

The Promotion of Artificial Intelligence and the Formation of New Quality Productivity

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Abstract. In the era of the digital economy, the development of artificial intelligence and new productivity have played an important role in promoting macroeconomics. Firstly, this paper introduces the related policies and literature review of artificial intelligence promotion and the formation of new quality productivity, then analyzes the development status and existing problems of artificial intelligence promotion and new quality productivity, and finally puts forward some countermeasures and suggestions on artificial intelligence promotion, including clarifying the independent technical route of artificial intelligence industry in China, intensively building computing centers and opening data sets, promoting industrial application based on the independent technical route of artificial intelligence in China, and paying attention to the cultivation of talents; The countermeasures and suggestions on cultivating new quality productivity include accelerating the emergence of cutting-edge technologies and disruptive technologies, fully releasing the potential of data elements, and building a new quality productivity realization mechanism with deep integration of science and technology, industry and finance.

Keywords: Artificial Intelligence; New Quality Productivity; Realization Mechanism.

1. Introduction

The National Network Information Office, in collaboration with the National Development and Reform Commission, the Ministry of Education, the Ministry of Science and Technology, the Ministry of Industry and Information Technology, the Ministry of Public Security, and the State Administration of Radio, Film, and Television, released the Interim Measures for the Management of Generative Artificial Intelligence Services in July 2023. This document outlines the principles that the state should uphold, promoting innovation and development at the same time as enforcing legal regulations. The "Several Measures for Promoting the Innovation and Development of General Artificial Intelligence in Beijing (2023-2025)," jointly released by the Beijing Municipal Science and Technology Commission, Zhongguancun Management Committee, Beijing Economic and Information Bureau, and Beijing Municipal Development and Reform Commission in May 2023, played a significant role in advancing the field of general artificial intelligence in Beijing, allowing the government's guiding role and innovation platforms' catalytic role full play.

In September 2023, while on an inspection mission in Heilongjiang, General Secretary Xi Jinping made a point about the need to integrate resources for scientific and technological innovation, take the lead in developing future industries and strategically important emerging industries, and quicken the formation of new high-quality productivity. General Secretary Xi Jinping methodically explained the evolution of new quality productivity, pointing out that "high-quality development needs the guidance of new productivity theory, and the new quality productivity has been formed in practice and demonstrated its strong driving force and supporting force for high-quality development" on January 31, 2024, when he oversaw the eleventh collective study in the Political Bureau of the Central Committee of the Communist Party of China (CPC). Innovation is fueled by new-quality productivity. It deviates from the traditional patterns of economic growth and productivity development, which are characterized by high levels of efficiency, quality, and technology, and is compatible with new advancements. As per the previously indicated analysis, the Chinese government has introduced several relevant regulations to facilitate artificial intelligence and generate new, superior production. These laws provide a supportive legislative framework for the development of these two disciplines.

Based on the foregoing analysis, this paper first explains the literature review on the development of new quality productivity and artificial intelligence. It then examines the issues that exist and the

state of these fields' advancement. Finally, it offers some solutions and recommendations for advancing these fields' advancement, with the goal of offering theoretical support for the relevant management departments' policy implementation.

2. Literature Review

1. Analysis of the development status of artificial intelligence.

There is no general consensus on the definition of artificial intelligence in academic circles. According to different research fields and research directions, scholars have different understandings of artificial intelligence. The father of artificial intelligence, John McCarthy, famously stated: A machine that makes intelligence, especially the program that makes artificial intelligence, is the essence of artificial intelligence, that is, "study how to make a computer and program it so that it can do what the mind can do" (Margaret, 2006). It is not only a technical tool to help or replace human thinking (Richard, 2018), but it can also be called "adaptive machine learning." Its design concept is to enable computer systems to master intelligent behaviors by mining, refining, and analyzing a large amount of data (Hector, 2018), and it is a machine that can complete tasks that humans need intelligence to complete (Scherer, 2016). Weak artificial intelligence, strong artificial intelligence, and super artificial intelligence are the three stages that often make up artificial intelligence, depending on its distinction and function. Specifically, weak artificial intelligence is only an auxiliary tool to help human beings with mechanical and logical programs, which are beneficial and harmless to human beings. Such as: virtual personal assistant Siri, government hall robot, online customer service, driverless car, etc. Strong artificial intelligence is similar to human thinking and reasoning abilities. It is not only a tool to study human thinking but also thinking itself, as long as it runs appropriate programs. Super artificial intelligence surpasses the human brain's intellect in nearly every domain, such as social skills, knowledge acquisition, and technical innovation. Super artificial intelligence has outperformed humans in many areas, with the exception of some human traits, which allow it to potentially manipulate people more, put them at risk in social situations, or even kill them. Evidently, artificial intelligence is a technical science that studies, creates, and applies to mimic, expand, and grow the theories, practices, technologies, and application systems of human intelligence (Liu, 2016). It creates a computing system with thinking functions like sensing, reasoning, learning, and decision-making based on contemporary algorithms and huge historical data. It can also carry out related behaviors in accordance with certain goals (Jia, 2017). It is not only the product of artificial creation but also has the dual characteristics of naturalness and artificiality. It relies on various algorithms to simulate and surpass people, and it also has measurable value forms such as politics, economy, society, and culture (Wang, 2019). From this point of view, the essence of artificial intelligence is a complex discipline covering computer science, mathematical science, neuroscience, biology, and philosophy. It is the intelligence expressed by the system manufactured by human beings through certain programming language designs that can make independent and effective responses according to the surrounding environment. With the continuous updating and iteration of intelligent technology, artificial intelligence will gradually move from low-order to high-order or even higher-order. It is not a technological revolution that is gratifying to mankind, but it may be a "technological disaster" that human beings have never imagined. It is undeniable that the essence of artificial intelligence is not only an "angel" that may extend human wisdom but also make due contributions to improving human production efficiency, improving human lifestyle, and enriching human thinking patterns. It may also be a "demon" to replace and even destroy human beings, which will bring risks to human social equity, social relations, and social security.

2. Analysis of the development status of the formation of new quality productivity

Accelerating the formation of new quality productive forces is an important material basis for creating a new form of human civilization. Xi Jinping (2021) emphasized that "those countries that seize the opportunity of the scientific and technological revolution to become world powers are all leading countries in important scientific and technological fields." A strong material base and a robust

economic framework are essential to civilization's existence and advancement. The key factor accelerating civilization's evolution is scientific and technological innovation and the resulting shift in the mode of production. In the digital age, the involvement of data elements has brought about new chemical fission reactions in traditional production factors such as labor, capital, and energy, which has completely changed the way information processing, storage, and dissemination, spawned new business models and market structures, and caused subversive effects on traditional business and economic activities, providing a rare "window of opportunity" for China's scientific and technological innovation to catch up with advanced countries' technologies (Zhou Heyang, 2024).

All previous scientific and technological revolutions will not only provide a window of opportunity for late-developing countries to achieve "catch-up," but also accelerate the expansion of the gap between countries. The nation that leads in the creation of novel, important, and disruptive technologies as well as the realization of the swift growth of productive forces will be able to go ahead with new advantages and take the strategic initiative in a new phase of global development. Matt (2021) asserts that "the engine of innovation in China has been ignited," but "the ability of Western economies to generate innovation has weakened." In the digital era, China has essentially created a comprehensive, distinctive, and professional multi-level industrial Internet platform system through the efficient use of digital technology and data resources. As a result, new scenes have emerged, including sharing manufacturing, digital workshops, smart factories, and virtual verification. It may more flexibly encourage the high-quality development of the real economy with constant innovation in the face of internal and external environmental changes, market shocks, and technological innovation, thereby offering a strong material foundation for the creation of a new type of human civilization.

3. The Status Quo and Problem Analysis of Artificial Intelligence Promotion and New Quality Productivity

1. Development status and problem analysis of artificial intelligence promotion.

(1) Analysis of the development status of artificial intelligence.

The digital economy is expanding at a rate never seen before, affecting many sectors and having a profound impact. The rapid growth of new platforms, formats, and technologies like 5G, AI, and smart cities has a significant impact on industrial restructuring, scientific and technological innovation globally, as well as economic and social development. China's artificial intelligence industry has maintained a high-speed development trend, driven by policy, technology, market, and other variables; its applications in many areas are at the forefront of the global arena. With the help of fundamental software, application scenarios, and artificial intelligence core technology, it has steadily developed into a comparatively flawless industrial system. As a result, several exceptional businesses with global competitiveness have surfaced. The field of artificial intelligence development has entered a dynamic phase with promising market opportunities.

In the age of the digital economy, artificial intelligence (AI) is now a major factor in fostering the development of new, high-quality output. AI technology is widely used in the manufacturing, service, and information technology sectors. It not only streamlines production, increases productivity, and improves product quality, but it also greatly enhances the customer experience and service quality through targeted marketing, intelligent customer support, and personalized recommendations. Furthermore, AI has strongly backed the quick iteration of new goods and services and encouraged the innovation and growth of the information technology sector. However, issues like data privacy protection, skill scarcity, and laws and regulations come with the increasing use of AI. In the future, artificial intelligence (AI) technology is expected to advance more and find more applications, which will lead to its becoming increasingly significant in fostering the creation of new high-quality output. Consequently, in order to give strong support for AI technology creation and application, the government and businesses must boost their cooperation, enhance the legal system, and ensure the healthy growth of technology. They also need to strengthen people's training.

(2) Analysis of the existing problems of artificial intelligence promotion.

Practically speaking, there are still a lot of obstacles that China's artificial intelligence sector must overcome, one of which is the rather outdated nature of the underlying technology. The term "artificial intelligence root technology" refers to fundamental studies and important technological advancements that can facilitate the growth of AI technology and its offshoots. In the event that China's artificial intelligence root technology fails to make significant progress, it will pose a challenge to compete with a select group of first-movers in the industry, who have established economies, sizable markets, and a large user base. In order to achieve this, we should enact comprehensive policies, plan ahead, take full advantage of our advantages, encourage the advancement of artificial intelligence's foundational technologies, construct a sophisticated infrastructure for AI, hasten the deep integration of AI with industry, develop multi-level talent, and make sure China consistently holds the top spot in medium- and long-term international competition. In addition, there are four problems in the development of artificial intelligence technology in China:

First, there is a dearth of elite talent in artificial intelligence. The lack of local talent, particularly top talent, severely hinders the advancement of artificial intelligence technology. In comparison, the United States has a greater pool of talent in the fields of artificial intelligence and frontier technology. The US sanctions have a detrimental effect on the introduction of talent, and businesses have challenges when trying to hire top-tier AI talent abroad.

Second, domestic progress in the construction of high-quality data sets lags behind overseas. There is more high-quality data accumulated overseas, and many organizations cooperate to build open and available data sets. At present, algorithms, data, and computing power are the three major elements of the current development of artificial intelligence technology, and the challenge of developing artificial intelligence technology in China is closely related to the supply of these three major elements. For example, an artificial intelligence algorithm consumes a lot of computing power, especially for large models with massive parameters; the training cost is millions of dollars; and the cost bottleneck prevents SMEs from participating in the competition.

Third, the underlying technical facilities are insufficient. Overseas, infrastructure such as the artificial intelligence computing platform, artificial intelligence model development tools, and the basic artificial intelligence open platform are actively built so that more researchers and enterprises can invest in cutting-edge technology research and development of large models, the landing of technology industries, and accelerate the process of technological development.

Fourth, the United States has curbed the development of artificial intelligence technology. The sanctions imposed by the United States on China's artificial intelligence enterprises have a direct impact on supply chain stability, international business development, talent exchange and cooperation, investment, and financing. It reduces the leading edge of the enterprise and its contribution to other scientific and technological fields.

2. Analysis of the development status and problems of new quality productivity

(1) Analysis of the development status of new quality productivity

General Secretary Xi Jinping held a symposium in September 2023 on advancing the all-encompassing rejuvenation of Northeast China in the new age. This was part of his tour to Heilongjiang. He covered a number of topics in his lecture, such as the necessity of combining scientific and technological innovation resources, steering the growth of future sectors and strategically significant emerging industries, and quickening the creation of new, high-quality productivity. The Central Economic Work Conference, which took place on December 11–12, 2023, stressed the importance of using technological innovation to foster industrial innovation. In particular, disruptive and cutting-edge technology can foster the development of new models, industries, kinetic energy, and high-quality productivity. The Chinese government's 2024 work report put out the following recommendation: "Vigorously promote the construction of a modern industrial system and accelerate the development of new quality productive forces." High technology, high efficiency, and high-quality productivity that deviate from the conventional productivity development path and economic growth mode and adhere to the new development concept is known as new-quality

productivity. It originated with the revolutionary technological breakthrough, the creative distribution of production factors, and the profound modernization and upgradation of industries. The core symbol is the significant increase in total factor productivity, while the basic meaning is the jump in laborers, labor materials, labor objects, and their optimum combinations. Its traits include innovation, superior quality is crucial, and enhanced productivity is fundamental. High technology, high efficiency, and high-quality productivity that deviates from the conventional productivity development path and economic growth mode and adheres to the new development concept are known as new-quality productivity. Currently, high-quality development is strongly encouraged and driven by the new quality productivity that has emerged in practice. Innovation in science and technology has the power to create new models, industries, and kinetic energy—all of which are essential for creating new, high-quality production. In order to create new quality productivity, we must develop new kinetic energy, establish a strong foundation for crucial core technologies, promote the emergence of disruptive and creative scientific and technological innovations, and hasten the realization of advanced technological and scientific self-reliance. Additionally, we must support innovation in science and technology, especially when it comes to creative and unconventional science and technology.

China's Ministry of Industry and Information Technology statistics indicate that new quality productivity has emerged in practice and has demonstrated a powerful impetus and backing for the development of high quality. The added value of high-tech manufacturing above authorized size grew by 7.5% annually in January–February 2024, with three consecutive months of acceleration in this trend. New kinetic energy and new advantages were continuously cultivated and expanded, which injected a strong impetus into economic development. In January and February of 2024, the output of smartphones, EMUs, and other products achieved rapid growth. From the perspective of different industries, a new generation of information technology—intelligent networked cars, aerospace, bio-manufacturing, and other emerging industries—has developed healthily and orderly. The Ministry of Industry and Information Technology will gradually advance the development of infrastructure such as 5G and processing power to support the widespread application of industrial Internet. Currently, the industrial sector is heavily promoting the use of 5G. Simultaneously, we will persist in advocating for the digital revolution of the manufacturing sector, proactively constructing smart factories, executing the targeted initiative of digital empowerment for small and medium-sized businesses, quickening the advancement of digital technology, and advancing the manufacturing sector towards digitalization, networking, and intelligence.

China is simultaneously making plans for the future in order to establish new industries. In January 2024, the Ministry of Industry and Information Technology, in collaboration with six departments, released "Implementation Opinions on Promoting Future Industrial Innovation and Development" with the aim of reinforcing forward-looking planning and policy guidance for future industries. This will also expedite the development of future industries surrounding the manufacturing owners' battlefield. The opinions were considered pertinent to support policies in this regard.

According to the "Research on New Quality Productivity Index (2012–2022)" published by Southwestern University of Finance and Economics, the provincial new quality productivity index in China showed a trend of rapid growth in 2012–2022. At the same time, there are differences in new quality productivity levels in different regions.

The data shows that in 2022, China's provincial average new quality productivity level will be about 2.5 times that of 2012. By stages, the growth rate in 2017–2022 is faster than that in 2012–2017, which shows that the endogenous motivation for cultivating new quality productivity in China is constantly increasing. Judging from the growth of various components, the growth of the science and technology index is the fastest, and the role of innovation is growing.

Regionally speaking, the eastern region has the highest level of new quality productivity, followed by the central region; the western and northeastern regions have very low levels. Because of its geographic location and sound economic foundation, the eastern region can start and accelerate the development of new quality productivity more quickly. The central region's ongoing traditional

industry transformation and upgrading has given rise to an increasingly solid industrial base for the development of new quality productivity. On the other hand, there is still plenty of room for development in the western and northeastern regions. The eastern, central, western, and northeastern regions have different resource endowments. It is necessary to cultivate new quality productivity according to local conditions and accelerate the release of new kinetic energy for high-quality development.

In terms of regional development, the Yangtze River Delta region in China has the highest degree of regional integration, the best foundation, and the earliest start. With increasingly active collaborative innovation, more solid industrial cooperation, and accelerating the infrastructure of China Unicom, the cultivation foundation of new quality productivity has been continuously built, so it has always maintained the highest level of new quality productivity and a higher growth rate. The Beijing-Tianjin-Hebei region has accelerated the new quality productivity industrial chain's layout in recent years, bolstered unconventional and subversive scientific and technological innovation, and consistently raised the supply chain's resilience and safety level. Its new productivity of high quality has grown extremely quickly. China's Yangtze River Economic Belt serves as a significant hub for research and production, continuously fostering the growth of powerful and competitive contemporary industrial clusters. The transition of old industries into digital, intelligent, and environmentally friendly sectors offers fundamental industrial support for the growth of future and strategically important industries. With a new productivity growth model that leverages the advantageous conditions of coastal opening and fortifies the mechanism of cross-regional collaboration, the Pan-Pearl River Delta region is highly competitive.

Taking Guangdong Province as an example, by the end of 2023, Guangdong Province had cultivated a total of 1,525 "little giant" enterprises with special skills, which promoted the formation of a coordinated, efficient, integrated, and smooth development ecology, laying the foundation for the future advanced manufacturing map of Guangdong Province. The regional characteristics of strategic emerging industrial clusters in Guangdong Province are obvious, and the scale of strategic emerging industries is growing. A "stabilizer" made in Guangdong, the added value of Guangdong Province's twenty strategically important emerging industrial clusters grew by 5.2% annually in 2023 and contributed 40% of the province's GDP. Guangdong has additionally strengthened important core technology research, taken control of high-end links in the industrial value chain, and worked in the fields of biomedicine, high-end equipment production, and artificial intelligence. A few sectors of the economy that are linked to new-quality productivity are the most competitive in the nation.

(2) Analysis of the existing problems of new quality productivity

The path toward advanced productivity is represented by new-quality productivity, which is an advanced productivity quality that results from deep industry upgrading and transformation, inventive factor allocation, and revolutionary technical breakthroughs. A prerequisite and crucial assurance for the emergence of fresh creative energies is safety. New technology, new industries, and new domains are all involved in the development of new quality productivity. These new components frequently come with significant risk sources that are harder to prevent and regulate since they are more intricate, necessitating a higher degree of safety governance capability. Safe development is especially important when creating new, high-quality production forces in a forceful manner. Ensuring safe development is the foundation for promoting high-quality productivity in a healthy and seamless manner. When combined, superimposed, or coupled with natural systems (geography and meteorology) and social factors, the rapidly emerging new technologies, new kinetic energy, and new formats will unavoidably form a risk source with more extraordinary states, more diverse factors, and more complex systems, which will lead to more uncertain major accidents and disasters. In particular, China faces the following challenges as it attempts to create new, high-caliber labor forces:

First of all, there is a lack of a fully developed institutional system to guarantee the emergence of fresh, high-quality productive forces. Marxism places a strong emphasis on the idea that production relations are determined by productive forces, which in turn affect production relations. Production relations, therefore, have to adjust to the demands of productive forces for development. China's

innovation, education, and talent systems still need improvement; the market economy system is not yet ideal; and the production relations necessary to foster the emergence of new, high-caliber productive forces are still lacking. Therefore, the main issue to speed up the development of new-quality productivity is how to further deepen the reform, break the traditional concept of bondage and interest solidification patterns, and allow all types of high-quality production factors to flow smoothly and be efficiently allocated to the development of new-quality productivity.

Second, there is still not enough energy to propel the creation of new, high-quality productivity. China's innovative development has entered a leap period and shifted from quantitative growth to qualitative improvement in recent years. The overall effectiveness of innovation-driven development is low, and there are still issues like a lack of cutting-edge technical expertise, inadequate original innovation, and deficiencies in basic research. China's high-tech manufacturing sector spent 650.7 billion yuan on research and development in 2022, making up just 21.07% of the country's total R&D spending. China's investment in high-tech research and basic science is still low; in 2023, R&D expenditure for basic research amounted to 221.2 billion yuan, or only 6.65% of total social R&D expenditure. Furthermore, in 2022, China will employ 6.35 million full-time equivalents to work in research and development. Of these, only 8.03% will be employed full-time in basic research, while 19.69% will be employed in high-tech manufacturing. It is evident that China lacks creative skills in both high technology and basic science. The main challenge in accelerating the development of new quality productivity is figuring out how to support innovative and cutting-edge scientific and technological research, develop highly skilled innovators in fundamental research, and create a strong innovation momentum for the formation and development of new quality productivity.

Lastly, there is insufficient soundness in the industrial system that promotes the creation of new, high-quality productive forces. China has currently established a vast, all-encompassing, and competitive industrial system. From 20.9 trillion yuan in 2012 to 39.9 trillion yuan in 2023, the industrial added value has grown, making up around 30% of the total worldwide. The high-tech manufacturing sector's added value only makes up 15.7% of the added value of industrial companies larger than the defined size, indicating that China's manufacturing sector is still at the bottom of the global value chain overall. Particularly in the harsh and complex internal and external environment of today, China's industrial structure must be modernized and reformed, and new avenues for growth are continuously being opened up. The added value of high-tech manufacturing above authorized size grew by 7.5% annually in January–February 2024, with three consecutive months of acceleration in this trend. Economic progress received a significant boost from the constant cultivation and expansion of new advantages and kinetic energy. Therefore, developing new quality productivity requires understanding how to fill short boards, draw longboards, forge new boards, improve the supply chain's and industrial chain's toughness and competitiveness, and speed up the development of contemporary industrial systems.

For example, there are still some shortcomings and weaknesses in the construction of new quality productivity in Guangdong Province, including that the high-tech enabling manufacturing industry is still insufficient. It is necessary to raise the general degree of collaboration between industrial and scientific/technological innovation in order to create new, high-quality productivity. High-end chips, precision equipment, basic materials, industrial software, and other fields rely heavily on imports, and key core technologies are "subject to people." The "realization" ability of science and technology is not strong, and the development quality of innovative enterprises and key industries needs to be improved.

4. Countermeasures and Suggestions

(A) Suggestions on the promotion of artificial intelligence

The first is to clarify the independent technical route of China's artificial intelligence industry, cultivate key root technologies, and build an artificial intelligence industry system. It is necessary to strengthen the top-level design, build an ecosystem based on root technology while clarifying the

technical route of artificial intelligence autonomous root, and promote its wide application in various industries and scenarios; build an open ecosystem around artificial intelligence root technology and develop kernel architecture, memory systems, high-speed interconnection, and other technologies suitable for the artificial intelligence computing paradigm around high-performance chips; create a favorable international development environment; promote technical and academic exchanges; and build unified standards. At the same time, create a good environment conducive to the growth of artificial intelligence enterprises, such as by innovating policy tools in pilot areas such as the national new generation artificial intelligence innovation and development pilot zone and providing professional service support such as financing, infrastructure, and market docking promotion for enterprise growth incubation, so as to make outstanding enterprises stand out.

The second is to intensively build computing centers and open data sets to consolidate the foundation for the development of artificial intelligence-based root technology. It is necessary to make efforts to build an artificial intelligence computing center and high-quality public data sets based on China's root technology, and further improve the data production and flow mechanism; It is necessary to promote convergence and sharing, clarify data formats and metadata standards, develop standard libraries and toolkits, and formulate and unify relevant norms and standards; Promote classified data access between government agencies, between governments and enterprises, and between enterprises, and popularize the awareness of data protection; Improve data availability, focus on improving the access quality of artificial intelligence data, and give priority to the development of access paths. In addition, actively promotes the reduction of the cost of obtaining and using the three elements of data: computing power and algorithms. For example, we can promote the hierarchical opening of government data and build a basic data platform; build a multi-level data market to promote data compliance and efficient circulation; increase investment in chip research and development and encourage open sharing of infrastructure such as computing platforms; accelerate the training of talents related to artificial intelligence technology; and strengthen cooperation in industry-university research.

The third is to promote industrial applications based on China's artificial intelligence-based independent technology route. To construct a center for ecological innovation in artificial intelligence, expedite the innovation and integration of AI across several industries, encourage the widespread use of AI, foster the development of a data-driven, intelligent economy, and foster the growth of an artificial intelligence sector with a prominent leadership position, to encourage the breakthrough and successful implementation of artificial intelligence in China's main industries, the State Main Laboratory of "Artificial Intelligence+Industry" was established. At the same time, give play to the government's demand traction and publicity role in the opening of application scenarios, such as strengthening the interaction between the government and various market entities such as enterprises and investment institutions, building a multi-party cooperation mechanism for application scenario innovation, holding publicity and promotion activities for scene innovation, and sorting out and summarizing the demonstration results of application scenarios.

Fourth, emphasize talent development and encourage industry-university-research development in concert. Establish and enhance the system for training artificial intelligence personnel, conduct scientific research and training related to the development of autonomous root technology, and raise the standard of artificial intelligence throughout society's cognitive level. Moreover, supports the coordinated growth of industry-university research, encouraging businesses to collaborate with academic institutions to conduct cutting-edge scientific research and to jointly innovate artificial intelligence root technology.

(B) on the cultivation of new quality of productive forces countermeasures and suggestions

First, disruptive and cutting-edge technology emerge more quickly. Adjust to the emerging trend of integrating cutting-edge technologies and plan the "new track" strategy's implementation. Allow the government to play a leading role in arranging significant scientific and technical breakthroughs, and expedite the establishment of several national centers for future industrial technology research. Build an interdisciplinary, collaborative, and high-intensity collaborative innovation platform;

strengthen the multi-path exploration, cross-integration, and source supply of disruptive technologies; improve the selection and support mechanisms of disruptive and non-consensus technologies; and achieve more original breakthroughs. Further, strengthen the protection of intellectual property rights; build a social environment and evaluation system that is inclusive of innovation, encourages adventure, and tolerates failure; create an institutional environment that encourages invention, creation, innovation, and entrepreneurship; and enhance the original ability of major technologies. Accelerate the establishment of an innovation policy system that is more in line with international practices, actively promote international scientific and technological cooperation, further optimize the international scientific research environment, and support world-class scientists to participate in China's cutting-edge technology research and development through flexible methods such as revealing the list, international bidding, and selecting the best, so as to enhance the attractiveness of global innovation resource elements and enhance China's voice and leading role in the global scientific and technological innovation network.

Second, fully release the potential of data elements. Only by allowing data elements and all kinds of resources to flow fully can the economy become active and new-quality productivity emerge continuously. The first is to promote the construction of a data standardization system. Establish a unified national standard for data format, interface, storage, and other software and hardware; improve the general specifications of data registration, data transaction, data sharing, and data service; improve the quality of data supply; and form a more complete and well-connected data link. The second is to promote the confirmation, flow, and sharing of data. Improve the data property rights registration system, introduce data asset registration management measures, study the data classification and grading authorization mechanism, establish an interconnected data property rights registration platform, improve the data pricing system and data asset market operation system, and build multi-level market rules to ensure that data can flow and be used. The third is to innovate the data development and utilization mechanism. Encourage the use of data in important fields like intelligent manufacturing, business circulation, transportation and logistics, financial services, and medical and health care; promote the transformation of China's basic resource advantages into new advantages in economic development; breakthrough circulation barriers; improve the quality of supply; and encourage the combination of data elements with other elements to give rise to new industries, formats, models, applications, and forms of governance.

Thirdly, build a new productivity realization mechanism with deep integration of science and technology, industry, and finance. The smooth circulation mechanism of "technology-industry-finance" is an important channel for the industrialization of new technologies and an important mechanism for realizing new quality productivity. First, smooth the "technology-industry" cycle. Adhere to the "four orientations," focus on the key core technology needs of modern industrial system construction and the front-end subversive technology needs of future industrial development, and carry out key core technology research and original technology innovation. Establish a structure that places firms at the center of unleashing technical demand, promotes industry-university-research collaboration, and progresses the complete integration of the innovation chain with the industrial chain. The second aim is to enhance the "industry-finance" cycle. Perform well in five articles on the application of financial services to the actual economy: digital finance, green finance, inclusive finance, technology and finance, and pension finance. Additionally, you ought to be well-versed in the prerequisites that the actual economy needs in order for financial services to function. Large state-owned financial institutions should be supported in their expansion and development in order for them to function as the foundation of the real economy and the main force behind maintaining financial stability. The third is to improve the policy system of synergy between science and technology, industry, and finance. Relying on decision-making and coordination institutions such as the Central Financial and Economic Committee, the Central Science and Technology Committee, and the Central Financial Committee, we will establish a policy system that includes scientific and technological innovation, industrial development, and financial services. The goal will be to solve issues like the mismatch between financial institutions' business models and the demands of the real

economy, as well as the self-circulation of finance, by enhancing the link and communication between science and technology, industry, and financial decision-making departments. Observe the objective laws of finance and technology, foster the growth of new industries and financial innovation, establish the industrial and innovation chains in relation to each other, enhance the capital chains surrounding the innovation chains, and enhance the mechanisms for realizing new levels of productivity with a focus on the market, with enterprises serving as the central organization and a deep integration of science, technology, industry, and finance.

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