Higher-level International Economic Circulation: A New Link between China and the World^{^①}

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China's endeavor to form a new "dual circulation" development pattern in which domestic economic circulation (DEC) plays a leading role while international economic circulation (IEC) remains its extension and supplement is a strategic choice in the face of the new international and domestic development situation and new requirements. In particular, whether the international cycle is smooth and efficient will directly affect China's speed and quality of development and its international competitiveness in the future, and will also have an important impact on the development trend of economic globalization.

I. Looking back on the past 40 years: the inevitability of

large-scale IEC

Since the early days of reform and opening up, China's economy has been growing at an average annual rate of 9.7% for 40 years, during which reform and opening up are two key driving factors for China's outstanding economic performance. In particular, large-scale IEC and utilization of domestic and foreign resources and markets have played an important role. Now, China's development has entered a new period. Compared with 40 years ago, the main aspects of the country's national conditions have undergone fundamental changes, and the role and status of IEC have been reduced relatively.

(I) Structural imbalance of production factors and importance of large-scale IEC in the early days of reform and opening up

At the beginning of opening to the outside world, China's factor endowments were extremely unbalanced, and the proportion of several major production factors in

 $^{^{(1)}}$ This report only represents the views of the author, not reflecting the views of the organizer or the government.

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the world was either extremely high or extremely low, among which the labor force was extremely rich. In 1980, China's labor force accounted for 22.4% of the world total, but its capital and technology were extremely short, as shown in Figure 1. With such unbalanced factor endowments, it was impossible to absorb much labor into modern economic sectors, and the potential huge domestic demand could be realized. A high proportion of laborers were in recessive unemployment in the agricultural sector, and their income was extremely low.



Figure 1: The proportion of China's main production factors in the world in 1980^{\oplus}

At that time, therefore, we kept expanding the scale of opening up, which was measured by three indicators - foreign trade, processing trade and foreign capital absorption. Figure 2 shows the growth of China's foreign trade and the proportion of foreign trade to GDP (the degree of dependence on foreign trade, "DDOFT" for short) in the 30 years before reform and opening up. Among the three indicators, processing trade could give full play to our labor-intensive advantages, so it developed fastest and had a high proportion, as shown in Figure 3. Figure 4 shows China's attraction of foreign capital.

⁽⁴⁾ See Jiang Xiaojuan: Seventy Years of China's Opening to the Outside World, People's Publishing House, 2018.



Figure 2: China's DDOFT from 1980 to 2008

Note: "Trade" in the figure refers to trade in goods and services. Source: The World Bank.



Figure 3: The proportion of processing trade from 1986 to 2008

Source: China Trade and External Economic Statistical Yearbook



Figure 4: Foreign investment in China from 1980 to 2008 (100 million US dollars) Source: The United Nations Conference on Trade and Development.

In this period (1986-2008), large-scale IEC played an important role in promoting China's economic growth, employment, structural upgrading and technological progress.

1. IEC had a strong ability to create jobs

China's export industry focused on labor-intensive products and processing links and its ability to absorb employment was obviously stronger than that of domestic market-oriented industries. In 2006, when the proportion of IEC was the highest in China, the employment density per million yuan of industrial value added (number of employees/million yuan of industrial value added) was 6.73% on average in the whole industrial sector, but this figure was much higher in the major export industries, such as manufacturing of cultural, educational and sporting goods (21.52%), clothing, shoes and hats (18.29%), etc., as shown in Figure 5. Therefore, expanding exports could expand employment in a higher proportion. At that time, domestic demand of the same scale could not create so much employment.



Figure 5: Employment created per million yuan of industrial value added⁰

2. Energy and other resources were imported through IEC

The foreign exchange obtained from export could be used to import energy and raw materials that were in short supply, so as to support the development of domestic industries. For example, the import volume of oil, soybean and iron ore was on steady increase. Figure 6 below shows the growth and proportion change of our primary product imports since the early years of reform and opening up.



Figure 6: Import volume and proportion of primary products

Source: UN comtrade

Note: The bar chart shows the import volume and the line chart shows the proportion.

3. Advanced technology and equipment were introduced through IEC

In many years, the import of mechanical and electrical products (mainly complete sets of equipment, key stand-alone machines, advanced instruments and meters, etc.) accounted for about half of China's total commodity imports. This continuously improved the equipment level of China's industries. The import proportion of high-tech products, including investment products, intermediate products and consumer goods, was also on the rise. This made important contributions to the improvement of China's equipment level, final-product level and consumption level. See Figure 7.



Figure 7: Changes in import structure between 1985 and 2010 (%) Source: Statistical bulletin of the National Bureau of Statistics for the corresponding years.

In a word, due to a serious imbalance of factor endowments in the early stage of reform and opening up, a high proportion of IEC was an inevitable option and outstanding feature of China's sustained and rapid development in quite a long period after reform and opening up.

(II) The change in factor endowment and the decline of IEC proportion

Through 40 years of development, China's factor endowment has changed continuously, the status of IEC has changed from rising to falling, and that of DEC has been on the rise.

By 2018, China's working population had fallen to 20% of the world total; its investment ability had grown rapidly, and capital had become the biggest production factor. The country's total capital formation accounted for 26% of the global total, followed by R&D investment (21.2%), both of which exceeded labor force in proportion. Therefore, the proportion and position of the export of labor-intensive products in China's economy had declined. See Figure 8.



Figure 8: The proportion of China's major production factors in the world total in 2018 Source: Jiang Xiaojuan: Seventy Years of China's Opening to the Outside World, People's Publishing House, 2018.

In the last ten years, the proportion and status of foreign trade, processing trade and foreign investment absorption have obviously declined. See Figures 9, 10 and 11 below.



Figure 9: China's DDOFT

Note: "Trade" in the figure refers to trade in goods and services. Source: The World Bank.



Figure 10: The proportion of processing trade in China's foreign trade from 2009 to 2018 Source: China Trade and External Economic Statistical Yearbook



Figure 11: Foreign investment in China (US\$ 100 million)

Source: The United Nations Conference on Trade and Development.

(III) Seen from the perspective of international comparison: change conforms to the law of development

The relationship between a country's DEC and IEC is influenced not only by its own development stage and level, but also by its economic scale to a great extent. A big country can have a relatively complete economic system, with plenty of room for DEC. Small countries, however, tend have a higher DDOFT. Large populous countries have strong similarity and comparability in market scale, consumption structure and industrial system.

In the past 40 years economic globalization has been in rapid progress, and the DDOFT of all countries has increased significantly. As shown in Figure 12 (a, b, and c), the DDOFT of various countries generally increased, and the average DDOFT of these countries increased from 28.2% in 1980 to 46.9% in 2006, and then dropped slightly to 42.6% in 2019. On the whole, the status of foreign trade was significantly enhanced, and the role of IEC was significantly strengthened. China's DDOFT ranked from a low place to a high place in big countries and then fell to the medium level. In 1980, IEC was in a low position in China's economy, ranking last among all major countries. In 2006, China's DDOFT reached 64.48%, ranking second only to the Philippines among all major countries. After that, the status of IEC obviously declined, ranking in the lower middle in 2019, nearly seven percentage points lower than the average DDOFT of big countries. On the whole, IEC's position in China's economy conforms to the general development law of big countries: DDOFT is low at the lower stage of development, rises significantly in the stage of rapid development, and then gradually declines to a normal level in the stage of steady development.



Figure 12: The DDOFT of big countries with a population of more than 100 million in 1980, 2006

and 2019

Source: The World Bank.

(IV) Domestic market scale and industrial level: an important basis for DEC as the mainstay

In terms of market size, the total retail sales of consumer goods (TRSCG) in China increased year by year, from 3.8 trillion yuan in 2000 to 40.8 trillion yuan in 2019. This figure in the United States was about US\$ 6.24 trillion in 2019. According to the exchange rate of RMB against the US dollar, China's TRSCG was closer to that of the United States, with a difference of about US\$ 270 billion. Affected by the COVID-19 pandemic in 2020, China's TRSCG declined for the first time in history, falling to 39.20 trillion yuan, down 3.93% from 40.8 trillion yuan in 2019. In recent years, with the changes in consumption demand, consumption channels and consumption patterns and the ebb tide of E-commerce dividend, the era of rapid growth of TRSCG in China has passed, and the slowdown of TRSCG growth is an obvious trend. However, compared with other factors, the consumption of consumer goods remains an important contribution to economic growth. See Figure 13.

From the perspective of industrial system, China is the only country in the world with all the industrial categories specified in the United Nations Standard Industrial Classification. At present, China has 41 major industrial categories, 207 middle industrial categories and 666 small industrial categories, forming an independent and complete modern industrial system. Among more than 500 major industrial products in the world, more than 220 manufactured in China register the highest output in the world.[®] We used only a few decades to complete the industrialization process that took developed countries hundreds of years to complete. From the perspective of scientific and technological development, the number of effective invention patents of industrial enterprises above designated size nationwide in 2019 was 1,218,100, an increase of 123,900 over 2018. Some technologies have gone from "running after" to "running abreast", and even to "leading". Power generation equipment, power transmission and transformation equipment, rail transit equipment, communication equipment and other industries have already reached the international leading level.

The above analysis shows that after 40 years of development, China's national conditions have undergone significant changes, and the proportion and status of IEC have also undergone significant changes, and its importance has decreased.

⁽⁵⁾ Cited from: After seventy years of development China has become the only country in the world with all the industrial categories specified in the United Nations Standard Industrial Classification, http://china.cnr.cn/news/20190921/t20190921_524786466.shtml?ivk_sa=1023197a



Figure 13: China's TRSCG and its growth rate between 2000 and 2019 Source: National Bureau of Statistics.

II. Looking forward to the new era: we need to build a new link

between China and the world through high-level IEC

Facing the future, China has put forward a new "dual circulation" development pattern in which DEC plays a leading role while IEC remains its extension and supplement. To this end, we should take meeting domestic demand as the starting point and foothold of development, speed up the building of a complete domestic demand system, vigorously promote innovation in scientific research, technology development and other aspects, accelerate the promotion of strategic emerging industries such as digital economy, intelligent manufacturing, life and health, new materials, etc., create more new growth points and growth poles, focus on connecting all links of production, distribution, circulation and consumption, and cultivate new advantages of China through participation in international cooperation and competition under the new situation. To smoothly realize the transformation to this new development pattern, we need to promote high-quality economic development through IEC at a higher level.

(I) The importance and imperativeness of building a new link

Globally, while the division of labor in the traditional global value chain has stalled and slowed down, that in hi-tech based products and services has accelerated, which is vigorously promoting a new round of globalization.

First of all, in recent years, a great many newly-designed products and new products obtained through iterations or upgrades are based on multinational joint R&D and manufacturing from the very beginning. This is due to the acceleration of

technology upgrade, the increase of complexity of technology system, the rising R&D cost of new technologies and new products, the shortening of product life cycle and the acceleration of iteration speed. For this reason, it is more and more difficult for any single enterprise to innovate and produce independently. In this situation, global division of labor and cooperation can accelerate the speed of innovation and improve the labor productivity of manufacturing process.

Secondly, the global service industry chain is extending rapidly.

The basic nature of service has changed in the Internet and digital age. First, economies of scale are extremely significant. This is because the initial cost of many digital services, especially the replicable cultural and information services, is very high, but their marginal cost is very low. Second, economies of scope are also extremely significant. After a giant platform is formed, a wide variety of products and services can be sold on it, and with its brand advantages, it can constantly introduce new products and services. After logging in to a platform, consumers can buy almost all the goods and services they need. Enterprises can maximize the use of platform assets, reduce costs and improve efficiency.

Thirdly, digital technology promotes the formation of global innovation chains. Information technology, especially digital technology, provides a new way of cooperation and innovation. Modern information technology connects experts who are far away from each other, and enables them to share their R&D information in real time in a digital way. The rise of digital technology has promoted the deep integration of industries and the reconstruction of global value chains (Gereffi and Fer-nandez-Stark, 2019). Using big data technology, the World Intellectual Property Organization (WIPO) has tracked the world's largest science and technology clusters to study how global innovations are intertwined, finding that the division of labor in the global innovation network is more and more diversified and involves more and more economies.

In this context, we must participate in globalization at a higher level and to a deeper depth, so as to gain more benefits from high-level global division of labor and enhance our competitiveness.

(II) Favorable conditions for China to build a new link

1. China ranks among the top countries in the world in terms of participation in the global industrial chain

We have more favorable conditions than before to participate in the new round of

high-level globalization.

After years of open development, China's position in the global industrial chain has surpassed its position in the global GDP. Figure 14 below shows that China's position in the global industrial chain is the highest among all countries, although its GDP ranks second in the world. Among all countries, China takes an important position and the largest share in the global industrial chain. Therefore, promoting the development and maintaining the security of global industrial chain is of major significance to our own development.



Figure 14: Economies as global production centers measured by trade volume Source: The World Bank's Global Value Chain Development Report 2017°

Note: The size of the circle in which a country is located indicates its position, or importance, in the global industrial chain.

2. China's position in the global innovation chain has risen significantly

To a great extent, global innovation networks are formed through the internationalization of enterprise R&D. Transnational corporations are important carriers of global innovation networks. WIPO's research shows that China's importance in the global R&D network of multinational companies is increasing. In the last decade of the 20th century, China contributed only about 1% of patents to the global innovation network, but this percentage rose to 15% in the period from 2015 to 2017, as shown in Figure 15. Some Chinese cities have become the key nodes in the global innovation cooperation network. Beijing and Shanghai, for example, have already been in the top ten global innovation networks in the ICT industry, as shown in Figure 16.



Figure 15: Distribution of patents in the global innovation network by country and its

change[®]



Figure 16: China's position in the global innovation network of the ICT industry: Beijing and Shanghai are among the top 10 cities[®]

3. China has a host of advanced digital manufacturing enterprises

We also boast a number of outstanding enterprises participating in high-level international competition. In recent years, there have been a number of advanced digital manufacturing enterprises in China that can be regarded as industry benchmarks both at home and abroad. Since 2018, the World Economic Forum has cooperated with McKinsey & Company to select the "lighthouse factories" that lead the fourth industrial revolution. These factories are distributed in various industries around the world. By comprehensively applying digital technology and improving

business processes, they have changed employees' way of work and technology utilization in the production sector and realized the innovation of operation systems. So far, there are five batches of enterprises on the list, among which Chinese enterprises are the most, reaching 16, and accounting for 29.63%. This fully demonstrates the development and progress of Chinese enterprises in the past 40 years, showing a promising prospect that China will lead or promote the global digital industrial chain and innovation chain. See figure 17.



Figure 17: Distribution of "lighthouse factories" in major countries

Source: The data are compiled according to public information on the Internet and related reports.

Note: "Other countries" include: Ireland, Brazil, Saudi Arabia, Turkey, Singapore, Italy, Indonesia (each of which has two "lighthouse factories"); United Arab Emirates, Denmark, Finland, South Korea, Netherlands, Czech Republic, Romania, Sweden, India and Britain (each of which has one "lighthouse factory").

(III) IEC drives high-quality development

1. Attracting high-level foreign capital

As can be seen from Figure 18, the contribution of foreign-invested enterprises to all kinds of technological activities in China is higher than the national average, indicating that foreign investment has brought in rich technological resources, and foreign-invested enterprises have become an important force to drive China's technology to a higher level. According to the present situation in China, the main purpose of attracting foreign investment is not to bring in capital, but to obtain various competitive elements, such as technology, global network, business philosophy, R&D capability, etc.



Figure 18: Contributions of foreign-invested enterprises to product and process innovation of manufacturing enterprises above designated size in China in 2016-2018

Note: "Foreign invested enterprises" include those from Hong Kong, Macao and Taiwan.

Source: China Statistical Yearbook 2017, China Statistical Yearbook 2018, and China Statistical Yearbook 2019, National Bureau of Statistics

2. Integrating global advanced technologies

A big technology exporter is often a big technology importer. Only by participating in the global innovation chain in both directions can a country greatly improve its strongest technical capability. Figure 19 shows the import and export information of ICT patents in the United States, China and India, from which it can be seen that the United States, a technological power, has introduced a large number of technologies, which is not difficult to understand. In the industries that represent the highest technical level, each part of the product must reach a corresponding highest level. For large-scale complex product systems, the technical level and industrial characteristics of all participants in the industrial chain, such as complete-machine assembly enterprises, key equipment enterprises and component suppliers, must be iterated synchronously and developed in parallel. The higher the level of products, the more they need to integrate the world's strongest technological capabilities, so their global technology network is very intensive.



Figure 19: Imports and exports of ICT patents in the United States, China and India Source: The United Nations Conference on Trade and Development.

3. Importing much-needed natural resources

Natural endowments such as arable land, fresh water and oil resources cannot be changed. With the expansion of China's economy, these resources will be more and more in short supply. Figure 20 below shows China's dependence on oil import, that is, the proportion of annual net oil imports to total annual consumption, in the past 40 years. In 2006, our dependence on oil import exceeded 60%, and now it has reached nearly 80%. This shows that domestic oil supply obviously cannot meet the demand of our huge economy, and we need to make up for this gap through IEC.



Figure 20: China's oil imports and dependence on oil import from 1980 to 2019

Source: The data for 1980-2017 comes from the corresponding year's China Statistical Yearbook; the data for 2018-2019 are compiled according to public data.

4. Increasing outbound investment

Compared with other resources, capital is already a relatively abundant factor in China. In the face of increasingly scarce natural resources such as land, fresh water and environmental capacity and rising labor costs, if a considerable part of the capital continues to be allocated domestically, it will not achieve the best performance but reduce the rate of return. In this case, investors start to invest abroad to seek places with higher investment returns, which is an inevitable result of capital chasing profits. This kind of transfer is conducive to preventing the continuous decline of local investment returns and stabilizing capital gains. It can be seen from Figure 21 that China is changing from a transnational investment attractor to an international investor.



Figure 21: China's outbound direct investment and actual utilization of foreign capital from 1980 to 2019

Source: National Bureau of Statistics.

III. China needs to improve its systems and policies to promote

high-level IEC

1. The system of opening up to the outside world needs to be improved and relatively fixed

China should further improve its foreign-related economic laws and regulations and law enforcement, and adhere to the principle of equally treating and protecting various economic entities and property rights. First of all, we should attach equal importance to import and export. The importance of expanding our market and gaining the benefits of economies of scale and international division of labor through export is the same as that of introducing various resources and enhancing the technological level and competitiveness of domestic industries through import. Secondly, inbound and outbound investments should be treated equally. The capital, technology, advanced products and management experience brought in by foreign investment are as important as the investment returns, export expansion, overseas production and technology acquisition obtained through outbound investment. Third, foreign-funded and domestic-funded enterprises should be treated equally because both of them can promote China's economic development and international competitiveness. Fair competition between the two can screen out enterprises with stronger comprehensive competitiveness, improve the efficiency and competitiveness of the whole industry, and realize high-quality DEC and IEC.

2. Reform should be stepped up to create a better environment for development

The adverse impact of unbalanced domestic basic economic variables and market distortions has been amplified and has gone beyond our national boundary, hindering the formation and development of high-level IEC. For example, when the price of a certain element cannot timely reflect the market supply/demand and opportunity cost, an enterprise will overuse it and export it in large quantities. For another example, since domestic enterprises can not only raise funds in China, but also introduce foreign capital and invest overseas, if the efficiency of fund allocation in the domestic financial industry cannot be obviously improved, international investment and financing will happen abnormally. In addition, all major overseas securities markets and stock exchanges are competing to invite Chinese high-quality enterprises to get listed on them. In this context, if our securities market cannot be efficient, transparent and standardized, our high-quality enterprises will go public overseas. Therefore, only by accelerating the construction of a high-level market system can we accelerate the formation of higher-level IEC.

3. China needs an in-depth study of the influence of high-level trade rules

Now, some new high-standard trade agreements have been signed internationally, involving zero tariff, service industry opening, service trade, e-commerce, market access, intellectual property protection, environmental protection and so on. When all these agreements come into effect, they will cover more than 55% of international trade and investment activities and promote a new round of globalization in related fields. In this context, if we want to open wider to the outside world, we cannot circumvent the requirements of these agreements. In the process of building an open economic system, we, on the one hand, should pay close attention to the changes in

international economic, trade and investment rules, study their impacts and our countermeasures, build a corresponding system, carefully examine our implicit subsidy policies and protection policies for domestic enterprises, and take higher-standard opening measures when appropriate. On the other hand, we should, based on our own advantages, characteristics and needs, launch a high-standard rule system dominated by China, and make contributions to the formation of a new global system in the future.

⁽¹⁾ See Jiang Xiaojuan: The dual engine growth model of a big power: domestic and foreign demand in China's economic growth, Management World (Monthly), 2010, Issue 6.

[®] See World Bank: Global Value Chain Development Report 2017, July 26, 2017

[®] See WIPO: World Intellectual Property Report 2019 titled "The Geography of Innovation: Local Hotspots, Global Networks".

[®] See WIPO: World Intellectual Property Report 2019 titled "The Geography of Innovation: Local Hotspots, Global Networks".