Specialization and Coordination: New Paradigm, Theory, and Path for Regional Development

Lu Ming[1], Xiang Kuanhu[2*], Li Pengfei[1], Li Jiewei[3], Zhong Yuejun[4]

[1] *Antai College of Economics & Management, Shanghai Jiao Tong University, Shanghai, China*
[2] *School of Economics, Shanghai University, Shanghai*
[3] *School of Economics and Management, Shanghai Maritime University, Shanghai*
[4] *Faculty of Economics and Management, East China Normal University, Shanghai*

Abstract: *In its new development stage, China seeks to derive new dynamism from reform and opening up at a higher level to boost consumption and services. This process coincides with a further differentiation of comparative advantages across regions. Economic activity and population will continue to concentrate in clusters in coastal and central cities amid a continuous outflow of population from remote areas. Development expansion from coastal to interior regions and from central cities to the periphery will promote a new regional development paradigm of "dual centers and periphery". Therefore, China's regional development strategy should follow the new theory of seeking relative equilibrium amid development, identify regions of population inflow and outflow, and explore a new development path of regional specialization and coordination. By deepening market reforms and increasing central government coordination, the country is poised to improve the spatial allocation of resources and unleash institutional dividends in the process of developing a unified national market.*

Keywords: *Regional development, "dual centers-periphery", comparative advantage, population migration*

JEL Classification Code: R12, R58, H77

DOI: 10.19602/j.chinaeconomist.2024.01.05

1. Introduction

Since the adoption of the reform and opening-up policy in 1978, China has successfully integrated into the global market and implemented market-oriented reforms, accelerating socioeconomic development and reshaping economic and demographic landscapes. China's regional comparative advantages can be ascribed to local geographical conditions and national development stage. The regional development strategy needs to be suited to local comparative advantages and national development stage in order to unleash economic dynamism, promote regional specialization, and coordinate regional development.

The Chinese government has adopted regional development strategies with different orientations based on changing situations in various development stages. In the context of comprehensively deepening reforms and opening up at a higher level, China's new development paradigm with domestic

* CONTACT: Xiang Kuanhu, email: khxiang1986@163.com.

Acknowledgement: This paper is a result of the Major Project for the Research and Development of Marxist Theory and Major Project of the National Social Science Foundation of China (NSSFC) "Study on the In-Depth Implementation of the Coordinated Regional Development Strategy" (Grant No. 2001MZD011); General Project of the National Natural Science Foundation of China (NSFC) "Spatial Structure and Effective Governance of Cities under the Big Data Horizon" (Grant No. 72073094) and Key Project of the NSFC "Study on the Transformative Development and Governance of Small Towns in China" (Grant No. 71834005).

中国知网 https://www.cnki.net

circulation as the mainstay and domestic and international circulations reinforcing each other is set to bring about tremendous opportunities for regional economic development. In this paper, we analyze the further differentiation of China's regional comparative advantages in the new stage of globalization and modernization to form a "dual centers-periphery" new regional development paradigm based on the development expansion from coastal to interior regions and from central cities to the periphery. On a broad regional scale, there will be a continuous concentration of population in clusters in coastal and central cities, as well as a continuous outflow of population from interior regions. This study puts forth the "dual centers-periphery" theoretical framework based on the conventional center-periphery theory and China's own experience for the following reasons: (i) The conventional center-periphery theory is characterized by one-dimensional single-center analysis, and the emergence of centers needs to be discussed in light of China's experience; (ii) the conventional center-periphery theory cannot reveal the comparative advantages of city clusters across China. Considering the latest general spatial equilibrium research, this paper suggests that the development of a unified national market will create tremendous structural reform advantages for the Chinese economy by optimizing the spatial allocation of population, land, transfer payments, and other resources. Hence, China's future regional development strategy needs to be guided by the new theory of "promoting relative equilibrium through development", and should give full play to central government coordination by deepening factor market reforms, and identify areas of population inflow and outflow between and within regions.

The remainder of this paper is organized as follows: Section 2 provides a summary of positive change in the regional economic paradigm amid the rising level of economic development and deepening reforms. Section 3 broadens the "center-periphery" theory with the proposition of the "new center-periphery" theoretical framework suitable to China's new regional development paradigm. Section 4 elaborates the structural advantages of a unified national market from the policy implementation perspective, as well as the central government's role in coordinating regional development. Section 5 offers concluding remarks and an outlook of regional economic development with an equal emphasis on specialization and coordination, and its relationship with common prosperity.

2. New Paradigm of Regional Economy in the New Development Stage

China has entered a new development stage toward building a modern socialist country in all respects to achieve the second centennial goal. During this period, new developments are expected to occur in China's economy, some of which are inevitable results of socio-economic development, and others are positive changes arising from reform and opening up at a higher level. These new changes underpin the new paradigm of China's regional economy.

2.1 Background for the New Paradigm of China's Regional Economy

2.1.1 Rising level of development and share of services

With rising competitiveness, China's manufacturing industry is increasingly dependent on - and derives more industrial value-added from - producer services such as research and development (R&D), design, information, finance, and trade. While consumer demand for daily necessities and durable goods becomes saturated amid rising living standards, there is a growing consumer demand for a wide range of high-quality life services at various levels. In fostering a new development paradigm, it is essential to facilitate domestic circulation by reducing administrative interventions to the spatial allocation of the factors of production such as labor, land, and capital, as well as reducing excessive policy preferences for manufacturing development.

2.1.2 Economic structure improvement and rising contribution of consumption to economic growth

Contribution of consumption to gross domestic product (GDP) growth will increase steadily

中国知网 https://www.cnki.net

when economic development reaches a certain stage. Owing to the fact that China's macroeconomic environment favors investment over consumption, the latter contributes a much smaller share in comparison to developed countries in similar stages of development (Zhong et al., 2020). Under the new development paradigm, smooth domestic circulation helps increase the share of consumption in GDP through the adjustment of economic and demographic distributions.

2.1.3 Raising the level of reform and opening up to support external circulation

China is much more dependent on trade as a share of GDP than other major economies, and external circulation plays a significant role in China's economic development. China needs to engage in more extensive division of labor and economic and trade cooperation with other economies amid deepening globalization.

2.1.4 Smoothening domestic factor market circulation to create new dynamism for economic development

Given the diminishing economic impetus from the quantitative accumulation of production factors, China needs to increase total factor productivity (TFP) as the fundamental driving force of high-quality economic development. In the context of a spatial mismatch of production factors, it is essential to increase efficiency in the spatial allocation of resources as an important way to boost TFP.

Further changes in the new development stage will drive continuous adjustments in China's spatial economic and demographic distributions. The vast majority of services are non-tradable and require both sides of supply and demand to communicate face-to-face, highlighting the advantage of cities in service trade. Central cities and metropolitan circles close to large markets are well positioned to develop consumption hubs based on sophisticated commercial technology. China's ongoing reforms are expected to reduce limitations to the flow of people and land space, expanding growth potentials for large cities. Under the condition of reform and opening up at a higher level, there will be a continuous concentration of population and economic activity in central cities and their periphery, giving rise to metropolitan circles of megacities and further reinforcing the agglomeration effect of coastal regions and large urban centers.

2.2 Manifestations of China's New Paradigm of Regional Economy

The increasing concentration of economic activity at the urban level has led to a clear differentiation between regions of population inflow and regions of outflow. Due to the above-mentioned changes, there has been a notable differentiation in the economic aggregate and population size at the city, district and county levels in addition to the migration of economic activity and population between city clusters or economic belts. Between 2010 and 2020, China experienced inter-regional and intra-regional migrations of population. Inter-regional migration occurred at the level of prefectural cities, including municipalities and autonomous regions and prefectures, where the vast majority of localities recorded negative or slightly positive growth of population while significant population growth occurred only in coastal regions and regional large cities and their vicinity. At the district and county levels, only a few regions have experienced more significant increases of population, and the concentration of population in central urban districts also occurred in some prefectural cities such as Harbin with a population outflow. However, some peripheral counties and districts in regions with a population inflow have experienced a population outflow as a result of intra-regional migration.

3. New Theory for China's Regional Development Strategy

As the natural result of economic development, the inter-regional and intra-regional migrations of people and economic activity are expected to intensify. However, China's traditional regional development strategy is not suited for such changes, and unless timely adjustment is made, that strategy will lead to economic inefficiencies and inequities. In light of the new changes in China's regional

中国知网 https://www.cnki.net

economic distribution, this paper develops a "dual centers-periphery" theoretical system to uncover the patterns of population inflow and outflow based on China's regional economic distribution.

3.1 Theoretical Foundation for the "Dual Centers-Periphery" Framework

The "dual centers-periphery" framework is jointly determined by the laws of economic development and China's reality. The first "center-periphery" system features the three port cities of Tianjin, Shanghai and Shenzhen (neighboring Hong Kong), which are important conduits to access the international markets. The second "center-periphery" system is centered around regional large cities. China is a large country with distinctive regional differences, and certain interior cities may also become regional economic hubs for regional markets.

Based on the "dual centers-periphery" framework, China can be divided into six zones as shown in Figure 1. Such division follows two criteria: The distance to major seaports and the distance to central cities, which correspond to the horizontal and vertical axes of Figure 1. On each dimension, there exists a "center-periphery" system, thereby forming a "dual centers-periphery" system. Distance to major seaports determines each region's comparative advantage, which is reflected in the functions of central cities. With increasing distance to major seaports, the central city of a city cluster is positioned as a global city, national central city, or regional central city facing the international market, national market and domestic regional market, respectively. Distance to central cities determines the comparative advantages of regions and city clusters for developing different types of industries; with the increase in distance to central cities, the advantage for industrial development shifts from services to manufacturing, agriculture, and tourism. In terms of the flow of population, regions around major seaports and central cities receive an inflow of population while remote regions are the sources of population outflow. This theoretical framework clearly reveals the relationship between regions and the approach to regional coordination under the conventional regional development strategy.

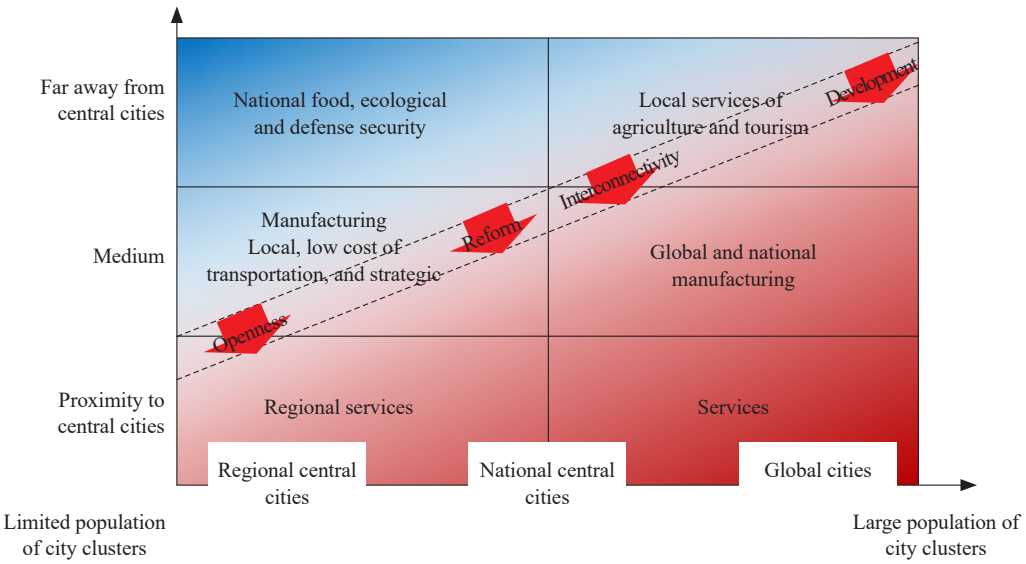

Figure 1: Regional Comparative Advantages under the "Dual Centers-Periphery" Framework

3.2 Dynamic Development of the "Dual Centers-Periphery" Paradigm

3.2.1 Change in regional comparative advantages and China's regional development strategy

China is in the process of economic transition and development, which influences the dynamic

中国知网 https://www.cnki.net

adjustment of comparative advantages across regions - and thereby shaping China's regional economic distribution - on the following four dimensions.

Openness: China's eastern coastal regions have developed comparative advantages for export-oriented manufacturing as the originally semi-closed economy embraced all-round openness. Economic openness at a higher level is expected to further strengthen the advantages of coastal regions to participate in the global economy.

Reform: Market-based reforms have enhanced the role of the price mechanism in allocating resources, and the unified national market is conducive to the reallocation of domestic production factors across various sectors and regions, further diverting capital and labor to coastal regions, big cities and their vicinity where productivity is high.

Connectivity: Rapid development of infrastructure and communications technology has increased regional connectivity and facilitated the flow of goods and production factors, giving rise to the comparative advantage of coastal regions and big cities for developing manufacturing and services.

Development: With rising levels of economic development, services have become more important in the economy, and service sector development entails a higher density of population. In addition, demand for consumer services is also increased, giving big cities a comparative advantage for developing services.

As shown in Figure 1, coastal regions, central cities and their vicinities are expected to gain agglomeration advantages under the joint effects of openness, reforms, connectivity and development from the dynamic perspective of the dual centers-periphery theoretical framework. As a result, regions between the two dotted lines that used to receive an inflow of population will experience an outflow of population. Within regions and city clusters, economic activity and population will continue to concentrate in central cities and their vicinities. The end result will be an expansion of regions with an outflow of population towards the lower right direction, a contraction of regions with an inflow of population towards the lower right direction, and a further increase in the concentration of population. According to the fifth through seventh national census data, there was a growing trend in the concentration of population towards coastal regions and big central cities over the period from 2010 to 2020, which coincided with the trend of "dual centers-periphery" model.

3.2.2 Development of regions with an outflow of population under the dynamic adjustment of regional comparative advantages

Under the dual centers-periphery framework, it is necessary to make adjustments to regional industrial distribution and infrastructure based on their respective comparative advantages. Due to shrinking population and economic aggregate, some small and medium-size cities in the interior regions have experienced a falling demand for public services and infrastructure, giving rise to a vicious cycle where inadequate public spending leads to an outflow of population and further economic deterioration and fewer financial resources for public spending.

Shrinking economy and population in some cities are attributable to the following reasons: (i) Traditional industries have declined while new pillar industries have yet to take their place; (ii) the economies of scale for services were insignificant during the heyday of traditional manufacturing, causing people to leave downtown areas in pursuit of better quality of life (Wiechmann, 2008; Blanco et al., 2009; Wiechmann and Pallagst, 2012). In China now, the first situation of city contraction is more common, i.e. small and medium-sized cities in some less developed regions shrank as their population and economic activity migrated to coastal regions and big cities. Between 2000 and 2010, for instance, 26.7% of cities at or above the prefectural level and 37.2% of counties or county-level cities and districts recorded an outflow of population, the vast majority of which were small and mediumsized cities (Zhang et al., 2016). Between 2010 and 2020, there was a concentration of population in central urban districts even in prefectural cities with negative population growth.

中国知网 https://www.cnki.net

The contraction of cities in certain regions is a natural result of economic development and structural transition and should not be regarded as a problem to be avoided or rectified. However, it should also be recognized that the outflow of population has presented cities with such dilemmas as strains on public finance, empty homes, and worsening quality of public services. These problems stem from a supply and demand contradiction, i.e., the outflow of population leads to a decline in the demand for infrastructure and public services while the amount and spatial distribution of infrastructure and public services cannot be flexibly adjusted.

Policymakers should plan for urban development in accordance with the contraction amid concentration trend in order to cope with various challenges that arise from the contraction of cities. It is advised that a "smart contraction" approach should be applied for cities experiencing demographic and economic declines. The implications of this approach are twofold: First, land development should be subdued to suit the size of population; second, land use should be intensive to encourage the concentration of population in densely populated urban districts. All cities should attach importance to intensive land use. Despite the currently modest inflow or outflow of population, some cities are likely to become future sources of population outflow. Without intensive land use in the process of urban development, public finance pressures will worsen when such outflow of population occurs.

4. Institutional Requirements for "Dual Centers-Periphery" Paradigm: Smoothening Domestic Circulation and Reforming the Central-Local Relationship

The "dual centers-periphery" theoretical framework delineates an ideal state of regional development in which a relative equilibrium is achieved through market-based economic forces. The implementation of this theoretical framework is predicated upon a clear identification of the structural benefits of domestic circulation to build reform consensus, gain a deeper understanding of the relationship between China's central and local governments and their institutional strengths, and promote the pivotal role of the central government in coordinating regional development.

4.1 Smooth Domestic Circulation: Foundation for Coordinated Regional Development

Over the years, Chinese academia has interpreted the balanced development of regional economy as the even distribution of economic activity and population. Since local governments are motivated to maximize local economic activity and tax base, the public generally expects that their administrations mobilize resources to balance widening regional income gaps. Therefore, the Chinese government has adopted a regional development policy in favor of the central and western regions since 2003 to achieve regional equilibrium somewhat at the expense of efficiency. As a result, China's regional per capita GDP gaps have narrowed since 2003, but a significant spatial mismatch of domestic production factors has occurred (Lu, 2017).

4.1.1 Spatial factor imbalance

The development of major cities as fresh sources of dynamism for China's economic growth has been hindered by impediments to people's migration, given that contemporary manufacturing and service sectors increasingly depend on economies of scale and complementarity of skills. Impeded flow of population: Obstacles to migration, especially the household registration system, have resulted in discrimination against rural workers in urban labor markets and public services like healthcare and education, driving up the cost of labor migration. The household registration system is still linked to an array of public services, which hinders population migration even in the face of government initiatives to loosen restrictions. From the standpoint of national development, barriers to population flow have led to underpopulation in cities, and a lack of workforce skills complementarity among various sectors has led

中国知网 https://www.cnki.net

to economic inefficiency and per capita income losses (Au and Anderson, 2006; Liang and Lu, 2015).

Spatial mismatch of land resources: Since 2003 there was a sharp increase in construction land supply in the central and western regions that have an outflow population, whereas there was a steady decrease of construction land supply in the eastern regions with an inflow of population. This has precipitated a rapid expansion of new towns in less developed regions with an outflow of population and an imbalance of housing supply and demand. Urban sprawl and idle industrial parks have heightened local government indebtedness (Chang and Lu, 2017).

Disparity between the transfer payment policy's goals and its instruments: In order to balance regional fiscal income and spending, the central government started providing large transfer payments to the less developed countryside, central and western regions, and the former industrial base of northeastern China around 2003. The less developed regions will continue to see a population exodus due to geographical constraints. In this way, transfer payments only partially assist those living in less developed areas if they are not transformed into transportable human and material capital. Even worse, governments in less developed areas may be prompted by economic development incentives to use transfer payments for the creation of vacant industrial parks, the development of industries lacking local comparative advantages, and the excessive financing of debt that raises regional financial risks (Zhong and Lu, 2015).

4.1.2 Structural dividends of smooth domestic circulation

In China, there is a widespread concern that market integration will hurt less developed regions. Hence, it is necessary to investigate the national welfare effect of domestic circulation under the general equilibrium framework.

The first reform dividend is the elimination of barriers to labor migration. In recent years, quantitative analyses based on the general equilibrium utility have found that the reduction of barriers to labor migration are conducive to China's overall labor productivity, economic growth, and welfare (Song, 2019; Tombe and Zhu, 2019, Hao et al. 2020; Liang et al., 2020). In addition, the concentration of economic activity also helped to reduce overall pollution and emissions intensity (Duranton and Puga, 2019; Qi et al., 2021). Moreover, domestic circulation will overcome the spatial mismatch of land. The spatial allocation and supply structure of land as a major production factor have a direct impact on economic transition and social development. Effective allocation of land resources may boost urban and rural productivity and promote manufacturing and service development, thereby contributing to economic growth, social welfare, and the reduction of regional income gaps. Lastly, domestic market circulation will also reduce the cost of trade between regions. By eliminating market segmentation and developing a unified national market, domestic circulation will facilitate market integration, enhance the economies of agglomeration, and promote regional comparative advantages, thereby unleashing structural dividends and bolstering the international competitiveness of the Chinese economy (Tombe and Zhu, 2019).

4.2 Top-Down Design: Assurance for Coordinated Regional Development

The central government should coordinate regional development strategies in the following six areas.

4.2.1 Regional development policies for domestic market integration

Less developed regions, if unable to benefit from development in advantageous regions, will be motivated to develop industries without comparative advantage in order to shore up local economic performance, resulting in market segmentation and industrial homogeneity (Lu, 2007), which becomes reinforced by homogeneous local industrial planning during the implementation of the national industrial policy (Zhao and Chen, 2020). Policy initiatives that contradict regional comparative advantage will hurt

中国知网 https://www.cnki.net

national competitiveness. Therefore, China's central government needs to coordinate regional economic development goals in order to further promote China's advantage as a large country and its overall national competitiveness.

4.2.2 Overcoming spatial externalities in a market of perfect competition

Due to spatial externalities, a market of perfect competition cannot maximize the advantage of economic agglomeration and may fail to coordinate regional objectives such as pollution abatement. By subsidizing businesses and workers to migrate to vibrant regions, the central government may increase otherwise insufficient economic agglomeration under positive externalities while increasing regional and overall economic efficiency. In addition, the central government may also coordinate efforts to reduce pollution at the national level, overcoming the insufficient motivation for local governments to clean up the environment.

Given the extensive cross-regional flow of people, China is also faced with the cross-regional positive externalities in the supply of public services, especially in the fields of education and healthcare, which are primarily funded by local governments. When education and healthcare services are converted into human capital, however, regions with an inflow of population reap the benefits. As a result, regions with an outflow of population lack the motivations to provide education and healthcare, thereby decelerating nationwide human capital accumulation. Hence, the cross-regional externalities of public services also require central government coordination.

4.2.3 Overcoming factor market segmentation

Under the traditional household registration system, it is hard for residents in less developed regions to benefit from economic development. In this situation, the central government must carry out vigorous institutional reforms to eliminate labor market segmentation due to local government behaviors under an unreasonable system. Moreover, the spatial allocation of land resources must provide additional construction area and development space for regions with an inflow of population and encourage the concentration of population in the central cities of regions with an outflow of population in order to accommodate future economic distribution, which also requires the central government to deepen land reforms.

4.2.4 Reducing regional gaps and achieving common prosperity under the principle of ensuring efficiency

The central government must intervene to narrow regional income gaps attributable to the following three situations. First, the agglomeration of population lags behind economic agglomeration under the condition of restricted flow of population due to various reasons. Since non-institutional barriers to migration may take a long time to vanish, it may be necessary to use regional development policies to advance economic development in less developed areas and provide "common prosperity" to non-migrants. For institutional barriers that limit the flow of people, however, the central government must deepen reforms to adjust the spatial distribution of population. Second, the convergence of regional income gaps is a long-term process primarily due to disparate initial conditions and uneven speed of convergence of regions towards the steady state (Kleinman et al., 2023). The long-term nature of convergence also entails government coordination to expedite the achievement of common prosperity. Third, some regions will suffer the adverse impact of specific economic or natural shocks followed by a protracted process of spontaneous recovery based solely on market forces.

4.2.5 Experimentation and roll-out of the new regional development paradigm

China's market-based reforms have followed a gradualist approach and will continue to play an important role. Given the risk of failure and the high cost of exploration, local governments lack the motivation to carry out such explorative reforms. It is necessary, therefore, for the central government to

中国知网 https://www.cnki.net

carry out pilot programs in a few chosen regions and provide relevant assurances that reform experiences be developed and rolled out step-by-step on a broader scale.

4.2.6 Coordinating the distribution of strategic industries

Strategic industries create positive externalities at the national level. Given the huge cost of R&D, support from national industrial policy is essential for the development and breakthrough of strategic industries. However, the national industrial policy may also encourage multiple regions to develop the same strategic industry, giving rise to industrial homogeneity and exacerbating regional segmentation (Zhao and Chen, 2020). Therefore the central government needs to identify the areas for strategic emerging industries to ensure the effective use of public funds and limit excessive competition among local governments.

5. Regional Economic Development: Equal Emphasis on Specialization and Coordination

The Report to the 20th CPC National Congress has called for achieving Chinese modernization to deliver common prosperity in this populous country. From the perspective of regional economy, modernization for such a large country entails adjustment in the spatial distribution of population, and the goal toward common prosperity needs to be achieved through adjustment to the existing spatial distribution. The Chinese modernization necessitates a new path of regional economic development in which specialization and coordination are equally important.

First, the people-first development concept should be followed to provide a science-based evaluation of the regional development policy and the reduction of per capita GDP gaps across regions. Regional development policy needs to follow a people-based approach instead of a "place-based" one. The place-based policy approach prioritizes equality over efficiency, but inefficient investment and unchecked local government debt in less developed regions will take their toll on both efficiency and quality in the long run. From the perspective of balancing efficiency with equality, the people-based policy that promotes migration is increasingly superior to the place-based policy.

Second, constant adjustments should be made to the central-local relationship and improve the spatial governance of China in the implementation of the new regional development theory that "promotes relative equilibrium through development". Central government coordination should be brought into better play as China's unique institutional strength. Local government performance needs to be evaluated by a complete range of indicators instead of economic growth alone. Particularly in regions with inadequate geographical conditions for economic development, government performance needs to be measured in terms of GDP per capita and quality of life. From the mid- and long-term perspective, various institutional barriers, as mentioned above, must be removed to develop a unified national market. Institutional development must be expedited to address the needs of local residents. In public sectors with ineffective price mechanisms, there needs to be more conduits for demand expression and feedback. Lastly, the central government needs to make local governments accountable for local policy implementation, not only with respect to debt raising, but to keep local development in line with overall national priorities.

Finally, policymakers need to be mindful that inter-regional specialization may contribute to common prosperity. The new regional distribution of the dual centers-periphery paradigm underscores a high degree of specialization between regions, which is not contradictory with the goal of common prosperity. Under the new regional distribution of the dual centers-periphery paradigm, policymakers need to focus on the following five economic mechanisms and policy priorities: (i) Regions with superior comparative advantages may achieve economic prosperity and income growth as a result of economic agglomeration; (ii) for less developed regions with unfavorable locations, their local residents

中国知网 https://www.cnki.net

may earn more incomes by migrating to high-income regions; (iii) since residents in less developed regions are primarily engaged in sectors subject to resource constraints such as agriculture, tourism, and natural resources, an outflow of population means a higher level of per capita resource stock and better conditions for income growth; (iv) additional fiscal revenues generated from agglomeration in developed regions can be used to support advantageous local industries in less developed regions via transfer payments, raise the quality of public services, and optimize their spatial distribution; (v) the potential problem of widening income gaps during the agglomeration of population can be addressed through secondary and tertiary distribution through further economic growth by such means as providing equal access to public services and citizenship to migrants.

References:

Au C., Henderson J. V. Are Chinese Cities Too Small? [J] Review of Economic Studies, 2006, 73 (3): 549-576.

Blanco H., Alberti M., Olshansky R. et al. Shaken, Shrinking, Hot, Impoverished and Informal: Emerging Research Agendas in Planning[J]. Progress in Planning, 2009, 72(4): 195-250.

Chang C., Lu M. Misery of New Town——Density, Distance and Debt[J]. China Economic Quarterly, 2017, (4): 389-410.

Duranton G., Puga D. Urban Growth and Its Aggregate Implications[R]. NBER Working Paper, 2019 (W26591).

Hao T., Sun R. Q., Tombe T., Zhu X. D. The Effect of Migration Policy on Growth, Structural Change, and Regional Inequality in China[J]. Journal of Monetary Economics, 2020, 113: 112-134.

Kleinman B., Liu E., Redding S. J. Dynamic Spatial General Equilibrium[J]. Econometrica, 2023, 91(2), 385-424.

Liang W., Lu M. The Divergence of Skill Composition: Exploring the Skill Complementarity and the Agglomeration of Labors[J]. Comparative Economic & Social Systems, 2015, (3): 185-197.

Liang W., Song R., Timmins C. Frictional Sorting[R]. NBER Working Paper, 2020 (W27643).

Lu M. Urban, Regional and National Development——The Present and Future of Spatial Political Economics[J]. China Economic Quarterly, 2017, (4): 1499-1532.

Qi J., Tang X., and Xi X. The Size Distribution of Firms and Industrial Water Pollution: A Quantitative Analysis of China[J]. American Economic Journal: Macroeconomics, 2021, 13 (1): 1-34.

Song Y. Cost and Benefit Analysis of the Hukou Reform——Simulation Evidence from a Theoretical Labor Market Model[J]. China Economic Quarterly, 2019, 18(3): 813-832.

Tombe T. Zhu X. Trade, Migration and Productivity: A Quantitative Analysis of China[J]. American Economic Review, 2019, 109 (5):1843-1872.

Wiechmann T. Errors Expected—Aligning Urban Strategy with Demographic Uncertainty in Shrinking Cities[J]. International Planning Studies, 2008, 13 (4): 431-446.

Wiechmann T., Pallagst K. Urban Shrinkage in Germany and the USA: A Comparison of Transformation Patterns and Local Strategies[J]. International Journal of Urban and Regional Research, 2012, 36 (2): 261-280.

Zhang X., Liu Y., Lyu C. The Background, Identification of Shrinking Cities in China and Their Characteristics[J]. Journal of Southeast University (Philosophy and Social Science), 2016, (4): 132-139.

Zhao T., Chen Z. Comparative Advantage and Industrial Policy Effect: Regional Differences and Institutional Cause[J]. China Economic Quarterly, 2020, (3): 777-796.

Zhong H., Lu M. How Does the Fiscal Transfer Affect the Local Government Debt? [J] Journal of Financial Research, 2015, (9):1-16.

Zhong Y., Lu M., Xi X. Agglomeration and Service Industry Development: Based on the Perspective of Population Spatial Distribution[J]. Journal of Management World, 2020, (11): 35-47.

中国知网 https://www.cnki.net