

## Research on the Opening-up Strategies of Sichuan Province under "The Belt and Road Initiative"

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### Abstract

### Review Article

This paper examines the influence of economies of scale and product differentiation on international commerce from a spatial viewpoint by reviewing transportation theory and new economic geography theory. Furthermore, it discusses the opportunities and challenges of Sichuan's foreign trade development under "the Belt and Road Initiative". Finally, the paper offers some recommendations for Sichuan's strategy of opening up.

**Keywords:** Transportation; Economies of scale; Industrial openness; Trade geography.

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## 1. Theoretical foundation

### 1.1 Transportation theory

Transportation theory incorporates multiple modes of transportation into a comprehensive transportation system for analysis, defines the relationship between transportation and economic development from a historical and logical point of view, and establishes the necessary connection between various stages of industrial development and transportation development. Explicitly, the transportation theory classifies the transportation procedure into three stages: pre-transportation, transportation and post-transportation. In the pre-transportation stage, the techniques of transportation are technologically outdated. The cost of space displacements of passengers and goods is alternatively high. Moreover, the boom in social transportation facilities and the entire quantity of transportation is slow. Transportation conditions unavoidably restrict the scope of monetary activities, however, the interplay among transportation and economy is vulnerable for the reason that the economy does not generate a great deal of transportation demand due to the constrains of productivity and transportation objects. In the transportation stage, together with the economic revolution, the exquisite liberation of productive forces, and the rapid development of huge capitalist industry, massive modifications have occurred in the traditional independent relationship between transportation and economic development. Meanwhile the transportation

had a decisive effect on the industrial revolution. In this stage, efficient techniques of transportation have emerged which include railway transportation, shipping transportation, road transportation and air transportation, and the modern means of transportation have exceptionally triumph over the constraints in movement imposed by natural conditions. Transportation plays an important role in promoting regional economic activities, shifting regional spatial structure, production scale, regional specialization and division of labor. At the same time, industrial development necessitates large-scale and high-volume transportation such as coal, iron and steel, ore to promote transportation development. During this period, transportation, the raw material industry with high transportation demand and reshipment industry becomes the core industry group with large volume in the region. The economy heavily dependent on transportation shows a two-way interactive relationship. In the stage of post-transportation, the transportation network is almost complete, and the diversification and efficiency of transportation modes have greatly broken through the restrictions on transportation cost and time. The importance of transportation is starting to take precedence over informatization, which also plays a key role in freeing up productivity and reducing space costs.

Most regions in Sichuan Province are still in the transportation stage, according to transportation theory. The efficiency of spatial displacement of people

and items will be improved, and transportation costs will be reduced, as the transportation network and technologies are improved. Transportation upgrading will have a significant influence on directing people movement and regional industrial layout, as well as boosting regional industrial structure layout and rebuilding regional spatial structure. Transportation, which is also an important component in regional growth, plays an evident promotional function.

### 1.2 New Economic Geography Theory

The center-periphery model theoretically analyzes the formation and change of spatial structure caused by the interaction among the increasing returns to scale of regional production, transportation costs and factor flows. Under the assumption of scale-induced increasing returns, transportation costs and cross-regional flow of factors, home market effect and price index effect form agglomeration forces, which urge enterprises to congregate in geographical space. The positive externalities of agglomeration are reinforced by the circular cumulative causality to form the path dependence of agglomeration. Be that as it may, the dispersion force is due to the impact of competition in the market. Moreover, the negative externalities have been centralized, leading to factor price competition and labor cost competition, which further facilitating the geographical expansion of companies. Transportation costs are an important factor influencing agglomeration and dispersion. The agglomeration power of manufacturers comes from the demand for a wide range of products. When transportation cost is reduced to the threshold, the agglomeration power of economic activities is then greater than the dispersion force. The spike in the number of enterprises in the core area and the reduction in the equilibrium price of commodities have a positive income effect on the work force, prompting the labor force and enterprises to concentrate in one area. This agglomeration process may occur instantly. When the transportation cost is exceptionally high, the spatial mobility of regional economic activities is constrained, and the enterprises and population are fragmented. Thus freight rates to some extent dominate the dynamic evolution of spatial agglomeration-diffusion of commercial development.

New economic geography, which is based on a spatial perspective and emphasizes the analysis of economies of scale and imperfect competitive markets as its core, demonstrates the "center-periphery" model and explains the regional changes in a country or region's economic activities against the backdrop of economic globalization, as well as how to participate in the international division of work. The idea may be applied to the southwest area, particularly to Sichuan Province, which is part of the "the Belt and Road Initiative" economic circle and hence can be considered.

## 2. Opportunities for Sichuan's Opening-up under 'the Belt and Road Initiative'

The construction of 'the Belt and Road Initiative' is a major strategy for the country to accelerate its opening-up and promote coordinated regional development.

### 2.1 Release the geographical dividend

Geographical dividend refers to the act of completely interacting with neighboring nations in order to develop regional markets, share technologies, and engage in other mutually advantageous exchanges of information. The natural junction of Sichuan is represented by "the Belt and Road Initiative". The geographical position of Sichuan places it at the intersection of four economic belts: the Silk Road, the Yangtze River economic belt, the Sino Pakistani economic corridor, and the Sino Indian Burmese commercial corridor. Sichuan is also home to the largest population of people in China. It is a vital transit corridor that connects the southwest and northwest of the continent, as well as Central Asia, South Asia, and Southeast Asia, among other places. Furthermore, Sichuan is transformed into a frontier for interior opening-up. As a result of China's "the Belt and Road Initiative", the Chinese province of Sichuan has become a bridgehead for economic and commercial cooperation between the country and western nations.

### 2.2. Stimulate the development of channel economy

The development of foreign trade on the basis of Chengdu-Europe Express Railway corridor can be seen as stimulating the development of the corridor economy. With the opening of the Chengdu-Europe Express Railway, Sichuan Province, has become a bridgehead for economic and trade cooperation between China and western countries, thereby greatly improving its advantages in transportation location. The reduction in transportation cost and time will entice a large number of enterprises to transport to the west by road, in particular the Chengdu-Europe Express Railway, and further promote the development of the open economy, the circulation economy, the service economy and the industrial economy. Meanwhile, in 2019, the Chengdu-Southeast Asia road freight shuttle bus was activated, boosting freight trade between Chengdu and Southeast Asia. As the junction city of "the Belt and Road Initiative", Chengdu will have more advantages to attract industrial agglomeration, which will help guide enterprises to expand production scale, leading to the advantages of economies of scale.

### 2.3 Promote the adjustment and upgrading of industrial structure

The "Belt and Road Initiative" passes through a number of Asian and European nations and regions, the majority of which are undeveloped and have a high need for infrastructure investment. Sichuan Province has a diverse range of industries. Exporting industries include electronic information, steel, footwear,

machinery and equipment, and furniture, all of which have competitive advantages. Meanwhile, enterprises with distinct advantages, such as Sichuan wine and Sichuan tea, exist. The RONGOU Express Railway's inauguration is advantageous to the smooth flow of international commerce in Sichuan province and aids in the resolution of the province's surplus production capacity issue. According to Chengdu customs statistics, Sichuan province exported 5,142 million RMB in basic goods and 460,291 million RMB in industrial products from January to December 2020, accounting for 98 percent of the total export value. Exports of industrial items were led by machinery and transportation equipment, which accounted for 84 percent of total exports. The "Belt and Road Initiative" area is rich in natural resources. Such as Southeast Asia and Central Asia, are resource producing countries, and the principal items imported into Sichuan are primarily upstream raw materials and auxiliary materials. It is clear that Sichuan Province and the nations along the line complement each other in terms of industry and have a lot of room for economic cooperation. Sichuan Province enhances resource allocation efficiency under the "Belt and Road Initiative" by using both local and international markets and resources, which is helpful in attaining the objective of boosting industrial structure adjustment and upgrading.

### 3. Complications in Sichuan's Opening-up

#### 3.1 Uncompetitive enterprise entities

Enterprises with excellent production efficiency will be more motivated to export under the new economic geography, which prioritizes economies of scale. Sichuan's firms, on the other hand, are tiny, dispersed, and ineffective. Despite the fact that they indicate an agglomeration tendency, the agglomeration impact is not visible. In the logistics sector, there are various issues, such as few organizations exceeding the designated Size, passively waiting for market demand, poor integration with regional industries, and insufficient support of the service system, which prevent businesses from expanding. The market entities in Sichuan are now diverse and dispersed, and cultivating major backbone companies is insufficient. Chengdu Europe Railway's container distribution hub is located in Qingbaijiang District. In theory, Qingbaijiang District is an industrial agglomeration region in Sichuan with a clear industrial scale economy, although the number of significant firms in the district is still modest.

#### 3.2 Faultiness in the existing transportation system

Transportation infrastructure remains an important factor limiting the development of Sichuan's foreign trade. As per the theory of transportation, transportation cost affects industrial location and specialization. The topography of Sichuan Province is complex, including both plain areas and high mountain and plateau areas. Especially in the 'three states' area, the terrain is so complicated, and the construction of the transportation network still needs to be improved.

While from the perspective of transportation construction time, the transportation infrastructure of Sichuan Province lags behind the eastern and central regions, and the transportation infrastructure has not yet meet the needs of economic development. From an international point of view, there are also obvious shortcomings in the construction of high-speed railways, expressways and the interconnection with the Chengdu-Europe Express Railway. The construction of a modern three-dimensional transportation corridor needs to be improved urgently. The Chengdu-Europe Express Railway lacks sufficient branch railways to integrate the surrounding economic resources. Such problems also affect the economic development of the corridor and objectively increase the logistics cost of Sichuan Province in international trade. Moreover, Sichuan's advantages in resource and human resources out weights the logistics costs, and its comparative advantages are not prominent. Furthermore, Sichuan is an inland region. Although there are shipping transportation channels along the Yangtze River, the construction of ports are deficient. Therefore the advantages of inland waterway transportation are not obvious, resulting in difficulties for Sichuan to establish a significant competitive advantage in product trades characterized by high volume, low added value, and a high fraction of transportation and logistics expenses in the overall cost of goods.

#### 3.3 Insufficient reliance on foreign trade

As a typical western region, Sichuan Province is located in the interior area, with closed traffic and a low level of economic prosperity. As a direct consequence, the foreign trade volume in Sichuan Province is significantly lower than the national average. In the past ten years, although Sichuan Province has accelerated the tempo of opening to the outside world and its overall international trade exports have been doubled, their total volume is still relatively insignificant. In 2020, the total import and export of goods in Sichuan totaled US\$ 116.8 billion, accounting for barely 2.5% of the total import and export of goods nationwide, which amounted to US\$ 464.260 billion. Meanwhile, there are significant regional variances in Sichuan's foreign trade, with Chengdu's total import and export volume contributing to 88.5% of Sichuan's total import and export volume in 2020.

#### 3.4 Incomprehensive business support system

Public carriers such as logistics parks, logistics information public service platforms, public warehousing construction, customs service, commodity inspection service, road traffic infrastructure, four-way logistics resource integration platform, and platform services for the logistics industry are among the most common types of logistics service support. Cross-border e-commerce platforms have become major platforms for commercial services in recent years, thanks to the expansion of the platform economy, while

cross-border e-commerce platforms in Sichuan Province are still in the stage of rapid development.

#### **4. Industry Opening Strategies Based on "the Belt and Road Initiative"**

##### **4.1. Making advantages of economies of scale**

The effect of growing returns to scale and imperfect competition are the basic forms of international trade. In order to expand foreign trade in Sichuan Province, attention should be devoted to the benefits of scale economy of domestic enterprises and multinational corporations.

In terms of domestic firms, enterprises in Sichuan Province are often plagued by a lack of insufficient production scale and a lack of competitiveness in the main body. As a result, when Sichuan Province adopts the industrial opening policy, the government should choose the industries with high technological capability, strong connection and environmental friendliness to safeguard and promote them, as well as improve the competitiveness of enterprises by aiding the mergers and reorganizations of large-scale enterprises with international competitiveness. Simultaneously, regional cooperation should be adhered to guide enterprises to develop towards clustering, including electronic information industry, equipment manufacturing industry, non-ferrous metal smelting industry, oil and gas chemical industry and cultural tourism industry, to expand internal economies of scale and external economies of scale and enhance the competitiveness of enterprises.

Multinational firms are a powerful driver for regional economic growth and industrial openness. Through the division of labor in the value chain, multinational firms create a "value chain channel," which stresses the value chain division system within and outside the industry, as well as cross-industry boundaries and external links in the value chain. Encourage local state-owned firms with competitive advantages to expand globally, therefore driving regional foreign trade growth and promoting regional foreign trade via scale and spillover effects. Multinational firms should integrate global value chain channels to promote the upgrading and growth of foreign industries in Sichuan.

##### **4.2 Using the Internet to revolutionize traditional industries**

Internet, a new generation of information platforms, can make it easier for traditional industries to identify possibilities for development and breakthrough for their own innovation and sharp changes due to its excellent distribution impact on diverse types of information. The emergence of the Internet not only immensely facilitates the communication between economic entities, minimises the difficulty for enterprises to acquire information, drives down the transaction costs of enterprises, allows enterprises to

face a wider and more diversified market to gain more development potential, but also diffuses the boundary between producers and consumers, and drives the transformation of traditional production methods of enterprises to acclimate to the development requirements of the new era.

Businesses benefit from advanced e-commerce systems that reduce their information costs. E-commerce models such as B2B, B2C, and O2O need to be developed in Sichuan Province as part of the construction of the Silk Road Economic Belt in order to display Sichuan Province's comparative advantages and relevant information for domestic and foreign businesses, as well as reduce the cost of information communication. Advanced e-commerce platforms bring information cost advantages to enterprises. Predicated on the construction of the Silk Road Economic Belt, Sichuan Province should boost its cooperation with pioneering e-commerce businesses in terms of connectivity and strenuously develop e-commerce approaches such as B2B, B2C and O2O, so as to fully display enterprises with comparative advantages and relevant information in Sichuan Province for domestic and foreign enterprises and reduce the cost of information communication.

Science and technology talents are the development support of the Internet. It goes without saying that talents are absolutely essential to the Internet's advancement. As for the training of talents, on the one hand, we should help bolster the training of network-related talents; On the other hand, we will expedite the introduction and mentoring of high-level talents. Given the abundance of university resources in western Sichuan, collaborative effort in running schools and targeted training can be adopted to inculcate high-end internet talents for Sichuan by borrowing sophisticated teaching resources.

##### **4.3 Promoting the channel economy**

The Silk Road Economic Belt connects numerous nations and areas as a significant economic corridor between East and West commerce. Economies of the countries along the route vary greatly in terms of their degree of development and the resources they possess. When Sichuan utilizes the "one road and one belt" strategy to develop international commerce, it should open up to the outside world and use the Chengdu Europe railway to strengthen the impact of foreign trade.

Essentially, Sichuan Province's opening-up of its industries based on the Chengdu-Europe Express Railway is, the development of a channel economy based on opening-up. In the traditional international trade, Sichuan is situated in the inland region, with inadequate transportation location, protracted transportation distance and downtrodden transportation infrastructure, leading to increased transportation costs.

However, the promotion of the Belt and Road Initiative, as well as the opening of the Chengdu-Europe Express Railway have broken this traffic constraint. Sichuan Province is at the geographic epicenter of the Silk Road Economic Belt and has a major traffic location advantage. Therefore, in the construction of transportation channels, Sichuan Province should take economical advantage of the Chengdu-Europe Express Railway to improve its freight transportation system and speed up the docking with the surrounding expressways, railways and inland ports. Meanwhile, the transportation cooperation between the Chengdu-Europe Express Railway and the southeast coastal and central regions, as well as the provinces and cities of Yunnan, Guizhou and Chongqing, needs to be strengthened. It is strongly recommended that Chengdu railway station of the Chengdu-Europe Express Railway be promoted as the key transfer station for China's foreign trade, taking full advantage of Chengdu's excellent infrastructure and magnitude advantages. It is also crucial to strengthen the unified acceptance platform for international container rail intermodal transportation, operate international container trains in a unified standard, abide by the regular departure system,

and optimize the competitive edge of freight transportation of the Chengdu-Europe Express Railway.

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