



# Research on the Innovation Mechanism and Optimization Path of the Coordinated Development of Harbin-Changchun Megalopolis

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**Abstract.** With the advancement of urbanization, urban agglomerations play a pivotal role in economic development, and the rise of urban agglomerations has led to the coordinated development of regions and gradually become the core force of regional development. Taking the Harbin-Changchun megalopolis as the research object, this paper analyzes the current situation and some existing problems, then proposes an innovative mechanism for coordinated development, and finally proposes an optimal path for coordinated development to further promote the coordinated development of Harbin-Changchun megalopolis.

**Keywords:** Harbin-Changchun megalopolis; innovation mechanisms; Optimization path.

## 1 Introduction

The Harbin-Changchun megalopolis is an important growth pole for the revitalization of the old industrial base in Northeast China, and it is also an important gateway for the opening up of the north. In 2016, the State Council approved the Harbin-Changchun megalopolis Development Plan, which further clarified the important role of the Harbin-Changchun megalopolis in economic development. Accelerating the coordinated development of the Harbin-Changchun megalopolis is conducive to promoting industrial clusters and population agglomeration, and giving full play to the location advantages. Innovation is an important engine to drive high-quality economic development, and integrating innovation into the coordinated development system of Harbin-Changchun megalopolis is an effective way to accelerate the transformation and upgrading of industrial structure and achieve rapid economic growth.

## **2 The Current Situation and Characteristics of Harbin-Changchun Megalopolis**

### **2.1 Geographical Location**

There are 10 prefecture-level cities and one autonomous prefecture in the Harbin-Changchun megalopolis, including Harbin, Daqing, Qiqihar, Suihua and Mudanjiang in Heilongjiang Province and Changchun, Jilin, Songyuan, Siping, Liaoyuan and Yanbian Korean Autonomous Prefecture in Jilin Province. With a land area of about 320,000 square kilometers,<sup>1</sup> the urban agglomeration is the northernmost urban agglomeration in China.

### **2.2 Spatial Distribution Morphology**

At present, the Harbin-Changchun megalopolis has basically formed a spatial pattern of “dual cores, one axis and two belts”. The “dual cores” are Harbin City and Changchun City, which strengthens the core driving role of Harbin and Changchun and effectively plays the supporting role of other cities; “One axis” is the main axis of Harbin-Chang's development; The “two belts” are the Harbin-Da (Qing) Qi (Qihar) Mu (Danjiang) Development Belt and the Chang-Ji (Lin) Tu (Menjiang) Development Belt.

### **2.3 Environmental Conditions**

Most of the cities in the Harbin-Changchun megalopolis are facing serious environmental pollution problems, and the local environmental protection consultation and communication mechanism is not perfect, and it is impossible to organize effective environmental governance activities. If the central city and its surrounding cities cannot reach an overall consensus on cooperation, it will be difficult to exert their subjective initiative to participate in environmental governance.<sup>2</sup> The ability of coordinated environmental supervision in various regions is also insufficient, and at present, there have been environmental pollution problems caused by factory sewage discharge, enterprise carbon dioxide emissions, and straw burning, which shows the imbalance of ecological and environmental supervision in various regions.<sup>3</sup>

### **2.4 Tourism Resources**

Harbin-Changchun megalopolis has rich tourism resources and scenic spots, among them, Harbin is an important city for the development of ice and snow tourism culture in Harbin-Changchun megalopolis, Harbin has become an ice and snow tourism brand area due to its unique geographical advantages and environmental climate, and has great potential in the development of ice and snow tourism.<sup>4</sup> Most of the tourist attractions in the Harbin-Changchun megalopolis are concentrated in Harbin, Qiqihar, Mudanjiang, Yanbian and Changchun. Suihua, Daqing, Jilin, Siping, Liaoyuan and Songyuan are relatively backward in terms of tourism resources. The lack of spatial synergy

between tourist attractions in various places, insufficient regional linkage, and insufficient integrity of the tourism industry chain are not conducive to economic development.<sup>5</sup>

## **2.5 Industrial Structure**

Industrial structure is an important factor to promote economic growth. Harbin-Changchun megalopolis is committed to the development of agricultural modernization, and the primary industry has always accounted for a large proportion, focusing on the development of agricultural product processing. In 2022, the GDP of the Harbin-Changchun megalopolis was 2301.73 billion yuan, the added value of the primary industry being 351.12 billion yuan, the added value of the secondary industry being 776.68 billion yuan, and the added value of the tertiary industry being 1171.22 billion yuan, and the added value of the tertiary industry will increase significantly.

# **3 Outstanding Problems in the Coordinated Development of Harbin-Changchun Megalopolis**

## **3.1 The Phenomenon of Brain Drain is Serious, and the Talent Introduction Policy is not Perfect**

Talent is the first resource, the problem of brain drain in Harbin-Changchun region is becoming more and more significant, and most college graduates will not choose to return to the northeast region for employment, but will choose to go to the south for employment. Due to the relatively lagging economic development, the city's low competitiveness, and the talent attraction policy in the coastal areas, the brain drain in the Harbin-Changchun region has intensified. For the Harbin-Changchun region, historical and environmental constraints make Harbin-Changchun mainly agriculture and industry, and the development of the tertiary industry is relatively weak, which is difficult to meet people's diversified employment needs, so that the supply of talents and local industrial demand do not match, and ultimately cause brain drain.<sup>6</sup>

## **3.2 The Industrial Structure is Converging, and the Competition within the Region is Fierce**

It can be seen from the "Table 1" that Harbin and Qiqihar are mainly based on equipment manufacturing and intensive processing of green agricultural products, and the development of Suihua, Changchun and Liaoyuan industries include agricultural and sideline food processing. The industrial structure of Harbin-Changchun region is homogeneous, and there are too many similar industries, which is easy to cause intra-regional competition and waste of resources.

**Table 1.** The main development industries of Harbin-Changchun megalopolis

Region	The main development industry
Harbin City	Equipment manufacturing industry, intensive processing industry of green agricultural products, modern biomedical industry, characteristic culture and tourism
Qiqihar City	Equipment manufacturing, deep processing of green food industry, new materials, biomedicine
Daqing City	Oil and gas industry, equipment manufacturing, petrochemical, automobile, new materials
Suihua City	Green food industry deep processing, chemical industry, medicine, flax textile
Mudanjiang City	Green Food, Forestry Industry, Eco-Tourism, Biomedicine
Changchun City	Automobile, agricultural product processing, high-end equipment industry
Jilin City	Chemical, automobile, metallurgy, agricultural products processing
Liaoyuan City	Agricultural and sideline food processing, high-precision aluminum processing, textile and hosiery industry, medicine and health
Songyuan City	Petrochemical industry, ecological agriculture, circular economy
Siping City	Equipment manufacturing, food and agricultural and sideline products processing, medicine and health
Yanbian Korean Autonomous Prefecture	Food industry, seafood processing, cultural tourism, logistics, cross-border e-commerce

Data source: China Business Industry Research Institute, "Harbin-Changchun megalopolis Development Plan" and other reports

### 3.3 The Space Spillover Effect is Weak, and the Radiation Drive has Limitations

At present, the spatial spillover effect of the Harbin-Changchun megalopolis is weak, the spatial connection of each city is weak, the interaction is loose, and the industrial linkage is insufficient. The radiation and driving role of the central cities of Harbin and Changchun has limitations, the impact on the surrounding cities is weak, the central city functions are lacking, and the agglomeration force continues to weaken, which affects the flow of factor resources to the surrounding cities.<sup>7</sup> The Harbin-Changchun megalopolis lacks of driving force in driving economic growth, which is not conducive to the coordinated development of the Harbin-Changchun megalopolis.

## 4 Innovative Mechanism for the Coordinated Development of Harbin-Changchun Megalopolis

### 4.1 Improve the Ecological and Environmental Protection Mechanism

First of all, it is necessary to strengthen the construction of regional environmental protection consultation and exchange platforms, rely on the development trend of the digital economy, and gradually build a network of mutual trust and mutual trust in regional cooperation, so as to improve the integration of regional cooperation. Secondly, establish a platform for the open sharing of regional environmental monitoring information, and open up information resources in an all-round way.<sup>8</sup> Focus on strengthening the

effective supervision of blind spots of environmental pollution, so that the entire environmental supervision process is networked and transparent.

#### **4.2 Improve Diversified Public Service Mechanisms**

In terms of promoting the construction of public services, measures with stronger targeting, wider coverage and more obvious effects have been adopted in key areas such as employment and social security, medical and health care, pension services, housing security, and social services. Provide diversified public services, accelerate the completion of the shortcomings of basic public services, and narrow the gap between regions, urban and rural areas, and populations. Innovate social security and public service systems, and promote the integration of social policies in the region.

#### **4.3 Improve the Security Mechanism of the Industrial Supply Chain**

To promote the coordinated development of the industry, while focusing on the optimization of the layout of the industrial chain, it is also necessary to ensure the safety and stability of the supply chain. Harbin and Changchun should increase the cross-regional coordination of enterprises, further give full play to the leading role of leading enterprises, establish cooperation projects with enterprises in other surrounding areas, optimize the layout of industrial chains and supply chains, and drive the industrial chain with the innovation chain. Promote the coordinated development of industries in the fields of high-end precision technology processing and manufacturing, new energy vehicles, biomedicine, and industrial Internet. The Harbin-Changchun region should continue to explore the innovation of industrial synergy mechanism, continue to play the leading role of high-tech industries, adhere to the integration of industry and city-industry, explore and innovate in the new urbanization, and make greater contributions to the coordinated development of Harbin-Changchun megalopolis.

### **5 The Optimization Path of the Coordinated Development of Harbin-Changchun Megalopolis**

#### **5.1 Optimize Policies for Attracting Human Resources**

First of all, improve the talent attraction policy, increase the attractiveness of talents, and give priority to solving problems such as housing, spouse placement, and children's education of talents. The Harbin-Changchun megalopolis will improve the welfare treatment of talents, improve medical standards, improve public services, and create a good livable environment for talents. The Harbin-Changchun megalopolis will improve the talent incentive mechanism and talent cultivation mechanism, improve the salary level, and refine the relevant systems for talent introduction. Secondly, establish enterprise image, attract investment, accelerate industrial transformation and upgrading, diversify industries to meet people's employment needs and provide more employment opportunities for talents. Finally, foreign entrepreneurs, college graduates, farmers with

advanced technology, etc. should be given financial and technical support to return home for innovation and entrepreneurship, not only to attract foreign talents, but also to retain local talents.

## **5.2 Optimize the Industrial Structure**

Optimize the industrial structure, promote regional industrial division, form functional positioning in each region, and form a rational industrial system with complementary advantages and symbiosis and win-win results. Harbin, Qiqihar, Daqing equipment manufacturing industry has formed a relatively complete industrial system, speed up the pace of digital empowerment, the formation of domestic sophisticated equipment manufacturing system. The focus is to promote Harbin's information service industry process and accelerate Daqing's high-end petrochemical and electronic information development. Changchun, Jilin, Siping, mainly to develop auto parts supporting advantages, actively develop independent brand cars, build a competitive auto service center. Relying on rich agricultural resources and land resources, Harbin, Qiqihar, Suihua, Mudanjiang, Changchun and Jilin will develop green agricultural products intensive processing industries, strengthen regional cooperation and links, and build agricultural industry demonstration bases. Develop ecological tourism in Mudanjiang, Qiqihar and Yanbian Korean Autonomous Prefecture, integrate and develop Changbai Mountain tourism resources, and drive the economic development of Harbin and Changchun areas.

## **5.3 Strengthen the Radiation Driving Role of the Core Area**

Give full play to the innovative leading role of central cities and enhance the development function and quality of non-central cities. Enhance the function of urban agglomeration, accelerate the process of industrialization and urbanization, form important areas for high-quality development, strengthen internal spatial links, and promote the coordinated development of cities within urban agglomeration. Establish advantageous industrial clusters, build industrial clusters for intensive processing of agricultural and livestock products, equipment manufacturing industrial clusters, biological medicine industrial clusters, jointly build healthy pension industrial bases, promote the development of transportation infrastructure, improve railway transportation systems in various regions, and increase internal links between regional cities. To create a benchmark area for the integrated development of primary, secondary and tertiary industries, cultivate new industries and create new impetus.

## **6 Conclusions**

Based on the coordinated development of Harbin-Changchun megalopolis, this paper analyzes the current situation and characteristics of Harbin-Changchun megalopolis, and proposes innovative mechanisms and optimization paths based on the existing

problems of Harbin-Changchun megalopolis, which provides a reference for accelerating the coordinated development of urban agglomerations. The coordinated development of the Harbin-Changchun megalopolis can improve the degree of regional cooperation and integration, narrow the gap between regional urban and rural areas, and rely on the development trend of the digital economy to open up information resources to achieve a win-win situation for all parties. At the same time, it is necessary to further optimize the talent policy and industrial structure, strengthen the radiation and driving role of the central city, and promote the coordinated and rapid development of the Harbin-Changchun megalopolis.

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