Fostering New Quality Productive Forces for Sound Development of Industrial Transformation Demonstration Areas

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Abstract: *Demonstration areas for industrial transformation and upgrading must embrace high-quality development in order to accomplish socialist modernization together with the rest of the country by 2035. Currently, new quality productive forces are emerging as driving forces for fostering endogenous dynamism for development. In this context, it is of practical relevance to discuss the theoretical rationale and pathway for new quality productive forces to support the high-quality development of the demonstration areas. From a theoretical point of view, the demonstration areas may foster new quality productive forces by nurturing market entities that contribute to endogenous dynamism, developing supporting systems, and upgrading industrial structure to lead the development path. Considering the current challenges, we suggest that the demonstration areas carry out reforms to strengthen institutional foundation and unleash endogenous dynamism for transformation and upgrading, encourage industrial evolution and specialization, and implement urban development according to local conditions, so as to expedite the formation of new quality productive forces and embrace high-quality development.*

Keywords: *Demonstration areas for industrial transformation and upgrading, new quality productive forces, special regions, old industrial and resource-based cities*

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1. Introduction

Advancing the high-quality development of demonstration areas for industrial transformation and upgrading is an important initiative to revitalize old industrial cities and resource-based ones according to their current development stage and ensure their achievement of socialist modernization alongside the rest of the country by 2035. This initiative not only contributes to the development of a regional economic landscape with complementary advantages (Zhang, Ye, 2022), but it also contributes to industrial sophistication and the modernization of industrial chains (Zhang, 2022). In 2016, five ministerial agencies, including the National Development and Reform Commission (NDRC), the Ministry of Science and Technology (MOST), the Ministry of Industry and Information Technology (MIIT), the Ministry of Natural Resources (MNR), and the China Development Bank (CDB), issued

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the *Implementation Opinions for Supporting Industrial Transformation and Upgrade of Old Industrial Cities and Resource-Based Ones*. Since then, China has taken three steps to build 20 city-level and 20 county-level demonstration areas for industrial transformation and upgrading (Table 1), as well as enact a series of policy documents to support reform and innovation for the demonstration areas (Table 2), establishing a long-term working mechanism and closed-loop policy system for their high-quality development. As China's economy enters the high-quality development stage, the demonstration areas face growing challenges such as insufficient dynamism, an inadequate supporting system, and barriers to transformation and development paths (Dong, 2022; Zhang and Cao, 2022). In order to achieve high-quality development, it is imperative to address the question of how to promote endogenous dynamism for transformation and upgrading in the demonstration areas.

Table 1: City- and County-Level Demonstration Areas for Industrial Transformation and Upgrading during the 14th Five-Year Plan Period

Type		Name of demonstration area			
City-level industrial transformation and upgrading demonstration areas	First Wave	Central Liaoning (Shenyang-Anshan-Fushun) Industrial Transformation and Upgrading Demonstration Area	Tangshan Industrial Transformation and Upgrading Demonstration Area, Hebei Province	Chongqing Metropolitan Circle Demonstration Area for Industrial Transformation and Upgrading	Tongling Industrial Transformation and Upgrading Demonstration Area, Anhui Province
		Central Jilin Industrial Transformation and Upgrading Demonstration Area (Changchun-Jilin-Songyuan)	Changzhi Industrial Transformation and Upgrading Demonstration Area, Shanxi Province	Northeast Ningxia (Shizuishan and Ningdong) Demonstration Area for Industrial Transformation and Upgrading	Huangshi Industrial Transformation and Upgrading Demonstration Area, Hubei Province
		Western Inner Mongolia (Baotou-Ordos) Industrial Transformation and Upgrading Demonstration Area	Zibo Industrial Transformation and Upgrading Demonstration Area, Shandong Province	Central Hunan (Zhuzhou, Xiangtan, Loudi) Industrial Transformation and Upgrading Demonstration Area	Zigong Industrial Transformation and Upgrading Demonstration Area, Sichuan Province
	Second Wave	West Beijing Industrial Transformation and Upgrading Demonstration Area	Daqing Industrial Transformation and Upgrading Demonstration Area, Heilongjiang Province	Jiangxi Pingxiang Industrial Transformation and Upgrading Demonstration Area	Guangdong Shaoguan Industrial Transformation and Upgrading Demonstration Area
		Dalian Industrial Transformation and Upgrading Demonstration Area	Xuzhou Industrial Transformation and Upgrading Demonstration Area, Jiangsu Province	Western Henan (Luoyang and Pingdingshan) Demonstration Area for Industrial Transformation and Upgrading	Liupanshui Industrial Transformation and Upgrading Demonstration Area, Guizhou Province
County-level industrial transformation and upgrading demonstration parks		Zhengding High-tech Industrial Development Zone, Hebei Province	Changxing Economic and Technological Development Zone, Zhejiang Province	Yuncheng Economic Development Zone, Shandong Province	Dianjiang Industrial Park, Chongqing Municipality
		Qingxu Economic Development Zone, Shanxi Province	Ninghai Economic and Technological Development Zone, Ningbo City	Lankao County Industrial Cluster, Henan Province	Daying Economic Development Zone, Sichuan Province
		Heishan Panghe Economic Development Zone, Liaoning Province	Anhui Tianchang Chuzhou High-tech Industrial Development Area	Xiantao High-tech Industrial Development Zone, Hubei Province	Qingzhen Economic Development Zone, Guizhou Province
		Hunchun Border Economic Cooperation Zone, Jilin Province	Fuqing Jiangyin Harbor City Economic Area, Fujian Province	Liuyang Economic and Technological Development Zone, Hunan Province	Tengchong Economic Development Zone, Yunnan Province
		Shuyang Economic and Technological Development Zone, Jiangsu Province	Nanchang Xiaolan Economic and Technological Development Area, Jiangxi Province	Dongyuan County Industrial Relocation Industrial Park, Guangdong Province	Sanyuan High-tech Industrial Development Zone, Shaanxi Province

Source: Compiled based on documents released from the Repository of State Council Policy Documents (www.gov.cn).

In recent years, scholars have extensively discussed what should be the core driving forces for the demonstration areas of industrial transformation and upgrading, highlighting the keywords of digital economy, technological renovation, and innovation platforms (Liu and Wu, 2023; Li et al., 2022; Wang and Ma, 2022). However, several shortcomings remain. First, the existing literature follows a homogeneous set of viewpoints that do not account for systematic and general driving factors. Second, existing research findings offer limited policy significance due to scant discussion of causes and a focus on empirical research while ignoring theoretical analysis. With the introduction of new quality productive forces as a new productivity theory for China's high-quality development, it is critical to investigate the theoretical rationale and practical path for "continuously enhancing the endogenous dynamism for the industrial transformation and upgrading of the demonstration areas by fostering new quality productive forces."

Table 2: Key Policy Documents on the Development of Demonstration Areas for Industrial Transformation and Upgrading

Document name	Time of issuance	Issuing authority	Description
Implementation Opinions on Supporting Industrial Transformation and Upgrading in Old Industrial Cities and Resource-Based Ones	September 2016	National Development and Reform Commission (NDRC), Ministry of Science and Technology (MOST), Ministry of Industry and Information Technology (MIIT), Ministry of Natural Resources (MNR), China Development Bank (CDB)	The *Opinions* calls for support to eligible cities in setting up industrial transformation and upgrading demonstration areas to pilot major reforms and policies and explore replicable experiences.
Notice of the Ministry of Land and Resources on Supporting the Construction of the First Wave of Industrial Transformation and Upgrading Demonstration Areas in Old Industrial Cities and Resource-Based Ones	April 2017	NDRC, MOST, MIIT, MLR, CDB	This document identifies 12 cities (economic zones) as the first wave of demonstration areas for industrial transformation and upgrading, and clarifies future priorities of work for the demonstration areas.
Notice on Further Promoting the Construction of Industrial Transformation and Upgrading Demonstration Areas	August 2019	NDRC, MOST, MIIT, MNR, CDB	The *Notice* calls for support to the development of Western Beijing Municipality, coastal areas of Dalian City, and some other localities as the second wave of demonstration areas.
Notice on the 2020 Annual Evaluation Results and Next-Step Key Work of Industrial Transformation and Upgrading Demonstration Areas	June 2021	NDRC, MOST, MIIT, MNR	The *Notice* identifies industrial transformation and upgrading demonstration areas under key support during the 14th Five-year Plan period, and additionally establishes 20 additional county-level industrial transformation and upgrading areas.
14th Five-Year Plan for the Revitalization and Development of Special Regions	September 2021	State Council	The *Plan* calls for support for resource-based cities to develop alternative industries and build industrial transformation and upgrading demonstration areas.
Implementation Plan for High-Quality Development of Industrial Transformation and Upgrading Demonstration Areas in Old Industrial Cities and Resource-Based Ones during the 14th Five-Year Plan Period	November 2021	NDRC, MOST, MIIT, MNR, CDB	The *Plan* identifies the development objectives and implementation pathways for demonstration areas during the 14th Five-year Plan period, and marks a new development stage for the demonstration areas.
Notice on the 2022 Annual Evaluation Results and 2023 Key Work of Industrial Transformation and Upgrading Demonstration Areas	May 2023	NDRC, MOST, MIIT and MNR	Cities with demonstration areas should receive more policy and financial support based on evaluation results in order to support the implementation of priority projects, increase endogenous development dynamism, pioneer the revitalization of old industrial bases across the country, and play a larger role in optimizing regional financial distribution.

Source: Compiled based on documents released from the Repository of State Council Policy Documents (www.gov.cn).

New quality productive forces represent advanced productivity in contemporary times, with the goal of driving disruptive breakthroughs in technology through innovation (Zhou and Xu, 2023). During his inspection tour of Heilongjiang Province from September 6 to 8, 2023, General Secretary Xi Jinping mentioned the phrase "new quality productive forces" for the first time, emphasizing the importance of "proactively nurturing strategic emerging industries such as new energy, new materials, advanced manufacturing, and ICT industries and cultivating future industries to form new quality productive forces and enhance development dynamism" (Xi, 2023a). At the Central Economic Work Conference on December 11, 2023, General Secretary Xi Jinping urged the country to "advance industrial innovation through technological innovation, and in particular, engender new industries, business models, and dynamism with disruptive and frontier technologies, so as to develop new quality productive forces" (Xi, 2023b). At the 11th Collective Study Session of the Politburo of the CPC Central Committee on January 31, 2024, General Secretary Xi Jinping said that "Developing new quality productive forces is an intrinsic requirement and priority for advancing high-quality development. We must compose a grand chapter of innovation and hasten the development of new quality productive forces" (Xi, 2024). China's new quality productive forces are still in the process of being cultivated and developed, and previous research has identified them as a critical driving force for fostering endogenous dynamism and propelling economic development (Xu, 2023; Wei, 2023).

In this context, this paper provides an in-depth overview of the theoretical basis, practical barriers, and implementation method for cultivating new quality productive forces and developing high-quality demonstration areas. Compared to the prior research, this paper provides the following marginal contributions: At the theoretical level, an "entity, factor, and structure" analytical framework is developed for the high-quality development of the demonstration areas through the cultivation of new quality productive forces, providing an analytical perspective and system for future research on new quality productive forces. On a practical level, our identification of obstacles and paths forward may give inspiration for policymaking and institutional improvement in relevant areas.

2. Theoretical Basis for Promoting High-Quality Development of the Demonstration Areas by Fostering New Quality Productive Forces

The *Implementation Plan for Supporting the High-Quality Development of Industrial Transformation and Upgrading Demonstration Areas in Old Industrial Cities and Resource-Based Ones* was jointly released in November 2021 by the NDRC, MOST, MIIT, MNR and CDB. As stated in this document, the objective is to "further enhance the endogenous dynamism, platform support, and pathway of industrial transformation and upgrading and achieve significant progress in the development of demonstration areas by 2025." Existing research suggests that cultivating industrial entities, developing a system of production factors, and improving industrial structure can all help to promote new quality productive forces (Chao and Wang, 2023; Du et al., 2023; He et al., 2024; Xu et al., 2023). As a result, this paper seeks to construct an "analytical framework for accelerating the development of new quality productive forces and advancing the high-quality development of demonstration areas (as illustrated in Figure 1)," and elaborates on the theoretical rationale for such framework.

2.1 Enhancing Endogenous Dynamism of the Demonstration Areas by Fostering Industrial Entities as New Quality Productive Forces

High-quality development of the demonstration areas necessitates the establishment of broader mechanisms for industrial transformation and upgrading, spurred by technological and institutional

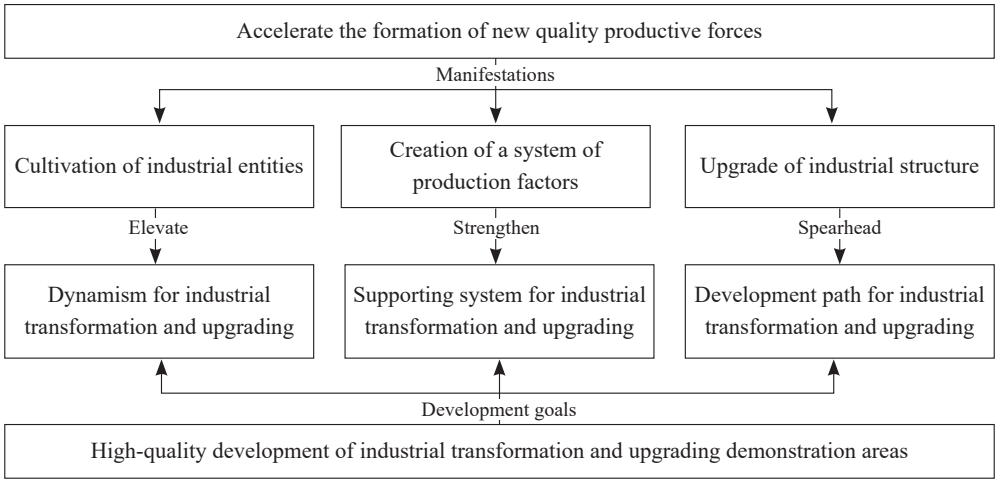

Figure 1: Analytical Framework for Fostering New Quality Productive Forces and Advancing High-Quality Development of Demonstration Areas

innovations. On the one hand, technological innovation is a critical driver of industrial transformation and upgrading. It is a key driving force for breaking new ground in critical technologies, improving product quality and value addition, enhancing core industrial competitiveness, dealing with changing demand and competitive pressures in domestic and international markets, and completing the industrial transformation from low-end to high-end development. Institutional innovation, on the other hand, is an important factor that stimulates the endogenous dynamism of industrial transformation and upgrading in the demonstration areas. Good institutional mechanisms can provide a stable, transparent, and fair business climate for demonstration cities, reduce institutional transaction costs, unleash the dynamism and creativity of market entities, promote the reasonable allocation and efficient use of resources, and create institutional assurances for industrial transformation and upgrading. However, old industrial and resource-based cities remain reliant on established industries, with little investment in emerging and innovative sectors. There has been no substantial progress in addressing the rigid institutional systems and insufficient support facilities for emerging industries. Such an innovation system is insufficient to accelerate industrial transformation and upgrading in the demonstration areas, emphasizing the need for greater dynamism.

The introduction of new quality productive forces represents a step forward in Marxist productivity theory. Traditional productive forces include ordinary and skilled workers as the workforce, general equipment and computers as the means of production, and unprocessed natural resources in the form of substances, along with processed feedstocks, as the objects of labor. In contrast, new quality productive forces include intellectual workers who are knowledge-based, skilled, and innovative, new means of production represented by sophisticated, precision, and cutting-edge equipment, and the new discovery of natural objects, raw materials with the introduction of more technological factors, and other intangible objects stemming from progress in science and technology (Zhou and Xu, 2023). Such qualitative change inevitably results in systematic transformations and major shifts in the division of labor across diverse sectors, raising the socialization of production to a new level and injecting powerful new impetus into future economic growth.

The purpose of cultivating industrial entities as new quality productive forces is to unleash endogenous dynamism for industrial transformation and upgrading. The key to attaining this goal is

to establish proactive arrangements for frontier industrial entities in strategic emerging and future industries (Chao and Wang, 2024). First, those industrial entities not only embody gradualist innovations in their respective sectors, but they also lead industrial and technological revolutions driven by critical and disruptive breakthroughs, resulting in new products, industries, services, and business models that transform every aspect of industrial organization and people's ways of life and work (Li, 2019). In this way, factor resources should be allocated to more efficient and innovative companies and sectors to boost efficiency (Ren and Wang, 2023), injecting dynamism into the demonstration areas for high-quality development. Second, disruptive technological innovations are required to develop new quality productive forces, which occur through industrial entities with significant externalities. Disruptive innovations support innovations in other sectors and drive quality and efficiency improvements in traditional industrial sectors; in addition, they effectively promote the transfer and cross-sector integration of technologies, contributing to global innovations through the identification and introduction of technology diffusion, manufacturing coordination, and applied innovations (Li et al., 2022). Hence, innovative industrial entities are vital for the transformation and upgrading of the demonstration areas. Third, the formation of future industrial entities may, in some cases, allow the demonstration areas to explore and lead in new industrial sectors. Given the strong market competition in China's traditional and strategic emerging industries, the demonstration areas must forge new paths of transformation and upgrading. Although future industries are still in the early stages of lifecycle development and face high innovation risks and trial-and-error costs (Chen, 2023), China is starting from the same place as other countries and regions, and early movers will be able to introduce and cultivate future industrial entities, resulting in industrial agglomeration and an enormous "innovation rent" (Chao and Wang, 2024). The benefits of such possibilities to catch up with and overtake others can be seen in China's achievements in new energy vehicles, 5G communications, BeiDou satellite navigation, and iron-based superconductivity (Zhou and Xu, 2023; Zhou et al., 2023).

2.2 New Quality Productive Forces: Reinforcing Supporting Systems for the Demonstration Areas

It is crucial to establish a comprehensive supporting system for industrial transformation and upgrading through industrial parks and urban-industrial integration. Only in this way will the demonstration areas develop to a high standard. The demonstration areas necessitate such a supporting system in order to optimize resource allocation and foster sustainable, eco-friendly, and innovation-oriented development. On the one hand, industrial parks, as a key carrier of industrial development, should concentrate resources and factors of production, reduce business costs and increase efficiency by providing infrastructure, public services, and technology support, and expand urban industries and boost competitiveness by attracting investment and business. On the other hand, integrated urban and industrial development is a critical pathway for new urbanization and balanced economic development. It is essential to prevent a disconnect between industrial and urban development by improving the industrial structure and urban functions of cities. The concentration of population and industry will, in turn, provide cities with long-term dynamism. However, the reality is that old industrial and resource-based cities rely on "standalone" development typical to traditional industrial clusters, and industrial transformation and upgrading have been hampered by a lack of strategic integration between industrial parks, cities, and industries, as well as gaps in urban development, functions, and public services.

General Secretary Xi Jinping has expanded and refined the Marxist theory on the factors of production by incorporating "knowledge," "technology," and "data" as factors of production (Pu and Huang, 2023). Emerging and cutting-edge technologies generate new factors of production that are

the most essential components and defining attributes of new quality productive forces. In contrast to conventional production methods, which are characterized by diminishing or constant returns to scale, new production factors, such as the data factor, have become significant drivers of productivity growth. These factors exceed the fundamental attributes and value creation capabilities of traditional factors by virtue of their dependence-multiplying characteristics, value-multiplying network effect, and intensive substitutability (Hong and Ren, 2023).

Demonstration areas should not only improve the quality of conventional production factors, but also integrate digital and intelligent new factors of production, so as to bring about the emergence of new quality productive forces. This naturally requires a complete market-based factor system of efficient land, reliable capital, skilled workforce, high-quality data, and groundbreaking innovation (Wei, 2023) that drives industrial transformation and upgrading in demonstration areas and supports the further improvement of platform functions. One crucial aspect is the development of industrial parks in demonstration areas that adhere to high standards. This serves to facilitate the effective allocation and concentration of resource factors, while also encouraging synergistic innovations between enterprises operating upstream and downstream, industrialization and informatization, and modern services and advanced manufacturing. In addition to supporting the "invisible hand of the market" in allocating land, capital, talent, and data, industrial parks also function as the "visible hand of the government" in providing policy guidance, incubation investments, and policy support capital as part of a government initiative to promote economic development. At the same time, industry-city integration is a prerequisite for cultivating new quality productive forces. The emergence of new quality productive forces is contingent upon a wealth of innovative talent (Du et al., 2023). In order to attract and retain highly qualified enterprises and talents whose concentration is beneficial for the continuous improvement of public services, cultural atmosphere, ecological environment, and auxiliary facilities in the demonstration areas, it is imperative that we foster an innovation ecosystem and promote integrated industry-city development (Feng, 2021).

2.3 New Quality Productive Forces: Industrial Upgrade for the Demonstration Areas to Lead Development Path

To achieve high-quality development, the demonstration areas must take a more comprehensive approach to industrial transformation and upgrading, with a focus on intelligent and green renovations. Intelligence and eco-friendliness are global trends for industrial development (Han and Li, 2022). To accelerate industrial transformation and upgrading in the demonstration areas, old industrial and resource-based cities must improve technology and value-added and promote sophistication, intelligence, and green performance. With a concentration of energy, resource-based, and heavy and chemical industries, old industrial and resource-based cities confront significant difficulties to the green transformation and lack impetus for intelligent renovation, industrial transformation, and upgrading. Furthermore, the path to industrial transformation and upgrading in the demonstration areas is hampered by outdated technology, a shortage of industrial talent, and restricted funding for technological renovation. It is crucial to fully integrate digital technologies into every facet of socioeconomic development, to implement cutting-edge, energy-efficient low-carbon technologies, equipment, and management models, and to optimize the economic and industrial structures of the demonstration areas overall.

The demonstration areas can lead industrial progress by adopting new quality productive forces. To generate new quality productive forces, the demonstration areas must improve their industrial structure by promoting knowledge- and technology-intensive industries as economic pillars (Rui, 2018).

It is also critical that the demonstration areas serve as engines for overall industrial system efficiency improvement and contribute to high-quality development through eco-friendly, intelligent, high-value-added, and high-growth industrial performance.

With new quality productive forces, the demonstration areas may pave the way for industrial transformation on the following dimensions: First, the digital and intelligent transformation. The incorporation of data as a major factor of production may hasten the digitalization of traditional sectors. The digital economy not only supports smart manufacturing and automated production in the industrial sector, but it is also permeating other sectors such as healthcare, governance, finance, and transportation, creating fertile ground for the emergence of new technologies, paradigms, and industries (Shi and Xu, 2024). The demonstration areas should leverage the digital economy's strategic potential in spawning new quality productive forces (Zhai and Xia, 2024) in order to accelerate their intelligent transformation. Second, the green shift of industrial structure. The formation of new quality productive forces not only leads to breakthroughs in critical disruptive technologies for energy conservation and carbon reduction, but it also allows for the application of those technologies in certain traditional industries (Zhou and Xu, 2023) to support green transformation in the demonstration areas. On the third dimension, the industrial structure should be developed and transformed in an integrated manner. The emergence of new technologies and business models has blurred the boundaries between different industries, resulting in cross-disciplinary integration of frontier technologies (Xu et al., 2023). New quality productive forces cannot materialize without cross-disciplinary integration and innovation (Wei, 2023). They requires a high degree of integration between strategic emerging industries and traditional industries, the digital economy and the real economy, the primary, secondary and tertiary industries, and advanced manufacturing and modern services. Such integration is vital for demonstration areas to achieve integrated industrial transformations and improve industrial structure.

3. Bottlenecks to the Formation of New Quality Productive Forces in the Demonstration Areas

In recent years, the demonstration areas have made significant progress and created successful strategies for upgrading traditional industries, relocating and transforming outdated industrial zones, promoting public welfare, and protecting the environment. However, the demonstration areas face bottlenecks in developing new quality productive forces, such as perennial institutional inflexibility (Liu et al., 2023), resource curse and path dependence (Wu et al., 2023), a late start to industrial transformation and upgrading (Yu and Ma, 2022), and insufficient endogenous growth dynamism.

3.1 Institutional Barriers to the Formation of New Quality Productive Forces in the Demonstration Areas

Currently, corporate transaction costs are high due to perennial institutional inflexibility for old industrial and resource-based cities and significant inter-regional market segmentations (Zheng et al., 2021), which not only prevent those cities from overcoming the path lockup and resource curse, but also severely impede the formation of new quality productive forces in the demonstration areas, as manifested in the following aspects. The first issue is that the demonstration areas have a less developed market economy, which makes it difficult and inefficient to allocate resources. A lack of competition and open markets caused by overly intrusive municipal governments has discouraged private sector innovation, especially among highly educated workers. Secondly, it is difficult to commercialize breakthrough technology and bring innovation resources and components together in the demonstration areas due to flawed institutional frameworks for innovation. Third, it is evident that there exist shortcomings in

the cultivation of talent within the demonstration areas. Without significant improvements in human capital, there would be no basis for the emergence of new quality productive forces, which depends on innovative talent as a critical factor (Du et al., 2023). An illustration of this dependence can be seen in the declining population density of resource-based and old industrial communities in northeast China, with 75% of resource-based cities experiencing net population outflows (Chen and Mei, 2018). How to attract and retain talent presents a difficult question for old industrial and resource-based cities. However, in practice, those cities lack a pro-business environment to unleash the vitality and creativity of market participants. Another deficit is the lack of a conducive environment for the development of human capital, which impedes the emergence of new quality productive forces.

3.2 Insufficient Industrial Foundation Hinders Development of New Quality Productive Forces in Demonstration Areas

In recent years, the demonstration areas have made some strides in growing and developing strategic emerging industries based on significant technology advancements and needs. However, their current industrial system remains relatively weak for developing new quality productive forces, posing hurdles to transforming traditional industries (Cheng et al., 2020). For example, according to some research reports, coal-based cities account for 53% of resource-based cities in China, while forestry-based cities account for 18%. Nonferrous metallurgical cities, petroleum cities, ferrous metallurgical cities, and other resource-based cities account for 10%, 8%, 7%, and 4%, respectively. The majority of those cities were built on mining sites that lacked the necessary infrastructure for modern industry.

China's old industrial cities and resource-based cities are centered on the mid- and low-end positions of industrial chains. Short industrial chains, meager value-added, poor industrial concentration, and insufficient competitiveness all pose challenges to incubating industrial entities that represent new quality productive forces. Meanwhile, it takes time to develop strategic emerging and future industries that can offer fresh dynamism. As a result, the demonstration areas are in a painful period for cultivating industrial firms. In terms of production factors, the demonstration areas are at a disadvantage when it comes to competing for new factors like data, technology, talent, and markets, all of which are critical for incubating new quality productive forces. Another hindrance is the lack of technology, capital, and talent for modern services, high-tech industries, and future sectors, as well as underdeveloped market mechanisms. Furthermore, the demonstration areas suffer from path dependence and a resource curse, as evidenced by their resource-based industrial structure, which is dominated by traditional heavy and chemical industries and is vulnerable to the cyclical volatility of domestic and international resource price and demand (Wu et al., 2023). Given the trend of carbon emission reduction, the demonstration areas confront greater obstacles and risks than ever in transforming their energy-intensive and polluting industries.

3.3 Lack of Urban Functions Hampers the Development of New Quality Productive forces in the Demonstration Areas

Cities or regions where demonstration areas are located must strive to improve their urban functions and services in order to promote new quality productive forces. Old industrial and resource cities suffer from homogeneous industrial structures, deficient infrastructure and public services, irrational urban planning, and poor environmental quality for a variety of reasons, including historical legacy and changing circumstances. As a result, the demonstration areas have received little assistance from local urban functions such as employment creation, industry support, population growth, and public services (An and Zhang, 2019). Without a doubt, host cities must compensate for urban function deficits,

build production factors, and update their industrial structure in order to incubate new quality productive forces. However, the majority of China's urban development programs are carried out in prosperous megacities rather than old industrial and resource-based cities where the demonstration areas are located, and urban development is delayed by complex social problems, a lack of capital, and overburdened public finance (Wu et al., 2023). Still, old industrial and resource-based cities have followed a standard pattern of urban development, giving industrial park renovations priority over bettering urban services. Urban development in those areas is inefficient due to flawed market systems, therefore innovation is required to improve public participation, establish long-term planning, and gain policy support (Cheng et al., 2020; Zhou and Shen, 2023).

4. Pathway Towards Creating New Quality Productive Forces in the Demonstration Areas

Given the above-mentioned gaps in the institutional mechanisms, industrial foundation and urban functions, it is suggested that local governments follow a three-pronged pathway to incubate new quality productive forces and empower high-quality development through institutional reforms, specialization, and urban development.

4.1 Unleashing Endogenous Dynamism through Institutional Reforms

The key to transforming the demonstration areas lies in institutional reforms that remove barriers to the creation of new quality productive forces and endogenous dynamism. To create new mechanisms that promote disruptive technologies and their commercialization, it is vital to unleash productivity and dynamism by deepening reforms and embracing innovation (Zhou and Xu, 2023). First, the government must establish and develop pro-business policies for the demonstration areas. It is critical to implement market-based factor allocation reforms and reinforce the role of competition policy. Efforts must be made to optimize the distribution and structure of the state sector of the economy, create a favorable business climate for private enterprises, and broaden opportunities for strategic emerging and future industries by streamlining administrative review and approval and encouraging private investment and entrepreneurship. Second, focus should be given to improving and reforming technological and scientific innovation systems in the demonstration areas, fostering a pro-innovation culture, and strengthening protection of innovative intellectual property rights (IPRs). The government is advised to create an innovation system that integrates industry, education, and research, with businesses playing a dominant role, and to make proactive efforts to establish regional technological innovation platforms led by tech firms, national laboratories, research universities, and national scientific research institutions. The importance of businesses as the backbone of technological innovation should be highlighted, and institutional frameworks should be put in place to allow the commercialization of R&D results and direct private investment to strategic emerging and future industries. Third, the demonstration areas should protect and promote entrepreneurship, as well as refocus institutional design from regional administration to overall coordination, the positive list to the negative list, and penalty imposition to forward-looking law enforcement assurances (Li and Zou, 2023). It is critical to strengthen talent development and promote innovation through more proactive, open, and effective innovation talent policies.

4.2 Spurring Industrial Progress and Specialization in the Demonstration Areas

By specialization, it is meant that the demonstration areas should build an innovation ecosystem with distinct regional features, and promote the regional economic transformation for intelligent,

sustainable, and inclusive growth (He and Li, 2023). Specialization provides a way for the demonstration areas to build up new quality productive forces by overcoming challenges such as a weak industrial foundation, painful industrial transformation, a lack of competitive factors of production, and path dependence. It represents a regional development model in which localities harness their comparative advantages to develop a diverse array of industries, and break free from path dependence. This development approach is separated into two stages: In the first stage, the demonstration areas transform strategic emerging sectors by leveraging their current technologies and know-how. Based on their core competences, resources, and strengths, the demonstration areas should capitalize on their comparative advantages in the early stages of building new quality productive forces. In the second stage, local governments should orchestrate efforts among market entities for groundbreaking innovations and serve as a system integrator to generate new industries by combining knowledge from disparate domains. By utilizing new quality producing forces, the demonstration areas are expected to navigate new paths and create emerging industries.

4.3 Improving Urban Functions for the Demonstration Areas

At the new juncture in the process of building a socialist modern country, the development of new quality productive forces can be assured by an extensive improvement of urban quality, which will also satisfy people's increasing needs for a better life. The demonstration areas will help to form new quality productive forces with necessary functions by improving the urban environment, promoting industrial upgrading, improving public services, enhancing cultural soft power, and advancing green development. First, an up-to-date infrastructure system must be developed to accelerate the formation of new quality productive forces via digital transformation, intelligent upgrading, integrated innovation services, and information infrastructure. Second, priority should be given to intensive, eco-friendly, and circular natural resource development, as well as the concept of ecological civilization, in order to strike a balance between resource utilization and urban development and to develop long-term mechanisms for sustainable development (Wu et al., 2019). Third, urban renewal should be conducted in accordance with local conditions. On the one hand, old industrial and resource-based cities should implement accurate policy measures to create livable, resilient, and smart cities, develop urban functions, and fully explore potentials for economic dynamism, which is essential for cultivating new quality productive forces. On the other hand, it is vital to carry out urban renewal and institutional innovations for the demonstration areas, as well as establish more flexible systems for real property management, construction planning review and approval, and resettlement compensation (Wu et al., 2023) to address challenges to urban renewal in old industrial and resource-based cities and proactively improve the urban quality of demonstration areas.

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