

CHINA'S RESEARCH & DEVELOPMENT SPEND

China's investment in research and development (R&D) is second only to the United States. Here, we analyse the data to give a snapshot of how and where the money is spent. **By Xiaole Ni.**

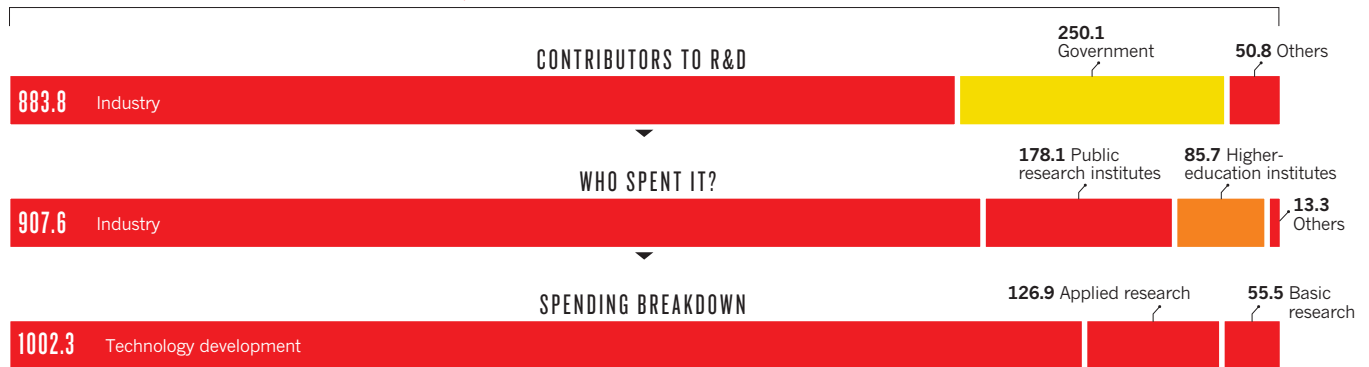
THE BROAD PERSPECTIVE

In 2013, China's R&D spending increased by 15% on 2012 — second only to the United States. Around 75% of spending is by industry, which also contributes the majority of the funds. Looking at the breakdown, the largest category of research is technology development¹. All figures are in billions of yuan.

Data are from 2013, unless indicated.

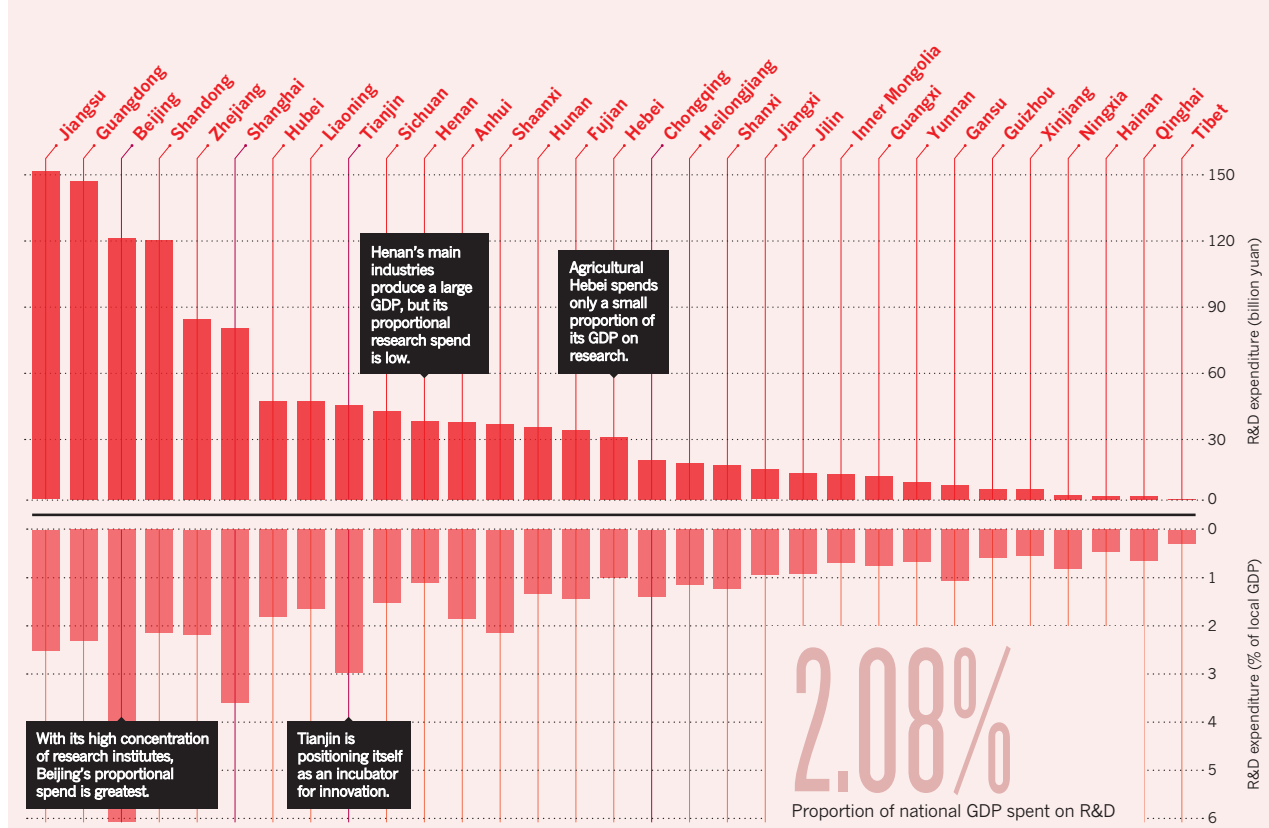
2013 conversion rate
1 yuan = US\$0.16

1,184.7 BILLION YUAN



Investment hotspots

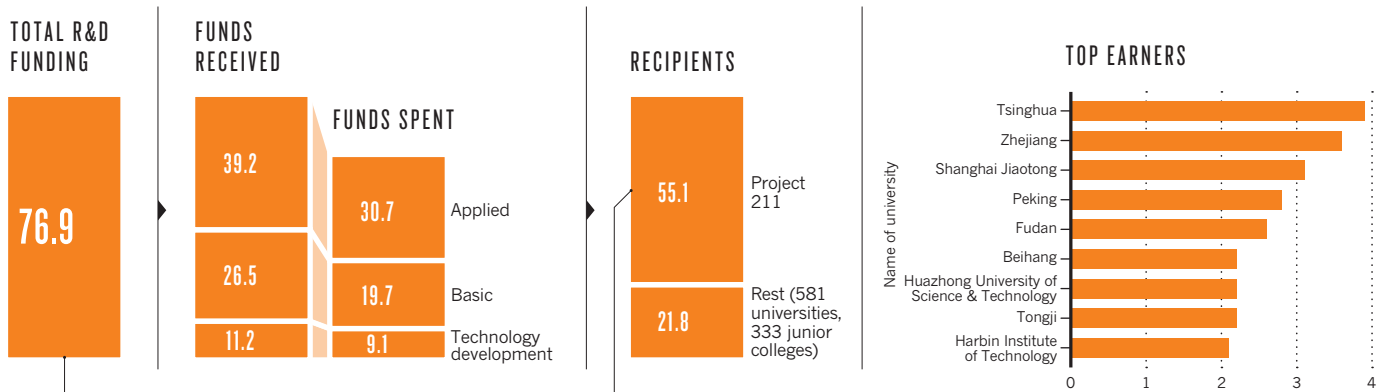
There are 31 areas under central government control that together spend mainland China's R&D budget. For some, this represents a more sizeable proportion of their local gross domestic product (GDP) than for others¹.



HIGHER-EDUCATION INSTITUTIONS

In 2012, 1,025 universities received a total of 76.9 billion yuan in R&D funding from the government, which they supplemented by raising additional money from other sources. Universities may be under the direct control of government ministries (for example agriculture, education or information) or of local government. Complicating the picture, some reports wrap R&D funding into the larger category of science and technology (S&T) funding, which totals 117 billion yuan and includes operational costs². All figures are in billions of yuan.

45% 29 universities receive nearly half of all S&T funding.

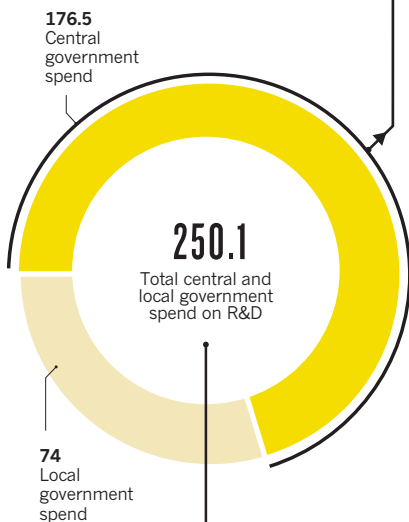


The figure of 76.9 billion yuan is from a different year to the 85.7 billion yuan in 'The broad perspective'.

China's top 111 universities are part of Project 211, a government initiative to raise research standards in its higher-education institutes. Project 211 includes a subset of 39 universities in the elite Project 985. Project 211 establishments receive the most funding; other universities receive less money and need to raise a greater proportion of funds by themselves.

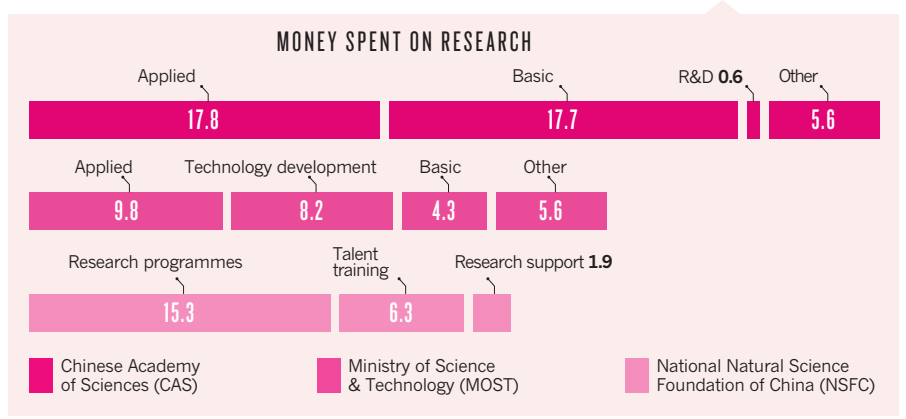
GOVERNMENT FUNDING

There are three main agencies, detailed in shaded pink bars to the centre right, that account for nearly one-third of central government R&D spend³. All figures are in billions of yuan.

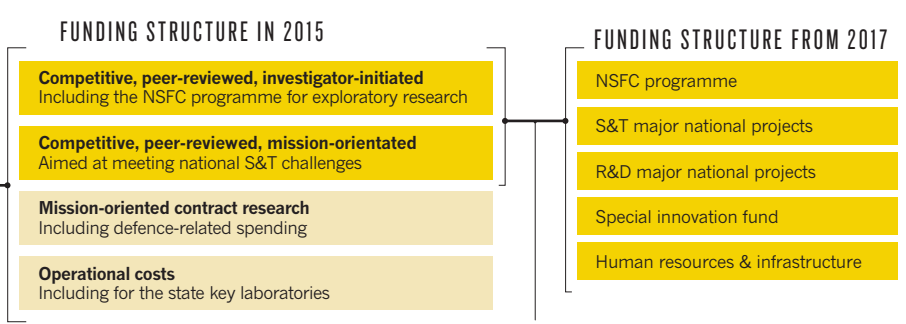


Around 70 government agencies fund R&D. Such agencies include the Ministry of Education, the Ministry of Industry and Information Technology, the Ministry of Health, the National Development and Reform Commission, and the Ministry of Defence.

Money spent by the three main agencies also includes additional non-governmental income. Amounts shown for the NSFC represent approved grant funding.



A complicated picture
There are four types of mechanism in place to allocate funding. The top two types involve around 100 competitive grant schemes that are overseen by 30 different government departments⁴.



China's government announced that by 2017, the two competitive grant categories will be modernized and managed under a new science and technology agency into five channels.

Sources: 1. National Bureau of Science and Technology of the Ministry of Finance (2013); 2. Higher Education Science and Technology statistics from the Ministry of Education (2013); 3. China's Ministry of Finance (2013); 4. Sun, Y. & Cao C. *Science* **345**, 1006-1008 (2014).