


China's Innovation-Driven Development Strategy and Prospects



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Recently, the key issue in China's economic development strategy has been innovation. China joined the world's top 25 most innovative countries for the first time in 2016, according to the global innovation index survey conducted by the World Intellectual Property Organization. This is the first case that a middle-income country has broken into the top 25, though the ranking is still lower than the US (4th), Germany (10th), Korea (11th) and Japan (16th). While China's innovation strategy was particularly emphasized this year, it is actually not such a recent development. Through an export-oriented policy using low-cost production factors and an investment-led strategy for industrialization and urbanization, China has grown at a CAGR of over 10% over the past three decades following the implementation of its reform and opening policy. However, as the economic downturn in the wake of the global financial crisis continued in advanced economies, important export destinations for China, and the role of investment as a growth engine became limited, China was inevitably required to shift to a new strategy for development.

Since the mid-2000s, China has begun to pursue policies aiming to improve the innovation capacity of the Chinese economy. In January 2006,

the Chinese government announced its medium- and long-term plan for science and technology development, the "National Guideline on Medium- and Long-term Plan for Science and Technology Development (2006-2020)." The plan calls for China to develop into an innovative country by achieving 60% of the contribution of science and technology to economic growth and 2.5% of R&D investment relative to GDP by 2020. It also presents three goals for developing into an innovative country: building a national innovation system; improving innovation capacity (source innovation, integration innovation, re-innovation, strategic high-tech R&D); and cultivating creative talents and improving the innovation environment. In pursuit of this policy, China successfully launched the world's fastest supercomputer, launched a lunar exploration satellite, and developed an electron linear accelerator with maximum output.

Since the mid-2000s promoted innovation policies, China has now established a certain level of foundation for innovation development. However, China is still in the mid-to-low stages of the global value chain, and although there are many key technology-related talents, such as pharmaceuticals and science and technology, the level is not so high, leading to a lack of advanced engineers and innovative entrepreneurs. Therefore, the period covered by the 13th five-year plan (2016-2020) is a crucial time for China to build a well-off society in an all-round way and enter the rank of innovative countries, and to deepen the innovation-driven development strategy and science and technology reform. So, in 2016, when the 13.5 plan begins, many innovation policies are being announced, highlighted, and pushed forward.

In the 13th Five-Year Economic and Social Development Plan, China placed the innovation-driven development strategy as a top priority and emphasized innovation as one of the five ideals, and then announced "the 13th Five-Year Plan for National Science and Technology Innovation" in August 2016. In the 13-5 Plan for Science and Technology Innovation, China has subdivided and quantified science and technology innovation targets so that it can join the ranks of the top 15 in global innovation capacity by 2020. In the plan, the concept of an innovative country is presented in terms of innovation ability, science and technology innovation, quantity and quality of innovation talents, a system favorable to innovation, innovation entrepreneurial ecosystem, with an emphasis on enhancing innovation capabilities in each field, and improving and optimizing the innovation system. According to this, China clearly outlined a future blueprint by specifying 12 target indicators such as 2.5% of R&D investment to GDP, R&D investment of 2.5 trillion yuan, and an annual R&D investment growth rate of 10.3% over 2015-2020.

In the "National Innovation-Driven Development Strategy Outline," which was also announced in 2016, innovation-driven development is defined as a synthesis of innovations such as institutional, management, business model, and culture innovation as the core of science and technology innovation, and a three-step strategy leading up to 2050 was proposed. According to this strategy, China will build a national innovation system by 2020, join the leading group of innovative countries by 2030, and grow into a world-class science and technology innovation power by 2050. The field of innovation is mainly focused on advanced digital devices, integrated circuit equipment, smart manufacturing and robots, broadband mobile communications, quantum communication, telecommunication networks, nuclear energy, water pollution treatment, genetically modified bioproducts and new drug manufacturing, key material, brain science and healthcare, med-large projects related to aviation engines and gas turbines, deep sea and space exploration, etc. It also emphasized public innovation and entrepreneurship so that the actors of innovation can be expanded from the small number of elites such as scientists to general companies and the public.

In fact, China has actively supported the start-up of businesses since 2015, giving rise to an unprecedented start-up boom. By 2018, China will establish innovation-startup demonstration bases, university innovation demonstration bases, and enterprise innovation demonstration bases in 17 cities, and set up development models in accordance with local situations, to be expanded nationwide later on. Local governments are also actively working to improve start-up support policies and foster the entrepreneurial ecosystems, as well as seeking to attract innovative talent, which is essential for enhancing innovation capability. All this is being carried out while at the same time pursuing innovative development plans that match local characteristics, such as key industry and natural resources.

In addition, with the aim of bringing change to the reluctance of China's executives and public officials to pursue innovation policies due to fear of innovation failure, China has selected six pilot cities to implement a system that allows mistakes in trial and error to improve the ability of the party executive to plan, implement and promote reform and innovation. Xi Jinping emphasized the importance of encouraging innovation and taking initiative, accepting mistakes in trial and error, and tolerating failures.

In the future, China will seek new and dynamic competitive advantages based on the enhancement of production quality and differentiation through innovation, in order to maintain the international competitiveness of the Chinese economy and to reduce energy, raw material con-

sumption and environmental destruction. In particular, China will seek to emerge as an innovation power centered on manufacturing innovation, based on scientific and technological innovation. Of course, the recent series of innovation policies in China can be successful only when the innovation policy and legal system in each field are realized, the input mechanism for science and technology innovation is more complete, and the promotion and management of the plan are further strengthened. In the course of these innovations, China will be inevitably involved in various forms of foreign cooperation in terms of intellectual property protection, financial innovation, professional talent supply, and enterprise management. Therefore, we should pay attention to the future direction of China's innovation strategy and the related implementation process. 