

Revitalizing Old Industrial Base of Northeast China: Process, Policy and Challenge

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Abstract: Northeast China is the largest old industrial base of China that endured persistent influence of the past planned economy system. This region has lost its leading place since the reform and opening up, and became a backward region by contrast with the coastal areas. This paper elaborates the evolutionary process of the old industrial base of Northeast China, analyses the main reasons for the decline, gives a preliminary evaluation on the revitalizing policies in recent years, and points out major long-term challenges for future revitalization. It concludes that for Northeast China, a relative declining area: 1) it is indispensable to get the long-term policy support from the central government; 2) system reform and structure adjustment are the crucial strategies, particularly the reform of the large and medium state-owned enterprises; and developing new industries is as important as upgrading traditional advantaged industries; 3) the local governments should play an indirect role, avoiding from any unnecessary intervention on economic activity; and 4) social security and investment climate must be improved simultaneously. In addition, the author stresses that the lack of knowledge on the nature of old industrial base had led to failures of the past initiatives, and revitalizing the old industrial base should be treated as a holistic regional project including economy growth, society progress and environment improvement.

Keywords: old industrial base; regional revitalization; regional policy; Northeast China

1 Introduction

Urban and regional decline is a worldwide phenomenon, and revitalizing the declined old industrial base remains as a tough issue in regional and urban development studies. With rapid technology advancing and global economic and political restructuring after World War II, most developed countries accomplished industry transformation in the period of the 1970s–1980s, and stepped on the post-industrialization stage, yet there were some declining cities or regions left to be revitalized. It is easy to find some Western literatures elaborating regional revitalization and urban regeneration, and some stories like Emscher Park in Ruhr, and Dockland in London etc. seem familiar to current Chinese scholars and officials (Roberts and Sykes, 2000; Couch et al., 2003; Hamnette, 2003). However, it is hard to find any holistic study on China's old industrial base, though the story of economic achievement in the coastal area has long dominated main stream of China's social and economy since

the 1980s. In the mid-1990s, some scholars noted the declining in the old industrial base of Northeast China (Li and Li, 1996), and began to concern revitalizing issues (Li, 1996; Lin et al., 2000; Liu, 2001). Until 2003, revitalizing old industrial bases became a national policy, people treated old industrial base issues more seriously, and realized the very lack of knowledge on the nature of this issue. Hence, more and more domestic literatures aimed at making some sense of foreign theory and empirical story about revitalizing old industrial base (Li and Zhang, 2004; Li and Wu, 2005; Li and Shi, 2006). Major research projects focused on policy and measure for the revitalization, particularly on the system reform of the state-owned enterprises (SOEs) and industrial adjustment (Jin et al., 2006; Wang and Wei, 2005). The international research even more concerned finance and market issues (Bourguignon, 2003). But, a broadly acknowledged theoretical framework for revitalizing old industrial base does not appear.

Theoretically, any industrial base may experience a

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cycle of birth, growth and decline. There is some comparability between different social contexts, and China certainly could learn both experiences and lessons from the abroad cases. But, a fundamental difference between Chinese and Western old industrial bases is that China's old industrial bases have all grown up under the blocked planned economy for a long time, and system reform should maintain the core part of revitalizing policy. Therefore, we should treat the old industrial base as a regional phenomenon based on its special history background, unique social and economic context and local condition. This paper attempts to comprehensively discuss the old industrial base of Northeast China, usually called Northeast Old Industrial Base (NOIB), in order to give a good understanding of China's old industrial base issues, which by all means adds new materials on the old industrial base studies.

2 Evolutionary Process of Northeast Old Industrial Base

Northeastern China consists of Liaoning, Jilin and Heilongjiang provinces and the eastern part of the Inner Mon-

golia Autonomous Regions, with an area of $1.25 \times 10^6 \text{ km}^2$; whereas NOIB in general is referred to Northeast China that includes Liaoning, Jilin and Heilongjiang provinces only. In 2005, gross regional production in Northeast China was 1.80×10^{12} yuan (RMB), and total population was about 120×10^6 . Owing to the very abundant natural resources, unique development history and geopolitical relations with the pre-Soviet Union, Northeast China was built to be the first industrialized region in the 1950s–1960s, with the result that it won its historic position as the largest industrial base of China at that time. Earlier regional industrialization had produced advanced social development. The urbanization level in Northeast China, involving 90 cities, is 50%, which is about 10% higher than national average level. This region also takes front rank in education and technology level; there are hundreds of colleges and university and key institutes. Moreover, Northeast China is very famous for its vast black soil plain, which contributes 1/3 more commodity crop for the whole China annually. Bordered with D P R Korea, Russia and Mongolia, Northeast China could play an important role in regional cooperation in Northeast Asia (Fig. 1).

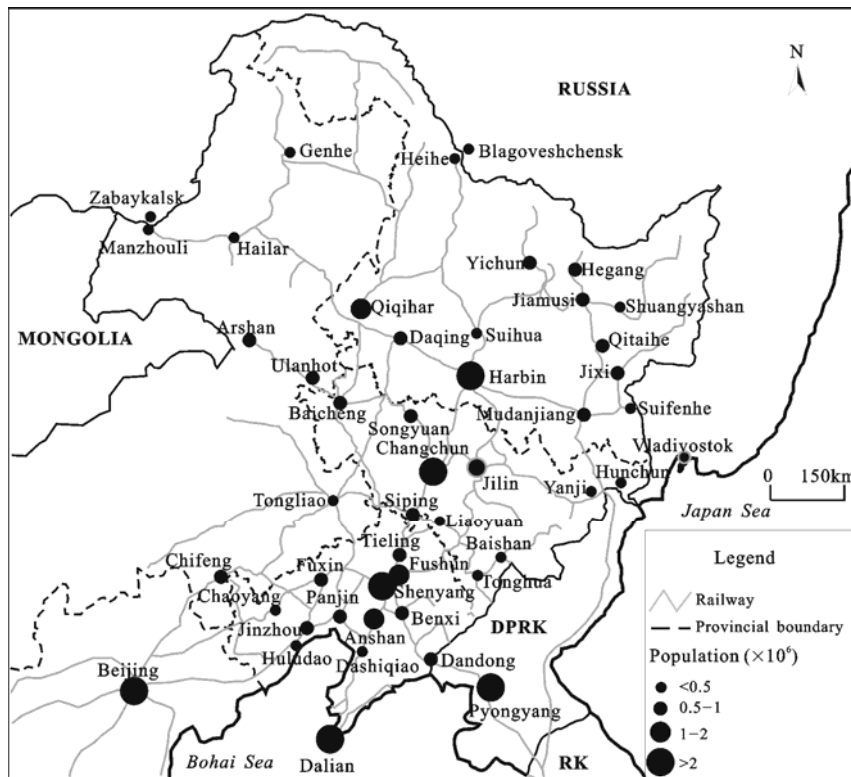


Fig. 1 Distribution sketch of cities in Northeast China

2.1 Industrial legacy and building of Northeast Old Industrial Base

In the early 20th century, Northeast China generally represented an agricultural landscape with hundreds of thousands immigrants from inner China because of the deregulation of land cultivation by the government of late Qing Dynasty. The agricultural booming in a short time provided favorable conditions for the agro-processing industries, and a large amount of flour, soybean oil, alcoholic drink, and sugar products were sold to domestic and overseas markets. Especially the annual soybean trade amount of Northeast China, where is the main soybean production area in the world, rose from 640×10^3 t in 1922 to 2.83×10^6 t in 1931 (Deng et al., 2004). Most of the soybean was sold to Europe, Japan and Russia. Meanwhile some industry sectors were at the beginning stage.

In 1931, the Japanese invaded and conquered Northeast China, and sooner established a puppet Manchurian government. Some 20 big cities including Dalian, Anshan, Benxi, Fushun, Dandong, Shenyang, Changchun, Jilin, Harbin, Qiqihar, Jiamusi were built to be various types of industrial cities with main sectors of mining and quarrying, smelting, machinery, petroleum processing and coking, raw chemical materials and chemical products, textile industry, etc. (Fig. 1). Obviously, there were many congenital malformations for this resources-based heavy industrial layout, which was subject to war requirement and the nature of colonized economy, but it commenced a regional scale of industrialization. When Japan surrendered, there left a primary foundation for further development. But the Civil War and Korea War held up this industrialization process around 1950.

After the People's Republic of China was found in 1949, Chinese people were eager to change this semi-colonized and semi-feudal agricultural nation to be a powerful industrialized country. Therefore, in the national First Five-Year Plan period (1953–1957), the Chinese central government initiated 156 state key projects assisted by the former Soviet Union, of which 57 projects were distributed in the Northeast China (Dong, 1999) with total investment of 30×10^9 yuan which was 37.3% of the whole country (Bao et al., 2006). Main reasons for this layout are as follows. 1) After successive years of wars, most regions were damaged seriously and lack of basic conditions to start industrial production. Northeast China had better conditions than

the other areas, so it is quite understandable for the central government to reuse the industrial legacy including workshops, machines and infrastructures as well as technicians and skilled workers. 2) Northeast China had both quantity and quality advantages in natural resources. These industrial materials had a very good spatial combination particularly in Central Liaoning Province which was acknowledged as “Oriental Ruhr” and had long been a very important mining, smelting, petroleum processing, chemical, manufacturing industries base. And 3) Northeast China was bordered with former Soviet Union. It was convenient to copy the former Soviet Union industrialization model, to introduce the former Soviet Union's experts and industrial equipments to this region. Also, it was a safe area for developing economy with respect to the intimate Sino-Soviet Union relationship and uncertain world security situation in the 1950s.

Some 54 projects were virtually implemented in 1953–1961. Except for some new establishments such as First Automotive Works Corp (FAW) in Changchun City, most investments were put on reconstruction and enlargement of the old sectors such as coal mining, smelting, electric power, machinery and manufacturing industries in the big cities. Those projects had fundamentally changed regional economic landscape, some 20 big mining cities rose across the region, and large manufacturing city like Shenyang, Dalian, Harbin and Changchun as well as the specialized cities such as Jilin (chemical industry), Anshan (steel industry) won their very outstanding places in Chinese economy in those time. It seems to be a historic coincidence that a giant oil field was found in Daqing City in 1959, and it had made a marvelous record of over 50×10^6 t of annual output for 26 years. Not only had it met the need of the state economy for at least three decades to the early 1990s, but also it has contributed Northeast China to be the largest petroleum processing and chemical materials products base until now. By the mid-1980s, Northeast China became a pioneer stamping on a heavy industrialization road, it had made great successes in upgrading technology, optimizing industrial structure, expanding production capacity and developing new sectors during the planned economy period. All those investment had received very rich and generous rewards. In 1985, the outputs of coal, crude oil, wood, steel, pig iron, automobile, machine tool, tractor and cement amounted to

15.1%, 53.4%, 37.65%, 24.3%, 25%, 32.2%, 13.7%, 11%, and 12% of Chinese total production, respectively. From the 1950s to the beginning of reform and opening up in the late 1970s, Northeast China had contributed half billion ton of rolled steel, one million of machinery equipments and two million technicians and skilled workers to other regions at the cost of regional natural resources and ecological environment as well as the loss of local benefit under the planned economy system (Bao et al., 2006). Northeast China won many historic glories, and was worthy of the name of the largest industrial base in China.

2.2 Decline of Northeast Old Industrial Base

By the end of the 1970s, Chinese economy has been almost at the edge of collapse due to the political reason, while stricken symptom appeared in the Northeast Old Industrial Base for long-term absence of investment on upgrading technology and adjusting structure of hundreds of thousands of overburdened state-owned enterprises. In 1978, China implemented the reform and opening up policy to begin with the southeast coastal area, which indicated the shift of regional policy focus from the inner lands to coastal areas. Northeast China, far away from the economic frontier areas, was no longer at the core of preferable policies, but it must continue the state instructions and afford reform cost through some unequal policy such as the “dual track of price system” in the late 1980s (Chuai, 1990; Yang, 1992). The unaccountable amount of raw and processed materials kept being allocated and transferred to southeast coastal areas by the same low price as before. Moreover, growth rate of regional investment in the fixed assets was lower than that of the national average in the period of 1982–2003, and regional percentage of the investment kept declining (Table 1).

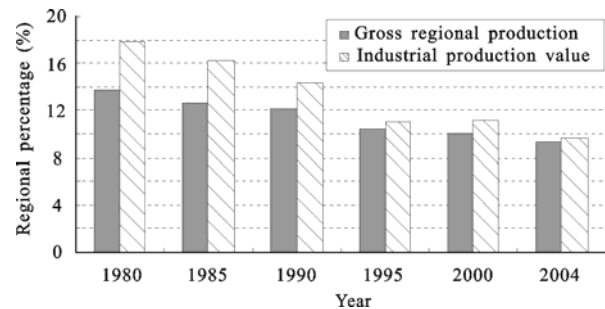
Table 1 Investment in fixed assets of Northeast China

	Growth rate (%)		Regional percentage in China (%)
	Northeast China	Whole China	
1982–1985	26.1	27.7	12.3
1986–1990	10.1	13.0	11.9
1991–2000	30.0	35.6	9.5
2001–2003	9.7	10.6	8.0

Sources: National Bureau of Statistics of China, 1996, 2001, 2004

Though the central government was aware of the de-

cline tendency and increased investment on reconstruction of NOIB, insufficient investment could not keep the declining trend within limits. From 1980 to 2004, regional percentages of gross regional production and industrial production value decreased from 13.7%, 17.8% to 9.3%, 9.6% respectively (Wang and Wei, 2005) (Fig. 2). Things turned to be more serious in mid-1990s, and the whole region was suffered with the syndrome called and “Northeast Phenomenon” by scholars (Li and Li, 1996; Li, 1996; Ding, 2003).



Sources: National Bureau of Statistics of China, 1986, 1991, 1996, 2001, 2005

Fig. 2 Regional percentage of gross regional production and industrial production value of Northeast China

The Northeast Phenomenon had several evident features. First, the industrial output and profit showed a state of ceasing or decreasing in all sectors; second, thousands of SOEs were bankrupt or closed; third, some mining cities were faced with the depletion of mineral resources; fourth, laid-off and unemployment were very pervasive across the whole region, inducing urban poverty and public security issues and environmental issues; and the fifth, the dilapidated factories and disrepair infrastructure presented small and medium-sized industrial cities with a decadent image across this region.

The cause of Northeast Phenomenon is still a stimulant topic by now, and remains some contentious points. Generally, there are three leading explanations. The first approach is based on “industry life cycle theory”, which thinks the decline of traditional industry, particularly mining industry, is inevitable when resources are exhausted and markets are lost. The second is institutional approach. Northeast China had been thoroughly built to be a planned economy entity, which must manifest some unfitness, stagnancy, and resistance symptoms during transition to market system, and the existing system restrained the SOEs from implementing quick and complete restructuring. This approach maintains the domi-

nance (Lu, 2004; Qiao, 2004; Wang and Li, 2004; Chen and Liu, 2005). The third is from local culture aspects. This viewpoint seemed not be argued officially with respect to local people's feeling, but lots of literatures attack the absence of commercialism and entrepreneurship in Northeast China, and the backward thinking of "waiting, relying, and asking" that have grown up during long-term planned system (Lan, 2003; Liu and Chang, 2005). Each of the above viewpoints has partial stringency, but it is hardly a thorough explanation without quantity of practical studies. A more comprehensive geographical approach becomes much helpful to understand Northeast Phenomenon, because geographers argue this issue as a special regional phenomenon, and think that Northeast Phenomenon in nature is an issue of regional development (Li and Li, 1996; Li, 1996; Ding, 2003; Chen et al., 2004; Deng et al., 2004; Jin et al., 2006).

Except for Northeast Phenomenon, New Northeast Phenomenon came upon in the late 1990s, which was referred to unmarketable grain and declining income for Northeast farmers. New Northeast Phenomenon was not necessarily related to Northeast Phenomenon, and was a temporary issue, but it had aggravated the existing social and economic problems during that time.

Most scholars consider that system bondage and structural contradiction are the two key intrinsic factors for the decline of Northeast China, and backward reform and opening up is one key extrinsic factor. It needs to understand those factors in its unique historic context at a justice and objective standpoint. For instance, this region had less right to manage its own affairs in the past, because it has kept playing much more indispensable roles in both state economy and national defense than the other regions.

3 Revitalizing Policies and Their Primary Effect

3.1 Revitalizing policies

In 1997, the Chinese central government initiated a three-year reform and reconstruction programme on SOEs, targeting establishment of modern corporate system in most large and medium-sized SOEs. This programme basically reached the goal in structure reform of SOEs across China (Liu, 2001; Chen, 2003), but it left considerable tasks particularly in the old industrial bases

(Zhang, 2001). In 2002, the 16th Party Congress Report of China emphasized "to support the northeastern region and other old industrial bases in accelerating their structure adjustment and transformation and to support cities and areas mainly engaged in natural resources exploitation in their efforts to develop alternative industries", which indicated that the Chinese central government deliberately put forward a holistic policy dealing with the old industrial bases. Soon afterwards, the top leaders investigated Northeast China for three times, and Premier Wen Jiabao addressed revitalizing NOIB by "new idea, new system, new mechanism and new way". In October 5, 2003, CPC Central Committee and the State Council of China issued "On implementing the strategy of revitalizing the Northeast old industrial base and other areas" (SCORNOIBOA, 2005), which symbolized a special regional policy for the old industrial base first time in China. Swiftly, National Development and Reform Commission of China put forward the first list of revitalizing items funded by treasury bond discount loans, totally 100 projects, 64×10^9 yuan. The State Council of China set up a leading group and standing office (State Council Office for Revitalizing Northeast Old Industrial Base and Other Areas, SCORNOIBOA for short) steering and coordinating the implementing policies. Liaoning, Jilin and Heilongjiang provincial governments sponsored their concrete plans. Generally, the central and provincial governments have played main roles in the revitalizing activities.

The revitalizing strategy constituted a series of favorable policies from Chinese central government (SCORNOIBOA, 2005; 2006) and gave more benefits for Northeast China. 1) By putting tax-free policy on agriculture in Jilin and Heilongjiang provinces first, and by expanding compensatory coverage and scale of grain production, the three provinces of Jilin, Heilongjiang and Liaoning had got 24×10^9 yuan in 2004 and 2005 from the central finance through the transfer payment of rural tax-for-fees reform, direct subsidies on grain and seed purchasing price difference. 2) Following Liaoning, Jilin and Heilongjiang provinces have carried out pilot projects of urban social security system including pension insurance, unemployment insurance and minimum-standard living insurance. Those two provinces got an annual quota of 1.82×10^9 yuan from central finance for personal pension insurance, and total 5.5×10^9 yuan for compensating the previous laid-off

workers who completely dismissed from their SOEs in 2004–2005. 3) From July 1, 2004, the Northeast China first implemented value-added tax reform. Only in the first half year of 2006, did this region get a tax drawback of 9.45×10^9 yuan. Additionally, by cutting down depreciable life for fixed assets and invested immaterial assets ($\leq 40\%$ depreciation rate), and by cutting down resources tax ($\leq 30\%$ tax rate) in the depleting mines and oil fields, the relevant sectors and enterprises received considerable profit. 4) By enhancing SOE's policy-related bankruptcy, the three provinces closed 122 bankrupt SOEs in 2004–2005; as a result, governmental capital of 22.4×10^9 yuan was canceled after verification, which was 24.5% of that of whole nation. 5) The large and medium state-owned enterprises had made substantial actions on separating their social function. Some 420 primary and middle schools, public security organs, procuratorial organs and people's courts were transferred to local governments, accompanying with 33×10^3 staff, 14×10^3 retired teachers, while the national finance offered 1.9×10^9 yuan. 6) The state-owned commercial banks had striped bad assets off twice by 2005 with total value of 331×10^9 yuan. 7) Pilot projects dealing with collective enterprises' issues were carried out extensively. And 8) In the end of 2006, the State Council of China issued the policy to cancel the enterprise owing taxes of 10×10^9 yuan before 1997. As a regional policy, it is rarely found in China's tax history. Except for above policies from Chinese central government, some ministries and the provincial governments also issued preferable policies to support this region, which has promoted work in slum clearance, land and mineral resources development and regional opening up.

3.2 Initial achievements of revitalizing policies

The revitalizing policies have brought with primary effects over the past three years of 2003–2006 (Zhang, 2006), though those proceedings remain some uncertainty in future. First of all, regional economy developed faster than before. Owing to policy effects, investments on fixed asset increased much faster than that in other areas. Growth rate of investment on fixed asset was 6.9% less than that of national average in 2003, but it was 5.9% and 12.1% more than that of Chinese average in 2004 and 2005 respectively, which presented an unprecedented climate. The incomes of citizen and farmer increased faster than that of Chinese average. Second,

system reform has made remarkable achievements. Over 90% SOEs have been reformed to be shareholding system. Some key enterprises such as Angang Steel Company Limited of Liaoning Province have accomplished inter and intra regional restructuring. Hopefully, private economy kept increasing at an annual rate over 20%, and more and more investors from southeast coastal areas began to develop small and medium enterprises in this region. Third, regional opening up has gone forward rapidly. There have been nine subdivisions and nine agencies of foreign banks in Dalian and Shenyang by 2006. Total regional FDI reached to $US\$5.7 \times 10^9$ for the first time, and growing FDI was going on merging in SOEs. Meanwhile, some large SOEs began to merge overseas manufacturing enterprises. Fourth, structural adjustment was focused on upgrading manufacturing technology, and developing high-tech industry and agricultural processing industry. Fifth, social tensions have been relieved due to projects on reemployment, social security system, slum clearance and comfortable housing particularly in mining cities. Liaoning Province took the leading role in building the social security system and minimum-standard living insurance covering whole province. In respect to Liaoning's experiences, this work went on smoothly in Jilin and Heilongjiang provinces under support of central finance. Newly added employment amount was 2.4×10^6 in 2005, and this figure kept increasing in 2006. The Chinese central government has put 6.5×10^9 yuan on managing 15 subsidence mining areas, and resettling 152 thousand households. In response to the Ministry of Construction of China's policy, a regional scale slum clearance is undergoing at present. Liaoning Province resettled 345×10^3 households, 1.20×10^6 slum dwellers moved into new apartments in 2005–2006. Sixth, a large number of urban and regional infrastructure projects are under construction, which will largely improve capacities in traffic, communication, electricity power and water supply.

Even if the encouraging achievements, it seems too early to assess the effects in an all-around way. It is just going on the first stage to tackle issues in-depth, and many system and structure contradictions need long time to solve. The good beginning probably is attributed to policy driving, and a temporary market demanding on heavy and petrochemical industry products. Although gross regional production (GRP) increased much faster than before, its proportion in the national GDP kept de-

creasing in recent years, which indicates that intra-regional gap keeps enlarging, and Northeast China is still a relative backward region.

4 Long-term Challenges

Over a three-year revitalizing practice to now, some essential issues become much clear, it is recognized that the revitalizing process would last two or three decades at least, as we could not cure the recession syndrome before resolving the time-costing problems as follows.

4.1 System obstacle

Over two decades reform and opening up, most system and mechanism established during the planned economy period have been changed to fit current market system. However, large central SOEs still play major roles in regional economy, most superiority resources and opportunities are under control of them, and they keep very intricate beneficial and conflicting interest relations with local enterprises and governments. In 2006, value-added of industry for central SOEs still took a very high percentage, 53% in Liaoning, 63% in Jilin, 86% in Heilongjiang, all of which were 20–30 percentage points higher than the national average. Therefore, accelerating reform of the central SOEs, with a full consideration to their responsibility on local social-economic development, is the core of the system reform. Meanwhile, it needs some years for the newly reformed SOEs to build a standard and effective modern corporate system and discharge historic burdens. Individual-run economy is still weak. Additionally, it is very pressing to deepen reform of local governments, aiming at improving working efficiency and preventing corruption.

4.2 Rigid industrial structure

The NOIB has long been in a heavy industry-leading economy. This kind of industrial structure usually brings with consequences that high investment on the fixed assets does not necessarily increase employment rate, and economic connection between city and countryside is very weak. However, most of newly approved projects funded by treasury bond discount loans are concentrated on reconstructing and enlarging the old sectors and enterprises (SCORNOIBOA, 2005; 2006), so that the heavy industry-leading structure will be further consolidated, and the industrial structure hardly changed in the past 3

years (Table 2). It is very bewildered why not promoting some new labor-intensive industry, and it is also doubted if those projects could improve regional employment situation, except for some short-term GRP increase.

Table 2 Industrial structure of Northeast China in 2003 and 2006 (%)

	Primary industry	Secondary industry	Tertiary industry
2003	12.4	50.7	36.9
2006	12.2	50.7	37.1

Sources: National Bureau of Statistics of China, 2004, 2007

4.3 Fund shortage and financial credit

Generally speaking, Northeast China has been lack of investment for decades, and there is an all-around fund shortage in social, economic and environmental development. Owing to historic reasons, SOEs and state-controlling companies had a total of 140×10^9 yuan of non-performing loan in 2006 (Zhang, 2006), which has deteriorated local credit climate. Policy-related loan and FDI increase has not paralleled with an expected large-scale commercial loan increase, and potential investors lack a strong confidence in harvesting the anticipated profit from the revitalizing projects. More seriously, there is 810×10^9 yuan imbalance between deposit and loan in local banks and credit agencies, because a large number of local funds were transferred to the developed areas. New projects are very difficult to get loans from local financial institutes.

4.4 Employment issues

After one decade decline, there emerged a large proportion of disadvantageous groups, about 5×10^6 deprived people in forest, military and coal sectors in 2006 (Zhang, 2006). In spite of some success in improving employment in recent years, long-term pressure has been not relieved so far. Except for new added-employment from urban and rural population, further reform of SOEs continues to release large number of new unemployee. Nevertheless, the current industrial policy is still capital and technology intensive, and small and medium-sized enterprises are not able to provide large number of jobs, consequently a favorable economic environment has not ready for future employment increase.

4.5 Transformation of mining cities

Mining city is the epitome of the NOIB. At present,

some 20 mining cities are struggling to survive. Transforming mining cities is one of the most thorny and complex problems. Such problems as industry declining, unemployment, urban poverty and deteriorated ecological environment there, are more serious than those in the other areas. Stable employment rate is around 60% only. The substitute industries have not made breakthrough in most mining cities, and fund shortage keeps increase with reform deepening. The mining cities are very vulnerable to any disturbance, so transformation of mining city becomes both a pressing and long-term issue.

4.6 Inter-regional cooperation

Due to similar industrial structure, imperfect distribution system and the lack of investment, there is more competition and less cooperation among cities and different level of local governments presently. New projects concentrated on central and southern urban agglomerates and coastal areas of Northeast China, while no intra-provincial industry cluster come into being. The peripheral areas tend toward marginalizing and further recessing. It is expected to create some kinds of collaboration and coordination mechanisms among provinces as well as cities, in order to prevent malignant competition and fulfill whole region prosperity.

4.7 Resources and environment carrying capacity

Over decades of high intensive resources exploitation, resources and environment carrying capacity has decreased sharply. Except that some minerals are near to be exhausted in somewhere, regional water and land capacity hardly meets economic and social requirements, particularly in the central and coastal areas of Northeast China. Resources and environment constraint warns that current economy model is not sustainable, and industry transformation has to parallel with eco-environment improvement in a long term.

5 Conclusions

Over two decades of adjustment and reconstruction, the past initiatives have made tangible achievements in economy and society development. Economic structure and quality have been improved, economy quantity and growth rate increased largely in recent years, and substantial change is towards market-oriented economy system. Regional infrastructure and urban and country-

side construction have improved social development level. The regional ecological environment and natural resources are better generally. But, Northeast China has not attained high growth rate as the coastal areas, and the decline of some traditional industries has aggravated the syndrome of the old industrial base, namely the Northeast Phenomenon somewhere. The evident changes only happened in recent years, which proves that the central revitalizing strategy is necessary and effective for the old industrial base.

In spite of the above achievements, crucial issues remain to be settled. The state-owned economy still keeps the leading role, backward situation does not change, and it seems far away to cure the old industrial base syndrome. Out of various reasons for the decline of NOIB, outmoded system and mechanism is the first constrain factor, also it remains the most difficult issues to deal with. The pressing problem is to accelerate reform of central SOEs in parallel with developing new economic engines from private economy, so that the overwhelming preponderance of SOEs could be broken, and a new balance between central and local economy may emerge.

Unlike old industrial bases in the West, it is a type of relative decline in Northeast China in comparison to China's high growth rate in recent decades. But this character could not conceal the substantial contradiction and problem in NOIB, nor does mean any easiness to revitalize regional economy. Long-term challenges are expected to be overcome in two or three decades, hence it needs stronger support from Chinese central government, by endowing more free and open policies related to tax revenue, finance, custom in cancelling historic debts and SOE's bankrupt, merging, restructuring, etc.

In retrospect of the reconstruction process of NOIB, some past lessons could be identified. 1) Both central and local governments lacked exact cognition on the nature of old industrial base issues. No comprehensive strategy was put forward before 2003, instead of some piecemeal tactics on some concrete issues. Insufficient fund was comminuted to a variety of reconstruction items, so that there were rarely good results. 2) There was a long time misunderstanding on revitalizing old industrial base, which oversimplified it to be industrial issue; as a consequence all concerns were concentrated on industrial technology problems, while some substantial aspects such as system reform and institutional in-

novation were belittled. And 3) More emphases were put on government intervention and less on market and private strength which have been smothered innovation appetency, so that most resources were put on the aged SOEs, less resources were distributed to new economic sectors. Consequently, private and foreign-oriented economy lagged largely behind the coastal areas.

Therefore, reconstruction of old industrial base is a holistic regional project including economic growth, society progress and eco-environment improvement. The emphases for revitalizing NOIB include system reform, structure adjustment, employment growth and industrial competitiveness upgrading. In concert with revitalizing industry, agriculture, regional infrastructure, social security, investment climate, etc., must be improved simultaneously. The all levels of governments should assume an indirect role, shifting from actor and decision maker to facilitator, signaler, and prodder, and any unnecessary intervention will hurt local economy. In addition to enhancing traditional predominance industrial sector such as huge equipment manufacturing, petrol-chemical processing and steel industries, more emphases should be put on new sectors including agricultural processing, pharmacy industry and a variety of hi-tech sectors by full use of local intellectual resources. It is expected that new industrial sectors under market economy system could play more important role in revitalizing NOIB, and Northeast China would recover the past brilliance through radical reform and opening up.

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