New Industrialization: Characteristics, System Development and Implementation Pathway

Research Group of the Institute of Industrial Economics, Chinese Academy of Social Sciences (CASS), Beijing, China

Abstract: *New industrialization in China, different from its past economic development pattern or patterns in developed nations, is the country's theoretical innovation based on the positive and negative experiences of industrialization at home and worldwide. New industrialization has various novel characteristics, including new sources of efficiency, new factors of production, new organizational forms, and new constraints. In addition, it has certain particularities arising from modernization with Chinese characteristics. This article summarizes the characteristics of new industrialization from the perspectives of people-centered approach, quality-first concept, independent innovation, green low-carbon economics, digital-real integration, and open circulation. There are four systems for promoting new industrialization: A self-sustained scientific and technological system, a high-end advanced manufacturing system, a green low-carbon circular system, and a division of labor system with domestic and international circulation. The Chinese new industrialization proposes the pathway and policy measures considering the new global situation and the requirements of new goals of strengthening organization and leadership, reducing factor cost, accelerating independent technological innovation, smoothing domestic and international circulation, and optimizing competition environment.*

Keywords: *New industrialization, Chinese modernization, system building, policy measures*
JEL Classification Code: O1
DOI: 10.19602/j.chinaeconomist.2024.01.01

After the founding of the People's Republic of China, the Communist Party of China (CPC) has been leading the Chinese people into a journey of industrialization that has transformed both China and the world. China has achieved a leapfrog development from a poverty-stricken agrarian country to a country with the world's largest industrial scale, surpassed all developed industrial countries except the United States in terms of GDP, and fulfilled its first centenary goal. Entering the new era, the CPC central leadership emphasized on developing the real economy and proposed a timetable to achieve new industrialization basic goals by 2035. An in-depth study of the connotations and strategic tasks of new industrialization is of great significance to build a strong modern socialist country.

1. Practical Basis and Historical Background of the Proposal for New Industrialization

No theoretical question can be asked without practical experience, and no theory can be formed without its historical background.

Beginning in the second half of the 18th century, the industrial revolution started a new chapter of human history, in which productivity increased rapidly and the economy outperformed that of any previous

(C)1994-2024 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

era, creating enormous material wealth. The countries that witnessed the industrial revolution, such as the United Kingdom, the United States, Japan and Germany, became the world's major industrial powerhouses. China missed the opportunities of the first two technological and industrial revolutions, therefore its GDP per capita remained at a low level at the beginning of the modern era. What is worse, facing the invasion by the imperialist countries, China turned into a semi-colonial and semi-feudal society and suffered from economic stagnation caused by prolonged turmoil. Before the founding of the People's Republic of China, China's GDP per capita was even lower than that of the 19th century (Maddison, 2008). After 1949, the country built a relatively complete industrial system in a short period by implementing the strategy of prioritizing heavy industry and developing industrial projects represented by the 156 key projects. After the reform and opening up, it further exploited its comparative advantages of abundant labor force and low wages to join international division of labor, achieved a high growth rate of labor-intensive industries and became a globally important processing and manufacturing economy.

At present, the world is in the midst of profound changes unseen in a century, and a new round of technological revolution and industrial transformation is rapidly developing. China faces difficulties in industrial development along with significant constraints in industrial transformation and upgrading. In addition to various unresolved issues and phase-related problems left by past industrialization, China is confronted with new challenges, such as global public health pressure, the spiraling escalation of Sino-American trade frictions, and the reconstruction of the global value chain. In 2021, the added value of China's manufacturing sector reached 31.4 trillion yuan, enabling China to retain the top ranking among the world's manufacturing countries for 12 consecutive years. The scale of its manufacturing sector has surpassed that of the United States, Japan and Germany combined, and the output of more than 220 products tops the world's production. With its 41 industry groups, 207 industry categories and 666 industry subcategories, China is the only country that has all the industry classes listed in the industrial classification recommended by the United Nations. Among the emerging major achievements, 5G, high-speed rail, nuclear power, spaceflight, and other important sectors have become world-class advanced technologies, and a group of high-quality enterprises and national product brands have demonstrated their competitiveness. Overall, the great rejuvenation of the Chinese nation is an irreversible historical course. In the process of building a strong, modern socialist country, industry remains a key force that drives economic growth, ensures the supply of material products, leads the upgrading of other sectors, copes with systemic shocks, and promotes scientific and technological innovation (Research Group of the Institute of Industrial Economics, China Academy of Social Sciences. 2022).

New industrialization also took place against a new international background. First, the latest technological and industrial revolutions are revealing their impact. Unlike the previous ones, the latest technological revolution and industrial transformation are deeply affecting our production and way of life, disintegrating the traditional industrial organization pattern and division of labor system. With the successive maturation, application, diffusion, and integration of technologies such as digital technology, life science, new energy, new materials, space and ocean explorations, advanced manufacturing, technological transformation is accelerating, and overlapping of technologies in different disciplines and fields are increasing. Integrated innovations across multiple disciplines and fields have given rise to new products and services, new modes and business patterns and have posed challenges to the traditional model of manufacturing. Second, the global political and economic landscape has undergone profound changes; although globalization is still the mainstream, the world has entered a period of turbulence and change due to the profound adjustment of international powers, the escalating threat to world peace, and the rise of unilateralism, protectionism, hegemony, and power politics. The trend of competition overtaking cooperation is taking shape globally. In recent years, the global manufacturing sector formed a new pattern of multi-power coexistence, multi-regional development, and multi-element governance, with a clear trend of diversification, decentralization, and regionalization of the industrial supply chain. Third, energy conservation and carbon reduction to cope with climate change has become a global consensus. In response to climate change, most countries in the world have signed the Paris Agreement

(C)1994-2024 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

and pledged to reduce fossil energy consumption and greenhouse gas emissions; China and many developed countries have formulated a timetable for carbon dioxide peaking and carbon neutrality. New industrialization is an objective requirement for China to respond to climate change and to transform its traditional industrial development model to build a community of shared future for mankind.

2. Characteristics of New Industrialization

Proposed on the basis of a deep understanding of the experience and lessons of industrialization and an insight into the laws of industrial and economic development under the new round of technological revolution and industrial transformation, new industrialization has a series of new characteristics and new connotations.

2.1 New Industrialization Is Theoretical Innovation Based on Positive and Negative Experiences

Industrialization has led to rapid economic growth and significant improvement in standard of living, but it has also given rise to serious conflicts and problems in various aspects due to the mismatch between productive forces and relations of production, the inadequate understanding of the laws of industrialization, and the limitations of technological development. First, a series of ecological and environmental problems have emerged, such as ecological damage, environmental pollution, and global warming, owing to the expansion of industrial production. Second, in the process of global industrialization, developed countries faced problems, such as deindustrialization, inequitable social distribution, and widening gap between the rich and the poor, while some developing countries experienced deindustrialization so early that the pre-mature industrial structure caused them to fall into the middle-income trap. In the process of rapid industrialization, China faces challenges such as excessive resource consumption and ecological and environmental problems. New industrialization is proposed based on an understanding of the general laws of industrialization in the world, and of the experiences and lessons of economic development since the founding of the People's Republic of China, especially in the decades since the reform and opening-up, and an analysis of domestic development conditions, development stages and development goals against the backdrop of the international environment.

2.2 Characteristics of New Industrialization

The paradigm shift triggered by the new round of technological revolution and industrial transformation, in particular, the emergence and widespread application of revolutionary innovations in the field of the digital economy, have led to a series of new characteristics of the current industrialization process.

(i) New sources of efficiency. The digital economy is the most active area of the new round of technological revolution and industrial transformation, in which many revolutionary digital technologies keep emerging, and these new technologies, after becoming matured, form new products, new services and new business models, which in turn form new industries and become an important driving force for economic growth. The new-generation digital technologies, such as cloud computing, big data, new-generation internet, internet of things, artificial intelligence, blockchain, virtual reality, intelligent robotics and 3D printing are widely applied in the industrial field, showing a trend of deep integration between digital technologies and the real economy. The paradigm of industrial economy is being replaced by that of the digital economy, and digital technologies are becoming an important driving force for improving quality, efficiency and competitiveness in the industrial field. Digital technology has promoted the integration of the manufacturing sector and the service sector. In this process, the manufacturing sector develops a variety of value-added services based on manufacturing capabilities and data, and the proportion of value-added services in the revenues and profits of manufacturers continues to increase.

(ii) New factors of production. In the process of social and industrial development, the ability of

(C)1994-2024 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

mankind to utilize natural resources has been increasing, and the composition of factors of production has been gradually shifting from primary to advanced factors. In the era of the digital economy, after labor, capital, land, knowledge, technology and management, data have become an important factor of production which not only changes the input structure, but also significantly improves the efficiency of other factors of production. Therefore, data have become an important source of value and the key to industrial competitiveness. More importantly, data are generated in production and operation activities and are characterized by non-competitiveness and non-depletion.

(iii) New organizational forms. In the era of the digital economy, platforms have emerged as an important organizational form with an ever-expanding application scope and growing importance. First, under the network effect, platforms can gather large numbers of users and suppliers, and enable a few top-tier platforms with a leading installed base to stand out and win market competition. Second, with the support of digital infrastructure, platforms can gather global users and achieve efficient connections between users, thus becoming a highly open form of production and organization. Open innovation has a deeper impact in the digital economy, and various user forums and open-source communities that gather global resources play an increasingly significant role in scientific and technological innovation. Third, platforms provide core tools and services, expanding audiences, pairing, and setting rules and standards (Moazed and Johnson, 2018), which not only replace some of the functions of governments to a certain extent, but also strengthen the dominant role and control of platforms within the industrial chain.

(iv) New constraints. Green economy is another critical area of the new round of scientific and technological revolution and industrial transformation. However, unlike the typical innovation-driven characteristics of the digital economy, green economy has more demand-driven characteristics. While achieving the goals of industrial development and economic growth, industrialization needs to emphasize the importance of green economy both as a constraint and a new opportunity for industrialization. Reduction of carbon emissions requires new technologies, products, services and solutions, which will create new opportunities for industrial development, and also cause a substitution and subversion effect on many traditional industries. Those countries that create new low-carbon technologies will be able to achieve faster economic growth in the new round of global industrial competition.

2.3 Chinese Characteristics of New Industrialization

Putting people first is the fundamental purpose of China's new industrialization. This people-centered approach should bring improvements at both the micro and macro levels. At the micro level, it should provide laborers with a good working environment, safeguard their rights and interests, and promote the increase of their income. At the macro level, new industrialization should promote urbanization, information technology and agricultural modernization, drive economic growth and social development, satisfy the people's growing expectation for a better life, and provide strong support for the realization of common prosperity.

High-quality development is the core connotation of new industrialization. Unlike traditional industrialization, which is characterized by the expansion of industrial scale and the transformation of economic structure, new industrialization is predominantly characterized by the pursuit of development quality. It is necessary to improve the quality level of China's industrial products in terms of performance, reliability, and service life. The country needs to upgrade its mainstream industries from low-end to high-end, and its main industries and key products need to have international leading competitiveness. As a result, the industry as a whole needs to achieve higher productivity, higher value-added rate and economic efficiency, thereby laying a solid material foundation for common prosperity.

Independent innovation is the fundamental driving force of new industrialization. With the transformation of China's industrial structure into the middle- and high-end segments of traditional industries, high-tech industries, and strategic emerging industries, the input demand for industrial development is shifting from the previous reliance on simple factor inputs to advanced factor inputs,

(C)1994-2024 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

such as know-how, technology, and capital. New industrialization needs to shift from low-level scale expansion to high-level quality efficient development, and the realization of this transformation must rely on innovation. Innovation-driven development requires not only imitative, but also original innovation with deeper and broader scope.

Low-carbon economy is the ecological background of new industrialization in the 21st century. To apply the concept of green development, industrial enterprises need to actively use green and low-carbon technologies, modes, and develop green and low-carbon products, so that the whole industrial chain and value chain and the whole life cycle of products can coexist harmoniously with ecology and cities. In addition to vigorously promoting the greening and low-carbonization of industry itself, it is also necessary to provide richer and more efficient green and low-carbon products for various sectors of the national economy.

The integration between digital and real economy is a technical feature of new industrialization. The maturity and wide application of digital technology have made it possible to integrate digital with manufacturing technology and the digital with the real economy. The integration between digital and real economy has become a key driving force for expanding its scale, upgrading its technological level, improving its international competitiveness, and strengthening its control over the global value chain.

The spatial form of new industrialization is open and circulating. It is necessary to deepen institutional opening-up and make use of China's oversized market and sound industrial system to attract high-level foreign investment in high-tech industries, strategic emerging industries, research and development centers and other fields. Industrialization in the new era needs to insist on creating a double development dynamic with the domestic economy as the mainstay and the domestic economy and international engagement providing mutual reinforcement, which means China needs to take the domestic market as the foundation of its economy while expanding opening-up and, meanwhile, use the smooth domestic economy to give a strong support and promotion to the international integration, which will vigorously support opening-up and defend globalization.

3. System Development of New Industrialization

In the face of unprecedented changes, the long-term development of China’s industrialization requires improving quality and fostering new driving forces, which also constitutes the basis for building a strong modern socialist country in all respects. In order to promote new industrialization, the country must identify key problems, address major constraints, eliminate main risks and form a core driving force for innovation-driven development by building a world-leading industrial and technological system. It must also make a breakthrough in the evolution of its industrial structure by building a high-end and advanced manufacturing system, make a fundamental change in its development mode by building a low-carbon and circular green system, and bring its status in international division of labor to a new level by building a division of labor system which creates synergies between domestic and overseas markets.

3.1 Building a Self-Sustained Scientific and Technological System

Compared with developed countries, China lacks key technologies in its manufacturing sector and relies on the core technologies of other countries due to its weakness in basic R&D capability and inadequacy of revolutionary innovation. Therefore, the country needs to build a self-sustained industrial and technological system to shift the driving force of industrialization from factor input to innovation. To this end we suggest the following.

(i) Strengthen the independence and controllability of industrial technology on an ongoing basis

China has become a major player in terms of input and output of technological innovation, but it is still exposed to the risk of containment and needs to strengthen the independence and controllability of its industrial technology as uncertainties and risks increase. First, it needs to make dynamic adjustments

(C)1994-2024 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

to the proportion and relationship between independent and imitative innovation and improve the independent industrial technology system covering core and basic technologies, key and innovative technologies, and leading and future technologies. Second, it needs to strengthen the independence of key industrial technology and promote the interaction and integration between the innovation chain and the industrial chain while replacing foreign technologies with domestic technologies. Third, it needs to strengthen the exchange and cooperation with international industrial technology, expand the financing channels of high-tech industries, build up a world-class technology trading market and incubation environment, improve the rule-based system for the commercialization of cutting-edge technologies and attract world-leading technological achievements.

(ii) Fostering innovation capacity to lead the new industrial revolution

In order to enhance innovation capacity, it is necessary to continuously increase public investment in technological innovation and allocate highly concentrated innovation resources to various types of enterprises and other innovation entities. Only by building a new type of high-level innovation infrastructure and optimizing the innovation environment can the historic opportunities created by the new round of technological revolution and industrial transformation be fully employed in the process of new industrialization. First, the function of innovation entities needs to be strengthened to promote the institutional reform of scientific research entities, enhance the status of enterprises as the innovation entities, and establish a basic research and development system, an industrial application system, and an advantageous and breakthrough technology research and development system. Second, the construction of a new type of innovation infrastructure needs to be accelerated to build a number of world-leading, rare or even unique major scientific devices and industrial validation platforms. Third, the forward-looking deployment of cutting-edge technologies and future industries needs to be strengthened to promote the development of multiple technology routes simultaneously in various technological fields affecting the future and realize a further development of industrial and technological capabilities in the new round of technological revolution and industrial transformation.

3.2 Consolidating a High-End, Advanced Manufacturing System

The foundation of industrialization must be the real economy, and the manufacturing sector is the core of the real economy. In the process of new industrialization, the manufacturing sector will maintain its important strategic position, continue to support the quality development of China's economy, and become a solid force in building a new development pattern. We have the following suggestions.

(i) Stabilizing expectations for the development of the manufacturing sector

For a large country like China, the rising status and role of the service sector does not mean the decline of the status and role of the manufacturing sector, but rather highlights the irreplaceable role of the manufacturing sector in high-quality development (Guo and Peng, 2021). The smooth progress of new industrialization and the consolidation of the advanced manufacturing system requires stabilizing the expectations for the development of the manufacturing sector. First, measures need to be taken to guarantee the factors required for developing the manufacturing sector, *i.e.*, the supply of land, energy, capital, and labor. Second, effective investment in industry needs to be stabilized and expanded, focusing on new industries, new patterns and new infrastructure as key areas, and intelligent manufacturing, service-oriented manufacturing, and overseas manufacturing base construction as key directions to explore new opportunities for investment in the manufacturing sector.

(ii) Promoting the deep integration of industrialization and digital technology

Digital technology is the most significant representative technology in the new round of technological revolution and industrial transformation. With the further penetration and empowerment of digital technology in various industrial sectors, the digital transformation of industry and manufacturing will become the main battlefield of digital integration. First, the information manufacturing sector

(C)1994-2024 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

needs to be optimized and strengthened, and based on the scale efficiency, measures need to be taken to forge advantageous technology, make up for existing shortcomings and develop a modern information manufacturing system with the largest scale and the most complete system in the world, which is highly efficient, resilient and technologically advanced. Second, the digital transformation of traditional industrial sectors needs to be deeply promoted, with a focus on modernizing industrial equipment, to strengthen the self-awareness, self-learning, self-decision and self-adaptation capabilities of the industrial production process. Third, new models of digital manufacturing need to be developed to promote digital transformation of industry, such as digitalization of product functions, industrial big data linkage, intelligent supply chain coordination, and product services through the life cycle.

(iii) Vigorously developing service-oriented manufacturing

By ending the fragmentation of value creation caused by industrial classification, service-oriented manufacturing needs to help increase the efficiency and profitability of the manufacturing sector while creating differentiated competitive advantages. First, a rule-based system for service-oriented manufacturing needs to be developed to change the traditional mindset, eliminate the institutional barriers to inter-industry factor flows, guide manufacturers to reshape the focus of the value chain, and encourage service providers to adjust their strategic focus from "2C"(to Customer) to "2B" (to Business). Second, emphasis needs to be placed on promoting the deep integration of advanced manufacturing and modern service industries, and supporting the deep integration between the advanced manufacturing industries, such as high-end equipment, electronic information, new energy automobile, biomedicine, and the modern service industries, such as software and information service industry, financial industry, scientific and technological research and development, and scientific and technological service industry. Third, informatization needs to be applied to promote innovation in service-oriented manufacturing and to continuously improve the value creation capabilities of manufacturers in the service stage.

3.3 Building a Green, Low-Carbon Circular Economy

Compared with the petroleum and the electricity revolution, the main difference in the current energy transformation is that it originated from the strategic choice of sustainable development by human society rather than from technological progress. Unlike developed countries, China started its green transformation from a lower development level and has borne heavier responsibility to reduce emissions. Therefore, the country needs a more robust institutional foundation and policy support for sustainable circular economy. We suggest the following.

(i) Scientific division of the carbon dioxide peaking targets

"Peaking carbon dioxide emissions and achieving carbon neutrality is a solemn commitment made by China to the world and is also a broad and deep social and economic transformation which will not be easy to achieve." (Xi, 2022) Industry is an important generator of carbon emissions and is also a key to achieving the goals of carbon dioxide peaking and carbon neutrality. First, carbon reductions in industry and manufacturing need to be made at an appropriate pace and in a phased and selective manner. While energy consumption and carbon emissions in different sectors are to be scientifically measured, energy load and energy consumption need to be distinguished and the goals of carbon dioxide peaking and carbon neutrality need to be scientifically determined according to different industrial and technological characteristics and resource endowments and industrial structures of different regions. For the industrial sectors and stages with high emissions and the regions with heavier industry, the goals of carbon dioxide peaking need to be advanced while the goals of carbon neutrality need to be appropriately reduced. Second, multi-industry goals and policies for emission reductions need to be put in place. A pilot program of "carbon compensation" across different industries and sectors needs to be carried out and "carbon tax" needs to be imposed on those industries that do not emit carbon dioxide but use high-emission input.

(ii) Comprehensive promotion of green, low-carbon transformation in industry

(C)1994-2024 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

In order to develop industry and manufacturing in the context of new industrialization, it is necessary to achieve a comprehensive green and low-carbon transformation. Nowadays, the main obstacles to green transformation are the high proportion of fossil energy in the energy structure, the insufficient low-carbon technological innovation which cannot meet the demand for carbon reduction, and the low level of achievements in circular economy. First, the energy structure needs to be continuously improved. Large-scale clean energy production bases need to be constructed steadily and tax and incentive mechanisms be adjusted to motivate industrial enterprises to use clean energy and promote the use of clean energy in the vicinity of its source. Second, technological innovation needs to be relied upon to continuously improve industrial efficiency. Efforts need to be made to tackle global challenges in energy efficiency and emission reduction technology so that Chinese energy conservation and emission reduction technologies can be world-leading and the energy efficiency level of key industrial sectors can reach or exceed that of developed countries. Third, a multi-layer circular economy system needs to be established. The resource recycling industry and the remanufacturing industry need to be vigorously developed, and resource conservation and concentrated utilization need to be promoted through technological progress and rule-based system development to form multi-layered circular economy within an enterprise, a development zone and a region.

(iii) Advocating green consumption across society

The construction of a green, low-carbon circular system requires changes in production methods and lifestyles; therefore, in addition to the green transformation of the industry itself, the greening of consumption also gives an important support. First, promotion of green consumption needs to be strengthened to guide people to change their old habits and consciously resist bad consumption habits. Second, wasteful consumption and high-carbon consumption need to be reduced; a price mechanism needs to be adopted to control excessive consumption, status consumption, luxury consumption and other wasteful behaviors, and the new mode that combines online and offline life and work needs to be further promoted. Third, the ratio of low-carbon industrial product consumption needs to be raised, the policy of subsidizing individual purchases of low-carbon products such as new energy vehicles, energy-saving electrical appliances, and distributed energy systems need to be continuously implemented and the infrastructure and consumption scenarios for low-carbon products such as charging piles and smart microgrid systems need to be further improved.

3.4 Establishing a Division of Labor System with Domestic and International Circulation

New industrialization needs not to follow the old path of export-oriented development with excessive emphasis on exports, let alone the path of self-segregation from the world. In the international environment where anti-globalization is on the rise, China needs to be more open to the world, capitalize on domestic and international markets and resources, create a double development dynamic with the domestic economy as the mainstay with domestic economy and international engagement providing mutual reinforcement, and establish a division of labor system with domestic and international circulation. For this purpose, the country needs to address the following.

(i) Implementing high-quality "go global" and "bring in" strategies

New industrialization requires insisting on comprehensive opening-up to international and domestic markets and continuously improving the attractiveness of the "bring in" strategy and the competitiveness of the "go global" strategy. First, China needs to further consolidate its advantages in the export of industrial products, improve the construction of international marketing channels and localized operation capabilities, and guarantee the overseas orders delivery capabilities of export enterprises. Second, it needs to promote the global deployment of industries, continuously improve the capabilities of international material allocation and international capacity cooperation, improve the fast customs clearance mechanism and transportation channels of cross-border goods, strengthen regional capacity cooperation, and enhance the ability to resist risks through cross-border synergy of industries.

(C)1994-2024 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

Third, the country needs to expand the utilization of foreign capital and improve the level of foreign capital utilization, continue improving services for foreign-funded enterprises, continuously improve the business environment, and promote the increase in the quantity and quality of foreign capital.

(ii) Unleashing and further satisfy the demand for domestic consumption

Unleashing domestic demand is not only a guarantee for the resilience and security of the industrial chain and the supply chain, but also a better way for the public to enjoy the fruits of industrialization, reflecting the goal of new industrialization to meet people's needs for a better life. First, confidence in domestic consumption needs to be boosted and economic development and livelihood protection be promoted in a coordinated way to ensure people's basic living needs, steadily increase people's disposable income, and strengthen the basic conditions for unleashing consumption potential. Second, consumption demand needs to be developed at various levels, such as continuously increasing traditional basic consumption, actively developing service consumption, accelerating the fostering of new types of consumption, and vigorously advocating green and low-carbon consumption. Third, the hardware foundation and institutional environment for expanding domestic demand need to be improved, including further improving communication and logistics infrastructure, and encouraging innovation in new digital, personalized and experience-based business patterns.

(iii) Optimizing the geographical distribution of domestic industries

One of the characteristics of China's last stage of industrialization was the gradual transfer of industries from the eastern coastal areas to the central and western regions. This process objectively promoted the industrialization and industrial upgrading of various regions, but left problems which have to be resolved by new industrialization, such as unbalanced regional development and widening development gap between regions. First, regional industrial synergy needs to be strengthened, and a concept that highlights balanced regional development needs to be formed to emphasize the functional and characteristic development positioning and policies of each region. Second, the factor flow needs to be promoted to facilitate the input of high-end factors from the developed regions in the east to the less developed regions in the central and western parts of China and improve the reconstruction and optimization of the industrial chain and the supply chain within city clusters. Third, the development gap between urban and rural areas needs to be narrowed, and measures taken to further give full play to the role of industry in promoting the equalization of urban and rural infrastructures and drive changes in employment, consumption, and living patterns.

(iv) Adjusting and improving division of labor in global industries

China's development is intended to seek a more reasonable position in the international division of labor and to build a fairer international division of labor order, and will not threaten any country, let alone deprive any country of its development opportunities. To build a community of shared future, which is one of the goals of new industrialization, it is necessary to continuously improve the division of labor with both developed and developing countries. First, cooperative relations with developed countries in high-end and emerging industries need to be strengthened, and extensive cooperation with developed countries needs to be carried out in strategic technology research and development. Second, mutually beneficial cooperation with developing countries needs to be strengthened with a focus on South Asia, Southeast Asia, South America, West Asia and Africa, to build a new type of outbound investment and cooperation relationship that meets the principle of "a community of shared future". Therefore, China should promote in-depth cooperation with developing countries at the level of industrial chains and systems, and build a new model of international cooperation through the interconnection of information networks and the integration of industrial chains and supply chains.

4. Implementation Pathway of New Industrialization

Promoting the new industrialization is a complex and systematic project that involves institutional mechanisms and policies in various aspects such as organization, human resources, taxation, finance,

(C)1994-2024 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

industry, technology, trade, regions, environment, and market regulations. While adapting to the new situation and new requirements for the goals of the new era, it is necessary to streamline and adjust the institutional mechanisms and policies related to new industrialization to establish its implementation pathway. To this end, the following is needed.

Adjusting and optimizing industrial policies. China needs to conduct compliance inspection of the existing industrial policies, strive to improve the compatibility of industrial policies with other policies, gradually clean up the industrial subsidy measures that conflict with international rules and market order, reduce the subsidies for end products, and gradually shift the focus of subsidies to the front-end research and development sectors. The country needs to rely on consumers to *vote with their feet*, shift the direction of financial support from producers to consumers, and improve the efficiency of subsidies through market-oriented means. It needs to improve the existing administrative methods of government procurement, enhance the rationality and transparency of government procurement, and adhere to the principle of neutral competition while ensuring safety. Government procurement needs to play a positive role in publicizing and supporting the demand for new products and new modes to guide the consumer's demand for new products.

Strengthening the policy of independent innovation. China needs to adhere to openness and inclusiveness in guiding technological innovation, encourage colleges and universities, scientific research institutes, enterprises and public institutions, in collaboration with overseas technological teams, to actively carry out global joint research and development, create a new technological cooperation mode and expand the frontier of technological cooperation. The country needs to upgrade the existing "startup and innovation" platform to attract the outstanding teams from home and abroad to join the domestic startups and innovation teams; it also needs to accelerate the opening of incubators with support from venture capital and industrial funds, with the aim of building the "startup and innovation" platform into a global technological innovation center. China needs to continue strengthening intellectual property protection laws and regulations, while supporting key enterprises to strengthen their intellectual property reserves in the key technology segments; it needs to regulate the technology trading market, expand the trading scale of technology patent and copyright services related to advanced manufacturing industries. Meanwhile, the country needs to actively explore the modern technology trading means such as blockchain to promote the monetization of intellectual property rights.

Further optimizing trade policy. By fully aligning itself with the world's leading regions in opening-up, China needs to further expand the scope of opening-up and push forward the development of new industrialization in an open and inclusive manner. Efforts need to be made to strengthen the construction of opening-up demonstration zones in Hainan, Guangdong, Hong Kong, Macao, and the Yangtze River Delta. The reform measures need first to be implemented on a trial basis in those demonstration zones, and then gradually extended to other regions after achieving satisfactory results. China needs to speed up the elimination of non-transparent and non-compliant trade policy instruments in line with international trade rules, reduce the subsidies for export tax rebates and create a favorable environment for opening-up; it needs to enhance the quality and quantity of investment promotion to attract foreign investment into high-tech fields, such as intelligent manufacturing, green manufacturing, and digital-real integration. China needs to expand the opening-up in productive service industries, such as finance, logistics and software, and use foreign investment to accelerate the upgrading of its domestic productive service industries. In the face of the opportunities and challenges brought by major adjustments in the global value chain, it needs to accelerate the construction of regional value chains, fully leverage the functions of the Regional Comprehensive Economic Partnership (RCEP), in order to promote negotiations on various types of bilateral free trade zones or regional trade agreements and win more space to develop new markets and new supply chains.

(C)1994-2024 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

Strengthening the policy of coordinated regional development. China should capitalize on the potential of its domestic market, improve the synergy mechanism between the developed coastal regions and the central and western regions, and further facilitate the transfer of labor-intensive industries from the eastern to the central and western regions, so as to make better use of the comparative advantages of resource endowments in various regions and gradually develop a clear division of labor for the mutual benefit of the east and the west regions. In the central and western regions, the country should accelerate infrastructure upgrading, improve business and ecological environment, and create a good living atmosphere for professionals. The central and western regions need to play the role of gateway under the Belt and Road Initiative, and speed up the construction of border free trade zones and special functional zones so that such regions can take the lead in connecting with West Asia, South Asia, Central and North Asia and ASEAN to cooperate with the coastal regions in implementing the opening-up policy. The regional integration strategy needs to be further implemented to speed up the construction in key regions such as Beijing, Tianjin, Hebei, Guangdong, Hong Kong, Macao, the Yangtze River Delta and the Chengdu-Chongqing economic circle, build leading demonstration areas for new industrialization and promote industrial development in the surrounding areas.

Improving environmental policy. China needs to adhere to the green and low-carbon development direction of new industrialization and accelerate the promotion of green manufacturing; it needs to introduce the green and low-carbon transformation of iron and steel, cement, non-ferrous metals and chemicals, and other high-energy-consuming industries, upgrade the existing production technologies and terminal treatment equipment, and increase the recycling and treatment of wastewater, waste gas and solid waste. The country needs to promote the use of wind power, hydropower, photovoltaic power and other renewable energies in industrial parks, accelerate the research and development of green energy storage technologies, construct green factories and energy-saving buildings, and build a number of green manufacturing demonstration parks. Commercial banks, securities, trust and other financial institutions should be encouraged to accelerate the implementation of green technology financing. The key links and technology roadmap in the industrial chain need to be drawn up based on the goals of carbon dioxide peaking and carbon neutrality. Green loans and bonds need to be issued to promote the low-carbon transformation of backbone enterprises. By expanding innovative services in green supply chain finance, China needs to lead small, medium-sized and micro enterprises in the upstream and downstream to carry out green and low-carbon transformation.

Strengthening market supervision. China needs to effectively implement competition policies, strengthen fair competition among market players, and conduct anti-monopoly investigations against operators who are suspected of abusing their dominant market position and restricting market competition. It needs to strengthen the supervision and administration of online and offline markets, crack down on production of counterfeit goods, and make efforts to improve the quality of products and services. Facing the trend of digital-real integration of new industrialization, the country needs to actively explore new regulatory mode for digital industrialization and industrial digitization. While delegating power, China needs also to improve relevant industry laws and regulations, clarifying the competitive limits of internet platforms, and compelling platform-based enterprises to abide by market regulations; it needs to strengthen the protection of data property rights, improve the national big data regulatory system, assess the data security risks in key sectors, strictly constrain the use of data resources by platform enterprises, strengthen the lawful management of data, prevent data monopoly and safeguard consumers' data privacy. Subject to laws and regulations, enterprises are encouraged to establish a data resource sharing system to expand the positive externality of data dividends. In view of the difficulty of existing regulations in covering new industries and new modes, China needs to enable industry associations, social organizations, experts, and scholars to play their role in building a collaborative

(C)1994-2024 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

regulatory model involving multiple subjects. Relevant industry initiatives or rules should be introduced before the gradual improvement of laws and regulations, so as to enhance the timeliness, accuracy and rationality of supervision and regulation. CE

References:

Guo K. S., Peng J. Z. The Manufacturing Sector's Strategic Position and Role in China's New Stage of Development [J]. Social Sciences in China, 2021, (5):128-149.

Maddison A. Chinese Economic Performance in the Long Run: 960-2030 AD [M]. Paris: OECD Publishing, 2007.

Moazed A, Johnson N. L. Modern Monopolies: What It Takes to Dominate the 21st Century Economy [M]. New York: St. Martin's Press, 2016.

Research Group of the Institute of Industrial Economics of CASS. Stabilizing Industrial Growth: International Experience, Practical Challenges and Policy Orientation [J]. China Industrial Economics, 2022, (2):5-26.

Xi J. P. Striving to Build a Modernization Where Humanity and Nature Coexist in Harmony [J]. Qiushi Journal, 2022, (11): 4-9.

(C)1994-2024 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net