Technological Innovation Drives the Stable Economic Growth of China

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Entering the year 2023, Chinese economy reveals a good trend of recovery and rising. However, confronted with the prominent external political and economic uncertainties and the accelerating global technological progress, there’re many pressures as well. The 20th National Congress of the CPC has established the major tasks and ways to realize the great rejuvenation of the Chinese nation, that is, to promote the Chinese modernization, for which the long-term stable economic growth is the basis.

The theory of economic growth and the development history of human society indicate that knowledge and the technologies thus formed are the permanent driving force of economic growth, and the practice of China's rapid rise has also proved it. Throughout the history of human economic growth, knowledge accumulation and technological innovation are concentratedly made in several major industrial revolutions. As a civilized ancient country with long-standing history, China fell into poverty and backwardness in modern history because it did not keep up with the pace of industrial revolution. After the founding of the People’s Republic of China, especially since the reform and opening up, China has been accelerating the pace of development. Unfortunately, there’s little breakthrough in major technological innovation. Nowadays, science and technology are changing rapidly, and scientific and technological progress does matter the future of a country. Only by standing at the forefront of human science and technology can China maintain its permanent competitive advantage and lay a solid foundation for Chinese modernization. If we can seize the opportunity of the new industrial revolution, China will be a world power in the future in real sense.

Existing researches show that, every time, the industrial revolution will promote the progress of human society and the differentiation of world pattern, which is shown in five aspects.

Firstly, the industrial revolution generally takes place along with the breakthroughs in a certain or a series of technologies which gradually evolve into a means of production and management, and further becomes the driving force to promote the progress of human society. History reveals that major technological progress would not necessarily lead to industrial revolution, just a few technological innovations that eventually become the impetus for the progress of human society and changes in the pattern of international division of labor have evolved into industrial revolutions. For example, the first industrial revolution took steam engine as a technology platform, liberated mankind from heavy energy tools, and separated industry from traditional agriculture, opening the journey of human industrialization, and some countries then gained industrial leadership, while the traditional agricultural powers declined, resulted in the adjustment to the former international division of labor and expanded the development differences between countries and regions. The second industrial revolution continued the above energy reform, greatly improved the production of secondary energy and widely applied it to human production and life. The transformation of industrial production mode enabled the rapid growth of large industries and cities, and greatly improved human living standards and labor productivity. The differentiation between countries and regions were intensified, the gap in economic development was widened, and the North-South difference and the international division of labor pattern exist until this day was formed according to the standard whether the industrial production and management technology were mastered. The third industrial revolution, which is still undergoing, is different from the first two industrial revolutions which made breakthroughs in liberating human physical strength, and targets at human intelligence and way of thinking. By virtue of electronic communication, digital decoding, AI, and other technologies, it aims at reducing information transaction costs, enhancing learning effects and expand thinking ability, so as to improve the level of human capital and production efficiency, improve the life quality of human. It can be seen that the progress of science and technology and industrial revolution resulted from it have become a weapon for national competition and a great impetus for the progress of human society.

Secondly, the origin of industrial revolution has evolved from a single region in the first industrial revolution to the combined multiple regions which are for systematic breakthroughs. Knowledge is the product of human experience and thinking, which is cumulative. Industrial revolution is originated from the transformation of knowledge which has been accumulated to a certain level into technologies that human can control, which happened accidently or randomly when human economic development was not at a high level. But today, technological breakthroughs are due to goal-directed R&D activities, both the certainty and practicality have been greatly improved, and R&D level and incentives have been the basis of today's technological progress. Therefore, the first industrial revolution which happened by chance several hundred years ago has changed. Now the global competitive regions, countries and enterprises concentrate their strength to solve key problems, and the new technological revolution may be taken advantage of by enterprises and countries that seize the commanding heights of science and technology on a global scale. China, which is now at the forefront of global innovation, although missed the first and second industrial revolutions and development opportunities, rides the east wind of reform and opening up and ushers in the third industrial revolution. If it could create a better incentive environment, China will undoubtedly be a beneficiary of the new industrial revolution. Fortunately, electronic information technology is improving the production and operation capacity of enterprises, improving the governance capacity and level of government, and achieving the optimization of personal consumption and financial product selection through e-payment and e-commerce and by other channels, and new energy and NEVs industry is making for “corner overtaking”. All of the above mentioned are improving the welfare of our people, changing the traditional economic and market structure, improving the competitiveness of enterprises, and promoting the combination of efficient market and promising government. Continuing to encourage the whole society to enter a higher level of innovation and learning society, it will accelerate the pace of Chinese industrial revolution.

Thirdly, industrial revolution will bring about changes in people’s thought and behavior, which will then affect the evolution of society and economy, and form a new social and economic structure that adapts to the new technological environment. Therefore, industrial revolution is an important force to promote human development. Chinese modernization needs to be powered by a new industrial revolution, and the long-term stable economic and social growth provides the material guarantee for realizing Chinese modernization. Moreover, for a modern country, its social development matches with the economic development. When the industrial revolution brings new technologies, people's ways of thinking and behavior will continue to be adjusted and evolve on the new technology platform, thus promoting social progress.

Fourthly, industrial revolution will accelerate the differentiation of world pattern and re-establish the global system of labor division, thus forming a new global political and economic pattern which may last for several years. Countries that can follow the industrial revolution often have the opportunity for rapid economic and social development, while other countries that lose the opportunity would be at a disadvantage in the new global system of labor division. China's modern history is a case in point. Because China missed the first and second industrial revolutions, its economic and social structure was based on the traditional small-scale peasant economy, modern industry and cities failed to emerge, and the labor productivity of the whole society was low, resulting in its ranking among the least developed countries in the world. This is the painful experience. It offers us the strong internal driving force to promote a new industrial revolution, and makes us more determined to overcome scientific and technological difficulties. However, the goals are not necessarily consistent with the reality at any time, and it requires the joint efforts of the whole society to achieve the ideal goal, the premise of which is that the social and market participants form a compatible pattern of incentives. The major challenge we are currently facing is how to pull together the strength of the whole society, form a joint market force, and concentrate social resources to pursue further development and progress.

Fifthly, the birthplace of industrial revolution will enjoy special dividends, so that it will be in a favorable position in the future development, and may become a leader in the change of world pattern. It has become a consensus on human development that those who gain science and technology win the world. Under the trend that the new industrial revolution is sweeping all fields of human kind, only by catching up can we successfully realize the great rejuvenation of the Chinese nation. History indicates that the regions where the industrial revolution originates have enjoyed and continue to enjoy the dividends brought about by the success of the industrial revolution for a long time, making them the sources and beneficiaries of global resources. The emergence of a new industrial revolution is breaking this pattern, but no new leaders have emerged to replace the old pattern, because the world power structure is based on solid economic strength and strong scientific and technological innovation capacity. The new industrial revolution provides China with the opportunity to surpass, but it needs the relevant talent and incentive mechanism to guarantee. Under the current international political and economic pattern, constantly improving the ability of independent innovation and promoting self-reliance of high-level science and technology have become an important part for us to grasp the strategic initiative of scientific and technological innovation and maintain the long-term competitive advantage, and innovation incentive is of top priority.

China, who actively participates in and promotes the new industrial revolution, has accumulated certain strength, but there’s still a long way to go to be the main impeller and original place of the new industrial revolution. Only by deepening reform, pooling social resources, and forming a mechanism with the same goals and incentives for the whole society can we further mobilize the enthusiasm of all interested parties, jointly turn challenges into opportunities and obstacles into driving forces, and fully enjoy the development dividends brought by the new industrial revolution to China.

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