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China spending more than Europe on science and technology as GDP percentage, new figures reveal

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China has overtaken the European Union in expenditure on science and technology as a percentage of its economic output as Europe's economy stagnates, figures released by the Organisation for Economic Co-operation and Development have revealed,

The country once known as the world's factory devoted 1.98 per cent of its gross domestic product to science and technology in 2012, a 7.6 per cent increase from the previous year. The current Five Year Plan aims for an increase of expenditure to 2.2 per cent of GDP by 2015.

In comparison, the 28 member states of the European Union invested only 1.97 per cent of their joint economic output in R&D in 2012, a mere one per cent increase from a year earlier. The trend is expected to continue as the EU's economies registered zero growth in 2013 and are expected to grow by only 1.4 per cent this year, according to Eurostat.

Michael Jennings, the European Commission's spokesperson for research, told the South China Morning Post that his institution had raised the issue with member states. "The European Commission has long warned that China is catching up in terms of R&D intensity," he said.

"The EU has to increase R&D spending, in the public sector but especially in the private sector," said Jennings. "The fact that the EU-level programme for research, Horizon 2020, has received a boost of nearly 30% is a good sign," referring to the HK$840 billion research fund established in 2011.

Naubahar Sharif, a science policy expert at the University of Science and Technology, said one reason for this change was multinationals shifting research to China. “They are able to shift their R&D activities to locations such as the Chinese coastal regions where high-quality labour is more reliable, abundant, and cheaper,” he said.

As such, French car maker Peugeot opened a tech centre in Shanghai in 2008. German car maker BMW followed suit last year.

Yet, China has still much work left in increasing its R&D expenditure as it has not caught up with the EU in absolute terms.

China’s expenditure still lagged behind the European Union’s aggregate by about a third in absolute terms. The EU’s 28 countries spent a combined US$339.1 billion in 2012, whereas China only spent about US$243.4 billion, the OECD figures show.

The world’s second-largest economy also lagged behind other regional competitors in terms of how much of their GDP is spent on research.

The US, the world’s largest economy, devoted 2.8 per cent of its GDP to R&D. Japan, the world’s third-largest, devoted 3.3 per cent. South Korea topped the ranking, spending 4.4 per cent.

A study by the US-based Battelle Memorial Institute last year estimated that China’s R&D spending would increase to 2 per cent this year.

The study estimated that by 2018 China could overtake a combined pool of 34 European countries, and by 2022 it could overtake the US, which currently spends almost twice as China in absolute terms.. The two largest economies will then likely each dole out US$600 billion for science and technology, it said.

China’s next challenge was to make research more efficient, said Sharif. “China needs to be move up a level where their R&D expenditures are not only vast in terms of their numbers, but also significant in terms of their effectiveness, impact and longevity,” he said, cautioning that these were more difficult to measure.

Kieron Flanagan, a lecturer in science and technology policy at the Univeristy of Manchester, also cautioned that lower spending in R&D did not necessarily imply that Europe's economic development was bound to lag behind.

"R&D only really works as an indicator of input for manufacturing sectors. European economies are increasingly dominated by service sectors," he said.

"As China’s service sectors grow and become more innovative, you would also expect R&D to become a less useful indicator."