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The Operation Path and Development Strategy of Digital Economy Innovation to Three Major Demands

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Abstract

In recent years, the innovative development of the digital economy has become a key measure for countries to promote economic recovery as soon as possible, and is a powerful driving force for economic growth. The impact of the innovative development of the digital economy on consumption, investment and export has different development mechanisms and operation paths. On the contrary, reasonable regulation of the three major needs also promotes the development of the digital economy. To promote the innovative development of the digital economy, according to its three major needs of regulation, the two work together to further promote the current economic development.

Keywords

Digital economy; Three major needs; Economic growth.

1. Introduction

During the epidemic, the global economy suffered a serious impact and fell sharply. After unremitting efforts, China's economy has maintained a growth trend, but the economic growth rate has declined compared with that before the epidemic. After the dramatic adjustment of the epidemic policy, the national economy will return to a stable state of development. Among them, whether the three major needs can play a major role in promoting the economic development and whether they can play a major role in the overall development of the national economy is the issue that we should focus on.

With the continuous adjustment and optimization of the economic structure and the continuous expansion of the economic aggregate, the focus of China's investment has shifted to non-productive investment for a long time, and it is difficult to form a strong sustainable driving force. Compared with the past, the pulling effect of exports on economic growth is still weakening. At present, consumption is the most affected by the epidemic, including traditional catering, accommodation consumption, cultural consumption, tourism consumption, general commodity consumption, etc.

At present, under the general trend of globalization, the digital economy has been developing rapidly with the integration and penetration of technologies and industries in various countries, and has gradually become a powerful driving force for economic growth. In the face of the more volatile and uncertain complex form of the world economy, the digital economy has demonstrated tenacity. Developing the digital economy is a key measure for countries to promote economic recovery as soon as possible, and has become the growth potential of the global economy.

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In terms of its academic significance, the digital economy, as a new type of service industry at this stage, has given unlimited potential to the transformation and upgrading of the country, and has gradually become an important topic in the academic circles of various countries. Scholars have studied the regional digital economy and the digital economy related to industrial enterprises extensively. Therefore, in order to explore the impact of the digital economy on economic growth, it is essential to study the digital economy and improve the corresponding system. In practical sense, this paper deeply summarizes the connotation and characteristics of digital economy and the mechanism between digital economy and economic growth, discusses the pulling effect of digital economy on the national economy from the aspects of consumption, investment and export, and reveals the operation path of digital economy innovation on the three major demands. Based on the professional knowledge learned, put forward relevant suggestions to make the digital economy better play a positive role in economic growth, drive economic recovery after the epidemic, and improve the efficiency of China's economic operation.

The digital economy has attracted wide attention from all walks of life because of its great innovation and development. Scholars have deeply recognized the role of digital economy in economic growth. Zhao Tao et al. (2020) believed that the digital economy, as the most active field in China's economic development, will play an important role in stimulating consumption, stimulating investment and creating employment by expanding the breadth and depth of integration with various fields of economic and social development [1]. Xiang Hongjin, Tu Haiyan, et al. (2023) found that the development of digital economy can significantly promote China's export trade by reducing the cost of information collection and the level of market entry threshold. In addition, the development level of digital economy drives the healthy competition between regions [2]. The research results of Zhou Jing and Wang Qiong (2022) show that the development of digital economy has a significant positive impact on OFDI of Chinese enterprises [3]. Liu Sheng and Lin Xiao (2022) found that in terms of different types of service consumption, no matter what kind of service and consumption type, the consumption upgrading effect of the digital economy is significantly positive [4].

2. Basic Theory

2.1. The connotation of digital economy innovation

In the "Fourteenth Five-Year Plan" for the Development of the Digital Economy, it is clearly pointed out that the digital economy is a new economic form with data resources as the key elements, modern information network as the main carrier, integrated application of information and communication technology, and all-factor digital transformation as the important driving force to promote a more unified fairness and efficiency. In the complex stage of global political and economic situation, China's digital economy innovation will further promote the healthy development of China's economy.

(1) The diversification of innovation subjects. In the era of digital economy, the innovation subject has evolved from the "three spiral theory of industrial and political innovation" in the second stage to the "four spiral theory" of user-oriented government (public institutions) - enterprises (industry) - university scientific research - users (citizens). With the development of digital technology, the increase of communication channels, and the change of learning methods, enterprises are no longer the only innovation subject, and relevant practitioners of various universities, scientific research institutes, industries and users themselves can participate in innovation, thus giving play to the greater value of the digital economy.

(2) Comprehensiveness in the field of innovation. The innovation of digital economy makes digital technology not only be used in the fields dominated by modern information technology, but also be combined with traditional industrial fields, so that traditional industries can

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improve their industrial competitiveness and strengthen their competitive advantages by virtue of digital economy.

(3) Perfection of the innovation system. The digital economy innovation system consists of five subsystems: digital knowledge innovation system, digital technology innovation system, digital regional innovation system, digital intermediary service system and national defense science and technology innovation system. The five subsystems interact with each other to promote the innovative development of the digital economy and let the digital economy promote the national economic development.

2.2. The connotation of the three needs

The three major demands refer to consumption demand, investment demand and export demand. The size of consumption demand is expressed by the level of final consumption expenditure. The size of investment demand is expressed by the level of gross capital formation. The size of export demand is expressed by the net export level of goods and services. The final consumption expenditure refers to the total final consumption expenditure of goods and services of resident units in the domestic economic territory and abroad within a certain period of time, but does not include the consumption expenditure of non-resident units in the domestic economic territory. The level of final consumption expenditure is affected by the disposable income of resident units, the price level of goods, price expectations, consumption preferences and consumption desire, but mainly by the disposable income and consumption desire of resident units. Total capital formation refers to the total value of fixed assets obtained by the resident unit within a certain period minus the total value of disposed fixed assets and the market value of changes in the physical quantity of inventories. Total capital formation includes total fixed capital formation and inventory. The level of gross capital formation is affected by the speed of capital accumulation and investment desire. The net export level of goods and services refers to the export of goods and services minus the import of goods and services. The net exports of goods and services are affected by the trade policies, exchange rates, consumption levels and other factors of each country. Consumption demand, investment demand and export demand jointly affect the country's economic development.

3. Change Trend of Three Major Demands

Since 1978, consumption demand and investment demand have shown an upward trend, while export demand has changed greatly and fluctuated frequently.

Since 1978, China's consumer demand has shown an upward trend. From 1978 to 1985, China's final consumption expenditure was 100 to 100 billion yuan. At this time, China is in the early stage of reform and opening up, and the productivity continues to recover, resulting in the gradual recovery of the national economy and the slow increase of people's income. At this time, the consumption desire is low, and the growth of consumption demand measured by final consumption expenditure is slow. From 1986 to 1999, China's final consumption expenditure was 100 million to 100 million yuan. At this time, the country vigorously promoted the reform and opening up, the productivity developed rapidly, the income level of residents increased more, and the consumption desire gradually increased, resulting in a certain increase in consumption demand. After 2000, China's final consumption expenditure was more than 10 billion yuan. The potential of reform and opening up was brought into full play, the income of residents increased significantly, the disposable income increased significantly, and the demand for spiritual and material consumption increased significantly.

Since 1978, China's investment demand has generally shown an upward trend. From 1978 to 1988, the total amount of capital formation was 100 to 100 billion yuan; from 1989 to 2004, the total amount of capital formation was 100 to 100 billion yuan; from 2005 onwards, the total

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amount of capital formation was 100 to 100 billion yuan. After 1978, the country carried out the reform and opening-up policy, gave preferential policies to foreign investors, and attracted a large amount of investment. At the same time, China's productivity developed rapidly, the speed of capital accumulation continued to increase, and the desire for investment continued to increase, which further affected the increase of investment demand. However, due to the influence of policy, situation and other factors, the investment demand has declined in a certain year. Therefore, the investment demand measured by the level of gross capital formation shows a wave-like upward trend.

Since 1978, the export demand has changed frequently and the growth rate has been very slow and flat. From 1978 to 1995, China's net exports of goods and services were less than 100 billion yuan and the value was negative for eight years, and the exports of goods and services were less than imports. During this period, due to the beginning of reform and opening up, China produced few products and provided few services, and the competitiveness of products and services was low and the export was low. From 1996 to 2004, China's net exports of goods and services were between 100 billion and 500 billion yuan. After 2005, China's net exports of goods and services were more than 100 billion yuan. However, due to the political and economic situation at home and abroad, national development needs and other reasons, such as Sino-US trade frictions, trade barriers set by Europe and the United States to China, China's export demand changes frequently and grows slowly, and tends to be flat as a whole.

Consumption, investment and export affect national economic development. The sum of final consumption expenditure, gross capital formation and net exports of goods and services constitutes the GDP of the expenditure method. The three influence and complement each other. When the final consumption expenditure is insufficient, the increase of gross capital formation and net exports of goods and services can stabilize the GDP; If the total capital formation is small, it can increase the final consumption expenditure, the net export of goods and services, and stabilize the gross domestic product; The expanded demand for consumption and investment requires an increase in the net export of goods and services. In a word, the economic development is affected by the complementarity of consumption demand, investment demand and export demand.

4. Operation Mechanism of Digital Economy Innovation on Consumption/Investment/Export

In the process of traditional economic innovation, innovation-driven economic development emphasizes two requirements: first, technological innovation input and output; Second, technological innovation achievements should be transferred and applied to the input and output of social production. Generally, digital economy innovation is an innovative activity that subverts and surpasses the existing mainstream technologies, product markets and business models, and has the characteristics of subversive innovation. In other words, digital economy innovation is an economic innovation activity that produces and applies new ideas, new technologies, new models and new formats under the digital economy, and promotes the transformation of social productivity, production mode and production relations. Zhang Sen and others also believe that digital economy innovation includes theoretical innovation, cultural innovation, technological innovation and institutional innovation. It is a complex and systematic project with features of wide coverage, multiple influencing factors, strong subversion and great significance.

It can be seen that the innovative development of the digital economy has broken the restriction of the limited supply of traditional factors on growth, provided the basis and possibility for sustainable growth and sustainable development, made it easier to realize economies of scale and scope, and has increasingly become a new driving force for global economic development.

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It can be inferred that there are both connections and differences between digital economic innovation and traditional economic innovation. In terms of the connection of identity, both digital economic innovation and traditional economic innovation emphasize the input-output process of innovation elements and the transfer and transformation of innovation achievements to realize innovation application and innovation value, both of which are aimed at promoting the transformation of economic development mode. In terms of the difference, the innovation of digital economy puts more emphasis on the innovation of new ideas, new technologies, new models and new business forms, as well as the collaboration of various innovative elements. The traditional economic innovation highlights the innovation-driven development with technological innovation as the core. Therefore, digital economic innovation not only has the role path of traditional economic innovation driving economic development, but also may have its own unique role path. Digital economic innovation is a long-term and arduous system engineering. Digital economic innovation is an important content, an important way, and a necessary means to achieve consumption, investment, and export.

4.1. Operating mechanism of consumption

The so-called consumption operation refers to the analysis of the mutual transmission process of consumption activities between the social consumption subjects composed of the government and the collective and the individual consumption activities composed of the residents from the perspective of consumption. It is not only an independent subsystem of the large system of national economic operation, but also a dynamic system that is constantly changing, and there is a link between various factors of consumption activities. It consists of the following three links. First, the formation of consumption. Second, consumption is chosen as the stage of consumption expenditure currency investment. Third, the realization of consumption, including the use and evaluation of consumer goods.

Because people's consumption demand is extremely complex and changes rapidly, new products emerge in an endless stream, which stimulate new consumption demand, resulting in a huge amount of demand information. At the same time, there is also a huge amount of supply information. Due to the complexity of the production structure and the progress of science and technology, new products, new materials and new processes are constantly emerging, resulting in endless production plans and technological processes to produce a use value. In short, in our era of "information explosion", it is difficult to collect and sort out the huge amount of information scattered in all aspects of society. Even if the planning center has all this information, it is impossible to solve these countless equilibrium equations, decompose them layer by layer, and then let the lower units execute them. It can't solve the "time lag" problem from information collection to processing and feedback, that is, it can't reflect the actual dynamic resource allocation problem. The digital economy may provide a new way to solve this problem.

As a new economic form with digital technology and innovation as the core driving force, digital economy innovation is continuously impacting the national consumption structure and consumption scale, and promoting the potential of China's consumption market to be constantly stimulated. In terms of the optimization of consumption structure: First, the wide application of digital technology in the era of digital economy has made digital consumer products and consumer services increasingly diversified, providing consumers with richer choice space. To some extent, this has led to the gradual transformation of the consumption structure of residents from material demand to spiritual demand, that is, the proportion of virtual service consumption is gradually higher than that of physical consumption. Second, the new business forms, new industries and new technologies created by the digital economy serve online consumption, which can effectively break the restrictions of traditional consumption regions and meet the needs of consumers anytime and anywhere. This has made online

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consumption content such as online education and online sales become the mainstream, and its proportion in the consumption structure has increased significantly.

As for the expansion of consumption scale, with the continuous penetration of digital economy into all fields of human social life, digital industrialization has been effectively implemented, and new consumption has become the main way for consumers to meet their own needs. On the one hand, digital industrialization is conducive to expanding consumption scale. With the improvement of the level of digital industrialization, the field of consumer products and services tends to be automated and intelligent, promoting the improvement of product quality and production efficiency, and further expanding the scale of online consumer service supply and product production. This is conducive to meeting the growing consumer demand of consumer entities and expanding the scale of consumption. On the other hand, new consumption behaviors are conducive to expanding consumption scale. Different from traditional consumption behavior, new consumption behavior is oriented to meet consumers' expectations for a better life. In the digital economy, smart consumption, contactless consumption and other new types of consumption promote changes in consumer habits and preferences, effectively activating the demonstration effect and ratchet effect of new consumption behaviors. Under the innovation of digital economy, the "stay" time has been greatly reduced and the resource allocation has been optimized.

4.2. Operation mechanism of investment

The investment mechanism is a coupling way in which the economic behavior of the investor, the investment signal parameters, and the investment regulation mechanism interact and correlate with each other.

The pattern of interests between the central government and local governments in China is plastic and fuzzy, and there are differences in interests between local governments. Therefore, not only does the central government of our country have no detachment in the whole investment activities, but also the local government has to play multiple roles in various investment activities, directly participating in and organizing the operation of local investment in multiple identities, such as investment decision-making subject, investment distribution subject, investment management subject, etc. In such a complex operation system, the choice of local government is far from simple. It always makes a choice in the way of thinking that is rational and irrational. Therefore, the investment behavior of local government often hides the sharp friction between maintaining macro interests and striving for local interests.

There are at least two problems in the way of investment of investors in China: first, the investors' investment behavior is not standardized. Investors are often not the recipients of investment benefits. Second, investors often lack profit motivation and safety investment awareness.

The reform of China's investment system has been relatively successful in solving the investment incentive mechanism. This success mainly comes from the policy of "delegating power and transferring benefits". The essence of "decentralization" is to transfer the residual claim and investment decision-making power from the government to the investment subject. Among all incentive mechanisms, the ownership arrangement of possession surplus is undoubtedly the strongest incentive. The investor has the right to make investment decisions and can participate in profit distribution, which is very important for mobilizing the enthusiasm of investors and giving full play to their information advantages. The resource allocation role of OFDI has been fully discussed by scholars, but it still has marginal contribution to clarify how OFDI promotes the relationship between global resource allocation and the innovative development of the digital economy from the perspective of the innovative development of the digital economy, especially in the context of developing countries and emerging market countries. From the perspective of digital economy development, on the basis of the past

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scientific and technological revolution, the information and communication revolution represented by the Internet, cloud computing, and artificial intelligence technology has promoted the rise of digitalization and the popularization of digital platforms, providing new economic growth points and key potential for boosting the world economy. Especially during the outbreak of the COVID-19 epidemic, the development of digital economy has shown great potential. In recent years, all countries have been actively carrying out response policies to do a good job of digital transformation, taking the fields related to the digital economy as the key development targets, and trying to seek the most strengthened effect of international cooperation, including expanding investment, innovating ideas, and improving digital skills. The infrastructure construction of the digital economy and the inclusiveness of financial investment will play a complementary role and play an important synergy.

4.3. Operation mechanism for export

Export can be divided into five stages, and the transformation between these stages mainly depends on the following aspects: learning mechanism, technology transformation mechanism, international capital flow mechanism, etc.

With the development of information technology, enterprises gradually carry out the deep integration of Internet+trade, reduce the entry threshold of enterprises, improve product management capabilities, and promote trade growth and quality improvement. At the level of learning mechanism, the innovation of digital economy will achieve the reduction of unit cost in the future through greater economic scale, better technology and continuous accumulation of labor and management experience. At the level of technology transformation mechanism, economic digital innovation makes technology and management resources more convenient and quickly imported from foreign countries, and can be accumulated in the process of development. The digital economy is deeply integrated into the production process of enterprises, and promotes the quality upgrading of enterprises' export products by improving production efficiency and quality production capacity. From a regional perspective, the development of the digital economy optimizes the allocation of regional resources and improves product quality by reducing export costs. At the level of international capital rotation mechanism, inward direct investment and technology transfer are very important. It is an important mechanism and way to absorb technology, management, information and other resources. Digital economic innovation has marginal significance for inward direct investment and acts on the export operation mechanism. The digital economy affects the industrial structure. The reallocation of resources triggered by the digital economy improves the quality of sustainable products. The product iterative development adjusts the export share, and improves the industrial export structure and the quality of export products. At the same time, the digital economy will have a negative impact on exports. The digital economy will aggravate the competition of enterprises, cause trade friction, raise labor costs and other problems. However, the positive effect of the digital economy on exports is greater than the negative effect, and the overall effect is positive.

5. Relevant Suggestions for Promoting the Innovative Development of the Digital economy and Regulating the Three Major needs

The continuous development of the digital economy is the core trend of the current global industrial innovation and development, which will enhance the ability of industrial transformation and upgrading, and become an important support for Chinese path to modernization. "The development of the digital economy is of great significance and is a strategic choice to grasp the new opportunities of the new round of scientific and technological revolution and industrial transformation". With the continuous improvement of the top-level

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design, the digital process is also sinking, helping the digital economy to become stronger, better and larger.

In the current context of global epidemic prevention and control, China is actively building a new pattern of dual-cycle development, adhering to the economic development model with the domestic macro-cycle as the main body and the domestic and international dual-cycle promoting each other, while paying attention to the domestic consumer market, adhering to the high-level opening up, and promoting the continuous development of import and export trade. The digital economy helps to strengthen the new driving force of economic development and promote the further implementation of the new pattern of double-cycle development. We should further popularize sophisticated digital technologies such as big data, artificial intelligence, and Internet plus, promote the accelerated flow and rational allocation of various resource elements, promote the restructuring of various industrial organization models, break the time and space constraints, and smooth the economic cycle at home and abroad.

As the most dynamic new economic form at present, digital economy is of great significance for stimulating the release of residents' consumption potential. We should actively build a production model of two-way joint transformation of data and digital technology, enabling consumer goods to improve quality and efficiency. At the same time, we will shape digital consumer goods and services through the integration of big data and online models, create a variety of new consumption channels, make mobile payment become the mainstream, promote the transformation and upgrading of consumption structure, and further facilitate consumption. We should adhere to the restructuring and optimization of limited production factors through the organic combination of data elements and other production factors, in order to achieve the geometric growth of total factor productivity and promote the transformation of production of consumer goods. Continue to improve the intelligent and digital infrastructure construction of the express and other circulation industries, actively build the network connectivity structure of logistics front-end deployment, mid-end sorting, and back-end transportation, improve the efficiency of the circulation organization, rely on information technology extension functions, improve the flow speed between production and consumption links, and further promote consumption. It is necessary to build information circulation and feedback mechanism through the rational use of data, seize a large number of consumer demand and extend it to the industrial chain and integrate it against the wishes of the supplier, greatly reduce the information search costs of both parties, promote the reduction of information asymmetry risk, form a new supply chain, and protect the interests of consumers. While digital scenes and digital applications are widely used, we should also accelerate the establishment and improvement of the digital economy market supervision system and data information security protection mechanism, and make efforts to protect consumer rights and interests.

As the development trend of the digital economy continues to deepen, the digital transformation of enterprises becomes a certainty possibility, and the investment value in the field of the digital economy is gradually emerging. Therefore, investors should pay more attention to the field of the digital economy when investing to drive the development of the digital economy. With the promotion and application of digital technology, it is conducive to smooth the information exchange of listed companies, intermediaries, investors and other market participants, improve the efficiency of the capital market, improve the market's price discovery function for assets, and reduce the existence of arbitrage opportunities. Under this trend, ordinary individual investors without information advantages are more difficult to make profits, the professionalism of investment will be more enhanced, and residents will rely more on the strength of professional institutional investors when investing, thus promoting the increase of the proportion of institutional investors, which has adjusted the structure of investors. Therefore, we should promote the transformation of professional investment institutions, build closer ties with residents, publicize more investment knowledge, and

increase convenience services on the premise of enhancing data utilization, so that investors do not lag behind the information tide. At the same time, under the premise of the increasing influence of intangible assets and human capital on digital companies, profit is no longer one of the most reliable indicators to reflect the changes in the company's value, and is often no longer the most critical factor in the analysis of investment value. Such companies should have a reasonable valuation of intangible assets such as key technologies and their leaders or the development resources invested in research and innovation, and do not ignore their potential value and future income, so as to maintain the company's sustainable competitiveness and further promote the development of the digital economy.

With the rapid development of the digital economy, the online communication platform provided by the Internet for both sides of transnational import and export trade has become increasingly popular, and its timeliness has greatly reduced the negative effects of geographical barriers. With the global spread of the COVID-19, online communication platforms enabled by the digital economy have emerged. Governments of all countries should strengthen cooperation, further expand their functions, enrich their content, provide diversified online remote services for import and export trade, and effectively shorten the time for enterprises to obtain regulatory information and handle compliance procedures by streamlining procedures, so as to improve the efficiency of international trade. In addition, countries should build enterprise credit evaluation systems under a series of digital technologies such as blockchain and the Internet of Things and based on real trade scenarios to promote international cooperation and information sharing, and reduce the additional credit costs paid by buyers and sellers to find and obtain information from each other. The increasingly mature big data system will also bring transparent and comprehensive targeted market data to domestic exporters, So that it can reasonably avoid possible trade protection measures when formulating product production plans, thus improving the efficiency of export trade. On the other hand, digital technology empowers traditional industries. The emergence and development of digital trade enables the transaction of intangible data without physical carriers, greatly reducing the restrictions on traditional import and export trade, broadening the market scale of foreign trade, and increasing the tradability of some traditional products after the empowerment of digital technology. In order to stabilize China's import and export and enhance the pulling effect of export demand on economic development, we should adhere to the foreign trade policy proposed at the 20th National Congress of the Communist Party of China and promote the high-quality development of the "the Belt and Road".

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