

The Realistic Form and Dilemma of China's Innovation-driven Development

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Abstract: China has proposed five major development concepts, namely “innovation, coordination, green, openness, and sharing”. Innovation and development have become the key driving force and fundamental support for the comprehensive development under the overall layout of the "five in one". The point of achievement is the driving factor for the strategic adjustment of the economic structure during the "13th Five-Year Plan" period. Implementing an innovation-driven development strategy faces both good opportunities and severe challenges.

Key words: innovation drive current situation dilemma crack

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I. INTRODUCTION

Innovation-driven development refers to the innovation-driven development of production factors. In the past period of time, all regions in China have relied mainly on capital, land, labor, natural environment and other factors of production to promote economic development through the allocation, consumption and integration of these factors. This approach has been achieved in socialist economic construction and even reform and opening up. A lot of results. However, as the speed of development accelerates, its drawbacks begin to manifest and continue to develop, which has hindered economic development to a certain extent. For this reason, the state proposes to use innovation drivers instead of production factors. First of all, innovation is the integration of production factors, which can avoid the loss of a single production factor and achieve the sustainable development of various production factors. Secondly, as a renewable resource, once innovation becomes the driving force for development, it will continue to grow and develop; It can promote the generation of high added value, and the productivity transformed by it has a series effect increase. Compared with the additive effect and multiplier effect of the original production factors, it has a more advantageous amplification function. In other words, innovation-driven development relies on innovation to achieve a high degree of integration of production factors, thereby creating wealth sustainably and achieving the effect of driving economic and social health and steady development.

II. THE NEED TO IMPLEMENT AN INNOVATION-DRIVEN DEVELOPMENT STRATEGY

2.1 Implementing the innovation-driven development strategy is the inevitable choice for China's socialist construction under the new normal

Over the past 30 years of reform and opening up, China's economic development has achieved remarkable achievements in the entire world. The economic aggregate of China's GDP has been rising year after year, and its growth rate has been in the world's leading position for many years. China is recognized by the world as one of the most dynamic economies. In 2010, China surpassed Japan and officially became the world's second largest economy. Body, contributing more than 30% to world economic growth.

However, we should also see that there are many problems in the Chinese economy. For example, China has a large population and the cost of labor is increasing. At present, China's demographic dividend is gradually decreasing. However, China's natural resources are constantly being consumed, and there is a large shortage of energy. The ecological environment of the green mountains and rivers is also deteriorating. China The economic development of society is not fully balanced. In the past, the traditional extensive economic development model generally relied on investment-driven and traditional production factors to promote economic development. At present, the pace is slower, and the economic development under the new normal is facing the barriers and bottlenecks.

On June 9, 2014, the Chinese Academy of Sciences held the 17th Academician Conference and the Chinese Academy of Engineering held the 12th Academician Conference. At the meeting, President Xi Jinping pointed out: "Where the old road is not going, where is the new road? In terms of technological innovation, it is

accelerating the transformation from factor-driven, investment-scale-driven development to innovation-driven development." The drive to replace the original natural resources and tangible labor productivity with creativity and knowledge is replacing the traditional economic growth model and gradually becoming the main driving force for China's economic growth. It can be said that under the situation of China's continuous economic development and deep reform of the economic system, the traditional investment-driven, factor-driven transformation into the innovation drive under the new development concept is the scientific law of socialist economic development with Chinese characteristics.

2.2 Implementing an innovation-driven development strategy is an objective requirement for adapting to the development of the world economy

Since the industrial revolution, the progress made by human society has mainly come from scientific development and technological innovation. Advanced science and technology are constantly applied to human production activities, from which advanced productivity is formed. It can be said that the development stage of human society, from primitive to modern, from simple to complex, from primary to advanced, is itself a process of continuous innovation. The size of innovation ability and the strength of innovation are also important factors for the uneven development speed of different ethnic groups, the unsynchronized development stage and the difference in development level.

The world today is undergoing a period of great development, great change, and great adjustment. Economic globalization is developing in depth, and the inter-state relations and interdependence between countries are deepening. At the same time, the world's economic growth momentum is insufficient, and the polarization between rich and poor is becoming increasingly serious. In the context of globalization of market development, the key to competition among countries is no longer the traditional elements of labor, land and resources. The competition between countries has been transformed into competition for technology and technology, and innovation is the inevitable development of the economy. law.

Since the 1980s, the world manufacturing industry has undergone major changes, and major developed countries have experienced the process of "de-industrialization". In this process, developed countries have used the relatively low resource and labor costs of developing countries to expand their product markets while acquiring large amounts of revenue. At the same time, however, the contribution of the manufacturing industry to the social economy has been shrinking, and with the adjustment of the global industrial division of labor, "industrial hollowing out" has emerged, which has shaken the foundation of economic and social development.

In recent years, the old developed countries such as the United States and the United Kingdom have re-emphasized the importance of their own manufacturing industries. They have used the big data revolution to carry out technological innovation and use robots, artificial intelligence and digitization to carry out "re-industrialization." This requires China to implement an innovation-driven development strategy, maintain a stable and healthy economic development, and achieve "cylinder overtaking". At present, although China's economic aggregate ranks second in the world, many major economic indicators are in the forefront of the world, but it must also be clearly recognized that China's economy is huge and not strong, economic growth is fast and quality is not good. To form a new international competitive advantage, China must implement an innovation-driven development strategy to provide a long-term driving force for China's economic development.

III. THE STATUS QUO OF IMPLEMENTING INNOVATION-DRIVEN DEVELOPMENT STRATEGY

3.1 Innovation-driven development has achieved good results

In recent years, China has continuously implemented the innovation-driven development strategy, strengthened basic research and applied research, and actively made progress in the industrialization of scientific and technological achievements, continuously strengthened the orientation of the scientific and technological innovation market, enhanced the ability of innovative entities, and strengthened the protection and application of intellectual property rights. Deepen the reform of the investment and financing system of science and technology, and strive to create a good atmosphere for the masses to innovate and create a lot of people, and the regional innovation capability has been significantly improved.

3.2 The dilemma of implementing innovation-driven development strategies

First, lack of high-level talent resources. In the past few years, through the introduction of talents, the Chinese scientific research team has continued to grow effectively, and the total number of scientific researchers has increased year by year. However, if this kind of talent construction mechanism is used for a long time, it will lead to excessive foreign dependence.

Second, the traditional industrial upgrading and transformation faces many difficulties. The traditional economic development model is realized by a large number of factors that consume resources and labor. It is inevitably

characterized by high emissions, low efficiency and high pollution, and has high dependence on non-renewable resources such as coal and petroleum. Although the resource recovery strategy is already being implemented nationwide, the development of resource recovery is still in its infancy. Most industrial waste has not been treated and reused, but it has been directly buried, which causes waste of resources. It is accompanied by environmental pollution. Despite the current development of high-tech industries, at least for now, it seems that the promotion of traditional industries is not very obvious. The reason is that the scientific and technological content of traditional industries is very low, and there are certain problems with the connection with emerging industries, resulting in low levels. Repeat construction.

The third is the imbalance of innovation resources. Most of the innovation platforms are distributed in universities, research institutes and state-owned enterprises. The main force of innovation-driven development in the process of economic and social development should be small and medium-sized enterprises based on new products, new technologies and invention patents. The innovation ability of universities and research institutes is certainly strong. The forms of scientific research output are mainly scientific research papers, award-winning achievements, and undertaking research topics. The cooperation between industry, university and research institutes is not high, the implementation is insufficient, and the three parties' information flow is not smooth, which has caused the transformation of innovation results to a certain extent. At the same time, the geographic and technological resources are geographically wide, and key laboratories and high-tech industries are mainly concentrated in a few central cities, which also restricts the socio-economic development of our province and the formation of industrial clusters.

Fourth, the lack of "last mile" in the transformation of results. Many scientific and technological achievements have been shelved and cannot be transformed into real productivity. The specific reasons can be summarized as follows: First, the overall effectiveness of industry-university-research cooperation is not high. As mentioned above, the production, research and research of our province is mainly concentrated in enterprises, universities and research institutes. However, the different goals pursued by the three parties will inevitably lead to unclear division of labor in the research process, thus reducing efficiency. Second, the implementation of the policy is not in place. In response to the predicament of the transformation of scientific and technological achievements, the government has introduced a number of policies to promote it. However, due to the multi-faceted reasons such as the entrepreneurial environment, there are still many shortcomings in the implementation of policies. Third, innovative resources are difficult to share. The reason is that the technology intermediary service system is not perfect, and the science and technology intermediary is mostly founded by the government. There is a phenomenon that the government and enterprises are not divided in the operation process. At the same time, the market development is not perfect enough. The personnel quality and service level need to be improved, which will inevitably lead to The service system cannot keep up with innovation and development, and it is difficult to achieve information sharing.

The last is the passive innovation of enterprises in the process of innovation drive. The passive innovation we refer to is mainly the passive investment in research and development. In recent years, many companies have been struggling in the traditional industry and are not willing to innovate because of the lack of innovation. As a result, the investment in innovation of enterprises has declined year by year.

IV. THE PATH TO IMPLEMENTING AN INNOVATION-DRIVEN DEVELOPMENT STRATEGY

4.1 Further increase the reform of the science and technology system

First of all, to clarify the relationship between the government and the market, the key task of deepening the reform of the science and technology system lies in the sound market-oriented mechanism for technological innovation. To achieve the transformation of government functions, from the past construction of the economy, the pursuit of GDP growth, to the active implementation of inclusive policies, the establishment of a service-oriented government. The government must create a good environment for technological innovation, establish a sound market for fair competition and integrity management, clarify the relationship between rights and responsibilities, perform necessary functions for statutory functions, and resolutely stop acts without legal authorization. Second, governments at all levels should formulate policies that are conducive to people's entrepreneurship and innovation, and create a good institutional environment. At the same time, we must abandon the evaluation system of GDP only, and reflect the economic value of technological innovation. We should also build public services related to innovation and entrepreneurship. The platform provides the people with information on technological innovation, economic trends, preferential policies, and industry dynamics, and opens up innovative information to the public to realize resource sharing. Third, governments at all levels should fully mobilize the enthusiasm of entrepreneurship and innovation in all sectors of society. Government departments at all levels should adhere to the enterprise as the main body, strengthen coordination and co-construction, provide resources for higher education institutions and scientific research institutions, promote school-enterprise cooperation, and ensure the effectiveness of innovative activities.

4.2 Strengthen the integration of industry, academia and research

4.2.1 The essence of innovation drive is talent drive

First of all, we must unswervingly continue to vigorously popularize nine-year compulsory education, increase vocational education and adult education, and focus on cultivating the people's "openness" and "critical" thinking; to be nationwide, especially in poor areas. And backward areas to strengthen science education, improve cultural level, publicize scientific ideas, popularize scientific knowledge, and enhance the scientific literacy of the people. At the same time, we must pay attention to education, attach importance to innovation, respect teachers and scientists, and strive to create a soft environment for talents who respect talents and respect knowledge.

Secondly, governments at all levels should concentrate on cultivating some experts with advanced level, excellent thinking and high quality. They lead a large number of high-level scientific innovation teams as leading talents in science and technology. Research institutes can take multiple measures to form a better, more scientific and practical incentive mechanism, and strive to optimize and improve the economic benefits of the research backbone and core team; all types of enterprises in accordance with laws and regulations, through the corresponding options for researchers, equity and dividends, etc., effectively mobilize their enthusiasm for scientific and technological innovation; for scientific researchers who create major scientific and technological achievements, give special policies, allow them to retain basic treatment, bring scientific research projects and scientific and technological achievements, join or start enterprises to carry out scientific innovation work. Establish a green channel for talents to move into the industry.

Third, governments at all levels should introduce relevant policies, vigorously improve the treatment of outstanding scientific workers, and provide them with a more comfortable and relaxed scientific and innovative environment. At the same time, it is necessary to formulate a more competitive talent attraction system, implement a more active and effective talent introduction plan, and vigorously introduce high-level, high-level overseas returnees and domestic science and technology workers, and make good use of international and domestic talent resources.

4.2.2 Enterprise is the main body of entrepreneurial innovation

The market demand is constantly evolving. The fundamental reason is that the needs of consumers are constantly changing. This is the fundamental reason for the continuous innovation of enterprises. In this regard, companies must accurately understand the market demand, and carry out targeted innovation investment, and carry out research and development activities corresponding to it. Enterprises survive and develop in the market. In order to better develop, they will inevitably adapt to the needs of the market. It is inevitable that enterprises become the mainstay of innovation and entrepreneurship, promoting productivity and developing productive forces.

Enterprises should implement innovative ideas in their work, clarify their innovation strategies, and upgrade them to the height of determining their destiny; enterprises should focus on building innovative teams, attaching importance to employee training and continuing education, enhancing the pool of innovative talents, and increasing scientific research and development. Invest.

Furthermore, we should further close the interaction and linkage between enterprises within the industry, concentrate on forming industrial clusters, seek development in innovation, and seek innovation in synergy. More enterprises should be allowed to play a role, organize enterprises to participate in research, formulate technical innovation plans and plans for the province, and solicit opinions in the process of policy and standard setting; should establish a regional technical innovation consultation and dialogue system to ensure enterprises. The normalization of communication between senior levels allows companies and entrepreneurs to play an important role in innovation decision-making.

4.3 Formulate laws and regulations related to innovation and entrepreneurship

Before the reform and opening up, China lacked intellectual property awareness at the national level and did not recognize the core competitive position of intellectual property. China's intellectual property system is very tortuous and starts very late. At present, the current intellectual property system mainly draws on the West. Due to historical reasons, governments at all levels are not aware of the respect and protection of intellectual property rights. At the social level, the people do not have Forming a cultural concept of respecting and protecting intellectual property rights. Moreover, due to practical reasons, enterprises lack awareness of the use of intellectual property rights, and the situation of honesty and law-abiding, respect for knowledge, and advocating innovation has not taken shape.

Intellectual property is an important weapon and should be firmly in control. While paying attention to entities, governments at all levels should also attach importance to procedures, formulate and improve laws and

regulations related to intellectual property rights, and provide legal basis for the protection of intellectual property rights; within the scope permitted by national policies, expand the scope of protection of intellectual property laws. In the field of high-tech science and technology, such as genetic engineering, biotechnology, big data, etc., it is included in the scope of legal protection.

Governments at all levels should strengthen the cultivation of people's awareness of intellectual property rights protection, advocate innovation and respect for the fruits of others' work, carry out extensive publicity and education, incorporate them into the school education system, and create a cultural atmosphere conducive to innovation consciousness; Rationally allocate the value created by intellectual property in the process of application, actively construct a platform and mechanism for intellectual property transactions and sharing, help enterprises to effectively cooperate and exchange, and foster the social atmosphere of sharing intellectual property while protecting intellectual property rights.

4.4 Build three major innovation drive platforms

4.4.1 Building an industrial cluster innovation platform

Michael Porter, the father of competitive strategy, puts forward the theory of competitive advantage. He points out that industrial clusters are the basic unit of competitiveness. The industrial cluster innovation platform refers to the establishment of corresponding service platforms in industrial cluster areas to provide services for relevant industrial cluster enterprises in the region, including creating favorable conditions, broadening living space, solving problems in development, and assisting enterprises in industrial upgrading. It can be said that in the development of regional economy, industrial clusters and industrial structure determine the quality and speed of the transformation of regional economic development mode. Therefore, in order to implement the innovation-driven development strategy, it is necessary to build an industrial cluster innovation platform, complete the coordination and integration of various innovation elements, and promote the modern industrial cluster, thus driving the overall industrial transformation. Specifically, it is through the government-led, high-tech industrial parks in various regions. Taking high-tech parks as a space carrier, we can effectively concentrate production factors such as land, talents and information technology, and carry out effective social organization arrangements to ensure the high-tech industry is running well. Therefore, in the process of implementing the innovation-driven strategy, we must give full play to the role of the park in industrial agglomeration. Governments at all levels should improve the market competition system, formulate a scientific cooperation system for industry, university and research, establish a clear property rights system, continuously explore the venture capital system, and create a good and open regional culture.

4.4.2 Building a public service innovation platform

The public service innovation platform is established by relying on science and technology intermediaries, and is led by the government. Universities, enterprises, research institutes and industry associations participate together, regardless of geographical restrictions and industry restrictions. The platform has three main functions: social services, management services, and macro-control. In the future, we must increase investment in public resources, build a platform for public service innovation, provide services for technology transactions and sharing, further strengthen the service functions of relevant technology intermediaries, and continue to create a good environment for innovation.

4.4.3 Improve financial and financial support system

First, increase financial and scientific capital investment. Increase financial input for major industrialization projects and scientific and technological research projects, and lead the direction of industrial development; increase financial investment for innovative industrial projects with high technological content, high added value, long industrial chain and favorable ecological civilization construction, and guide the whole society to innovate development of. Guide and foster the listing of technology companies, and promote technological innovation through the capital market.

Second, optimize the structure of the financial capital stock. Incentives for participating in enterprise projects in higher education institutions; competing funds for science and technology competitive projects. The government purchases corresponding scientific and technological services, organizes key technologies for public relations by science and technology experts, and promotes economic innovation and development in the region; R&D funds should be included in the annual budget, mainly for scientific research institutions in the public welfare, supportive and competitive categories, for secondary distribution.

In addition, innovative financial enterprise capital use model. Transform the original government funds "one-on-one" direct investment support, and gradually increase the proportion of indirect investment in enterprises. Increase the scale of government-led provincial venture capital funds and enhance the core competitiveness of high-tech enterprises. Enterprises applying for and obtaining patent authorizations should increase incentives and strengthen the guiding role of GSP rewards.

Finally, support banks to develop more financing products that meet the characteristics of technological innovation. Encourage innovative enterprises to achieve financing through scientific and technological research and development through financial products such as microfinance, venture capital, equity trading, and angel investment. Select the appropriate part of the original government guarantee and investment company management technology funds to provide innovative enterprises in the form of investment, support the scientific research and innovation development of enterprises, and enlarge the use efficiency and guiding effect of government science and technology funds.

V. CONCLUSION

In order to better meet the objective requirements of the staged transformation of economic and social development, China needs to establish an innovation-driven concept, actively create an environment driven by innovation, and promote the economic development to drive innovation and endogenous growth through the introduction of a series of innovative driving measures. path of. In the coming period, we need to continue to implement the five development concepts of “innovation, coordination, greenness, openness, and sharing” and the latest requirements of the Party Central Committee on supply-side structural reforms, and vigorously implement “scientific and technological innovation, factor innovation, industrial innovation, and space. Innovate the four major innovation strategies, encourage innovation and entrepreneurship, actively support small and medium-sized enterprises, and focus on cultivating a number of high-tech enterprises, especially the support for small and medium-sized technology enterprises.

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