

PART III

ACCELERATING THE DEVELOPMENT OF A MODERN INDUSTRIAL SYSTEM AND STRENGTHENING THE FOUNDATIONS OF THE REAL ECONOMY

We will keep our focus of economic development on the real economy and move faster to build China into a manufacturing powerhouse and a manufacturer of quality. We will promote the full integration of advanced manufacturing with modern services, strengthen the supporting and leading role of infrastructure, and build a modern industrial system that coordinates the growth of the real economy with the development of technological innovation, modern finance, and human resources.

Chapter 8 Implementing the Manufacturing Powerhouse Strategy

We will rely on our own efforts, keep risks under control, and deliver in terms of safety and performance. The industrial base will be upgraded and industrial chains modernized. With its share in the economy remaining basically stable, manufacturing will strengthen its competitive advantages and move toward high-quality development.

Section 1 Enhancing China's Basic Industrial Capacity

We will implement the industrial foundation reengineering project and move faster to eliminate bottlenecks and bolster areas of weakness in basic parts and components, basic software, basic materials, and basic processes and industrial technology foundations. Relying on leading firms in relevant sectors, we will intensify research on important products and key technologies and accelerate breakthroughs in turning these into engineering and industrial applications. We will implement major technology and equipment research projects, improve the incentive and risk-compensation mechanisms, and promote demonstration applications of the first unit (set) of equipment, the first batch of materials, and the first version of software. We will improve the industrial foundation support system, develop a number of national manufacturing innovation centers in key fields, and improve the national quality infrastructure. We will build demonstration platforms for production and application, develop public service platforms for basic industrial technology such as standard measurement, certification

and accreditation, inspection and testing, as well as test verification, and optimize databases for industrial foundations like technologies and processes.

Section 2

Modernizing Industrial and Supply Chains

Combining economic efficiency with safety, we will address weak links and foster strengths through strategic plans and targeted policies for supply chains in all sectors and build more innovative, higher value-added, more secure, and more reliable industrial chains and supply chains. We will enhance manufacturing chains, strengthen the support provided by resources, technology, and equipment, develop international industrial security cooperation, and diversify industrial chains and supply chains. Based on the strengths of China's large-scale and complete industries and the first-mover advantages in some sectors, we will consolidate and upgrade the competitiveness of the entire industrial chains in high-speed rail, electricity equipment, new energy, shipping and other fields, and build industrial chains of strategic and overall significance starting with complete machine products that conform to the trends of future industrial changes. We will improve the distribution of regional industrial chains, encourage the key links of industrial chains to remain in China, and strengthen the capacity of the central, western, and northeastern regions to undertake industrial relocation. We will implement the emergency product production capacity reserve projects and build regional centers to guarantee the provision of emergency supplies. We will launch projects to cultivate a number of pilot firms and cultivate a group of leading enterprises with ecological leadership and core competitiveness. We will help small and medium enterprises (SMEs) to enhance their specialized advantages to develop them into outstanding "little giants" and cultivate single-product

champion enterprises in manufacturing. We will strengthen technological and economic safety assessment and carry out surveys and evaluations of industrial competitiveness.

Sector 3

Promoting the Optimization and Upgrading of Manufacturing

We will deepen the implementation of smart manufacturing and green manufacturing projects, develop new service-oriented manufacturing models, and make manufacturing higher-end, smarter, and more eco-friendly. We will develop advanced manufacturing clusters and promote the innovative development of sectors such as integrated circuits, aerospace, shipping and maritime engineering equipment, robotics, advanced rail transit equipment, advanced electricity equipment, engineering machinery, high-end computer numerical control (CNC) machines, and pharmaceuticals and medical equipment. We will transform and upgrade traditional industries, improve the layout and structure of raw material industries including petrochemicals, steel, nonferrous metals, and building materials, increase the supply of quality products in sectors such as light industries and textiles, transform and upgrade enterprises in key industries like the chemical industry and paper-making at a faster pace, and improve the green manufacturing system. We will implement special projects to enhance the core competitiveness and technological transformation of the manufacturing sector, encouraging enterprises to apply advanced applicable technologies and strengthen equipment upgrading and large-scale application of new products. We will build smart manufacturing demonstration factories and improve the smart manufacturing standard system. We will carry out quality improvement initiatives to increase the variety and quality of manufacturing products and to nurture domestic brands.

Section 4

Implementing Manufacturing Cost and Burden Reduction Initiatives

We will strengthen production factor assurances and efficient services, consolidate and expand the achievements in tax and fee reduction, reduce the production and operating costs of enterprises, and reinforce the roots and competitiveness of our manufacturing sector. We will increase the capacity of industrial land and put it to more efficient use and promote new land-use models. We will increase the scale of medium- and long-term loans and credit loans to the manufacturing sector, increase special loans for technological transformation, and ensure that manufacturing has more access to equity investment and bond financing. Manufacturing enterprises will be allowed to fully engage in market-based electricity transactions. We will regulate and bring down logistics charges such as for ports, shipping, and road and railway transportation and overhaul all charges and fees levied on businesses. We will establish a full-cycle service mechanism for major manufacturing projects and a system for entrepreneurs to participate in enterprise-related policy formulation. We will also support the development of a comprehensive information, technology, import, export, and digital transformation service platform for SMEs.

Box 4

Improvement in Manufacturing Core Competitiveness

01 High-end new materials

- Promote breakthroughs in high-end rare earth functional materials, high-quality special steels, high-performance alloys, high-temperature alloys, high-purity rare metal materials, high-performance ceramics, electronic glass and other advanced metals and inorganic non-metallic materials;
- Strengthen the R&D and application of carbon fibers, aramid fibers, and other high-performance fibers and their composite materials, as well as bio-based and biomedical materials;
- Accelerate breakthroughs in key technologies for high-performance resins such as metallocene polyethylene (m-PE) and high-purity electronic materials such as photoresists for integrated circuits.

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Box 4	
Improvement in Manufacturing Core Competitiveness	
02 Major technical equipment	<ul style="list-style-type: none"> ▪ Promote the R&D and application of CR450 Chinese standard high-speed electric multiple unit (EMU) trains, pedigree Chinese standard subway trains, high-end machine tool equipment, advanced engineering machinery, key nuclear power unit parts, cruise ships, large liquefied natural gas (LNG) ships, and deep-sea oil and gas production platforms; ▪ Push forward with demonstration operation of the C919 airliner and the serial development of the ARJ21 regional passenger aircraft.
03 Smart manufacturing and robotic technology	<ul style="list-style-type: none"> ▪ Prioritize research on distributed control systems, programmable logic controllers, data acquisition and visual monitoring systems, and other industrial control equipment; ▪ Make breakthroughs in key technologies for intelligent robots such as advanced controllers, high-precision servo drive systems, and high-performance decelerators; ▪ Develop additive manufacturing.
04 Aeroengines and gas turbines	<ul style="list-style-type: none"> ▪ Accelerate the R&D and verification of technologies such as key materials for advanced aeroengines; ▪ Promote the development of the civil aviation turbofan engine CJ1000 product with a high bypass ratio; ▪ Make breakthroughs in key technologies for wide-body passenger aircraft engines; ▪ Realize industrialized development of advanced civil aviation turboshaft engines; ▪ Establish the experimental heavy-duty gas turbine power station in Shanghai.
05 Industrial applications of the BeiDou Navigation Satellite System (BDS)	<ul style="list-style-type: none"> ▪ Make breakthroughs in technologies that integrate communications and navigation; ▪ Build an industrial innovation platform for the applications of the BDS; ▪ Carry out demonstrations in industries including communications, finance, energy, and civil aviation; ▪ Promote the market-oriented and large-scale application of the BDS in consumer fields such as in-car navigation, smartphones, and wearable devices.
06 New energy vehicles and intelligent (connected) vehicles (ICV)	<ul style="list-style-type: none"> ▪ Make progress in key technologies for new energy vehicles including high-safety power batteries, high-efficiency drive motors, and high-performance power systems; ▪ Speed up the R&D of key components of ICV including basic technology platforms, software and hardware systems, chassis-by-wire, and intelligent terminals.

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Box 4	
Improvement in Manufacturing Core Competitiveness	
07	<p>High-end medical equipment and innovative drugs</p> <ul style="list-style-type: none"> ▪ Achieve breakthroughs in core technologies such as laparoscopic surgical robots and extracorporeal membrane oxygenation (ECMO) machines; ▪ Conduct research on high-end imaging, radiotherapy, and other large medical equipment and their key components; ▪ Develop implantable and interventional devices such as brain pacemakers and fully degradable vascular stents; ▪ Upgrade rehabilitation assistive devices; ▪ Conduct R&D on vaccines for major infectious diseases and targeted medication for malignant tumors and cardiovascular and cerebrovascular diseases; ▪ Strengthen R&D on key technologies and equipment of traditional Chinese medicine (TCM).
08	<p>Agricultural machinery and equipment</p> <ul style="list-style-type: none"> ▪ Develop advanced applicable agricultural machinery such as intelligent high-horsepower tractors, precision (no-tillage) sowing machines, boom sprayers, ditching fertilizer applicators, high-efficiency combine harvesters, fruit and vegetable harvesters, sugarcane harvesters, and cotton pickers; ▪ Develop special agricultural machinery for high-efficiency agricultural production in hilly and mountainous areas; ▪ Promote R&D and industrial development of advanced grain and oil processing equipment; ▪ Conduct R&D of equipment for green and intelligent breeding, feeding, environmental control, collecting, and manure utilization; ▪ Conduct R&D of machinery and equipment for planting trees and grass.