

# **A Study on the Impact of Factor Market Integration in the Guangdong-Hong Kong-Macao Greater Bay Area on Deep Economic Cooperation and Its Promotion Strategies**

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**Abstract:** The Guangdong-Hong Kong-Macao Greater Bay Area (GBA) is a key national-level urban agglomeration aimed at fostering innovation, industrial integration, and high-quality development. Factor market integration—including labor, capital, logistics, and information—is critical for promoting deep regional economic cooperation, yet the GBA faces challenges such as institutional fragmentation, administrative barriers, and insufficient cross-border infrastructure. This study systematically examines the current status of factor market integration in the GBA, analyzes its mechanisms for enhancing regional cooperation through reduced transaction costs, optimized resource allocation, and industrial chain synergy, and identifies major obstacles hindering integration. Drawing on comparative experiences from the Yangtze River Delta and the European Union, the paper proposes strategic recommendations including institutional openness, coordinated governance mechanisms, infrastructure network optimization, and reforms to facilitate talent, capital, and data flows. The findings provide theoretical and policy guidance for advancing factor market integration and achieving high-quality, deep economic cooperation in the GBA.

## **1. Introduction**

### **1.1 Research Background and Significance**

The Guangdong-Hong Kong-Macao Greater Bay Area (GBA) is China's third national-level urban agglomeration strategy, following the Yangtze River Delta and the Beijing-Tianjin-Hebei region. It aims to build a globally influential international science and technology innovation center, a hub for modern industries, and a quality living circle. In the 14th Five-Year Plan and the 2035 Vision Outline, the central government proposed to “accelerate the free flow of factors and build a unified, open, and orderly competitive modern market system,” pointing the direction for the GBA's high-quality development.

Against this macro background, the integration of factor markets has become a core issue in promoting deep economic cooperation in the GBA. Factor markets primarily include resource allocation mechanisms for human capital, capital, land, technology, and information. The integration process involves not only physical interconnectivity but also the coordination of rules and standards, institutional convergence, and the reconstruction of governance systems. Efficient factor allocation can break through administrative boundaries and enable optimal resource utilization, thus facilitating the deep integration of industrial, innovation, and supply chains.

Currently, the GBA still faces challenges such as poor factor mobility, severe institutional segmentation, and fragmented policies, which hinder the region's overall coordination capabilities and international competitiveness. Therefore, an in-depth study on the integration of factor markets is of great theoretical and practical significance for enhancing the synergy among Guangdong, Chinese Hong Kong, and Chinese Macao, and for promoting the efficient flow of production factors and the integrated application of innovation resources. This paper attempts to propose practical

promotion strategies from the perspectives of institutional coordination, mechanism innovation, and policy optimization, providing a reference for making the GBA a model for regional integration reform and a leading area for high-quality development in China.

## **1.2 Research Status at Home and Abroad**

The issues of regional integration and factor market coordination have long been focal points in regional economics, institutional economics, and development studies. Foreign scholars often base their research on successful practices such as the European Union and the North American Free Trade Agreement, emphasizing the role of institutional coordination and policy mutual recognition in promoting integration. For example, Krugman's (1991) "New Economic Geography" theory suggests that market expansion and factor agglomeration can enhance regional competitiveness by reducing transaction costs and achieving economies of scale <sup>[1]</sup>. Baldwin (2006) and others advocate that regional integration should advance simultaneously in market mechanisms and institutional frameworks to achieve deep coordination <sup>[2]</sup>.

In recent years, domestic scholars have gradually focused on the flow of regional factors and institutional innovation. Zhang Ping (2019) pointed out that coordinated regional development should start with the efficient allocation of production factors to enhance interregional synergy <sup>[3]</sup>. Li Shantong and others (2021) proposed that factor market integration is a key experience in the success of the Yangtze River Delta integration, which could offer insights for the GBA's development <sup>[4]</sup>. However, in the context of the GBA, due to the "One Country, Two Systems" institutional arrangement and the reality of "three separate customs territories," the three regions face multiple barriers such as differences in legal systems, significant discrepancies in administrative approvals, and incomplete interconnection of capital markets. These are the main bottlenecks hindering the integration of factor markets.

In summary, although existing research has delved into regional integration and factor mobility, there is still a lack of studies on the integration paths and mechanisms of factor markets under the unique institutional background of the GBA. This paper aims to fill this research gap based on the specific practices of Guangdong, Chinese Hong Kong, and Chinese Macao, from a multi-factor coordination perspective, and propose practical policy recommendations.

## **1.3 Research Content and Methods**

Focusing on the theme of "The Impact of Factor Market Integration in the GBA on Deep Economic Cooperation and Promotion Strategies," this paper conducts research from the following aspects: First, systematically review the current status of the flow of factors such as human resources, capital, logistics, and information within the GBA in terms of spatial structure and institutional environment, and identify the existing obstacles and bottlenecks in the integration process; second, analyze how factor market integration influences regional deep economic cooperation through mechanisms such as reducing institutional transaction costs, optimizing resource allocation efficiency, and improving industrial synergy, and on this basis, construct a logical model of its function; third, extract learnable experiences from comparative studies of typical cases such as the Yangtze River Delta integration and the construction of the EU single market, and propose practical strategy paths and institutional innovation suggestions in combination with the unique institutional and policy background of the GBA.

In terms of research methods, this paper mainly adopts a combination of policy text analysis, typical case studies, and comparative research. Through systematically reviewing the current policy system and cooperation mechanisms in the GBA, it analyzes the operation logic and institutional coordination of key projects, and employs theoretical induction and logical deduction to construct a research framework from both theoretical and practical levels, enhancing the systematicness and empirical value of the study. Through the above content, this paper aims to provide theoretical support and policy suggestions for optimizing the coordination mechanism of factor markets and exploring the path of regional economic integration in the GBA.

## **2. Analysis of the Current Status of Factor Market Integration in the GBA**

### **2.1 Construction of Talent Factor Mobility Mechanism**

As one of the most open and market-oriented regions in China, the free flow of talent is regarded as a key link in promoting regional economic coordination and the integration of innovation resources in the GBA. In recent years, Guangdong, Chinese Hong Kong, and Chinese Macao have made certain achievements in mutual recognition of academic degrees, recognition of professional qualifications, and facilitation of residence and employment. For example, China has signed multiple higher education degree mutual recognition agreements with Chinese Hong Kong and Chinese Macao. Some professional qualification certificates, such as for architects, accountants, and doctors, have begun pilot programs for mutual recognition, partially easing institutional barriers for Chinese Hong Kong and Chinese Macao professionals entering the mainland job market.

At the same time, the three regions continue to promote the reform of the residence permit system, providing greater convenience for Chinese Hong Kong and Chinese Macao residents to study, work, receive medical treatment, and live in the mainland. Cities like Guangzhou, Shenzhen, and Zhuhai have introduced support policies for entrepreneurship and employment of youth from Chinese Hong Kong and Chinese Macao, and established “Innovation and Entrepreneurship Bases for Hong Kong and Macao Youth” to attract high-level talent to settle and develop.

However, obstacles still exist. First, there are significant differences in title evaluation and vocational skill standards, especially in the slow progress of mutual recognition of mid- and senior-level titles, which affects the efficiency of cross-border allocation of talent resources. Second, Chinese Hong Kong and Chinese Macao lack sufficient understanding of the mainland’s vocational systems, and the willingness and institutional adaptation for bidirectional mobility need to be further strengthened. In addition, there are still gaps in social security systems such as medical insurance and social welfare, which to some extent weakens the willingness of Chinese Hong Kong and Chinese Macao talent to “move north.” Therefore, future efforts should be made to continuously advance policy and institutional coordination, information platform construction, and legal support, to build a more inclusive, flexible, and mutually trusting talent mobility mechanism.

### **2.2 Current Status of Cross-border Flow of Capital Factors**

As a core resource, the degree of facilitation of capital cross-border flow directly determines the vitality of investment, financing, and consumption within the region. The GBA has made significant progress in promoting the interconnection of financial markets, as evidenced by the continuous improvement of cross-border financial infrastructure and the continuous innovation of capital market cooperation mechanisms [5].

Currently, free trade zones such as Qianhai in Shenzhen, Nansha in Guangzhou, and Hengqin in Zhuhai serve as pilot zones for financial reform, playing important roles in promoting RMB cross-border settlement, cross-border loans, and capital account convertibility. Especially, mechanisms such as “Cross-boundary Wealth Management Connect,” “Bond Connect,” and “Stock Connect” have created two-way investment channels between GBA residents and investment institutions, positively contributing to the diversification of financial products and the expansion of financing channels.

However, the free flow of capital factors still faces a series of challenges. On one hand, there are significant differences in financial supervision, capital account openness, and foreign exchange management systems among the three regions. In particular, Chinese Hong Kong and Chinese Macao, as international free ports, have financial systems more aligned with international standards, creating coordination barriers with the mainland regulatory system. On the other hand, although the scope of RMB cross-border usage is gradually expanding, it has yet to fully play its role in anchoring regional financial stability due to limitations in market confidence, exchange rate mechanisms, and clearing arrangements. Therefore, it is necessary to further establish financial information sharing mechanisms, optimize cross-border financial service procedures, strengthen regulatory coordination, and promote the convergence of financial market rules in terms of laws and regulations, thereby providing institutional guarantees and a risk control framework for the free flow of capital factors.

## **2.3 Coordinated Development of Logistics and Industrial Chains**

The GBA features high industrial concentration and active import and export activities, making it a national base for foreign trade and advanced manufacturing. Cross-border logistics and industrial chain coordination are the foundation for achieving regional industrial integration and efficiency improvement. In recent years, transportation infrastructure within the GBA has been continuously improved, and the interconnectivity of logistics networks including ports, airports, railways, and highways has significantly increased. Major transportation projects such as the Hong Kong-Zhuhai-Macao Bridge, the Shenzhen-Zhongshan Corridor, and the Guangzhou-Shenzhen-Hong Kong Express Rail Link have greatly shortened the spatial distance among the three regions, laying a physical foundation for factor flow and industrial coordination. In terms of port logistics, world-class container ports such as Guangzhou Port, Shenzhen Port, and Hong Kong Port are gradually promoting “port alliances” and intelligent upgrades to improve customs clearance efficiency and coordination capabilities. For example, Guangdong and Chinese Hong Kong have made progress in advancing the “single window” mechanism, achieving partial data sharing and information synchronization in customs declarations, thereby improving customs clearance facilitation. Regarding industrial chains, the manufacturing industry in the Pearl River Delta and the high-end service industries such as finance, law, and scientific research in Chinese Hong Kong and Chinese Macao are highly complementary. However, issues such as redundant construction and homogeneous competition still exist among the regions. Some high-end service resources in Chinese Hong Kong and Chinese Macao have not fully extended to mainland cities, which also face weaknesses such as the lack of high-end industrial chain segments and relatively insufficient innovation capabilities.

## **2.4 Mechanism for the Interconnectivity of Data and Information Elements**

With the rapid development of the digital economy, data has emerged as the "fifth factor of production" following land, capital, and labor. Its role in resource allocation, industrial upgrading, and social governance is becoming increasingly prominent. The Guangdong-Hong Kong-Macao Greater Bay Area (GBA) has made preliminary explorations in the construction of digital infrastructure and the circulation of data elements. However, due to differences in regulatory rules, inconsistent technical standards, and asymmetric data security regulations, the overall level of interconnectivity remains limited.

In terms of data infrastructure, the three regions have made rapid progress in areas such as cloud computing centers, 5G networks, and smart city development, thus providing the physical conditions necessary to promote data sharing. The digital industry hubs represented by Shenzhen are highly complementary to Chinese Hong Kong's scientific research data resources. In recent years, the construction of a “Digital Bay Area” has been included in several strategic plans, with attempts by the three regions to enable data sharing and platform interconnectivity in areas such as smart governance, public services, and healthcare.

## **3. Mechanism by Which Factor Market Integration Facilitates Deep Economic Cooperation in the Greater Bay Area**

### **3.1 Reducing Institutional Transaction Costs and Enhancing Resource Allocation Efficiency**

In the GBA, significant differences exist among the three regions in terms of institutional systems, legal norms, and administrative management <sup>[6]</sup>. These differences have resulted in market fragmentation and high institutional transaction costs, becoming a core constraint on deep regional economic cooperation. Promoting factor market integration through the unification or mutual recognition of relevant institutional rules can help build an open, transparent, and fair market environment, fundamentally reduce institutional costs, and stimulate market vitality.

For instance, advancing mutual recognition of professional qualifications, the generalization of cross-border financial products, and the interconnection of logistics information systems can reduce institutional redundancy and repetitive certification procedures, thus improving the efficiency and predictability of cross-border factor flows. At the same time, establishing sound multilateral

consultation mechanisms and strengthening intergovernmental communication and coordination can break down “policy silos,” achieve policy synergy and institutional compatibility, and provide stable guarantees for the free flow of resources and factors among the three regions.

### **3.2 Promoting Deepened Industrial Chain Division of Labor and the Aggregation of Innovation Factors**

Factor market integration can eliminate administrative boundaries that segment industrial chains, enabling the efficient alignment of innovation elements and industrial resources, and facilitating the coordinated development of industrial, supply, and innovation chains within the region. Mainland cities in the GBA possess advantages in manufacturing capacity and production factors, while Chinese Hong Kong and Chinese Macao offer high-end service resources in finance, law, research, and education. The free flow of factors can enable high-level coordination in “upstream R&D + midstream manufacturing + downstream services,” helping to deepen the division of labor in industrial chains.

Moreover, integration of factor markets will incentivize the efficient aggregation of scientific, capital, and human resources within the region, fostering an integrated innovation ecosystem that connects government, industry, academia, research, and application. For example, leveraging Chinese Hong Kong’s international research platforms and the Mainland’s abundant application scenarios and policy support can help build a globally competitive mechanism for technology commercialization, promoting the cross-border and integrated development of emerging industries, the digital economy, and high-end manufacturing.

### **3.3 Promoting Diverse Cooperation among Market Entities and Enhancing Regional Competitiveness**

Factor market integration provides market entities with greater freedom and collaborative space, breaking down traditional geographic boundaries in business operations and encouraging enterprises, institutions, and organizations to engage in diverse forms of cooperation across a wider range of fields. Increasing cooperation in the construction of cross-border industrial parks, the co-development of innovation incubation platforms, and the export of professional services indicates that enterprises are actively responding to the institutional and policy dividends brought by market integration <sup>[7]</sup>. Especially in the context of highly mobile capital, information, and talent, resource allocation among regional enterprises is shifting from internal integration to cross-border collaboration, forming a multi-entity innovation model involving “leading enterprises + SMEs + research institutions.” For example, Chinese Hong Kong’s tech startups can quickly commercialize their innovations using Shenzhen’s manufacturing capabilities, while Shenzhen enterprises can utilize Chinese Hong Kong’s capital markets to secure international financing, pushing businesses toward full-chain integration.

## **4. Major Obstacles to the Integration of Factor Markets**

### **4.1 Legal and Institutional Differences**

Guangdong, Chinese Hong Kong, and Chinese Macao each operate under different legal systems and governance models: Chinese Mainland adopts the civil law system, while Chinese Hong Kong and Chinese Macao respectively follow common law and the Portuguese legal system <sup>[8]</sup>. These fundamental differences result in incompatible regulations concerning market access, business registration, contract enforcement, financial supervision, and data protection. Such institutional barriers severely restrict the free flow of factors and hinder the process of regional economic integration. In practice, businesses and professionals engaging in cross-border activities often face duplicate registrations, inconsistent regulatory requirements, and even legal conflicts, thereby increasing compliance and time costs. Moreover, differences in key areas such as intellectual property protection and tax policies further undermine market participants’ confidence and willingness to engage in regional cooperation. The lack of institutional compatibility not only reduces the efficiency of regional integration but also impairs the Greater Bay Area’s strategic role as a national pilot zone

for institutional innovation.

#### **4.2 Administrative Fragmentation and Lack of Coordination Mechanisms**

Although economic ties among Guangdong, Chinese Hong Kong, and Chinese Macao are growing stronger, the existing administrative structures remain largely territorial in nature, with limited policy coordination across regions and a lack of systematic, regularized governance mechanisms. In policymaking, project approval, and fiscal investment, the three regions often act independently, resulting in “policy fragmentation.” For example, in cross-regional cooperation projects such as industrial park development, transportation planning, and joint technology platforms, significant differences in administrative procedures and approval standards among cities have led to long implementation timelines, inefficiency, and even resource misallocation and redundant construction. Furthermore, the absence of robust coordination mechanisms tends to blur governance responsibilities and exacerbate information asymmetries, weakening governments’ ability to guide the integration of market factors. Such administrative fragmentation not only slows down market integration but also hampers the strategic layout of a unified regional market and industrial synergy.

#### **4.3 Lagging Cross-Border Infrastructure Connectivity**

While notable progress has been made in physical connectivity—such as the completion of the Hong Kong-Zhuhai-Macao Bridge and the Guangzhou-Shenzhen-Hong Kong high-speed rail—deeper infrastructure collaboration and management still lag behind <sup>[9]</sup>. Firstly, cross-border transportation systems lack integration in areas such as scheduling, ticketing, and payment services, resulting in poor user experiences. Secondly, the logistics network suffers from inconsistent standards in customs clearance, cargo tracking, and information system interfaces, leading to reduced overall efficiency. Thirdly, cross-border information infrastructure lacks a unified layout, with data centers and cloud platforms not yet sharing resources or being developed in a coordinated way. Moreover, the absence of unified coordination in the operation and management of cross-border infrastructure hinders efficient operations and risk response, impeding the rapid circulation of logistics and information within the region.

#### **4.4 Hidden Barriers to the Cross-Border Flow of Talent, Capital, and Data**

Despite continuous policy efforts, the actual cross-border flow of key factors such as talent, capital, and data still faces numerous hidden barriers, revealing deeper issues of weak policy implementation and institutional inertia. For talent, Chinese Hong Kong and Chinese Macao residents still encounter complex qualification verifications and insufficient living convenience when working in Chinese Mainland, discouraging long-term mobility. For capital, financial regulations remain unaligned, and cross-border financing still largely relies on pilot programs or special channels, limiting scalability and replicability. For data, the three regions diverge significantly in governance philosophies, data transmission standards, and security review procedures, seriously restricting enterprise collaboration in digital economy and tech innovation.

### **5. Strategic Recommendations for Advancing Factor Market Integration**

#### **5.1 Build a Platform for Institutional Openness**

Under the framework of "One Country, Two Systems," institutional openness should lead the way, promoting the establishment of a unified negative list for market access and dismantling regulatory and data usage barriers among the three regions. It is recommended to establish a Greater Bay Area unified rules convergence platform to foster innovations such as mutual recognition of business registration, coordination of professional qualification accreditation, and universal financial supervision standards. A cross-border institutional alignment mechanism based on mutual trust should be created. Additionally, legislative and administrative bodies from the three regions should be encouraged to engage in institutional dialogue and connectivity, forming a rule-of-law-based, institutionalized path toward synergy, and providing a stable and transparent environment for market participants.

## 5.2 Improve Cross-Regional Coordinated Governance Mechanisms

A regularized regional coordination platform—such as a "Greater Bay Area Economic Coordination Committee"—should be established to promote a collaborative governance model involving government, businesses, and multiple stakeholders, with a task-oriented structure. This platform should align regional development strategies, coordinate major projects, and facilitate cross-regional resource allocation, improving policy formulation and implementation efficiency. At the same time, cooperation mechanisms among administrative jurisdictions should be strengthened, with special coordination groups formed to pilot institutional reforms and cross-border cooperation in key areas such as education, healthcare, technology, and transportation, offering governance models for regional integration.

## 5.3 Optimize Cross-Border Infrastructure Network Planning

Efforts should shift from “hard connectivity” to “deep connectivity.” From a regional integration perspective, cross-border infrastructure networks in transportation, logistics, energy, and digital information should be systematically planned to form a complementary, resource-sharing, and highly coordinated regional infrastructure system. Priority should be given to the development of Greater Bay Area data hub clusters, a unified logistics information platform, and interconnected transportation hubs. New mechanisms for the co-construction, co-management, and co-sharing of infrastructure should also be explored. Moreover, standardized and intelligent management of cross-border infrastructure construction and operation should be enhanced by leveraging big data and artificial intelligence to improve management efficiency and service quality.

## 5.4 Promote “Soft Connectivity” through Reform and Innovation

For core factors such as talent, capital, and data, a multidimensional approach covering policy, mechanisms, and services is needed to build efficient, convenient, and standardized cross-border flow systems <sup>[10]</sup>. Specifically: In talent, improve mechanisms for mutual recognition of academic qualifications, professional titles, residence facilitation, and social security alignment, and develop a cross-border talent mobility service platform; In capital, normalize financial innovations such as “Cross-boundary Wealth Management Connect” and “Bond Connect,” and explore pilot paths for RMB internationalization within the Greater Bay Area; In data, strengthen coordination of data regulations across the three regions, establish standards for regional data sharing and cross-border transmission, and reinforce data security and privacy protection to enable seamless digital economy collaboration <sup>[11]</sup>.

## 6. Conclusion

The integration of factor markets in the Guangdong-Hong Kong-Macao Greater Bay Area is a key driver of deep regional economic integration and a cornerstone of China’s national coordinated development strategy. This paper systematically explores the mechanisms, challenges, and strategic recommendations related to integration, aiming to provide feasible pathways for building a more open, efficient, and collaborative market system in the Greater Bay Area. Going forward, continuous efforts in institutional design, technological support, and governance structure optimization are essential to transform the region from “physical connectivity” to “institutional integration,” and to achieve the goals of high-quality, integrated development.

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