

# Study on Revitalizing Northeast China Through a New Road of Industrialization

## ETUDE DE LA REVITALISATION DU NORD-EST DE CHINE PAR UNE NOUVELLE VOIE D'INDUSTRIALISATION

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**Abstract:** The old northeast industrial base has been the cradle of China after Liberation industry and has made the significant contribution to speed up the process of industrialization in China. The 16th National Party Congress definitely put forward the strategy of revitalizing the old industrial bases in Northeast China. Undoubtedly it can bring new lease and vitality for the development of the old industrial bases in Northeast China in the future. To begin with the study of the contents of a new road of industrialization, the article focuses on the necessity of taking a new road of industrialization to revitalize Northeast China and put forward the countermeasures for it according to analyze the current status.

**Key words:** revitalization of Northeast China, new industrialization, resources, countermeasures

**Résumé:** L'ancienne base industrielle nord-est a été le berceau de l'industrie de Chine après la Libération et a donné une contribution significative à l'accélération du processus d'industrialisation chinoise. Le 16<sup>e</sup> Congrès national du Parti a mis en avant définitivement la stratégie de revitalisation des anciennes bases industrielles dans le Nord-Est de Chine. Sans aucun doute, cette stratégie peut amener la vitalité et un nouveau commencement au développement de ces anciennes bases industrielles dans le futur. Débutant par l'étude du contenu de la nouvelle voie d'industrialisation, le présent article se focalise sur la nécessité de prendre une nouvelle voie d'industrialisation pour redresser le Nord-Est de Chine et propose des contre-mesures correspondantes en vertu de la situation actuelle.

**Mots-Clés:** revitalisation du Nord-Est de Chine, nouvelle industrialisation, ressources, contre-mesures

### 1. CONNOTATION, CHARACTERISTICS AND ADVANTAGES OF INDUSTRIALIZATION AND NEW INDUSTRIALIZATION

#### 1.1 The connotation of Industrialization

Industrialization, a foreign word, which comes from English, refers to the industrial or the secondary

industry has been becoming more and more important in national economy. Although industrialization has been the important issue to be concerned by economic history and modern economic development theories, but now, there is no unified understanding about its connotation. From the viewpoint of economics, the narrow definition of industrialization usually refers to the growing process of industry in the national economy and the rising number of industrial employment in total employment. The broad definition of industrialization refers to a country or region change from agricultural society to industrial society and the development process of industrial society, including the technical

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level, the tools of change, and also including comprehensive changes of people division, work methods, management system, until ideas. The road of industrialization refers to achieve principles, modalities and mechanisms of industrialization.

## **1.2 The connotation of traditional industrialization and new industrialization**

Huang Fanzhang, Macroeconomic Research Institute scholar in State Municipal Commission of Development and Reform pointed out that there are two meanings of the traditional road of industrialization. First, speaking to the history of industrialization in China, the traditional industrialization is under the conditions of planned economy in the past. Second, as far as the history of global industrialization is concerned, the traditional industrialization has been carried out or realized by the developed countries. But there are many different points of view about the definition of a new road of industrialization in theoretical circle. The most recognition is that a new road of industrialization is on the base of our national condition and gives full play to the advantage in the future. According to the requirements of sustainable development, information technology will be combined with industrialization organically. We should pay more attention to technological advances and human resource advantages to achieve industrialization mode as soon as possible. In a word, all of these are a new path to achieve industrialization for us.

## **1.3 The characteristics and superiorities of a new road of industrialization**

### **1.3.1 A new road of industrialization of combining information with industrialization and giving full play to the advantage in the future**

The new technological revolution, the core of which is technology, is forging ahead in the 21st century. The rapid development of information and network technology not only rapidly raising labor productivity in traditional industries, but also effectively improve macro-economic management and micro-economic management to find new production methods and the new form of industry as soon as possible. In China, the new industrialization developed just in such special background, so we can say that history provided a rare historic opportunity for us. China can use the information revolution advantages to speed up industrialization greatly and shorten the time. Meanwhile, we must pay our attention both to industrialization and information in order to achieve a leapfrog development of productive forces, because they can promote each other. The most essential feature of new industrialization is to complete the process of industrialization in a relatively brief period of time.

### **1.3.2 A new road of industrialization, as the driving force is the progress of scientific and technological, as the center is to improve economic benefit**

If we want to achieve industrialization in the new historical conditions, we must work closely with the strategy of rejuvenating the country through science and education, and give full play to science and technology as the primary productive force to improve the economic efficiency, focusing on the scientific and technological advances and improving the quality of workers, and to constantly improve competitiveness force. Only in this way, the industrialization can conform to current requirements in the modern world.

### **1.3.3 A new road of industrialization on the base of sustainable development**

China, world's most populous developing country, its population size and economic scale is growing, while its per capita consumption of resources and environmental capacity are limited, therefore we must find a development model that industrialization and environmental protection, conservation of resources is coordinated, and we must deal with the relationship between economic development and Population, resources, environment to taking the road of industrialization low resource consumption, little environmental pollution and the sustainable development.

### **1.3.4 A new road of industrialization of People-oriented**

People-oriented, as the goal is to meet the requirements of people and the Comprehensive Development, as a matter of top priority is to the development of human resources for industrialization. With the development of industry and the growing of organic composition of capital and labor productivity in all the departments of national economy, industrialization and urbanization will inevitably accompanied by a large number of farmers shifted to non-agricultural industries.

Therefore, there are contradictions between industrialization and expansion of employment, and it is particularly obvious in China. That is why we can only complete the task of industrialization, as the guide is to full employment, and coordinated the employment and mechanization to protect people's livelihood and maintain social stability.

## **2. THE INEVITABILITY OF TAKING A NEW ROAD OF INDUSTRIALIZATION TO REVITALIZE NORTHEAST CHINA**

### **2.1 Taking a new road of industrialization is an inevitable choice based on the world**

## **economy and development trend of science and technology**

Since the 1990s, the world economy and science and technology development has taken a great change especially the rapid development of information technology, leading to even more fierce international competition in the information, capital, technology, personnel, and other elements of production. Through wider application of High-tech especially the information technology, human activities and social life begin to enter the information age and intelligent automation. Information technology has been widely used in various fields of economic and social life. The information is causing enormous economic and social changes in the world now.

The Northeast region must use information technology to promote industrialization, as the means are using the most advanced information technology, a comprehensive reform, and promote the upgrading of traditional industries, in the new starting point with new ways and a shorter time to achieve industrialization. Only when we do like these we can narrow the gap with world's advanced level rapidly to catch up with it and even surpass it to realize our goals.

## **2.2 Taking a new road of industrialization is a correct conclusion based on the status quo of Northeast industrialization**

Because of the long-term extensive management of Northeast regions and high yield but low grade of the production, it was at a disadvantage in the international competition, even in the domestic competition, and obviously has a weak performance in recent years. There are many contradictions in Northeast regions, such as irrational industrial structure, technological backwardness, low energy efficiency, serious environmental pollution and unemployment problem of laid-off workers, and so on ①. All these issue show that we must find a new model of development, seeking advantages and avoiding disadvantages, on the base of fully considering the status quo of industrialization, through practice, explore a new road of industrialization.

## **2.3 Taking a new road to industrialization is the correct choice according to existing resources and environmental constraints of northeastern region**

According to the traditional road of industrialization, resources and the environment will be insurmountable hard constraints to achieve industrialization of northeast region. At the same time, environmental capacity will also be one constraint. To some extent, it has become a major constraint and obstacle for sustainable development of economic. Therefore, traditional

industrialization at the cost of sacrificing the environment is simply not feasible in Northeast China in the future.

## **2.4 A new road of industrialization is the needs to expand employment and improve the structure of employment in Northeast China**

Northeast region is the most serious area on the issue of employment in China. The employment pressure mainly comes from three sides. First side is the large number of new labor force each year. Second side is large-scale of rural surplus labor force need to transfer. Last side is an increasing number of laid-off workers. At the same time, the structure of employment is extremely unreasonable in Northeastern China. An important requirement for a new road of industrialization is people-oriented. We should make full use of human resources, develop labor-intensive industries, expand economic and employment growth in capacity, and ease the employment pressure to achieve payrolls of surplus rural labor force as soon as possible.

## **3. THE STATUS QUO OF NORTHEAST REGION TO TAKE A NEW ROAD OF INDUSTRIALIZATION**

### **3.1 Advantage analysis**

#### **3.1.1 Location advantage is prominent**

Northeast economic zone is the open window to Northeast Asia in China. The three provinces in Northeast are located in China and join the market segment of the Northeast Asia with 4,637 km of border line and 2,178 km long mainland coastline. Comparing with the five neighboring countries, its industrial structure are highly complementary to each other. As an indispensable part of the land for new Eurasian continental bridge, good location advantages provide good facilities for the northeastern region to make full use of domestic and international resources and markets to promote the new industrialization.

#### **3.1.2 Science and technology advantage is obvious**

We gathered institutions of higher learning, scientific research institutions and we are very strong in scientific research. We have many obvious advantages in local knowledge reserves, intellectual density, science and technology industry, advanced education and many scientific and technological talents. At the same time, we have 1,218 various research institutions above the county level of Government departments, 2 National Engineering Research Center, 20 key national

laboratories, and more than 1,200 private technology enterprises. Our colleges and universities cover a broad range of disciplines, well-appointed professional, nearly 100 subjects or research, which are the only direction and in the nation's leading position, have an important impact in our country. That is to say we have the necessary scientific and technological forces and personnel to take a new road of industrialization.

### **3.1.3 Industrial base and its infrastructure are good**

Our industrial base is very good. As the most complete variety of areas in China's manufacturing industry with major equipment manufacturing industry, we have advantages in the basis of technical groups, such as industry, research strengths and skilled workers. Our main industrial products are in a pivotal position in our country.

Our infrastructure is solid. Our rail transport network is very intensive. The line of rail operator is 158948.9 kilometers long, accounting for 22 per cent of the country. The railway density is 2.2 times than the national average density. cargo throughput of Dalian and Yingkou port account for 8.8 percent of the main coastal ports in China. We have well developed highway traffic. It provides good first conditions to the northeast taking a new road of industrialization.

### **3.1.4 Reserve resources are rich**

Total resources of the northeast region are rich, full range, and all types of resources are at forefront of the economic zones in China in terms of quality and quantity. There are more than 130 kinds of minerals in northeast of all the 157 kinds of minerals, which have been proven in China, including more than 40 kinds of minerals in nation's top three. It is incomparable resources and development scale for the rest of zone in China and the dominant position is still exist.

### **3.1.5 New opportunities of history development**

Firstly, policy condition is the policy support to revitalize the old industrial bases in Northeast China. The 16th National Party Congress put forward we will support the adjustment and transformation of old industrial bases in Northeast China and development of subsequent industries in the resource cities and areas. The two strategies, revitalization of the old industrial bases in Northeast China and western development, are called two wheels of interactive development of east and west. And revitalization of the Northeast is becoming a national policy.

Secondly, strategic opportunity is to start National Regional Planning being a new impetus to regional cooperation. It is the first time for 11th Five-Year Plan to plan to develop the regional planning of economic content on a prominent important position, to promote the coordinated development of regional, to form a rational pattern of regional development. The important

objective of this regional planning is integration or re-allocation of resources, beyond the perspective of administrative divisions, in a greater scope of, to enhance inter-regional cooperation with a range of areas in infrastructure, ecological protection, key industries, human resources, financial services, system constructing, to promote regional reasonable division of labor and economic integration. Along with the development of Yangtze River Delta, Pearl River Delta region, the Beijing-Tianjin-Hebei region, the old industrial bases in Northeast China and other regions, which start the regional planning in the practice, regional economic integration will develop rapidly.

## **3.2 Problem analysis**

### **3.2.1 The Information development of northeastern region is not in a high level, and still at the initial phase**

Our information is in the lower-middle level in China, even nearly the last in 31 provinces and autonomous regions, such as the proportion of investment in the information industry, accounting for total infrastructure and investment in upgrading and updating, and the proportion of information industrial added value accounting for the gross domestic product, and the number of computers of each hundred families. Enterprises, especially local enterprises, paid insufficient attention to the information and give rise to technological backwardness.

### **3.2.2 Industrial structure needs to be optimized and upgraded and high-tech industries are in a small proportion**

In the industrial structure of the old industrial bases in northeast China, the most significant feature is more heavy industry and less light industry. The upgrade speed is still very slow after several adjustments and it exacerbates resources supply contradiction. Industrial ownership structure relatively homogeneous, as follows, high proportion of state-owned industrial enterprises, low efficiency of state-owned industrial enterprises, many serious losses of state-owned enterprises even insolvent, the brink of bankruptcy, the small proportion of high-tech industries.

### **3.2.3 Prominent problem of employment and re-employment**

Three provinces in Northeast China is the most serious areas on employment problem. This is mainly manifested in the following aspects, high rate of urban unemployment and high number of unemployment. In the country rural labor is surplus, due to development of tertiary industry is slow in northeastern region. The labor force can not transfer from the second industry to the tertiary industry which is a larger capacity to absorb labor force, but a considerable portion back to the first industry. This part of labor with low level of education

and limited kinds and level of technology has many difficulties in the employment.

### **3.2.4 Increasingly deteriorating damages from industrial production to ecologic**

Along with the development of economic, industrialization and urbanization in northeastern region, its regional ecological and environmental problems have become increasingly prominent. The increasingly deterioration of the ecological environment, to a certain extent, is becoming the main constraints and important obstacles for industrialization. In short, the economic growth is at the expense of the environment and resources for the price in three provinces of Northeast China, which is a high consumption, low efficiency and high emissions unsustainable road of development.

### **3.2.5 Low level of opening to the outside world, a greater gap compared with the southeast coastal areas**

In the external sector, the proportion is decreasing in the northeastern region, in attracting foreign investment, even more backward, few introduction of foreign capital. Because of the low level of opening to the outside world, we can not use foreign funds and other resources fully and effectively to accelerate the process of industrialization in Northeast China.

## **4. COUNTERMEASURES TO TAKE A NEW ROAD TO INDUSTRIALIZATION OF NORTHEAST REGION**

### **4.1 Strengthening the construction of high-tech industry development zones and the University of Science Park**

Our aim is to build an high-tech innovation system with optimizing structure, a rational layout, efficiency, in-depth distribution, to seize the commanding heights of high and new technology and the industrialization, to form new advantages of economic, industrial, and technological, to achieve leapfrog development of high-tech industries, to realize the development of the old industrial bases changes from technology introduction to independent innovation, to achieve the second venture of old industrial bases. We can rely on the advantages of university of talent, knowledge, technology, results, information, discipline, bases, innovation, and use of human environment, characteristics of the region, industrial development and infrastructure conditions by university and the surrounding area, result in a good hardware and software environment to attract talent and venture capital, realize commercialization and industrialization of technology and outcome, create enterprises and format enterprise-scale production.

### **4.2 Promoting new industrialization of people-oriented and gradually solving the employment problem in the Northeast**

#### **4.2.1 Allowing as many people as possible to participate in the posts of industrialization**

We should establish economic development strategy of employment priority and put the effective development of human resources, expanding employment, and create more jobs to the priority of socio-economic development. We should speed up the process of urbanization and raise the city's level of employment, support the development of small and medium enterprises, private enterprises. We should speed up the development of tertiary industry and rely on it to solve the employment because it is the common choice for all the countries in the world.

#### **4.2.2 Allowing as many people as possible to have the opportunities and the ability to participate in the industrialization**

We should establish and improve the labor market and the system of fair competition environment, and promote efficient movement of labor factor. We should strengthen employment services and improve the re-employment service system which is flexible and diverse forms of employment. On the policies, we encourage self-employed workers and flexible employment, and we encourage laid-off and unemployed persons be employed through flexible and diverse forms of employment, such as part-time, temporary, seasonal, flexible working. We should vigorously carry out various forms of targeted job training and re-employment training to improve the skills and the ability to adapt to change of laid-off workers and surplus rural labor force constantly, improve business counseling, and establish and improve business service system. Through creating the conditions and innovating system to clear away the obstacles for the transfer of rural surplus labor force.

### **4.3 Accelerating the process of urbanization in northeastern region and achieving positive interaction of industrialization and urbanization**

#### **4.3.1 Promoting the process of new industrialization, adjusting the industrial structure, and accelerating the process of urbanization**

First of all, we must adjust the industrial structure to achieve the transformation from heavy industry in a large proportion to both, develop labor-intensive industries, and expand the rural labor force to non-agricultural industries channels. Second, vigorously develop the tertiary industry. The essence of the city is to create jobs and transfer farmers from the first industry to the second and tertiary industries.

#### **4.3.2 Rationally determining the strategic layout of the city to promote new-type industrialization better**

We should expand the development of big cities. We should develop the potential of large cities positively, focus on expanding the size of the cities, expand the scope of development, and accelerate industrial clustering and population concentration. We should step up urban infrastructure construction, improve the functions of cities, and improve the city's ability to absorb the population. We should also accelerate the development of specialized industry, strengthen the role of industry support to further enhance self-development and function of external radiation and give full play to major cities in the leading role in the regional economic development. We should speed up development of the small and medium towns around the large and medium-sized cities reasonable, strengthen infrastructure construction of small cities and towns, and gradually improve its urban functions to give a broad space of further expansion to the central cities.

#### **4.4 Participating in the Northeast Asian cooperation positively and accelerating the process of new industrialization**

##### **4.4.1 Strengthening the cooperation with the other countries of Northeast Asia Northeast to crack resources bottleneck of new industrialization**

We should establish the offshore resources supply base of northeastern region. There are rich resources in Russia, North Korea, and Mongolia. Relying on geography, we should strengthen the cooperation with the three countries in the energy, raw materials, the development of mineral resources, play the advantages in processing resources of northeast region to extend the industrial chain. It can not only solve the constraints of resource of northeastern region, but also to a certain extent, solve the resource depletion and subsequent urban industry to promote new industrialization.

##### **4.4.2 To play the comparative advantages of labor, accelerate the transfer of the surplus labor force, and promote new industrialization**

We can establish the labor cooperation mechanism of old industrial bases in Northeast China, through the close exchanges and cooperation between governments and enterprises, for the abundant labor resources of us. On the one hand, we should pay attention to the complementary advantage between northeastern region and Northeast Asian countries in the labor, the skills training of the labor language, plans to conduct labor output. On the other hand, we should also make full use of the characteristic advantages of northeast region, with the capital and technology of Japan, South Korea's and resources of Russian to promote labor cooperation through strengthening industrial development and enterprise cooperation.

##### **4.4.3 To play manufacturing equipment of northeast region and build equipment manufacturing base of Northeast Asia**

In the rapid development of the information industry promotion, the trend of the manufacturing sector transformation appears inevitable. The characteristic of our manufacturing sector is by a solid foundation of technology, lack of high-class technology, with a complementary Japan and South Korea. Whether from the geographical or industrial base, the preferred area to transfer of industry for Japan and South Korea is northeastern region. Northeast region should promote the cooperation between equipment manufacturing enterprises and foreign enterprises to solve some problems, such as too large proportion of state-owned enterprises, aging equipment, and so on, in using of the industry transformation. If we combine the Chinese cheap labor with the resources from western Mongolia and Russia and funds from the eastern Japan and South Korea, a world manufacturing centre is bound to rise rapidly to promote the process of new industrialization of Northeast China effectively.

#### **REFERENCES**

- Lin C. Y. (2003). Revitalization of the old industrial bases in Northeast China and the difficulty of countermeasures. *The Macroeconomic Research*, 10<sup>th</sup> Issue.
- Jin, F. J., et al. (2006). Revitalizing northeast China and the strategy of sustainable development research. *The Commercial*, p. 2.
- Jiao F. Y. (2004). On the comparative advantages of the Northeast and structural optimization strategy. *The Tax and The Economy*, 2<sup>nd</sup> Issue.
- The Chinese Academy of Engineering, January 14, 2006, The northeastern region of the water and land resources allocation, ecological environmental protection and sustainable development on a number of strategic issues, *Economic Daily News*.

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