

CHANGING FEATURES AND TREND OF LIGHT INDUSTRY DISTRIBUTION IN NORTHEAST CHINA

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ABSTRACT: Modern industry in northeast China started from light industry. From the end of 19th century to 1931 was the phase of initial development of light industry in northeast China. During this period, the development of light industry gave priority to grain processing industry. After occupying northeast China, Japanese vigorously developed heavy industry to meet the needs of munitions and paid more attention to raw materials and semi-finished articles industry for the purpose of the war. Light industry was impeded and developed slowly. After the founding of New China, large-scale economic construction took place in northeast and heavy industry received prior investment and equipment. Northeast region became the first heavy industry base through several five-year plans, the development of light industry made giant strides. The present features of light industry distribution are: difference of light industry distribution, similarity of light industry structure, and imbalance of light industry development. The changing trend of light industry distribution is pointed out.

KEY WORDS: northeast region, light industry distribution, evolution process, distribution features, changing trend

Modern industry in northeast China started from light industry. However, development of heavy industry surpassed light industry afterwards. Since the founding of New China, northeast China has become a main national heavy industry base. The development and construction of light industry has gone through tortuous changing process. It is significant for the development and construction of light industry of northeast China as well as for the research on regional industrial geography to study evolving process, features and trend of light industry distribution.

I. EVOLVING PROCESS OF LIGHT INDUSTRY DISTRIBUTION IN NORTHEAST CHINA

1. The Phase of Initial Development

From the end of 19th century to 1931 was the phase of initial development of light industry in northeast China. During this period, the development of light industry gave priority to grain processing industry. If to take the proportion of some important sectors in volume of light industrial capital in eight cities as an example, the proportion of grain processing industry (including flouring, grinding and extracting oil, etc.) was 41.5 per cent. Other sectors of light industry such as match, soap, tobacco, tanning (hide processing), brewing, printing etc. developed properly (Table 1)^[1]. Because of the stimulus of demand from foreign market, extracting oil from soybeans gained marked development and became one of dominant sectors of light industry. The notable development of grain processing conforms with general laws of development of modern industry. During the initial phase of

Table 1 Distribution of major sectors of light industry in northeast China (1929)

Sectors		Shenyang	Dalian	Yingkou	Dandong	Jilin	Changchun	Harbin	Qiqihar	Total
Extracting oil	N	17	59	23	21	2	1	28	3	154
	F	14.4	567.5	46.8	20.3	37.5	20	204	1.8	912.3
Flouring	N	39 *				4	2	12	7 *	64
	F	58.2 *				286.5	200.0	326.4	4.1	875.2
Texttrile	N	54	1	87	37	5	3	29	9	225
	F	366.7	300		32	22.4	4.8	84.1	0.3	875.2
Tanning	N	65	2	6		1		1	9	225
	F	51.5	214.9			11.3		80	2.9	360.6
Paper-making	N		1		1	1	2		1	6
	F				350	475.0	0.2		0.1	825.3
Match	N	1	1	3		4	1		1	11
	F	18		25		76.5	30		2.4	151.9
Soap	N	7	4	1		1	6	5	2	31
	F	0.6	53.3	285.0		2.3	3.2	0.4	0.1	344.9
Tobacco	N	6	1	1				6		13
	F	106.7								106.7
Printing	N	25		60			19	8	12	124
	F	24.0					5.8	0.9	1.0	31.7

N—Number of factories, F—Funds (ten thousand yuan), * data of grinding

industry development, because of quite limited capacity of market and low-level domestic consumption, basic necessities such as grain and oil etc. was dominant in consumption, in addition, funds and techniques were scarce. So, those industrial sectors which belonged to prominent scale-economy, could get investment. Grain processing industry met these conditions. In this phase, light industrial distribution was dispersed, and the size was small.

Limited light industry was scattered in more than thirty cities. The situation was determined by spreading-feature of grain processing industry, that is, distribution of grain processing industry is both raw materials-intensive and consumption-intensive, can be near grain-processing area as well as consumption concentrated areas. In most cities, the size of factories of modern light industry were very small. The factories with over ten-thousand yuan and more than fifty workers were less than 2 per cent. And only in several cities there developed modern light industry of fair scale and level, among which, Shenyang with all kinds of light industrial sectors took textile as major sector; Dalian developed best extracting oil from soybeans; Harbin took flouring as dominant sector as well as was flouring center with relatively developed extracting oil. The above-mentioned cities where light industry developed rapidly had the features of "developing poles" in the development and construction of light industry in northeast.(Fig.1)

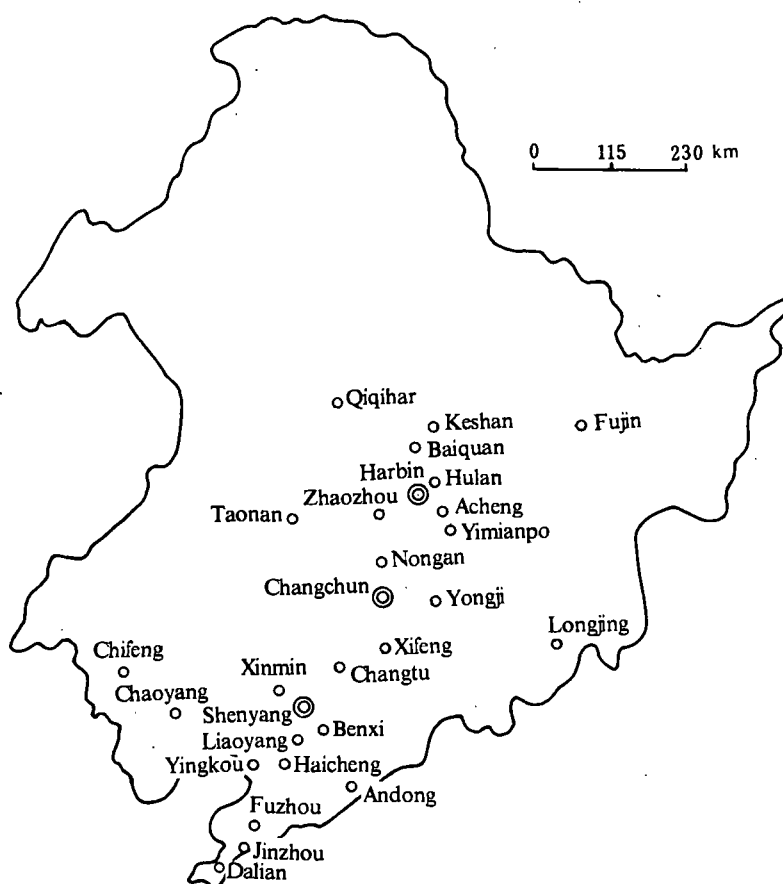


Fig.1 The distribution of light industry in northeast region in the 1920s

2. Slow Changing Phase

The period from 1931 to 1945 was the second phase of light industry development in the region. After occupying northeast China, Japanese vigorously developed heavy industry to meet the needs of munitions and paid more attention to raw materials and semi-finished articles industry for the purpose of the war. Light industry was impeded and developed slowly. The structure of light industry did not change greatly. Grain processing, extracting oil from soybeans, flouring and textile, etc. were still leading sectors of light industry. But textile and papermaking industries made progress. Until 1944, there were more than ninety flouring mills with yearly production capacity of 210 thousand tons and 182 extracting oil factories with yearly production capacity of 1738 thousand tons, also there were 55 paper mills and their yearly production capacity reached 120 thousand thos (Table 2 and 3)^[2]. In the this phase, the distribution of light industry concentrated along the railway from Harbin to Dalian as well as coastal and harbor cities such as Harbin, Changchun, Gongzhuling, Siping, Kaiyuan, Tieling, Shenyang, Liaoyang, Wafangdian, Jinzhou, Dalian, Yingkou, Dandong, etc. (Fig.2). The major factors forming this distribution pattern are as follows: firstly, Harbin-Dalian Railway plays an axis role in the development and distribution of light industry in northeast; secondly, Dalian, Shenyang and Harbin as developing poles had the effect of radiation and spread; thirdly, the area to the south of Changchun and Harbin-Dalian Railway was in the sphere of influence of "Manduria railway network" and Japanese managed intensively, thus, light industry developed more quick in the cities to the south of Changchun than to the north.

Table 2 Distribution of extracting oil, flouring and papermaking sectors (1944)

Sites	Extracting oil		Flouring		Papermaking	
	N	V	N	V	N	V
Whole Region	182	173.80	90	20.99	55	12.22
Along Harbin-Dalian railway	117	130.55	27	14.05	36	5.01
Proportion (%)	64.30	75.10	30	66.90	65.5	41.00
Shenyang	9	3.25	1	0.4	12	2.46
Dalian	43	80.50			5	0.37
Yingkou	5	5.35	1	0.02	2	0.59
Changchun	2	3.65	7	3.39	2	0.18
Harbin	11	19.50	14	8.85	2	0.58

N — Number of factories, V — Yearly production capacity (in 10 thousand tons)

3. The Phase of Planned Construction

After the founding of New China, large-scale economic construction took place in northeast and heavy industry received prior investment and equipment. Northeast region became the first heavy industry base through several five-year plans. During the same

Table 3 Distribution of cotton, woolen, silk, wool and flax textile industries (1944)

Sites	Cotton		Woolen		Silk		Flax	
	N	F	N	F	N	F	N	F
Whole region	24	18281	10	10750	5	1420	18	7125
Along Harbin-Dalian railway	21	11483	9	8750	3	375	15	5875
Proportioning (%)	87.5	62.8	90.0	81.4	60.0	26.4	83.3	82.5
Shenyang	11	5080	8	8450	1	30	4	3325
Dalian	3	3618					4	750
Yingkou	1	1000						
Changchun	1							
Harbin	1	300	1	300			1	100

N — Number of factories, F — Funds (ten thousand yuan)

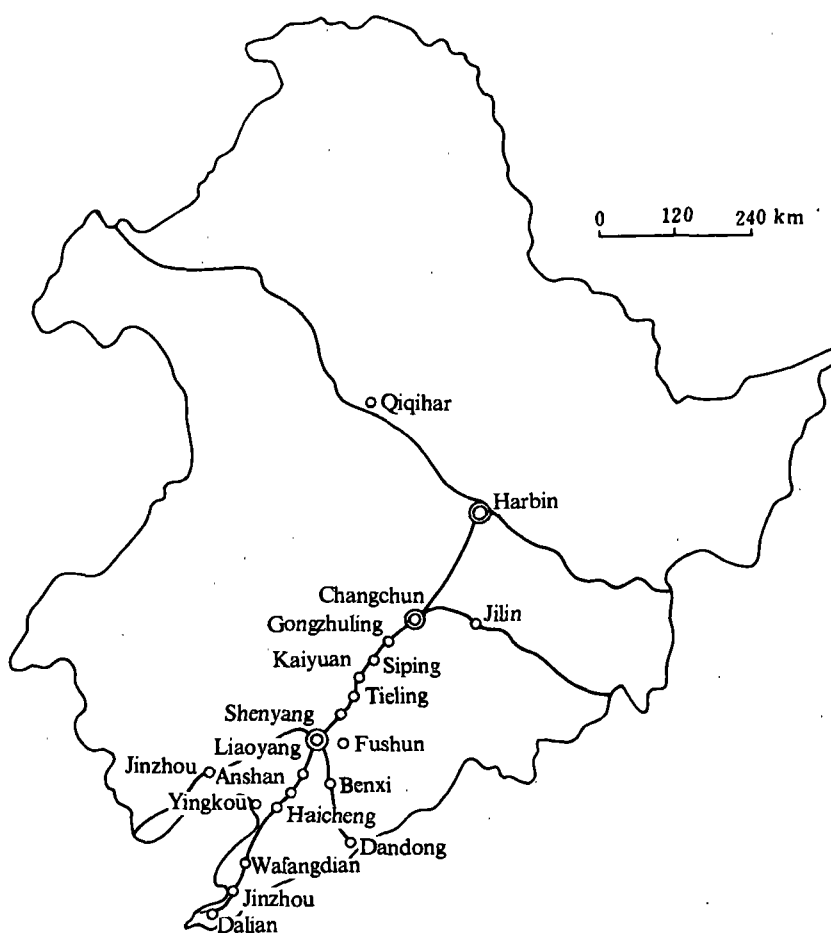


Fig.2 The distribution of light industry in northeast region in the 1940s

period, the development of light industry made giant strides. The structure of light industry has changed obviously, and the structure of raw material has new capital-intensive and technique-intensive industries such as chemical fiber, plastic products, domestic electrical appliance and domestic electronic industries, etc..

Some original industry sectors changed in depth and width of processing. During the period, light industry was distributed in the whole region. The emergence and development of technique-intensive industry and complicity of light industrial structure brought about a great advance in light industrial distribution, the distribution was less restricted by traditional distribution factors. Firstly, among three provinces and one area, Liaoning Province kept the tendency of rapid development; Jilin and Heilongjiang provinces and east Inner Mongolia made much progress. Their output values of light industry in 1987 was respectively 35 times, 60 times, 35 times and 80 times as much as those of 1949^[3]. Secondly, in middle, eastern and western parts of the region, the middle part is still a relatively developed area. But it is apparent that the distribution extended toward two sides of Harbin-Dalian Railway. Light industry in the eastern part increased markedly, there appeared many cities with well-developed light industry. They are Dandong, Tonghua, Yanji, Tumen, Mudanjiang, Jiamusi, etc.. In the western part there were also a great development. Many cities such as Jinzhou, Fuxin, Chaoyang, Baicheng, Taonan, Chifeng, Tongliao, Wafangdian, Hailar had light industry. In this phase, population increased, consumption-level rose, light industry was stimulated by demand, and spread toward eastern and western sides. The light industrial distribution formed network pattern which was composed of several light industry centers, took Harbin-Dalian Railway as central axis, Shenyang, Changchun and Harbin as pivots, extended along the railway toward two sides (Fig.3). Over forty years after the founding of New China, light industry experienced tortuous changes. During the First Five-Year Plan period, light industry developed steadily and coordinately. Market supply was good, supply-demand was balanced. From 1958 to 1987, light industry rose and fell two times. For example, in 1960 output value of light industry (OVLI) was 12.15 billion yuan and fell at 6.14 billion yuan in 1961. After 1979, particularly, during the Sixth Five-Year Plan period and the Seventh Five-Year Plan period, light industry developed rapidly. In 1987, OVLI reached 53.01 billion yuan which three times as much as that of 1978. From 1980 to 1987, OVLI increased at an average rate of 39.7 per cent. Technique-intensive industry producing television sets, recorders, domestic electrical appliance etc. expanded and possessed fair-scale. These facts indicate that light industry is striding forward to a high level.

To sum up, light industrial distribution in northeast region has the following three features: 1) having phase-nature, three phases; 2) having orderly evolution nature, that is, several points developed in first phase, growing along Harbin-Dalian Railway in the second phase, spreading out in the whole region in the third phase, and degree of order increased; 3) having correlation—the distribution is related to complicity of structure and improve-

ment of level.

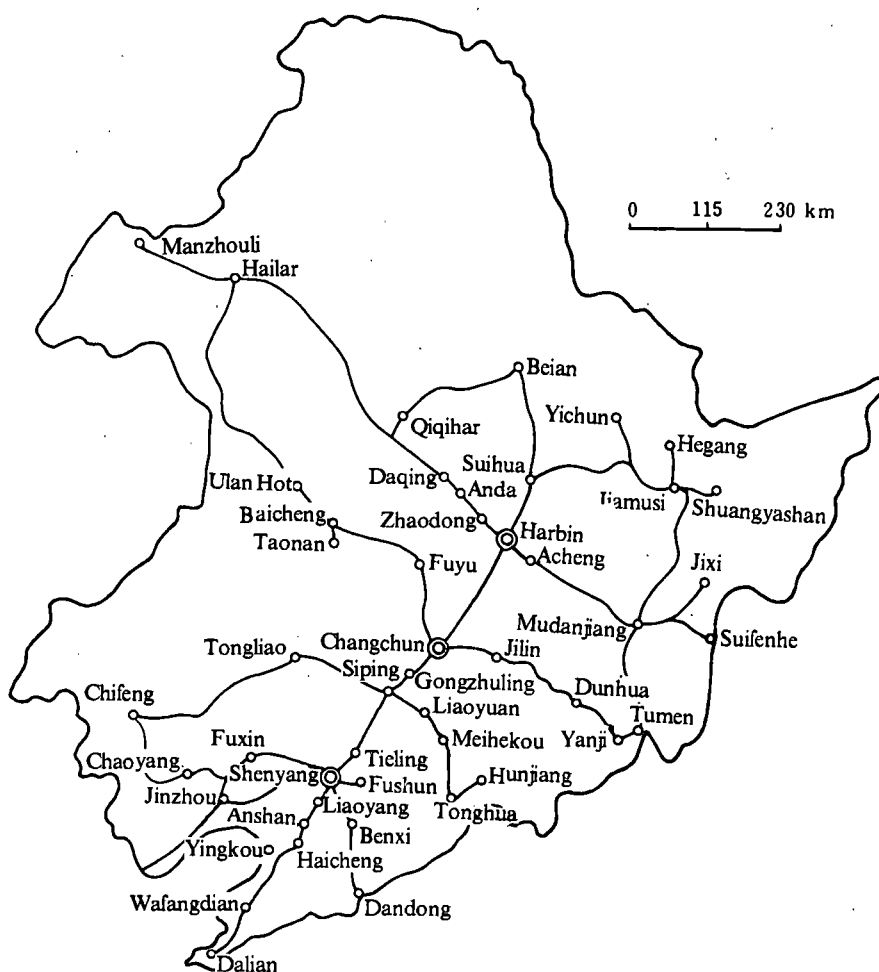


Fig.3 The distribution of light industry in northeast region in the 1980s

II. CHARACTERISTICS OF LIGHT INDUSTRY DISTRIBUTION IN NORTHEAST CHINA

The changing process of light industry distribution in northeast China is from unbalanced state toward balanced state, but in fact the imbalance still exists^[4].

1. Unbalanced Nature

Among three provinces and one area, unbalanced state of light industry distribution has not been much improved. The proportion of OVLI in the region and OVLI per capita changed little in the past years. OVLI of Liaoning Province has been the highest, ac-

counting for 55 per cent of the regional OVLI. OVLI of Jilin and Heilongjiang provinces accounted for respectively 22 per cent, and east Inner Mongolia has been lowest (Table 4). Coefficient geographical association and index of concentration of light industry changed little, for example, in 1952 was 16 and in 1987 was 61.9.

Table 4 Proportion of OVLI and OVLI per capita in northeast region

Year	Proportion of OVLI (%)				OVLI percapita (yuan)				
	Liaoning	Jilin	Hei.	Mong.	Northeast	Liaoning	Jilin	Hei.	Mong.
1949	55.2	13.8	29.1	1.9	31.2	39.3	17.8	37.6	7.3
1952	53.8	17.5	27.3	1.4	79.6	98.8	58.2	87.3	13.7
1978	48.4	21.0	27.0	3.5	225.5	308.4	211.2	186.6	84.7
1980	51.5	18.7	26.5	3.3	281.8	410.4	234.3	330.0	95.7
1985	49.4	19.9	27.2	3.8	416.9	572.9	372.9	353.3	159.5
1987	48.1	21.0	26.9	4.0	503.6	675.1	476.4	424.5	200.3

Mong.—East Inner Mongolia; Hei.—Heilongjiang

Light industry distribution was also unbalanced in the middle, eastern and western parts. The middle part was well-developed, next was the eastern part, and the western part lagged behind. In 1987, OVLI of the middle part accounted for 65.1 per cent of the region, but the eastern part and the western part 20 per cent and 15 per cent, respectively.

Light industry distribution is unbalanced in these three provinces and one area. In Liaoning Province, Shenyang, Dalian, Dandong and Yingkou have strong light industry, their OVLI per capita are 1141.8 yuan, 989.5 yuan, 1082.9 yuan, 1101.6 yuan, respectively, but OVLI per capita in Jinzhou, Chaoyang and Tieling are 390.9 yuan, 295.2 yuan, 239.8 yuan, respectively. The same situation exists in Jilin and Heilongjiang provinces.

2. Marked Disparities

There are many cities with light industry in northeast region among which the level and distribution of their light industry are different. By analyzing the specialized sectors and the comprehensive development level of 55 cities (Table 5), we can classify these cities into four types according to the number of specialized industrial sectors whose specialization index is over 1.0 and the proportion of OVLI.

1) Comprehensive center type. This type includes the cities with more than six specialized sectors and OVLI accounting for 5 per cent of regional OVLI. These cities are: Shenyang, Dalian, Harbin and Changchun, which possess complete light industry system with high technique and appropriate scale, acting as centers of light industrial development in their provinces.

Table 5 Specialized departments of light industry of cities in northeast region

Cities	Relative specialized departments	Specialized departments of whole region
Harbin	A, B, C, E, G, I	A, B, C, E, G, I
Qiqihar	A, E, D, E	
Mudanjiang	B, D, E, G	
Jiamusi	B, D, G, H	D
Suihua	A	
Beian	A	
Changchun	A, B, C, E, G, H, I	C, H, I
Jilin	A, C, D, E, F, G, I	D, G
Siping	A, F, G, I	
Liaoyuan	F, G	
Tonghua	G, I	
Hunjiang	D, G	
Gongzhuling	I	
Meihekou	D, I	
Baicheng	C	
Fuyu	A	
Taonan	B, E	
Yanji	A, H	
Tumen	D	
Shenyang	A, B, C, D, E, G, H, I	A, B, C, D, E, G, H, I
Dalian	A, E, C, D, E, G, H, I	A, B, C, E, G, H, I
Anshan	A, B, C, E	
Fushun	B, D, F, G, H	H
Benxi	B, F, G	
Dandong	B, D, F, G, H	B, D, F, H
Jinzhou	A, B, C, D, E, F, G, I	D, F, G
Yingkou	A, B, C, D, F	B, D, F
Fuxin	A, B, G	
Liaoyang	B, D, E, G, H	
Panjin	G	
Tieling	A, D, E	
Chaoyang	B, I	
Hailar	E	
Zhalantun	D	
Chifeng	A, B, E	
Ulan Hot	A	

A—Food, drink, tobacco; B—Textile; C—Sewing; D—Papermaking and paper products; E—Tanning and products; F—Chemical fibre; G—Plastic articles; H—Domestic electronic products; I—Printing

2) Comprehensive specialization type. There are three specialized sectors and OVLI accounts for 1 per cent. The following cities belong to this type: Dandong, Yingkou, Liaoyang, Jinzhou, Anshan, Fushun, Benxi, Jilin, Siping, Mudanjiang, Jiamusi, Qiqihar

and Chifeng. Among them, such cities as Dandong, Yingkou, Liaoyang, Siping, Jiamusi and Chifeng, their proportion of OVLI in the gross industrial output value reaches one-half or more. Some other cities such as Anshan, Benxi, Fushun, Jinzhou, Jilin, Mudanjiang and Qiqihar are heavy industry cities with fair-scale of light industry.

3) Mono-specialization type. This type of cities has only one or two specialized sectors. They are: Tieling, Chaoyang, Fuxin, Panjin, Liaoyuan, Hunjiang, Gongzhuling, Meihekou, Baicheng, Taonan, Fuyu, Yanji, Tumen, Suihua, Beian, Hailar, Zhalantun and Ulan Hot.

4) Non-specialization type. There is not specialized sectors. This type includes all the cities except those cities which belong to aforementioned three types. In some cities of this type there are some specialized sectors which are not well run but have great potentialities.

3. Similarity Nature

In recent years, because of low investment and results of repeatedly self-supported production, interregional similarity phenomenon of light industrial structure appears. 1) Light industrial structures of most cities are similar. Based on the statistics of nine sectors, there are 17 cities having the nine sectors, which make up 34 per cent of the number of cities in the region; there are 43 cities with seven sectors, accounting for 86 per cent of the number of cities. Almost every city has such traditional sectors as food, textile, papermaking, sewing, printing, etc.. 2) In most cities, the rank of light industrial sectors is also similar. Generally, food industry ranks the first, the second is textile, and sewing and papermaking sectors rank ahead too. 3. In most cities, food industry and textile sectors take large share in OVLI: There are 37 cities, accounting for 74 per cent of the city number, and the proportion of the two sectors of each city reaches more than 40 per cent.

It is notable that the phenomenon of similar structures and distributions of light industry bring out unfavourable effect: advantages of resources in these cities can not get full play and the expansion of domestic market and the development of specialized production may be hindered.

III. CHANGING TREND OF LIGHT INDUSTRY DISTRIBUTION

1. Distribution of Light Industry Tending Towards Balance

In the long run, the distribution of light industry tends to be balanced gradually. The reasons are: in eastern and western parts, with the increase of consumption demand, potentialities of resources exploitation, improvement of funds and technique circumstances, light industry will develop more rapidly. In the future, the new railway will be open from Jiamusi to Dandong in the east side and from Manzhouli to Jinzhou in the west side, being

as two transportation arteries which can promote regional economic development and balanced distribution of production. In east Inner Mongolia light industry will make great progress. However, in the near future, we can not lessen unbalanced situation.

2. Regional Structure Tending towards Rationalization

Because of regulation and change of industrial structure, light industry will tend to be rationalized. It is possible to form many centers of light industry: Shenyang, Harbin, Changchun etc. as regional comprehensive light industrial centers; Dandong, Yingkou, Liaoyang, Jinzhou, Siping, Liaoyuan, Tonghua, Yanji, Mudanjiang, Jiamusi, etc. as local light industrial centers. Those centers form a system of light industrial centers. It is likely to form the south Liaoning Province, the middle and west Jilin Province and Heilongjiang Province, the east Jilin Province and Heilongjiang Province, the east Inner Mongolia etc. as specialized production bases with their own distinguishing characteristics and rational division of labor. Export bases should be built in harbors and border trading ports such as Dalian, Dandong, Yingkou, Tumen, Tongjiang, etc. Assorted specialized bases should be built in the areas and cities with affluent resources, raw materials, funds, technique and qualified personnels. The centers serving local demand also should be built. The centers aforementioned form productive and distributed system of light industry with rational division of labor and close connection.

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