

New Quality Productivity and Chinese Modernization

-- Analysis based on the Perspective of Scientific and Technological Innovation

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ABSTRACT

New quality productivity is an advanced productivity quality that conforms to the new development concept and has the characteristics of high technology, high efficiency, and high quality. On the new journey of promoting high-quality development of Chinese modernization, we must accelerate the release of innovation momentum, insist on leading development with scientific and technological innovation, and promote the construction of a strong country and national rejuvenation with the development of the aerospace industry. New productivity has important contemporary value and practical significance for empowering commercial aerospace and low-altitude economy, vigorously promoting the spirit of aeronautical patriotism and the spirit of the manned space program, and promoting the high-quality development of Chinese modernization through self-reliance and self-reliance in high-level aerospace science and technology. Under the background of increasingly fierce global scientific and technological competition, China needs to follow the law of the formation and development of productive forces, explore the development path of new quality productive forces, and strengthen the innovative quality of Chinese modernization.

KEYWORDS

New Productivity; Chinese Modernization; Scientific and Technological Innovation; The Spirit of Aeronautical Patriotism; The Spirit of the Manned Space Program.

1. INTRODUCTION

The report to the 20th Communist Party of China (CPC) National Congress made important arrangements for accelerating the implementation of the innovation-driven development strategy and emphasized the importance of "accelerating the realization of high-level scientific and technological self-reliance"[1]. In December 2023, the Central Economic Work Conference further emphasized the promotion of industrial innovation by scientific and technological innovation, with particular emphasis on the promotion of new industries, new models and new kinetic energy by subversive technologies and cutting-edge technologies to develop new quality productivity. New quality productivity involves new fields and high technology content, so we must speed up the release of innovation kinetic energy and adhere to scientific and technological innovation to lead development. New productivity has important contemporary value and practical significance for empowering commercial aerospace and low-altitude economy, vigorously promoting the spirit of aeronautical patriotism and the spirit of the manned space program, and promoting the high-quality development

of Chinese modernization through self-reliance and self-reliance in high-level aerospace science and technology.

2. THE ERA CONNOTATION OF NEW QUALITY PRODUCTIVITY UNDER THE BACKGROUND OF SCIENTIFIC AND TECHNOLOGICAL INNOVATION

Scientific and technological innovation is the core element of developing new quality productivity. In September 2023, when General Secretary Xi Jinping visited Northeast China, he pointed out that "we will actively cultivate strategic emerging industries such as new energy, new materials, advanced manufacturing, electronic information, etc., and future industries, so as to accelerate the formation of new qualitative productive forces and enhance the new kinetic energy for development"[2].

The new quality productivity is pleased with the new emphasis on quality, focusing on intensive development, it is not the main pursuit of quantitative growth, but the quality of the modern economic system to improve. Effective quantitative growth will be achieved in the context of substantial qualitative improvement, which will be manifested in the development of new technologies, new forms of business and new modes of operation, as reflected in the following aspects. First, innovation-driven. That is to say, to create and improve the institutional environment and mechanisms conducive to innovation, to promote cross-field and cross-industry collaborative innovation, to break through a number of key technologies in key areas, to promote the digitalisation, networking and intelligence of the manufacturing industry, and to take the innovation-driven path of development. Secondly, quality is a priority. Adhere to quality as the lifeline of high-quality development, and take the road of quality-based development. Third, structural optimisation. Vigorously develop advanced manufacturing industries, transform and upgrade traditional industries, and promote the transformation of production-oriented manufacturing to service-oriented manufacturing. Optimise the spatial layout of industries, cultivate a number of industrial clusters and enterprise groups with core competitiveness, and take the development path of improving quality and efficiency. Fourth, green development. Vigorously develop the circular economy, improve the efficiency of resource recycling, build a green manufacturing system and take the road of ecological and civilised development. The development of new quality productive forces should be both independent and open. As General Secretary Xi Jinping said, "We have no other choice but to take the road of independent innovation" "Independent innovation is the road we must take to climb the world's scientific and technological peaks" "Accelerating the realisation of high-level scientific and technological self-reliance and self-reliance is the road we must take to promote high-quality development"[3].

Chinese modernization is inseparable from high-level science and technology. We must unwaveringly adhere to the core position of scientific and technological innovation in the overall situation of China's modernization drive, take the national strategic needs as the guide, gather strength to carry out original and leading scientific and technological research, and resolutely win the tough battle of key core technologies. Aerospace practice is a powerful engine to promote high-tech innovation and development, which is of great strategic significance for safeguarding China's aviation national defense security, enhancing comprehensive national strength and promoting social and economic development. On the new journey, we should focus on cultivating new quality productivity, focus on aerospace science and technology innovation, and write a new chapter of Chinese modernization with high-level aerospace science and technology.

3. THE GREAT SIGNIFICANCE OF NEW QUALITY PRODUCTIVITY EMPOWERING COMMERCIAL AEROSPACE AND LOW-ALTITUDE ECONOMY

The Central Economic Work Conference held at the end of 2023 explicitly proposed the creation of a number of strategic emerging industries such as bio-manufacturing, commercial aerospace, and low-altitude economy. The 2024 government work report also mentioned that it is necessary to actively cultivate emerging industries and future industries, and actively create new growth engines such as bio-manufacturing, commercial aerospace and low-altitude economy[4]. This fully demonstrates that commercial aerospace and low-altitude economy are key components of the country's development of new quality productivity.

Commercial aerospace refers to participation in the development of the space industry through commercial operation under the principle of marketisation and the exploration of new mechanisms for the marketisation and commercialisation of national civil space infrastructure. In recent years, China's commercial aerospace has shifted from its infancy to a period of rapid development, becoming an important supplement to China's aerospace endeavours and injecting new kinetic energy into accelerating the development of new qualitative productivity. The low-altitude economy is based on low-altitude airspace, led by the general aviation industry, with all kinds of low-altitude flight activities of manned and unmanned aerial vehicles as the traction, radiating and driving the integrated development of related fields, and can be deeply integrated with the primary, secondary and tertiary industries, with traditional connotations and emerging connotations, and has become an emerging economic form of the in-depth integration of the aerial vehicles and various industries. According to the data, the size of the national low-altitude economy market will be about 2.3 trillion yuan in 2022, and the market is expected to reach 5 trillion yuan in 2025.

A great cause breeds a great spirit, and a great spirit leads to a great cause. The spirit of aeronautical patriotism and the spirit of manned space program are the valuable spiritual wealth created by the CPC in unity and leadership of the majority of aerospace people in the great practice of aerospace, and they are the powerful spiritual impetus for building an aerospace power in the new era, advancing the self-reliance of the Chinese culture, and realising the great rejuvenation of the Chinese nation and the Chinese dream. The new quality productivity is an advanced quality of productive forces in line with the new development concept, with high-tech, high-efficiency and high-quality features, which gives the spirit of serving the nation by aviation and the spirit of human spaceflight new elements, new connotations and new qualities in keeping with the times, and is of great significance for vigorously carrying forward the spirit of aeronautical patriotism and the spirit of the manned space program in the new era. At the same time, the inheritance and development of the spirit of aeronautical patriotism and the spirit of manned space program can in turn promote the high-quality development of the new quality productivity.

4. THE GREAT SIGNIFICANCE OF NEW QUALITY PRODUCTIVITY EMPOWERING COMMERCIAL AEROSPACE AND LOW-ALTITUDE ECONOMY

General Secretary Xi Jinping attaches great importance to innovation in defence science and technology, calling for selecting breakthroughs, laying out ahead of time, strengthening forward-looking, pioneering and exploratory research on major technologies and new concepts, actively seeking competitive advantages in military technology, and increasing the contribution of innovation to the growth of combat power.

Aerospace is an important symbol to measure a country's innovation ability, national defense strength and comprehensive national strength. Realizing high-level scientific and technological self-reliance

in aerospace is the key link to promote the high-quality development of Chinese modernization. Meanwhile, the spirit of aeronautical patriotism and the spirit of the manned space program fully embrace the national spirit with patriotism at its core and the spirit of the times with reform and innovation at its core, and are an important part of the Great National Spirit and the spiritual genealogy of the Chinese Communist Party, as well as inexhaustible impetus to promote the high-quality development of Chinese modernization.

Aviation and space are inextricably linked and complementary. Aviation industry is an engineering technology field with modern science and technology, which is reflected in the promotion and integration of modern science and the pilot and application of high and new technology. On the one hand, its development progress depends on a strong industrial base and advanced science and technology; on the other hand, the demand for aviation science and technology innovation will form an overall pull on the national scientific and technological and industrial system, and every major aviation project development requires the breakthrough of hundreds of key technologies, the formation of a large batch of leading innovations, and outward spillover and radiation. Moreover, the aerospace industry plays an irreplaceable role in supporting the construction of an innovative country and the fulfilment of the second hundred-year goal. In March 2024, the name of the new vehicle for China's manned lunar exploration mission was formally determined, and the new-generation manned spacecraft was named "Mengzhou", implying that manned lunar exploration carries the Chinese people's dream of spaceflight and opens up a new journey of space exploration; The lunar lander is named "Range Moon", which is taken from Chairman Mao's poem "You can go up to the nine heavens to catch the moon", highlighting the Chinese people's boldness and confidence in exploring the universe and landing on the moon. Previously, the new-generation manned launch vehicle had been named "Long March 10". This fully demonstrates that China's aerospace industry has distinctive Chinese, contemporary and cultural characteristics.

5. CONCLUSION

The construction of a strong aerospace nation in the new era should adhere to and strengthen the overall leadership of the Party, take scientific and technological innovation as its main focus, continue to implement the strategy of innovation-driven development, make great efforts to develop new productive forces; build a high-level scientific and technological innovation system and a team of scientific and technological researchers, and strengthen the innovation foundation for the modern and high-quality development of Chinese modernization; actively developing commercial aviation and low-altitude economy with Chinese characteristics, establishing and perfecting the economic model and industrial scale of integrated aerospace development, and accelerating the formation of new productive forces in the aerospace industry; vigorously carry forward the spirit of aeronautical patriotism and the spirit of the manned space program, and contribute the strong spiritual power of the aerospace industry to the high-quality development of Chinese modernization.

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