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WUHAN: A CASE STUDY IN CHINESE URBANIZATION

Guo Wuxin

I. Introduction

After 33 years of the socialist economic construction carried out by the Chinese people, since the founding of the People's Republic of China, the urban development and the growth of urban population have shown great progress. This is the inevitable result of the development of social productivity and national industrialization. The existing cities have been rehabilitated and expanded, and a number of new cities, especially industrial cities, have been built. By the end of 1981, China's cities^{*} totalled 233^{**}, including 13 with a population of over 2,000,000; 24 of 1,000,000-1,999,999; 41 of 500,000-999,999; 50 of 300,000-499,999; 86 of 100,000-299,999; 19 cities below 100,000. The urban population of cities of this kind increased 2.4 times, that is from 57.7 million to 138.8 million, the proportion of urban dwellers in the total population rose from 10.6% in 1949 to 13.9% in 1981.

Large cities are the centers of economy, politics and culture of a region of a nation. The capital of our country, Beijing, is the national center of politics, culture and economic administration and has relatively well developed industry. The other major cities, such as Shanghai, Tianjin, Wuhan, Shenyang, Guangzhou, Chongqing and Xian are the regional

* I refer to the cities with city administration which are under the leadership of the central People's Government, or of provincial governments, or of prefectural governments.

** Not including the cities of Taiwan Province.

economic centers of East China, North China, Central China, North-East China, South China, South-West China and North-West China respectively. In addition to the 233 cities mentioned above, there are over 3,000 county towns and mining towns in China, most of which have a population of 10,000-30,000, some over 40,000-50,000. Besides, closely and directly related to the rural areas are the approximately 53,000 rural market towns which are distributed all over the country, and have an average population of about 3,500, with a maximum of 20,000 and a minimum of 1,000.

Being the regional economic center of Central China, Wuhan is one of the largest cities and the most important inland hub of communications both on land and water of the country. In 1981, the population of Wuhan's metropolitan Area was about 4,100,000, and 3,160,000 lived in the City Proper; it ranked fifth in China after Shanghai, Beijing, Tianjin and Shenyang. In industrial development, Wuhan occupied a fourth position in our country; its industrial output value was over 10 billion yuan RMB (Renminbi, Chinese currency) at 1970 prices, and was exceeded only by that of Shanghai, Beijing and Tianjin. In addition, by the end of 1981, in Wuhan there were about 30 universities and colleges, which had nearly 14,000 teachers and 50,000 students. Therefore, in the academic sphere Wuhan ranked third in the country in comparison with Beijing and Shanghai.

As the Capital of the Hubei Province, Wuhan is also the political, economic and cultural center of this province. It is situated in China's central plain where the Changjiang (Yangtze River) and the Han River meet. During the period over 30 years since liberation, Wuhan has made great achievements in its economy and urban construction. At the same time, the rapid growth of large cities such as Wuhan has brought about some serious problems, which need to be solved or they will be detrimental to the further

development of urban economy and the improvement of environment for urban residents. In my opinion, it is useful to search for methods of solution to these problems and to discuss the future of Wuhan's urban development in accordance with the actual conditions of the realization of modernization in China.

This paper is organized as follows. Section II below provides geographical, historical and socio-economic background of the urban development of Wuhan. In section III, I report the stages and the substantial achievements of the development of Wuhan's economy after 1949. Section IV outlines the position and role of Wuhan in the economies of Hubei Province and of Central China. The major problems confronting the Wuhan economy today are discussed in Section V. Section VI reviews a possible perspective. The paper is concluded with overview and summary in Section VII.

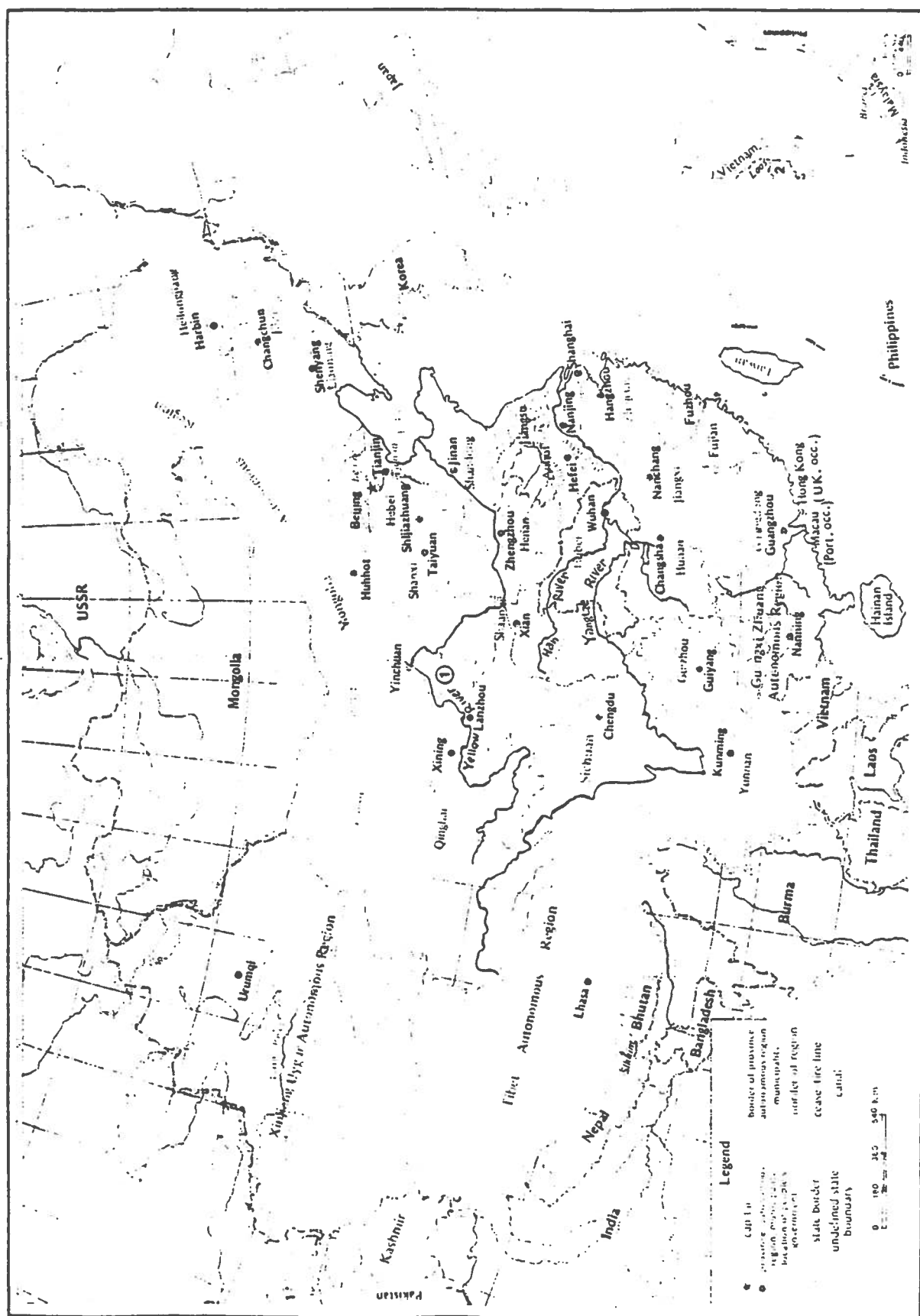
II. The Background of Urban Development in Wuhan

Wuhan was a big city before 1949. Since liberation Wuhan's urban construction has made significant progress. The most important conditions which have facilitated urban development in Wuhan are as follows:

(1) Favorable geographical location.* Wuhan is situated in the center of Hubei Province and Central China as well. It lies on the middle reaches of the Yangtze River, the third longest river in the world, the total length of which is 6,300 kilometres. It is here that it meets its largest branch, the Han River. The Yangtze River flows through Hubei Province from west to east. On the river a traveller can go up to Sichuan

* See Figure 1.

Figure 1
Administrative Divisions of China



Province and come down southwestward to Hunan Province through Dongting Lake, or eastward to the provinces of Anhui, Jiangxi, Jiangsu, and Zhejiang through Tai Lake. It is 1,125 kilometres from Wuhan to Shanghai by boat; the river transport system provides passage during eight months of the year for 5,000 ton ships, and ships up to 10,000 tons can navigate it in summers. It is 1,370 kilometres from Wuhan to Chongqing, and there are ships as large as 2,000 tons going up and down all the year round. Going northwestward along the Han River one can reach Henan Province and Shanxi Province. As mentioned above, Wuhan is situated in China's central part; the transport and communication lines link up not only the west and east, but also the provinces in the north and south of the country. People may travel up to the north or down to the south either by train or by bus. It is about 1,300 kilometres from Wuhan to Beijing and over 1,100 kilometres from Wuhan to Guangzhou.

Wuhan has a broad hinterland and is rich in minerals. Wuhan is the center of Central China, which consists roughly of the three provinces of Hubei, Hunan, and Henan. Thus defined, Wuhan's hinterland includes a territory of about 560,000 square kilometres, and a population of over 1/6 of the total of the nation. Between Hubei Province and Hunan Province is Dongting Lake, the second largest lake in China; on its north side is Jiangnan Plain and on the south side Dongting Lake Plain. The east part of Henan Province is also a broad plain. The region of Central China, including these plains, is one of the major growing areas of grain, cotton, oil crops, tobacco and a number of other agricultural products. This region is also famous for its minerals. For example, Henan Province has abundant coal and aluminum oxide deposits; Hunan Province is rich in minerals of nonferrous and rare metal; and Hubei Province has rich deposits of ferrous metal and plaster stone as well as potential water power.

In brief, because of its favorable geographical location, Wuhan has been the most important inland hub of communications since the ancient times. This also enabled Wuhan to become one of the major cities long ago. This condition continues to be advantageous to the urban development of Wuhan.

(2) The historical background. Wuhan is a city with a long history. Its urban area consists of three towns -- Wuchang, Hankou and Hanyang -- separated by the Yangtze River and Han River. During the period of the Three Kingdoms (220-265 A.D.), Sun Quan, the King of Wu, built a city in Wuchang in 221 A.D. Even earlier than this, Hanyang's In-Wu Zhou used to be an anchorage for merchant ships. Commerce in Hankou developed in 10th-13th centuries and the city became prosperous in the 17th century. It developed into one of the famous "Four Major Towns" of the country at that time. Hankou had been known as a port city for foreign trade since the middle of the 19th century.

Before the War of Resistance Against Japan (1937-1945), the commerce and industry in Wuhan were developed to a certain degree. In 1936 Wuhan's domestic trade accounted for 250 million yuan, its foreign trade was nearly 50 million yuan, amounting to 300 million yuan total and took the third place in China after Shanghai and Tianjin. In 1933 there were several hundred factories and more than 1,000 enterprises in the handicraft industry; there were about 100,000 workers: the industrial workers and craftsmen were roughly equal in number. The main industries were iron and steel, textile, wheat flour, tobacco, etc. Generally speaking, the level of industrial development was quite low at that time, and it had semi-feudal and semi-colonialist characteristics, because the economy of old China was semi-feudal and semi-colonialist.

(3) New socio-economic conditions. Since the founding of the People's Republic of China in 1949, the socio-economic conditions for the development of cities have been completely different from those of old China. The social system of semi-feudalism and semi-colonialism has been finally eliminated. In the first three years from 1949 to 1952, Chinese people carried out the work of economic rehabilitation. As a result, the bureaucrat capital was confiscated and a socialist economic sector owned by the whole people was thereby established. Land reform was realized all over the country. Next came an extensive socialist transformation of agriculture, handicrafts and industry and commerce of the national bourgeoisie. It represented a basic change in the national economy and the beginning of the planned economy.

The First Five-Year Plan (1953-1957) paid more attention to the speed of development, the proper ratios between various economic spheres and inland industrial construction. During this period economic development was both rapid and stable. The initial targets of the Second Five-Year Plan (1958-1962) were positive and rational, because they corresponded to the material and financial capacity of our country at that time. However, beginning in 1958 "left" errors, characterized by a one-sided emphasis on high speed and excessively high targets for production and construction, led to serious imbalances in the economy and brought grave consequences. Both agricultural and industrial production were seriously damaged. After the adoption of the policy of "readjustment, consolidation, filling-out and raising the standards" in 1961, the national economy began to improve again. But just as the economy was starting to develop, the "Culture Revolution" broke out. This large-scale disruption lasted throughout the Third five-Year Plan (1966-1970) and the Fourth Five-Year Plan (1971-1975).

During this period, in spite of some progress in the economy because of the efforts of our people, factional struggles, misallocation of resources, economic imbalances and the over-emphasis on accumulation at the expense of consumption distorted growth and development. The national economy was brought to the brink of collapse in 1976.

Since the overthrow of the "Gang of Four", China has begun to carry out the Fifth Five-Year Plan (1976-1980). A policy of "readjustment, reform, consolidation and improvement" has been carried out in order to eliminate the remaining problems and to bring our economic construction into the proper orbit. Thus, the national economy, including industry and agriculture, has showed great improvement in recent years.

To sum up, for the thirty years since liberation, in spite of setbacks, the socialist economy of our country, particularly its industry, has made great achievements. Compared with 1952, the year of completion of rehabilitation, 1981 saw an increase of 9.5 fold in the total value of industry and agriculture (19.6 fold in the total value of industry and 2.7 fold in the total value of agriculture), and 5.3 fold in national income. The Chinese people are now carrying out socialist modernization which has begun since the Sixth Five-Year Plan (1981-1985). It is a great strategic goal. During the period of socialist construction since 1949, the conditions for the development of cities in new China have been completely different from those before liberation. Therefore, by paying more attention to the urban construction and the development of inland industry, the backward state of the original cities, especially inland large cities such as Wuhan, has been basically changed.

III. Stages and Achievements in the Development of Wuhan's Economy

During the period of over thirty years since 1949, Wuhan has made great achievements in its economy. The development of its economy can be divided into four stages:

The first stage (1949-1957): the socialist transformation was completed and a large-scale industrial construction began. On the eve of liberation Wuhan's economy was almost on the verge of bankruptcy. The economy rapidly recovered and there was some progress made both in industry and in agriculture in the first three years after 1949. In 1952 this city's gross output value of industry and agriculture added up to 520 million yuan RMB, that is twice that of 1949, and topped all previous records before liberation. Later, during the period of the First Five-Year Plan, our government concentrated on the construction of a number of major and medium-sized projects, such as Wuhan Iron-steel Company, Wuhan heavy-duty Machine Tool Plant, Wuhan Boiler-making Plant, Wuhan Integrated Meat Processing Factory, Qinshang Heat and Power Plant, Changjiang Bridge at Wuhan and so on. At the same time, the socialist transformation in this city was basically completed. In 1956 the socialist sector of Wuhan's economy accounted for 97.7% of the gross output value of industry, 100% of the freight volume of transportation, 93.3% of the total volume of retail sales, and 97.7% of cultivated area.

The second stage (1957-1966). This was a period of further economic construction. At this stage Wuhan's economy suffered a setback as did the economy of the rest of the country. Neglecting the objective laws of economy, being over-anxious for quick success, being too keen on high production quotas and a high accumulation rate (as much as 57% in 1959), boasting and exaggerating -- all these "left" errors resulted in

fluctuation in the production of industry and agriculture and heavy losses to economic construction. However, Wuhan has made great progress in its economy since the policy of readjustment was adopted. The ratio between accumulation and consumption was readjusted (the accumulation rate was lowered as much as 38%) and the capital construction projects were curtailed. Since 1962, Wuhan's economy has begun to be active again.

At this stage, Wuhan had used 3.7 billion yuan RMB for its capital construction from the state investment, and the amount was quite great compared with that in the previous seven years. The fixed assets of state-owned industry were up 5-fold. The position of industry in Wuhan was more important in the economy after the major and medium-sized enterprises went into operation in succession in the First Five-Year Plan and the several years following. In 1949-1966 the proportion of industry in the total output value of industry and agriculture was 48.1% whereas originally it had been 42.9%. In the suburbs a large state farm was built by reclaiming over 23,000 hectares from the East-West Lake and by putting up 60 kilometres of long dykes, thus increasing the food supply of Wuhan. In 1962-1966 Wuhan's total output value of industry and agriculture increased by an average of 17.3% per year.

The third stage (1966-1976) was that of the "Cultural Revolution". The 10-year disruption wrought terrifying havoc on Wuhan's economy, and on the whole nation's economy as well. In 1974 and 1976 industrial output value fell by one-fourth over the previous year; during the 10 years, the loss of the total output value of Wuhan's industry and agriculture was as much as several billion yuan RMB. However, there was still some progress in Wuhan's industry because of the efforts of its people: e.g., a set of 1.7 metre rolling-mill equipment was imported from abroad in Wuhan Iron-Steel Company; a petrochemical factory was set up in Wuhan, capacity

for processing oil was 2,500,000 tons a year. There were also several other kinds of enterprises for producing automobiles, sulphuric acid, chemical fibre, bicycles, watches, TV sets and so on, which filled in the gaps in those industries. The fixed assets of Wuhan's state-owned industry were more than doubled during the 10 years. The railway transportation and irrigation and drainage of State East-West Lake Farm had been improved to some extent.

The fourth stage (1976-). Since the overthrow of the "Gang of Four" and the Third Plenum of Eleventh Committee of the Chinese Communist Party in December 1978, the "left" errors have been criticized and a policy of readjustment and reform has been carried out:

(1) Capital construction projects in Wuhan have been curtailed. In 1980 the investment for capital construction was reduced by one-third compared with that of 1978.

(2) Investment has been redirected. Non-industrial construction for culture and education, sanitation, and municipal works has been greatly developed. The proportion of the investment for non-industrial construction was up to $\frac{1}{2}$ that of the total investment for construction in 1980, while in 1978 it was $\frac{1}{4}$.

(3) The industrial structure has been improved. We placed too much emphasis on the development of heavy industry in the past nearly 30 years. Now we have devoted more efforts to light industrial development. In 1978 heavy industry accounted for 55.2% of the gross value of the industrial output of Wuhan (that is to say, it was the highest proportion since liberation). In 1981 light industry was more than 50%, a little more than that of heavy industry, as a result of accelerated development in this

sector. The consequence of this change has been an increasing availability of consumer goods.

(4) More attention has been paid to all-round development of farming, forestry, animal husbandry, side-line production and fishing in the suburb farms and two counties near-by. As our government has implemented various systems of job responsibility in the countryside, Wuhan has reaped harvests for years running in agriculture in spite of natural disasters.

(5) Different measures have been adopted to stimulate the exchange of urban and rural products, restore and develop small warehouses for trade and free markets, and to encourage independent sales by factories so that both collective commerce and individual business may develop.

In brief, during the past 30 years since liberation Wuhan's economy, particularly its industry, in spite of all setbacks, has made impressive progress. Now 13 industrial districts have been built in Wuhan and in its suburbs. In 1981 there were about 3,300 industrial enterprises -- twice as many as in 1933; 900,000 workers and staff -- nine times those of the period before the War of Resistance Against Japan; the industrial output value reached the highest level in history and topped 10 billion yuan RMB, that is tens of times that before the liberation. The well-known Wuhan Iron-Steel Company, China's second largest iron-steel company, produces millions of tons of pig iron, steel and steel products each year. Its new 1.7 metre rolling-mill's designed capacity per year is: for hot-rolled steel sheet, 3 million tons; for cold-rolled steel sheet, 1 million tons; for silicon steel, 70 thousand tons. There are several other well-known establishments in the city such as the Wuhan Heavy-duty Machine Tool Plant, the Wuhan Boiler-making Plant and the Wuhan Integrated Meat Processing Factory. The last is not only one of the largest in China, but also one of

the largest in Asia. Having been a center for the textile industry for a longtime Wuhan now has six textile mills with several tens of thousand workers and more than 500,000 spindles. In addition, Wuhan has various other kinds of industry: e.g., food, leather, tobacco, paper-making, enamel, petrochemicals, electronics, shipbuilding, automobile and others.

Wuhan has now been built into a city of multiple industries with iron and steel, machine equipment and textile as the main products and with a comparatively higher level of light industry as well as chemical and electronic industries.

In the past 30 years agriculture and side-line production have risen greatly. Wuhan has suburb districts and two counties; its agricultural population is now 1,300,000; labor force, 600,000; and area under cultivation; 140,000 hectares. In 1981, the total value for purchase and sale accounted for 13 billion yuan RMB; retail sales reached nearly 2.3 billion in which more than 1.8 billion of consumers goods were bought by the inhabitants.

At the same time, Wuhan has done quite well in improving and expanding its transportation system. The railway transportation has become more efficient: the Beijing-Wuhan Railway and the Guangzhou-Wuhan Railway have been linked by the Changjiang Bridge as one -- the Beijing-Guangzhou Railway -- which has been changed into a doubletracked line. There are two newly built railways of Hankou-Danjiang and Wuchang-Daye. Connections between the various lines -- Hankou-Danjiang Line, Jiaozuo-Zhijiang Line, Zhijiang-Liuzhou Line and Xiangyang-Chongqing Line -- have permitted through service. Wuhan has now nearly 500 wharfs, 2,000 ships of various kinds, 5 highways to other parts of the country, about 50,000 motor vehicles. In 1981, the total volume of freight handled was 9.4 times that of 1950.

Wuhan has taken on an entirely new look because of its improvement in urban construction. Narrow streets have been widened; many buildings both factories and residences and streets have been built. During this period the newly built residences have reached 11,000,000 or more square metres, twice that of the initial post-liberation period. There are 1,200 kilometres of roads in Wuhan which is nearly 11 times as much as before 1949. There are 726 kilometres of sewers -- 18 times as much as before 1949. This city has 15 parks (newly built and extended) with an area of over 340 hectare which is 12 times more than those during the initial post-liberation period. There are ten water-supply plants with water-pipes of 1,149 kilometre, but there were only two similar plants before 1949.

Owing to the economic growth, there has been a substantial improvement in the well-being of the people since liberation. In 1981 there were 1,800,000 employed people in urban districts, 3.6 times more than those in 1952; the actual purchasing power on an average was twice that in 1952; total savings deposits in both urban and rural area reached 527 million yuan RMB, 4.4 times as much in 1952. From newspaper reports we have learned that in Wuhan for every 100 families there are 252 watches, 103 radios, 75 bicycles, 74 sewing-machines, 74 electric fans, 67 TV sets.

Although great achievement has been made in Wuhan's economy, its economic growth is far from being satisfactory and the development of its industry is not high in comparison with the cities of developed countries.

IV. The Position and Role of Wuhan in the Economies of Hubei Province and of Central China

As mentioned above, Wuhan is the economic center of Hubei Province and Central China as well. A comparison of Wuhan's industry and economy with Hubei Province is found in the following:

Table 1

The Major Indicators of Wuhan's Economy
and Hubei's Economy, in 1981

	<u>Wuhan</u>	<u>Province</u>	<u>% of Wuhan in Total Volume of Hubei Province</u>
<u>Territory and Population</u>			
Territory (thousand sq. km.)*	4.48	186	2.4
Population (millions)*	4.1	47.7	8.6
<u>Industrial Enterprises (units)</u>	3,321	17,000	19.5
Of which:			
State-owned	808	4,600	17.6
Collective ownership	2,500	12,400	20.2
<u>Total Industrial Output Value (million Yuan RMB)**</u>	10,557	24,659	42.8
Of which:			
State-owned	8,684	19,797	43.9
Collective ownership	1,753	4,732	37.0
Of which:			
Light industry	5,581	12,796	43.6
Heavy industry	4,976	11,863	41.9
<u>Workers and Staff Members of Industrial Enterprises (thousands)</u>	900	2,223	40.5
Of which			
State-ownership	570	1,533	37.2
Collective ownership	330	690	47.8
<u>Total Agricultural Output Value (million yuan RMB)**</u>	488	8,997	5.4

	<u>Wuhan</u>	<u>Province</u>	<u>% of Wuhan in Total Volume of Hubei Province</u>
<u>Output of Major Products</u>			
Pig iron (1,000 tons)	2,680	3,178	90.0
Steel (1,000 tons)	2,710	3,423	79.0
Steel products (1,000 tons)	2,200	2,771	79.4
Machine tools (units)	2,325	4,100	56.7
Cotton cloth (million metres)	430	1,136	37.9
Bicycles (1,000 units)	362	536	67.5
Sewing machines (1,000 units)	259	473	54.7
Watches (1,000 units)	533	537	99.2
Fertilizer (1,000 tons)	33	619	5.3
Grain (1,000 tons)	618	17,070	3.6
<u>Total Investment in Capital Construction</u>			
(million yuan RMB)***	636.6	2,951	21.6
<u>Freight Traffic</u>			
(million tons)	52.66	87.26	60.3
Of which:			
Water freight traffic	14.58	20.46	71.3
Railway and highway freight traffic	38.08	66.80	57.0
<u>Total Volume of Retail Sales</u>			
(million yuan RMB)	2,285	10,055	22.7
<u>Local Financial Revenue</u>			
(million yuan RMB)	1,525.8	3,686	41.4****
<u>Local Financial Expenditure</u>			
(million yuan RMB)	303.5	2,403	12.6****

* Wuhan's Metropolitan Area.

** Total industrial output value and total agricultural output value are calculated at constant prices of 1970.

*** Only for state-owned enterprises.

**** Hubei Province's local financial revenue and expenditure only include a part of those of Wuhan.

Sources: Statistical Yearbook of China, 1981; Almanac of China's Economy, 1981; and other sources.

Therefore, we can see from the above that Wuhan is an economic center of Hubei Province. As this city in a strong position, it plays an extremely important role in the economy and urban construction of this province. It can be shown in the following:

(1) Wuhan is the principle industrial base in Hubei Province. In 1981 Wuhan's proportion of industrial enterprises, their workers and staff members and the total industrial output value in total volume of Hubei Province were 19.5%, 40.5% and 42.8% respectively. In heavy industry, Wuhan Iron-Steel Company produced nearly 9/10 of the iron and 4/5 of the steel and steel products of Hubei; Wuhan Heavy-Machine Tool Plant and other machine tool plants produced roughly 3/5 of the province's tools; in addition, it produced lots of chemicals, building materials and so on. In light industry, Wuhan produced almost all the watches of the province; 2/3 of the bicycles; half or more of the sewing machines and 2/5 of the cotton cloth. Wuhan is also an important center for producing leather shoes (6 million pairs in 1981), tobacco (477 thousand boxes in 1981), and other consumer goods.

(2) Wuhan is the most important hub of communications and commerce in Hubei Province. As the most extensive movement of goods of Hubei takes place on the two rivers (the Yangtze and Han) and the three railways (Beijing-Guangzhou, Hankou-Danjiang and Wuchang-Daye), Wuhan serves as the largest storage and distributing center. In 1981 Wuhan's proportion of the total freight traffic, the water freight traffic, and the railway and highway freight traffic in total volume of Hubei Province were 60.3%, 71.3% and 57% respectively. Wuhan is also a center of passenger transport. In the same year, there were 90,000 person-times of passengers coming and going per day. In 1980, being the biggest of the inland cities, Wuhan

grossed about 13 billion yuan RMB in the purchase and sale of commodities, and more than 2 billion yuan RMB in retail sales. Most of the products of Wuhan's light industry were sold in the city (two-fifths) and the counties of Hubei Province (two-fifths); the rest (one-fifth) were sold all over China.

(3) Wuhan is also the largest city of Hubei Province. The cities of Hubei are of four kinds: the first is especially big and Wuhan is the only one of this kind. The second consists of the other 5 cities, that is, medium-sized cities (Huangshi, Shashi, Yichang, Xiangfan and Shiyan), which are also under the leadership of the provincial government and each of which has a population of about 200,000-300,000. The third type is composed of 5 smaller cities, which are under the leadership of prefectural governments; they are Enshi, Suizhou, Laohekou, Jingmen and Echeng. And more than 70 much smaller cities are county towns and mill towns, which are distributed all over the province. The total population of all these cities was 7,480,000 (1980). Wuhan's population was 3,070,000, that is, 41% of all cities in Hubei Province. Besides, there are lots of very small towns, rural market towns.

Hubei's medium-sized and small cities have a close economic contact with Wuhan. The old cities such as Shashi, Yichang and Xiangfan have had rapid growth in their industrial development since 1949. Shashi has now become famous for its light industry and textile industry, having 220,000 spindles and 6,000 looms, 14.4% and 11.9% of Hubei respectively; Yichang and Xiangfan have quite a number of light and heavy industrial enterprises in machine-making, textiles, building materials, chemical fertilizer and electrical appliance. The development of these cities' industries has been parallel and mutually complementary with those of Wuhan. Wuhan depends

mostly on Gezhou Dam Hydro-electric Station near Yichang and Danjiang Hydro-electric Station near Xiangfan for its supply of electricity. Huangshi and Shiyan are developing industrial cities. Near Huangshi there is Daye Iron Mine, which provides Wuhan Iron-Steel Company with minerals; Shiyan is where the No. 2 Automobile Factory, the second largest one of China, lies. Wuhan supplies steel products and machines for the factory and is provided with motor vehicles in return.

Hubei puts the stress on Wuhan in urban construction. For instance, in 1981, with largest revenue in this province, the city made an investment for capital construction which was equal to 21.6% of Hubei's investment, while its population was only 8.6% of the province; its revenue and expenditure were respectively 41.4% and 12.6% of Hubei's total.

(4) In addition, Wuhan is a political center and a center of culture, science and technology. Wuhan is the capital of Hubei, where the Provincial Government is located. There are 50 or more universities and colleges in the province, half of which are in Wuhan. In 1981, Hubei had 74,100 undergraduate and graduate students and there were 50,000 in Wuhan, 2/3 of Hubei's total. Most of the scientific research institutes and research workers are concentrated in Wuhan.

Wuhan has also achieved the most prominent position in Central China's economy. There are three reasons for this. The First is that in Central China Wuhan is the biggest city with the largest population and the highest level of industrial growth. Let's compare its population with that of the capitals around it: Huan Province's capital Changsha had a population of 835,000; the capital of Henan Province, Zhengzhou, had a population of 859,000; Nanchang in Jiangxi Province, 815,000; and Hefei in Anhui Province, 539,000. The figures above (1981) showed that each had a

population of 1/4 or 1/6 that of Wuhan. These cities' total output value of industry are far less than Wuhan's. The second reason is that Wuhan comes first on the list, not only in land and water communication lines, but also in goods collecting and distributing, which contributes to a high correlation between Wuhan and the rest of the cities in Central China. The third is that in higher education and the development of science and technology, Wuhan is in an advantageous position. Its colleges and universities are much more numerous than those of any other city in Central China. Many young people from other parts of Central China go to Wuhan to receive higher education. Many technical problems are sent to Wuhan for solutions. So, Wuhan, one of the especially big cities in China, is a center of both the urban nets and economic contacts of Central China.

V. Major Problems Confronting Wuhan's Economy Today

New China is a developing country. The rapid growth of its large cities has aroused great concern of our people. In a city like Wuhan, the explosion of population, the high concentration of industry and the insufficient development have brought some pressing problems, which must be solved. The major problems currently confronting Wuhan's economy are as follows:

(1) The problem of the size of the city. Because of the rapid growth of Wuhan's population since 1950, there is now traffic congestion and a serious shortage of housing.

Table 2
Population Growth, 1936-1981

	<u>1936</u>	<u>1950</u> (thousands)	<u>1957</u>	<u>1981</u>	Increased in 1981 (expressed as a multiple of population of 1950)	Average Annual Increased Rate (1951-1981, 0/00)
China	479,085	492,532	656,630	1,014,360	2.06	24.4
Hubei Province	25,516	21,470	30,790	47,703	2.22	26.9
Wuhan (City Proper)	1,230	1,008	2,146	3,157	3.13	38.8

Sources: People's Handbook (edition in Chinese), 1951 and 1960; Statistical Yearbook of China, 1981; Almanac of China's Economy, 1981, and other sources.

The population of Wuhan's urban area for 1981 was more than three times that of 1950. During the period from 1950 to 1981, the population of Wuhan grew faster than that of Hubei and the whole country. Of course, the population growth of Wuhan, in a certain degree, was caused by the immigration from the rest of the country, especially from the counties of Hubei Province, because the rate of natural increase of Wuhan's population was about 20 0/00 at the beginning of the 1950s, about 30 0/00 in the mid-fifties, again about 20 0/00 in the sixties, about 15 0/00 at the beginning of the 1970s and under 7 0/00 after the mid-seventies.

As a result of the overpopulation of the city, there is traffic congestion and a serious shortage of housing. Commute traffic in Wuhan mostly depends on public transportation, including buses, trolley buses and ferry-boats, that is, 4.5 buses and trolley busses per 10 thousands citizens. In addition, there were several hundred thousand bicycles. With the rapid growth of commute traffic, Wuhan's traffic congestion has become

critical, because existing public transit is hard put to cope with the increasing demand. The buses and trolley buses are seriously overloaded and there is low traffic capacity, slow speed and frequent accidents, affecting the transport order especially during the rush hours. In 1981, the per capita floor space of residents in the city proper was only 4.05 square metres, though in the past 31 years a large number of apartment houses have been built.

In my opinion, the possible solutions are: First of all, the size of the city should be strictly controlled, and stabilized at the existing level. Therefore, special attention should be paid to the population problem; it is essential to control the growth of the urban population. In the second place, more and more apartment houses should be built. Several million square metres of them might better the housing condition in Wuhan in the near future. Thirdly, the traffic problems can be solved only through the coordination of all departments concerned in an integrated plan. It will be necessary to improve the road services, increase the number of vehicles, build a new subway and strengthen transport management.

(2) The technological development in Wuhan is relatively backward, and the productivity of its industry is lower than that of Shanghai, Beijing and Tianjin.

Table 3

Comparison of Wuhan's Industrial Development with
Other Major Cities' in 1981

	<u>Shanghai</u>	<u>Beijing</u>	<u>Tianjin</u>	<u>Wuhan</u>
Industrial Enterprises (units)	8,017	3,778	4,333	3,321
Fixed Assets of Industrial Enterprises (original value, million yuan RMB)	22,300	16,190	11,880	9,940
Total Industrial Output Value (million yuan RMB)*	64,750	23,820	20,650	10,557
Workers and Staff Members of Industrial Enterprises (thousands)	2,560	1,500	1,310	900
Workers and Staff Income in Industrial Enterprises (million yuan RMB)	2,188	1,180	900	676
Overall Labor Productivity (yuan RMB/person/year)*	25,293	15,880	15,763	11,730
Ratio of Total Industrial Output Value to Fixed Assets (original value) of Industrial Enter- prises**	3.5679	1.8079	2.1359	1.3051
Annual per Capital Income of Industrial Workers and Staff Members (yuan RMB)	854.7	786.7	755.7	751.1

* Total industrial output value and overall labor productivity are calculated at constant prices of 1970.

** This ratio is calculated at 1981 prices, roughly.

Source: Statistical Year book of China, 1981.

We can see from above that the major indicators of Wuhan's industrial development in 1981 were obviously lower than that of Shanghai, Beijing and Tianjin. The industrial enterprises, their fixed assets, workers and staff members, and the total output value of Wuhan were much less than that of

the three other cities mentioned above. Especially, as seen from the indicator of the overall labor productivity, the per capita output value in the industry of Wuhan in 1981 was only 46.3%, 73.9% and 74.4% of that of Shanghai, Beijing and Tianjin respectively. At the same time, Wuhan's industrial enterprises' ratio of total output value to fixed assets (original value) was the lowest in comparison with Shanghai, Beijing and Tianjin.

The reason is that in the past we did much in putting up new units to the neglect of technological renovation and transformation of the existing ones. Quite a number of our enterprises, including some important ones, have equipment that is old and outdated with low efficiency and high energy consumption and needs replacement and modernization. Therefore, there should be technological transformation for existing enterprises, especially the most important factories to ensure better economic results and at the same time full use of modern science and technology. Thus, more new industries will appear in the city.

(3) The environmental pollution in the city becomes more and more serious. The main source of pollution is that the industrial enterprises discharge about half a million tons of waste water each day and several million tons of other kinds of harmful substances, including residue and steam, into the environment each year.

In brief, the solution is that we should strictly carry out the Environmental Protection Law of the People's Republic of China (For Trial Implementation) adopted in 1979. According to the law, the units which have caused pollution and other hazards to the environment shall, according to the principle of "whoever causes pollution shall be responsible for its elimination," make plans to actively eliminate such, or alternatively

submit an application to the component authorities for approval to transfer the property or move to some other place. In cases where release of pollutants exceeds the limits of the specified national standards, a fine is supposed to be imposed according to the quantities and concentrations of the pollutants released as specified in the relevant regulations. The installations for the prevention of pollution and other hazards to the public should be designed, built and put into operation at the same time as the main project. Discharge of all kinds of harmful substances shall be in compliance with the criteria set down by the State, and we should strengthen business management and carry out rational production, make comprehensive use of such environment-polluting substances as waste gas, waste water and waste residues, and transform them into useful things.

VI. A Possible Perspective

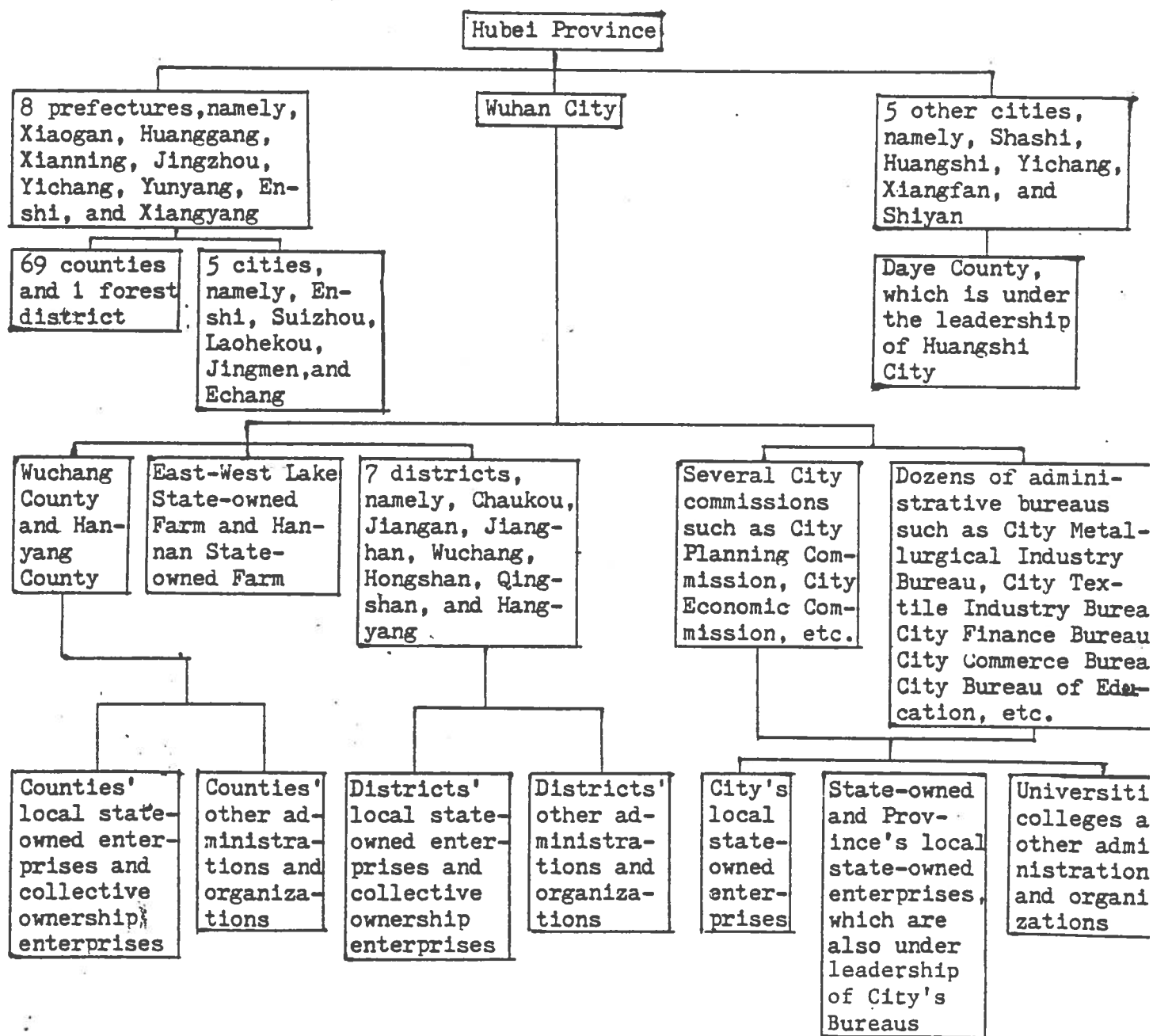
Wuhan, as one of the major industrial cities and the largest inland port in China, will be of greater significance to the economic life of Hubei Province, of the provinces in central parts of the country, and even to the economic life of the whole nation in the future.

From my point of view, the reasons are as follows:

(1) Because of the reform of the system of economic management and administration. The administrative system of Hubei Province and Wuhan City are found now in the following:

Table 4

Administrative System of Hubei Province*



* State-owned enterprises and collective enterprises are different forms of socialist enterprises in China. State-owned enterprises are those owned by the whole people and administrated by the ministries of Central People's Government. Local state-owned enterprises are those owned by the whole people and administrated by the bureaus of the local governments, including Hubei Province's Government, Wuhan City's Government and its districts' governments, prefectural governments, and counties' governments. Collective enterprises are those of collective ownership, administrated by their workers and staff and led by the local governments concerned.

In China a reform of the system of economic management and administration is being carried out now in order to simplify the administrative structure and build a closer relationship between town and countryside, between industry and agriculture. Enterprises which are directed by the government ministries and the provinces are to be put under the city administrative level. The prefectural level of administration is to be canceled and all counties under the leadership of prefectures will be governed by major cities and medium-sized cities nearby. As this kind of reform is developing in depth in China, the economic forces to be controlled by Wuhan will be increased, and the interference in economy decreased -- this will help Wuhan play a more positive role in the economy of Hubei Province, the central parts of China and the whole nation.

(2) As transportation is of particular significance, it will be greatly improved in Wuhan in the future. It is not too much to say that a major problem facing the economy of Wuhan is that of the waterways: we haven't made full use of the Yangtze River. It is roughly estimated that the Yangtze River is capable of carrying as much as 15-20 railways, but the shipping tonnage of the river now is equal to only one or two railways' volume of goods, that is only 1/8 to 1/20 of the river's capacity, so the Yangtze has great potentialities. Of course, the future is with railways too.

(3) The expansion of the energy resources (for example, in the west of Hubei, the region of Changjiang -- Yangtze River -- Three Gorges, a great dam, which will have a tremendous hydro-electric generating capacity, is to be built in the future), the improvement of other fundamental projects such as harbors, stations, warehouses, and road systems with modern equipment, and the technological transformation in industrial enterprises -- all this

will lead to a rapid growth in industrial production and to all-around development of the economy.

VII. Summary and Conclusions

This paper is a survey of Wuhan's economic development. It is not only a city with a long history, but also an especially big city with a rapid growth; it is one of China's most important industrial cities, one of the largest hubs of inland communications, and a port city as well. Since 1949 Wuhan has made great achievements and suffered setbacks. Wuhan faces a number of problems that need to be solved, though it has a favorable location and brilliant prospects for further development. In brief, like major cities, especially cities of other developing countries in the world, facing many new problems and new tasks, Wuhan is a case in Chinese urbanization and the epitome of Chinese socialist economic development.

The development of Wuhan's economy shows that its further rational economic development requires: (1) making full use of its favorable geographical location and the rich resources of Hubei Province and Central China, and the great potentialities of the Yangtze River; (2) carrying out the technological transformation for its industrial enterprises and improving its existing industrial structure according to the demands of the socialist modernization; (3) strengthening its commercial and economic correlation with the rest of the country, especially the other cities and the countryside in Central China; (4) having a strict control of the size and the population growth of the city, strengthening the work of the city and region planning and solving the problems confronting Wuhan's economy today; (5) carrying out correct economic policies for stable economic development and avoiding new setbacks.

It is now important to learn the experience of urban construction and the problems of urban development of foreign countries, both developing countries and developed countries. It is necessary to study the experience and problems of the development of North American cities such as Chicago, Pittsburg and others. Pittsburg and Wuhan are the industrial cities with developed iron and steel industry and they are now sister cities. However, there are more similarities between Wuhan and Chicago. As everybody knows, Chicago is one of the largest cities in the U.S. and the economic center of the central parts of the U.S. Chicago is the most important hub of water and land communications among the inland cities in the U.S., and it is famous for its vast areas of agriculture. It is one of the most important industrial cities with developed industries of iron and steel, machine making and meat processing, etc. It is one of the major centers of high education, science and technology of the U.S. Wuhan happens to have these characteristics. As Wuhan is a city of a developing country, the history of Wuhan's modern industry is much shorter than that of Chicago's and the existing level of its economic development is much lower than that of Chicago's. From the point of view of further development of Wuhan's economy and the urban construction in China, it is, no doubt, significant to study the development of the North American cities, especially of Chicago, including the experience in the fields of the development of communications, the industrialization and change of the industrial structure, the economic correlation with other cities and rural areas, the decentralization and the environment protection, and the work of the city and region planning.

Bibliography

- ACE(82) Almanac of China's Economy 1981, with Economic Statistics for 1949-1980, published by Modern Cultural Company Limited, in Association with Eurasia Press, New York and Hong Kong, 1982.
- CEY(81) China Encyclopedic Year Book, 1980 (Chinese Edition), China's Encyclopedic Press, Beijing, China, 1981.
- Ch(82) Chang Chixien, "The Urban Construction in China," in Almanac of China's Economy, 1982 (Chinese Edition), Beijing, China, pp. V-213 -- V-215.
- JZH(83) Jian Chuan, Zhon Mingjing and He Liyun, "The Mighty Changjiang River," in Beijing Review, March 7, 1983, Vol. 26, No. 10, pp. 21-27.
- MCM(81) "The Major Cities Must Play an Active Role," People's Diary, Beijing China, December 31, 1981.
- SCE(81) Studies of Collective Economy Both in Cities and Towns (Chinese Edition), People's Publishing House, Beijing, China, 1981.
- Su(82) Su Wenming, et al, "Economic Readjustment and Reform," Beijing Review, China Today (3), Special Feature Series, 1982.
- SYC(82) Statistical Yearbook of China, 1981, compiled by the State Statistical Bureau of PRC, Economic Information Agency, Hong Kong, 1982.
- Xi(82) Xiao Sheng, "The Construction of Towns in China," in Almanac of China's Economy, 1982 (Chinese Edition), Beijing, China, pp. V-307 -- V-308.
- Xu(82) Xu Dixin, et al, China's Search for Economic Growth, The Chinese Economy since 1949, New World Press, Beijing, China, 1982.
- Xu(81) Xue Muqiao, China's Socialist Economy, Foreign Languages Press, Beijing, China, 1981.
- Zh(81) Zhao Ziyang, The Present Economic Situation and the Policies of the Economic Construction in the Future (Chinese Edition), People's Publishing House, Beijing, China, 1981.