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China's technological innovation under the background of economic globalization challenges

Sibei Wang *

School of Economics and Management, Guangxi Normal University, Guilin, 541006, China

* Corresponding Author

Abstract

economic globalization has brought the global economy development power to a certain extent promoted the global contact, promote the development of the world economy, all kinds of commodities and enrich the lives of people all over the world. However, economic globalization has also brought greater international competition. While economic globalization has brought development opportunities to developing countries, it has also increasingly widened the global wealth gap between countries. In the context of globalization, the competition between countries is fiercer. With the continuous development of China's economy and the constant change and development of the trend of economic globalization, there are more and more studies on China's international competitiveness. Economic competitiveness is one of the most important parts of international competitiveness. Since the endogenous growth theory was put forward, people have paid more and more attention to the role of technological innovation in long-term economic growth. At the same time, the current global economic development is slow, and innovation has become a breakthrough for countries to find development. For a long time, the rapid growth of China's economy has largely relied on investment and capital accumulation and other factors. Since 2010, global competition has intensified and economic growth has encountered challenges, China has begun to plan to change the growth mode driven by factors. In May 2016, the Outline of the National Innovation-Driven Development Strategy made it clear that innovation-driven development was listed as a national strategy, and the report of the 19th National Congress in 2017 mentioned that technological innovation would become the most important force to promote the economy. This paper comprehensively reviews the relationship between economic globalization and technological innovation, finds out some problems existing in China's technological innovation under the background of economic globalization, and puts forward some suggestions.

Keywords

Economic Globalization, Technological Progress, Technological innovation and Technological diffusion.

1. Related concepts and theories

1.1. Economic globalization

There are different understandings of economic globalization from different perspectives[i]. This view views economic globalization as the interdependence of human economic activities on a worldwide scale. In 1991, the United Nations Conference on Trade and Development pointed out that economic globalization is not a simple trade between countries and regions, but a unified world market formed by countries and regions, and its essence is the globalization of people's production and trade. The International Monetary Fund has also said that the internationalization of trade is the expansion and improvement of the scope and methods of

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activities in the fields of industry, trade, science and technology, and humanities, thus increasing the interdependence between various regions and the world on a global scale. The Group for Economic Cooperation and Development of China believes that economic globalization is a process of gradual integration of production, products, markets and labor forces in the world.

The second is to understand economic globalization from the perspective of system. This view views economic globalization as the expansion of capitalism around the world. British scholar Sklerk believes that economic globalization is not only the process of global economic expansion of capitalism, but also the process of simultaneous expansion of capitalism in global economy, politics and culture, and the global system that is constantly expanding worldwide is based on capitalism. Left-wing scholar Albo believes that economic globalization depends on capitalist production relations and is a system of social relations, which is not limited to economic rules, but the economic norms are acted by the market and are increasingly changing.

The third is to understand economic globalization from the perspective of information communication. Scholars represented by Canadian thinker Marshall McLuhan believe that economic globalization is the advanced communication technology, which human beings can use to overcome natural limitations and freely communicate, thus contributing to economic networking on a global scale. With the popularization of information communication and network development, people in all regions of the world can almost obtain and share corresponding information in a very short time Message.

On the whole, economic globalization does not belong entirely to the concept of economics. It is an objective and dynamic development process. Although the economy is the main manifestation, it has caused the integration and collision of culture, politics, science and technology and many other fields on a global scale. Therefore, in the formulation of economic globalization strategy and countermeasures, it is necessary to pay attention to the coordinated development of many fields outside the economic field. In the field of economics, economic globalization should be regarded as a process. The essence of economic globalization is the globalization of capital, which is manifested in the increase of the scale and form of the flow of goods, services and production factors, and the deepening of economic ties between countries in the world.

1.2. Technological innovation

Technological innovation, first proposed by Schumpeter in the Theory of Economic Development, is defined as the process of "recombining" existing resources and realizing commercialization. And he believes it is the "entrepreneurial function" that drives this realignment of resources. Examples of technological innovation he proposed include: products, new modes of production, new sources of supply, new market environments and new forms of organization. Researchers generally believe that enterprise technological innovation ability is the organic combination of multiple capabilities and multiple factors[ii].

1.3. Technology diffusion

Technology diffusion refers to the diffusion and adoption of technology to its potential users through market or non-market channels. Technology diffusion is often the main means and channel for a government to achieve science and technology. Due to the development of new technologies, innovative products are becoming more mature and standardized, more and more enterprises are using new technologies, and more and more scientific and technological materials and knowledge information are displayed to social consumers, which reduces the cost of adopting new technologies, resulting in the trend of learning and imitation, and the pace of technology diffusion accelerates and the scope continues to expand. From the scope of

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dissemination, technology diffusion has three types: intra-industry diffusion, inter-industry diffusion and international diffusion.

Technology communication between countries is generally formed by cross-border economy such as trade and international direct investment, which can be either intra-industry technology transmission or inter-industry technology communication. Global economic integration has also promoted the diffusion and spillover of technology among countries, adding another booster to the technological progress of countries. Extensive international economic exchanges make it unnecessary for any developing country to rely solely on its own funds and capabilities to complete technological innovation. The innovation activities of all countries may produce externalities. The innovation of one country can not only promote its own scientific and technological progress, but also promote the technological progress of enterprises and trading partners through the effect of technological diffusion. Therefore, actively implementing the policy of opening to the outside world and expanding foreign exchanges will also become an indispensable part of the science and technology policies of various countries. But at the same time, we should also realize that in today's era of knowledge economy, countries are accumulating scientific and technological strength to enhance their technological innovation capabilities. Technological innovation is the fundamental guarantee for a country's enterprises to gain international market competitiveness and achieve sustainable development. If any enterprise wants to become the leader of the industry and gain more market share, it must first base on independent research and development, only rely on external technology diffusion, or follow the technology imitation, and will always be in a passive position in the market competition. Especially for a large developing country like China, building its own technological innovation system is indispensable, and it is also a fundamental guarantee for long-term economic development.

2. The interactive logic of economic globalization and technological innovation

2.1. International trade and technology diffusion

Scientific and technological progress in the period of knowledge economy is not only the main driving force for the growth of a country's enterprises, but also an important factor determining a country's global strength. We also promote the transmission of excellent experience and advanced technology among countries, so that countries in the world no longer rely solely on national innovation to achieve technological progress, but also through the diffusion and dissemination of science and technology among countries to share the world's excellent scientific and technological research results, in order to save research costs and resources, and then improve their own capabilities, improve the technical level and national economic growth rate. Due to the development of endogenous growth theory, technology has been paid more and more attention by economists and governments. Another school of international trade research, represented by Grossman and Helpman, incorporated international trade into the research framework of endogenous economic development principles, and discussed the economic diffusion effect caused by international trade and its role in the economic growth of free ports[iii].

2.2. Economic globalization and China's industrial upgrading

In the 1980s, with the trend of trade globalization and production internationalization becoming more and more obvious, the third world industrial transfer strategy has begun. Relying on the advantages of labor market and natural resources, China has gradually joined the foreign industrial division of labor system. In the middle and late 1990s, with the internationalization of China's finance and the financialization of China's economy all over the world, there was a trend of "de-industrialization" in western countries. Multinational

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companies moved the middle and high-end manufacturing and sector development and production links to China, and Chinese industry climbed from the lower reaches of the world value chain to the middle and high-level; With the arrival of a new round of scientific and technological revolution, the mode of production and organization will undergo great changes, and manufacturing intelligence, financial information, and industrial integration will dominate the future direction of industrial development, which creates conditions for China's industrial optimization and upgrading and economic leapfrog development. The trends of distributed production, industrial cluster virtualization and financial informatization caused by the transformation of production mode and organizational mode are more suitable for the development requirements of strategic emerging industries and producer services, and strongly promote China's transformation to intelligent manufacturing, service-oriented manufacturing and high-end global value chain[iv].

2.3. Multinational enterprises and globalization of innovation

Economic globalization means growing interdependence between local and transnational and trans-regional economic organizations. Technological change and multinational corporations are the main drivers of this process. Multinational corporations are also globalizing their new projects. There are two main reasons why multinational corporations are globalizing innovation. First, companies are globalizing their R&D to change the way they use their existing resources. In other words, in order to combine and adapt to certain foreign local conditions, the company tries to expand the use of these technical resources. The second is the act of strategic expansion, also known as "the expansion of the home country". To improve existing technology assets through foreign R&D investment, or to acquire, internalize and create new technology assets. Some studies demonstrate the important role of multinational enterprises in innovation globalization through empirical analysis of R&D and patent indicators[v].

3. The challenge to China's technological innovation under the background of economic globalization

3.1. Challenges brought about by the trend of economic globalization itself

Although economic globalization has increased the economic aggregate of various countries, it is obvious that people with more assets can benefit from it, resulting in the difference between the total income and property distribution of different people is gradually increasing. As a result, the resistance to economic globalization has increased greatly in recent years, and even the momentum of anti-globalization has formed at the present stage[vi][vii].

At the same time, global economic instability and the probability of financial crisis are increasing. Globalization is accompanied by the globalization of funds and the increase of overseas capital flow, which makes the distribution and circulation of financial capital more convenient in the world. Although some developed countries with mature market conditions, better international operation strength of financial capital and strong capital base have benefited more, developing countries have provided a large proportion of their economic earnings to developed countries providing funds in the form of capital gains in order to obtain the funds needed for economic growth, causing developing countries to lose their own earnings. More often than not, some debtor countries in Latin America are exposed to major debt risks almost once every decade. Although the speed of global financial innovation and industrial transfer has increased, the property distribution pattern has changed little, and the economies of developed countries still occupy an important economic position such as innovation, currency orientation and capital allocation center, and obtain excess investment returns. The annual return rate of Japan's foreign fixed assets accounts for about 3% to 5% of its GDP, while the national currency hegemony has a high return rate The incongrities and contradictions in

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trade, industry and technology between developed countries and emerging market countries keep emerging[viii].

3.2. The challenge posed by the "late disadvantage"

This mainly reflects the technological blockade of the leading countries in science and technology. The exporting countries of science and technology will control the export of science and technology for political and military considerations, or to maintain their own advantages and interest motives in international competition. Therefore, the countries of related products usually do not obtain the most advanced technology, but mainly acquire the technology that is entering or about to enter the mature stage of people[ix].

3.2.1. Capital barrier

Latecomer countries often lack the talent necessary for the development and application of new technologies, thus posing a major obstacle to the utilization of new technologies. The material life of most countries is not rich, the average GNP, average income is low, low income means low investment, low accumulation, the shortage of working capital also makes it lack of sufficient working capital to introduce technology from abroad, and the digestion and absorption of imported technology also requires a large number of science and technology supporting funds to follow up on the one hand, and the urgent need to carry out the process technology It is labor-intensive technology such as capital and skill. The emergence of the financing "problem" has led to difficult obstacles for laggards in the process of technological catch-up.

3.2.2. Demand barrier

Due to the constraints of the ability of social and economic development, the quantity and capacity of consumer demand are limited. In addition, compared with developed countries, consumer demand is relatively backward in terms of timing. Therefore, products made with foreign technology are likely to have no market, thus hindering the introduction and development of technology. At the same time, because developing countries lack the funds needed for new technologies, the popularization and application of new technologies are also deeply hindered. For example, China has introduced a can production line and directly invested 100 million yuan, but due to the lack of raw material supply, most of the production lines are currently in the shelved stage. In addition, the introduction of technology without the support of local production may also lead to excessive dependence on overseas components. As well as difficulties from resources and raw materials, the shortage of scientific and technological talent has become a greater obstacle to the advancement of science and technology for many laggard countries. According to the estimates of the United Nations Development Programme, the population of foreign experts provided by economically developed regions to developed countries is about 10,000 each year, but due to the lagging development of science and technology, developed countries have not yet been able to understand and apply new science and technology and equipment skilled workers, so they can not adapt to the introduction of new technology and the development of high-tech industries. Finally, underdeveloped countries lag behind in the development of infrastructure, including transportation, information, government investment mechanisms, and the development of science and technology and industrial science and technology, making the economic growth of some developed countries basically no impetus. Technical issues.

China's technology level is generally low, at the macro level, reflected in the weak control consciousness of enterprises, leading to the diversification of technology introduction, blind introduction of departments, local and small and medium-sized enterprises, repeated imports, bringing a lot of pollution and low product benefits. At the micro level, the enterprise has not established a perfect management system, so that the introduced advanced technology can not play a good role. Ideological and educational barriers. In the process of technological

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development, one of the biggest self-obstacles of developing countries is xenophobic isolationism. This is because developing countries will have a long-term impact on foreign advanced science and technology, small production ideas, and be invaded and enslaved by imperialism, which has produced a xenophobic resistance mentality, and also limited the import of foreign science and technology and capital to a certain extent. Of course, it is natural for developing countries to resist conditions attached by national and local governments or unfair trade in the process of international economic exchanges, but they must not give up eating for fear of choking[x].

4. Conclusion and suggestion

4.1. Maintaining open economic stability

4.1.1. We will firmly pursue the "double cycle" strategy

We will continue to advance reform and opening up, respond to all changes with "no change", and firmly lay the strategic foundation for increasing domestic demand. In view of the rising trend of protectionism and unilateralism and the countercurrent trend of economic globalization, we are firmly committed to the "double cycle" strategy. While actively tapping domestic demand, further implementing supply-side reform is an inevitable choice to keep pace with The Times. Further optimizing the environmental conditions for enterprise operation and development, further promoting the reform of factor markets, and promoting the reform and development of opening-up on a larger scale and at a higher level should all become an important starting point on the supply side. Promoting deeper reform and opening up will help China develop vigorously in the future and respond to changes with "no change" in a complex and volatile world environment[xi].

4.1.2. Actively create a favorable external environment

We will further develop economic and trade cooperation with EU countries and countries along the Belt and Road Initiative. On the one hand, conducting diplomatic relations at the ambassadorial level will help the Chinese nation forge ahead in the face of global changes. This requires us to make friends around the world through multi-track diplomacy. Such an arrangement also helps us to stabilize our position in dealing with economic shocks and technological confrontations. For example, in the face of the United States to China's scientific and technological "neck" problem, we should focus on improving innovation and conquer important technologies as soon as possible. From the perspective of the development of the "chip war", China has a broad technology import market has become a feature, can attract overseas companies who want to produce high-tech products in China to invest, while creating a huge market space for them, China's company scale, products and technology will also develop. This also reflects the win-win benefits of free trade. Of course, there is no doubt that this will encourage China to trade with the world's major trading countries more modestly and guide bilateral relations to the path of cooperation and mutual benefit. At the same time, to promote the deepening of economic and trade ties and high-quality growth with the "Belt and Road" countries, it also helps to adapt to the current international economic situation and changes in the trade structure, further strengthen economic and trade exchanges with emerging countries, best maintain balanced growth in the international trade frictions, and achieve good development of the global economic cycle[xii]

4.1.3. We will promote the vigorous development of new trading industries such as digital trading

We will promote the vigorous development of new trading industries such as digital transactions and contribute to the high-quality and vigorous development of China's foreign trade. In recent years, the rapid development of digital transactions in the world has already

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formed a new driving force for the increase of international trade. If we grasp the opportunity of the booming development of digital transactions, it will help China's foreign trade industry innovation and high-quality and vigorous development of international trade. It will undoubtedly be beneficial to the innovation of China's trade industry, the upgrading of market structure and the vigorous development of high-quality foreign trade.

4.2. Enhance research and development capabilities

4.2.1. Enhance the ability to absorb and transform foreign technologies

Make full use of the characteristics of economic globalization and technology diffusion to strengthen knowledge exchange with external countries, enterprises, universities, etc. Fully cultivate China's industrial development and improve China's position in the global value chain. Keep track of the latest international technological developments, and give appropriate policy preferences to the learning and transformation of advanced technologies. We will combine technology introduction with high-quality development, and fully introduce and absorb technologies that contribute to China's high-quality development

4.2.2. Strengthen the cultivation of independent innovation ability

To cultivate the ability of independent innovation, the government should play a leading role first. Give full play to the functions of the government, actively organize major scientific and technological innovation, make full use of the advantages of the new nationwide system, adhere to the demand orientation of scientific and technological innovation, and guide scientific and technological innovation to face the market and the future, so as to improve China's core national competitiveness. Secondly, we should fully understand and give play to the main role of enterprises in innovation, strengthen policy care, improve institutional mechanisms and supporting infrastructure, support innovative enterprises to increase research and development investment, and help innovative enterprises to transform results. Finally, adhere to the learning and utilization of knowledge, attach importance to the training of all kinds of talents, vigorously develop education, vigorously introduce overseas talents, encourage Chinese scientific researchers to actively participate in international cooperation, and integrate into the global innovation system[xiii].

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