

Urban Resilience and Post-pandemic Export Capacity Recovery

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Abstract

Based on the four dimensions of urban resilience: technology, space, society, and economy, it analyzes the role of urban resilience in fighting the epidemic, and then analyzes the main mechanisms by which the epidemic affects exports, such as policies, production, logistics, and sales. Finally, combining the two parts, it is concluded that the higher the resilience of the city, the more effective the fight against the epidemic, and the easier it is for exports to recover.

Keywords

Urban resilience export epidemic.

1. Introduction

Since the emergence of the novel coronavirus pneumonia virus on December 1, 2019, the economic development situation in China and the world has changed significantly. The rapid spread of the new crown pneumonia epidemic and its wide range of influence have severely impacted the global trade system and caused extremely serious damage to my country's export trade. According to Chinese customs data, my country's exports of goods from January to February 2020 fell by 18.3% compared with the same period of the previous year, with a trade deficit of US\$7.1 billion. At the same time, the growth rate of China's exports to the four major trading partners of the EU, ASEAN, the United States and Japan decreased by 17.1%, 4.1%, 25.9% and 24.1% respectively. Although my country has effectively controlled the epidemic in March 2020, and Chinese foreign trade companies have basically resumed work, the global spread of the epidemic has reduced the demand for my country's main trade objects, and China's export situation has not been greatly improved. The importance of export trade to a country cannot be underestimated. Export trade income is the main source of China's foreign exchange, and has a great impact on the import of China's advanced production equipment, the improvement of people's living standards and the stable and sustained economic growth. Therefore, it is particularly important to restore export capacity as soon as possible in the raging epidemic and seize the opportunity of economic recovery and development. my country has also issued policies such as raising the export tax rebate rate and expanding the role of export credit insurance to promote the development of export trade.

As the influence of the new crown pneumonia epidemic continues to expand, people pay more and more attention to and research on urban recovery after disasters, and the interpretation of the concept of "urban resilience" is constantly being improved.

According to the definition of the International Council for Regional Sustainable Development advocated by an international organization, "resilient city" refers to a city that can resist disasters, reduce disaster losses, and allocate resources reasonably to quickly recover from disasters by its own capabilities.

When affected by disasters, compared with regions that are under extreme pressure but relatively lack of adaptability and flexibility, resilient cities have better social and economic systems, better infrastructure, etc., their personnel and property conditions will be affected.

Better (Bolin & Stanford, 1998; Comfort, 1999).

Under the new crown pneumonia epidemic, cities with better resilience can also have better performance in fighting the epidemic and economic recovery after the epidemic.

Urban resilience can also play a strong role in the recovery of export capacity. Cities with higher resilience can show higher export resistance in the face of the epidemic, and have stronger export resilience after the epidemic ravages.

After the first wave of the epidemic swept China, the degree of export recovery in different cities showed great differences. Affected by the epidemic in the first half of 2020, the export value of most cities across the country showed a negative growth trend. However, as the epidemic gradually came under control

With the resumption of work and production, Shenzhen, Shanghai, Wuhan and other places saw significant growth in export trade in the second half of 2020, while Suzhou and Dongguan failed to recover from negative growth throughout 2020.

The different performance of these cities in terms of export recovery is closely related to the level of local urban resilience, which will affect the level of export recovery through various factors.

2. Literature Review

2.1 Foreign literature on urban resilience

In the article "Discussion on Several Issues of Building a Safe and Resilient City", resilience is a concept widely used by international organizations in the field of security. In 2015, the United Nations Third World Conference on Disaster Reduction took "resilience" as an important theme. The Conference on Sustainable Urban Development listed "inclusiveness, safety, resilience and sustainability" as the core goals of urban development. The 6th Global Platform for Disaster Reduction Conference in 2019 took "Resilience Dividend" as the theme of the conference. International organization for standardization, ISO in 2015 The name of the TC292 Technical Committee has been expanded from "Security Technical Committee" to "Security and Resilience Technical Committee", and cities such as New York, Tokyo, London, Chicago, and Singapore have also proposed to build a "Resilient City".

After sorting out the different concepts of urban resilience proposed in various literatures, its connotations are mainly reflected in the diversity of urban functions, the flexibility of urban organization, the diversity of urban elements, and the intersection of urban networks. Emphasize different aspects of resilient city construction from different dimensions such as infrastructure, ecology, society, and economy, and form a dynamic interaction and complex urban network between system layers. It can be seen that urban resilience is a hot and frontier field of current research, and it is a new idea to improve the ability of cities to face uncertain risks.

2.2 Domestic literature on urban resilience my country has begun to pay close attention to the research on resilient cities, and has achieved certain results. For example, Wang Zanxin and Wei Wei proposed factors to measure and determine China's regional economic resilience, and suggested fostering entrepreneurial spirit to enhance China's regional economic resilience; Shi Tao analyzed the temporal and spatial evolution of urban resilience development in the Yellow River Basin based on a sample of 51 cities in the Yellow River Basin from 2005 to 2019. Characteristics and driving factors; Feng Jieyao and other scholars based on the panel data of 11 prefecture-level cities in Shanxi Province, the economic development level and the impact of environmental pressure on urban resilience. However, the overall research progress is still in the period of exploration and progress, and it is necessary to establish a resilient system that is in line with China's national conditions and current situation, and has strong practicability and operability. Therefore, it is urgent to systematically explore the mechanism and effect of

my country's urban resilience under major external shocks, form a complete urban resilience building system, and help my country's urban export capacity develop steadily.

2.3 Literature on Ability Restoration The article "Research Review on Disaster Resilience of Urban Systems" mentioned: "If an urban system has resilience, it is first shown that it has sufficient resistance to disasters, and after the disaster, the system can quickly return to normal levels and maintain continuous operation. On the basis of summarizing disaster experience, we can improve our ability to deal with unpredictable disasters." Resilience, as a concept of urban resilience based on ecosystem theory, aims to pursue the relationship between cities and external emergencies. Adaptation and symbiosis are the core goals. Ma Qiwei and other scholars also quantitatively assessed the urban resilience and related factors in the paper "Restoration of Urban Vitality and Its Influencing Factors: Exploration in the Scenario of Public Health Emergencies". In order to better provide a strong source of support for governments at all levels.

In the article "Urban Resilience Assessment Model and Application for Flood Disasters", the background of the concept of resilient city is mentioned, and the definition of this concept by different scholars at home and abroad is expounded. This topic is biased towards the views of many scholars such as Huang Hong. In the face of natural disasters, we cannot simply prevent disasters, but also need to have the ability to adapt and recover quickly. The "Research Progress of International Resilient Cities Construction Based on the Impact of Climate Disasters" gives an evolution chart of the concept of resilience: more and more emphasis is placed on resilience, and it is mentioned that China's research on resilient cities mainly focuses on "sustainable development" and "climate change". , "ecological security", the research on urban exports is relatively lacking.

"Urban Resilience and Urban Exports: An Empirical Analysis Based on Panel Data of China's Prefectural Cities" analyzes the correlation between urban resilience and export capacity, and points out that there is currently a lack of literature on the effect of urban resilience on urban exports, which opens up A first-of-its-kind research framework that incorporates urban resilience and export capacity in urban economic systems. This article conducts in-depth and innovative research based on these literatures: for the first time, it examines the relationship between the restoration of export capacity and urban resilience and the impact of urban resilience on resilience after non-physical natural disasters (epidemics). It is necessary to improve urban resilience to help cities Reconstruction, residents' well-being, and residents' (re)employment, etc., are conducive to dealing with problems such as the difficulty of quickly recovering the country's export trade when the country is severely impacted, the difficulty of small and medium-sized enterprises unable to deliver orders and financing, and the difficulty of residents' home isolation and unable to resume work and production on time. It is also possible to gradually improve urban resilience with the help of big data analysis. When similar safety and health incidents occur again, the export capacity of relevant regions can quickly recover to the original level, and the export capacity of other regions will not be affected as much as possible.

3. The Role of Urban Resilience in Combating the Epidemic

3.1 Technical aspects With the rapid development of information technology, digital technology governance capability is an important part of urban resilience in the context of epidemic air defense. General Secretary Xi Jinping emphasized at the deployment meeting on coordinating the promotion of new crown pneumonia epidemic prevention and control and economic and social development, and it is necessary to encourage the use of digital technologies such as big data, artificial intelligence, and cloud computing to improve epidemic monitoring and analysis, prevention and treatment, and resource allocation. Good support. \

For example, during the epidemic, the widely used "health code" comprehensively integrates the activity trajectories and close contacts of social members through multi-source data such as comprehensive medical testing, traffic travel, inspection and quarantine, location trajectories, disease cases, community registration, and self-reporting. Judgment not only provides retrospective support for epidemic prevention and control, but also provides electronic passports for the normal flow of urban citizens. From late January to mid-March, CNOOC actively used the online "CNOOC Mall" to accumulate a transaction volume of more than 1 million tons, with a transaction amount of 4.6 billion yuan. The production index of information transmission, software and information technology services increased by 3.8%; the output of smart bracelets and semiconductor discrete devices increased by 119.7%, 45.1% and 31.4% respectively year-on-year. Big data, cloud computing, and intelligent manufacturing show strong potential and good development momentum.

Taking the response to epidemic prevention and control as an opportunity, combined with the national "credit innovation" work, do a solid job in the research and application of new technologies such as artificial intelligence, blockchain, Beidou navigation, 5G, etc., to better deal with the risk of "stuck neck", and use new A generation of information technology empowers enterprise operation and management, and promotes the transformation of operation and management models into new models and formats such as unmanned production and remote operation. Based on "one network unified management" and "city brain" and other technology integration platforms, the city is multi-scale and multi-level. The interconnection and comprehensive coordination ability of the city has strengthened the sensitivity, concentration and centrality of the city's decision-making command. Therefore, from a technical point of view, urban resilience is bound to be linked to the city's overall technological use capability, running through the entire operation of the city.

3.2 Spatial aspects As an important aspect of urban resilience, spatial resilience is currently mostly concentrated in the geographical environment. The spatial pattern and its resource allocation are of great significance and value in the fight against the epidemic.

At the macro level, regional spatial integration is conducive to resource sharing and deployment. Areas with too concentrated population and factors may lack the flexibility to adjust when the epidemic comes. Li Xiaojiang, former president of the China Academy of Urban Planning and Design, made a deep reflection on the modern urban form with high-rise and super-high-rise residences as the main form. He believes that too many people use the same space and facilities, which will inevitably greatly increase the chance of disease transmission and The psychological stress of worrying about infection. & At the micro level, whether it is the allocation of regional medical centers and resources, or the spatial layout of medical facilities at different levels such as cities, districts, and towns, and the configuration of public service facilities for living that matches the community shape, it can meet the needs of the epidemic emergency. The need for site selection and expansion of medical facilities, enhance the robustness of the fight against the epidemic, and improve the city's decentralized organizational capabilities.

3.3 Social aspects Social resilience is generally considered to refer to a community's demographic profile and its social capital profile, including gender, age, socioeconomic status, and other characteristics. In fact, when fighting the epidemic, social resilience not only includes demographic characteristics and social capital, but also mainly refers to the form of social organization that is conducive to decentralization and the ability to connect on this basis.

The prosperity and development of modern cities depends to a large extent on the scale effect formed by the high density of population. The more economic and social activities, the stronger the vitality of the city. However, in order to deal with major emergencies, it is precisely necessary to use local or even comprehensive social isolation to reduce social interaction, control the spread and spread of diseases, and protect healthy people. Research has proved that

this kind of residential form dominated by closed and semi-closed residential quarters and the "grid" management mechanism constructed on this basis have played a crucial role in the prevention and control of new coronary pneumonia in China. The grid space formed by the superposition of many minimum social units can achieve precise reverse adjustment, that is, the minimum range of control over the groups involved in the infected individuals is carried out to ensure the normal operation of other parts of the city.

On the other hand, while the space is divided, necessary social connections are also required, including volunteer mobilization, social organization participation, group prevention and group governance, resource delivery and mutual support. Resource management and allocation under normal circumstances and the resulting social pattern are themselves important foundations and conditions for improving residents' overall adaptability. The organization of the community-based grassroots society is crucial to building urban resilience.

3.4 Economic aspects Since the outbreak of the epidemic, the Central Committee of the Communist Party of China has coordinated the promotion of epidemic prevention and control and economic and social development, strengthened macro policy adjustment, and formulated a series of policy measures with high gold content. Proactive fiscal policies put more emphasis on people's livelihood expenditures and tax and fee reductions. At the beginning of 2021, health expenditure, social security and employment expenditure, energy conservation and environmental protection expenditure will increase by 22.7%, 2.5% and 3.4% respectively. According to preliminary estimates, various phased reduction and exemption policies and measures are expected to reduce the burden on enterprises by more than 800 billion yuan. Financial institutions implemented 300 billion yuan of special re-loans and 500 billion yuan of re-loan and re-discount policies, and targeted RRR cuts to release 550 billion yuan of long-term funds to support the supply of epidemic prevention and control materials, and the resumption of work and production in agriculture and enterprises. These economic policy measures have successively been implemented and effective, which is not only conducive to greatly alleviating business difficulties of enterprises, but also conducive to promoting supply-side structural reforms.

4. Analysis of the Impact of the Epidemic on Exports

Since the outbreak of the epidemic, my country's export of goods trade has suffered a serious impact. According to data from the General Administration of Customs of China, during January-February 2020, China's total exports were US\$204 million, a year-on-year decrease of nearly 16%. Taking the food industry as an example, the industry's exports suffered serious losses, nearly 90% related companies are restricted. It can be seen from this that the epidemic has had a serious negative impact on my country's exports, and this conclusion has also been recognized by most domestic scholars. On this basis, this article will focus on the way the epidemic affects exports, and analyze how the new crown epidemic has caused losses to my country's exports.

4.1. National Policies

In China, the government attaches great importance to epidemic prevention and control, and has issued strict policies. In the early days of the outbreak, almost everyone was quarantined at home. In some communities, only one resident was allowed to go out once a day, and workers were unable to go to work normally, which led to dismal business activities across the country. This is especially true for export companies, where workers are stuck at home and a large number of orders cannot be fulfilled on time. Even if inventory is used, it is still subject to policy restrictions in logistics and other aspects. For example, various regions have strict control over the operation of vehicles and ships, and vehicles and ships are not even allowed to enter and exit medium and high-risk areas. However, in the long run, the government's policies have been relatively slow, and large-scale home quarantine and logistics restrictions will no longer be

implemented, and workers can move freely with green codes and nucleic acid test results. Taking Shanghai's epidemic prevention policy as an example, those returning to Shanghai from low-risk areas can undergo nucleic acid testing within 48 hours, and can return to Shanghai after self-health testing; those returning to Shanghai with medium and high risks can undergo 4 nucleic acid tests and be quarantined for 14 days. Shanghai.

In foreign countries, the policy restrictions imposed by foreign governments on the import of Chinese products have been gradually relaxed. In the short term, as of February 28, 2020, a total of 28 countries have implemented import restrictions on China, of which 12 are strictly prohibited from importing Chinese animal products and related products, and most of the remaining countries have also taken quarantine measures on Chinese imports. . In the long run, since all countries have been affected by the epidemic to varying degrees, and China has perfected epidemic prevention measures and retained good production capacity, countries have loosened restrictions on the import of Chinese products, and China's exports have been "exploding" one after another. Taking Brazil as an example, after resuming normal trade with China, in response to the domestic epidemic, the Brazilian government reduced the tariff on medical products to 0. It can be seen that foreign policies have a strong negative impact in the short term, while the negative impact gradually disappears in the long run, and may even play a positive role.

4.2. Production of Export Commodities

Due to the impact of the epidemic, the resumption of production and work has been slow in a short period of time. The resumption of production and work in the manufacturing industry is mainly affected by labor and capital. Under the government's strict anti-epidemic policies, workers were initially isolated at home, and then the government encouraged the resumption of production and work. However, factory managers and workers were worried that there would be an infection caused by the epidemic, and a large number of workers would not be able to reach their jobs on time; the epidemic led to sales. Due to the massive reduction in business, foreign orders could not be delivered to customers on time, and there were problems such as delays in sales receipts, so that small and medium-sized enterprises did not have sufficient funds to resume production. Compared with the manufacturing industry, the resumption of production and work in the service industry is more severe. The service industry has the characteristics of dense population, which is contrary to my country's epidemic prevention measures. Therefore, under the epidemic situation, the service industry can hardly resume work and production. Take the tourism industry as an example. Affected by the epidemic, many countries have suspended domestic flights and announced travel warnings, resulting in a sharp drop in international tourism revenue. The above is the short-term impact of the epidemic on exports through the resumption of work and production, but in terms of long-term impact, the impact of the epidemic is relatively small. According to the Ministry of Commerce, as of March 12, 2020, the resumption rate of foreign trade enterprises in 8 provinces including Shandong, Anhui, and Liaoning exceeded 80%, while the resumption rate of foreign trade enterprises in 19 provinces including Zhejiang, Jiangsu, and Shanghai reached or was close to 100%. The region is also accelerating the process of resumption of production and work.

4.3. Logistics of Export Commodities

The logistics of export commodities are mainly affected by the Chinese government's epidemic prevention policies. In the short term, taking the city closure of Wuhan as an example, public transportation, subways, passenger transportation and other transportation are closed, and there is no special reason to enter or leave Wuhan. The introduction of this policy means that cities such as Wuhan have basically lost the possibility of export logistics. The situation of Yangluo Port also confirms this conclusion. As a port open to the outside world, the throughput of Yangluo Port in February 2020 was only 300-400 TEUs, about 20% of that in previous years,

and most of them were imported for epidemic prevention items, and there was almost no output of ordinary commodities, which could not be exported. logistics activities. In the long run, the epidemic prevention and control policy has been relaxed. When an epidemic occurs, patients are generally required to be quarantined for 14 days, and the city closure policy is no longer adopted. Only when there are large-scale infection cases in the city, such as the Nanjing epidemic, can the epidemic be affected. Airports and other major traffic routes will be closed, and domestic trade ships and foreign trade ships passing through ports will be managed separately. It can be seen that the short-term impact of the epidemic on export logistics is stronger than the long-term impact. 4.4 Sales of export commodities

In the early stage of the epidemic, both the export value and the export freight volume have dropped significantly. Among them, the export value was 2.04 trillion yuan, a year-on-year decrease of 15.9%; the freight volume was 190 million tons, a year-on-year decrease of 2.4%. The reason is mainly related to two aspects. The first is the difficulty of resuming production and work. During the nationwide home isolation period, workers cannot go to work normally, so factories are unable to complete and deliver pre-ordered foreign trade orders. The second is the decline in international demand. Even after the country encouraged the resumption of production and work, there has been a significant reduction in international demand. According to the export staff's explanation, the decrease in international demand is mainly because foreign countries believe that my country's epidemic cannot be controlled in a short period of time, so they are looking for other countries to replace my country's products.

However, judging from the export data of the whole year and a single month after the epidemic was controlled, my country's export sales have recovered in the long run. The export value for the whole year of 2020 is close to 18 trillion yuan, with a growth rate of 4%; in November of that year, China's exports increased by 21.1% year-on-year, hitting a new high for the year. Among them, the growth rate of labor-intensive industries such as textile products and plastic products industries Considerable, basically maintain the growth rate of more than 20%.

5. Conclusion

Based on the above analysis, it can be found that the epidemic affects the export value of a region and country by affecting the policy, production, circulation and sales of export commodities, but this is usually only a short-term impact. In the long run, the epidemic has been effective. Therefore, the impact of the epidemic on exports will be greatly reduced; and the higher the resilience of a city, the more resilient it can be to fight the epidemic in terms of technology, space, economy, and society. For example, the use of "health codes" helps residents understand their own safety conditions. Avoid traveling to medium to high risk areas. Therefore, we believe that urban resilience can greatly reduce the short-term impact of the epidemic on exports by effectively fighting the epidemic. The higher the resilience of the city, the faster and more effective the region and country can control the epidemic, and the policy, production, circulation, and sales of export commodities will be less affected by the epidemic, and the normal export capacity can continue to be maintained.

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