakistan'* conference in Islamabad, according to a press statement issued by the commission on Tuesday. The portal features a list of startups, simplified user experience for registration, access to mentors and incubation centres, online guides and video tutorials for startup companies.

"The SECP startup portal will be a gateway to information and collaboration hub, for the facilitation and uplifting of the existing and future entrepreneurs to connect and excel," Ali was quoted as saying in the press statement. It said he hoped that the portal will evolve with time as an important part of the startup ecosystem in Pakistan. A large gathering of entrepreneurs, innovators and technologists attended the conference to share their stories and inspire young entrepreneurs.

"SECP has instituted various reforms to develop a comprehensive and coherent industry policy to shape regulatory thinking and promote a conducive Fintech environment in Pakistan. This will help attract local and international innovators," the statement read. Ali spoke about the role of SECP and other public sector organisations in encouraging investment and fostering economic growth and prosperity in Pakistan.

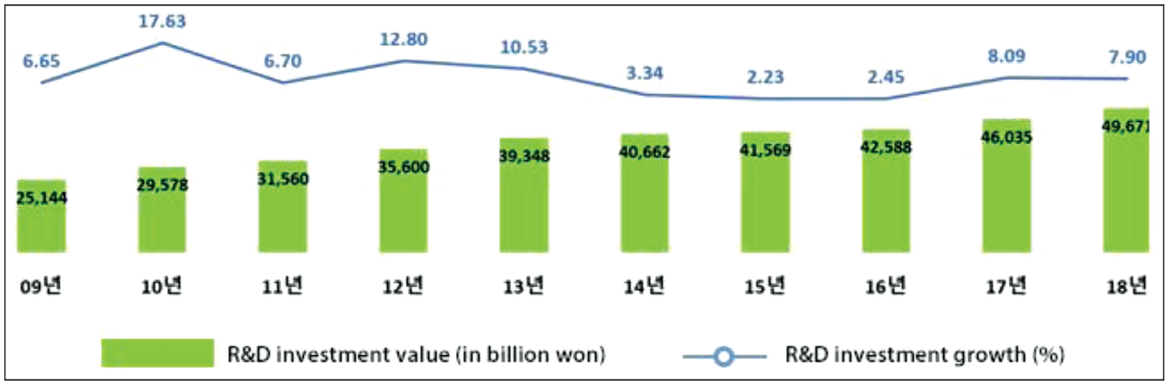
https://www.samaa.tv

REPUBLIC OF KOREA

R&D spending

Spending on research and development (R&D) by major Republic of Korean companies gained nearly 8 percent year on year in 2018, with the top eight players contributing over 60 percent of the total, a state think tank said. R&D expenditures by the country's top 1,000 companies in terms of sales came to 49.7 trillion won ($42.5 billion) last year, up 7.9 percent from the previous year, according to the Republic of Korea Institute for Advancement of Technology. The combined operating profit of the 1,000 firms reached 117.16 trillion won, up 0.1 percent from a year earlier.

The institute said R&D spending against sales by the top 1,000 businesses has steadily risen over the past decade, hitting 3.76 percent last year after surpassing 3 percent for the first time in 2013. R&D expenditures by companies with a workforce of 1,000 or more came to 42.8 trillion won, accounting for 86.3 percent



[Source: Korea Institute for Advancement of Technology]

of the total. The corresponding figure for companies with a workforce of less than 100 amounted to 614 billion won.

R&D spending by manufacturing companies, which account for 77.2 percent of the 1,000 companies, stood at 44.8 trillion won, or 90.2 percent of the total. Samsung Electronics and eight other leading companies spent more than 1 trillion on R&D and their combined R&D expenditures came to 30 trillion won, accounting for 60.4 percent of the total. Samsung was by far the largest R&D spender, followed by SK Hynix, LG Electronics, Hyundai Motor, Samsung Display, Kia Motors, LG Display and LG Chem. The country's top 100 R&D spenders invested 42 trillion won in total, accounting for 85.0 percent.

https://pulsenews.co.kr

SRI LANKA

National innovation bill

The National Innovation Agency Bill, which received House approval this week, is expected to pave the way for the private sector to support local innovation and contribute to national research. The bill provides for the establishment of the agency and incorporation to seek private sector support for innovation, to contribute to national research, and to identify barriers to innovation. The National Innovation Agency is administered by a governing council and the chairperson of the council will be the Secretary to the President.

Other members of the council include high ranking officials from the Development Strategies Ministry, Director General of the National Planning Department or his nominee, Director General of the Intellectual Property Office of Sri Lanka, representatives from the Science, Technology and Research Ministry. The council will also include a high ranking official from the International Trade Ministry and the Chairperson or his nominee of the Sri Lanka Institute of Nanotechnology.

The Governing Council will act in accordance with the directions of the President from time to time. Also, the President can make orders on matters contained in this Act. Every order will be published in the Gazette and presented to Parliament for approval within three months.

The agency will be responsible for maintaining a national innovation environment in line with the innovative entrepreneurship strategy, facilitating high technology enterprises generated by research and technology interchange, and coordinating with the private and public sector.

http://www.ft.lk

THAILAND

Innovation venture fund

Thai Union is committing US$30 million (910 million baht) to a venture fund for food tech innovations like alternative proteins, functional nutrition and value chain technology. The fund has invested in Flying Spark, an Israeli startup that makes food for human consumption out of sustainable larval insects. The company promises technology that enables easy and low-cost cultivation and processing, with almost no waste. Thai Union plans to invest further in entrepreneurs and will partner with these companies to support and accelerate their development.

Thai Union previously opened an incubator and accelerator for food tech startups called Space F alongside Thailand's National Innovation Agency and Mahidol University.

https://www.bangkokpost.com

Thailand windfarm green bond

The Asian Development Bank (ADB) will invest 3 billion Thai baht ($98.7m) in Energy Absolute's maiden green bond issuance, proceeds from which will help support the long-term financing of the company's 260 MW Hanuman windfarm in Thailand. The investment will contribute to Thailand's renewable energy objectives and its ongoing efforts to reduce carbon emissions.

The bond will have a total issuance of 10 billion Thai Baht. It will only be the second Climate Bonds Standard-certified bond issued by a Thai energy company and the first green bond for a wind power project in Thailand. Proceeds from green bonds are used to fund, in part or in full, new or existing projects that deliver environmental or climate-related benefits.

The agreement was signed in Bangkok by deputy director general of ADB's Private Sector Operations Department Mr. Christopher Thieme and Energy Absolute's deputy chief executive officer Mr. Amorn Sapthaweekul on the sidelines of a knowledge-sharing event—the Capital Market Research Forum: Development of Green Bonds in Thailand.

https://www.powerengineeringint.com

VIET NAM

2019 Global Competitive Index

Viet Nam's business environment continues to improve according to the recently released 2019 Global Competitive Report produced by the World Economic Forum. The report covers 141 countries accounting for 99 percent of global GDP. The report measures several factors and sub-factors, including institutions, infrastructure, ICT adoption, macroeconomic stability, health, skills, product market, labor market, financial system, market size, business dynamism, and innovation capability. A country's performance is rated on a progressive score on a 1-100 scale, where 100 represents the ideal state.

The report noted that despite a decade of low productivity, Vietnam with a rank of 67 improved the most globally and jumped 10 places from last year's standings. It further added that East Asia is the most competitive region in the world followed by Europe and North America. Singapore came out on top, beating the US.

Vietnam ranked best in terms of its market size and adoption of information and communications technology (ICT). Market size is defined by GDP and import of goods and services. ICT adoption is measured by the number of internet users and subscription to mobile-cellular telephones, mobile broadband, fixed internet, and fiber internet.

https://www.vietnam-briefing.com