

The Developing Economy and Urban Transportation

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Abstract: Social and economic development needs the support of transportation and communications and in turn the development level of society and economy affects urban traffic demand and determines the investment scale of transportation facilities. In the paper based on the analysis of the evolution of urban transportation in Shanghai in the past ten years and the economic background of that period, the urban transportation in the future development of economy is generally prospected.

Key Words: urban transportation, economy

1 General introduction to Shanghai economic development

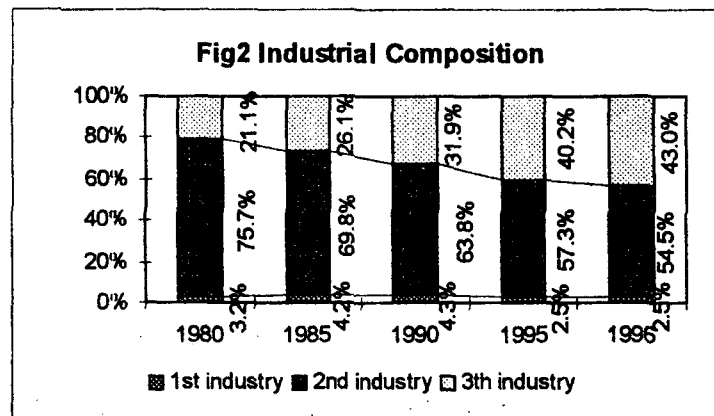
Being the biggest city in China, Shanghai has a population of over 13 million and an area of 6340 km². Shanghai takes a very important position in Chinese economy. In 1996 the GDP of Shanghai accounted for 1/23 of the whole nation; The financial income made up 1/8 of the country; The freight handling capacity of ports accounted for 1/5 of China; And the total profit of importing and exporting commodities accounted to 1/5 of the whole country.

Shanghai is in the period of rapid economic growth. The GDP of Shanghai increased 14% successively since 1991.

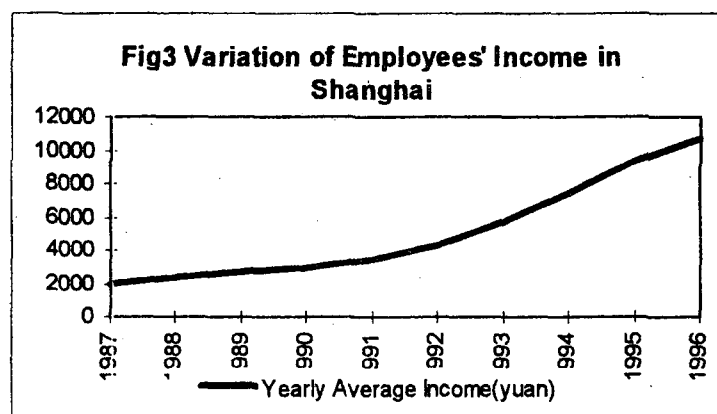
Table.1 Growth Speed of GDP in Shanghai(1987-1996)

Year	GDP (million yuan)	Growth against Previous Year	Year	GDP (million yuan)	Growth against Previous Year
1987	545.5	7.5%	1992	1114.3	14.8%
1988	648.3	10.1%	1993	1511.6	14.9%
1989	696.5	3.0%	1994	1971.9	14.3%
1990	756.5	3.5%	1995	2462.6	14.1%
1991	893.8	7.1%	1996	2902.2	13.0%

With continuous growth, the structure of GDP changes obviously. The proportion of the tertiary industry rises quickly, reached 43% in 1996, while that of the second industry decreases gradually. In the future one or two years the GDP of the tertiary industry will surpass half of the GDP in the whole city. Accordingly, the staff being engaged in the tertiary industry will increase and the staff for production will decrease.



The income of Shanghai citizens also constantly rises. In 1987 the average income of an employee was 1900 Yuan RMB. In 1996 the average income of an employee was 10700 Yuan RMB, which was 4.6 times higher. The average growth rate was 19%.

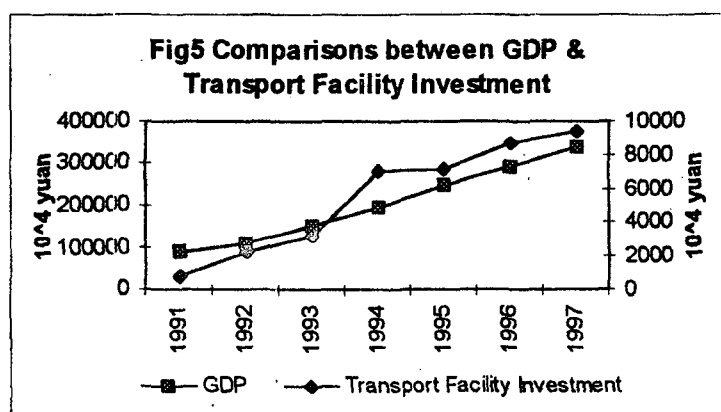
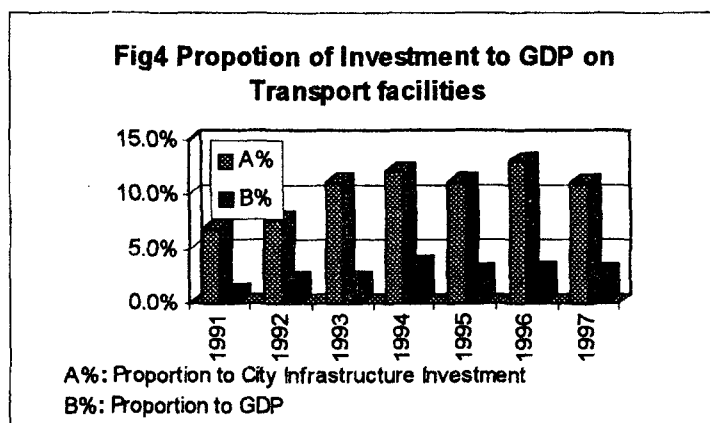


Construction of residential quarters has continuously grown in number. So housing conditions are improved. In 1995 the accomplished residential quarters totaled 12.69

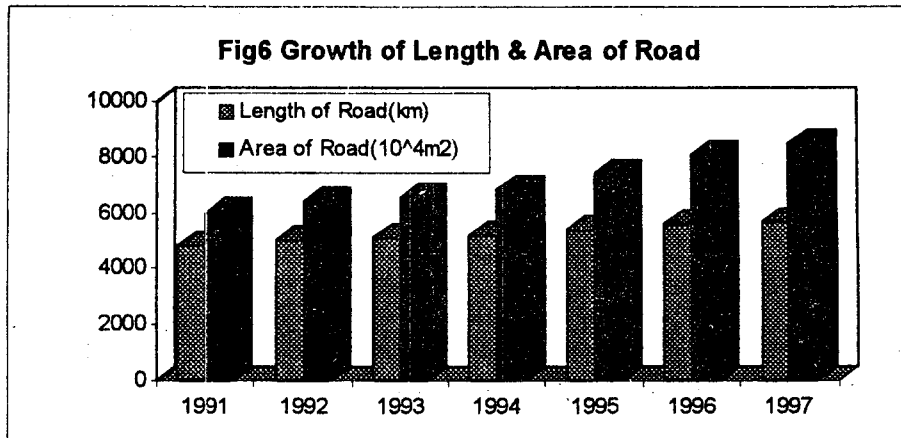
million m², which was 2.6 times of those in 1986. The urbanized area of Shanghai is also rapidly expanded due to the demand of housing construction and industry development.

2 City transportation development under rapid economic growth

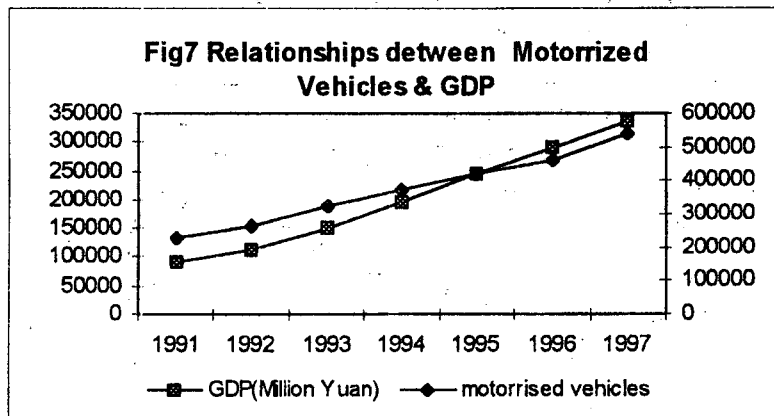
Economic development provides better investment conditions for urban transportation facilities. In 1997 the investment on transportation facilities in Shanghai reached 9943.8 million Yuan. The investment of transportation construction and GDP nearly grew simultaneously. Since 1993 the investment on transportation facilities was enhanced, which accounted for about 3% of GDP in the year.



The big amount of investment has greatly improved the road condition in Shanghai. By the year 1995, the total road length in Shanghai reached 5420 km. The road area amounted to 74 million m². The road area per capita was 5.69 m². From 1990 to 1995, the road length and area increased 15% and 17% respectively. And the class of the roads newly-constructed was higher, including several elevated roads. Thus, the actual increase of road network capacity was higher than that of road area. Meanwhile, the mass rapid transport means such as metro and light rail are under construction with fast speed.



By the end of 1997, the motorized vehicles of Shanghai amounted to 0.82 million. According to the increase trend, from 1986 to 1992, the motorized vehicles rose about 18 thousand annually. The average annual growth rate was 9.0 %. After the year 1992, the motorized vehicles grew about 51 thousand every year. The average growth rate was 16.4%. The increase has been in a trend of acceleration. The passenger vehicles and motorcycles rise with the fastest speed. There is some relationship between the increase of motorized vehicles and GDP of the city. The growth speed of motorized vehicles slightly lags behind that of GDP.

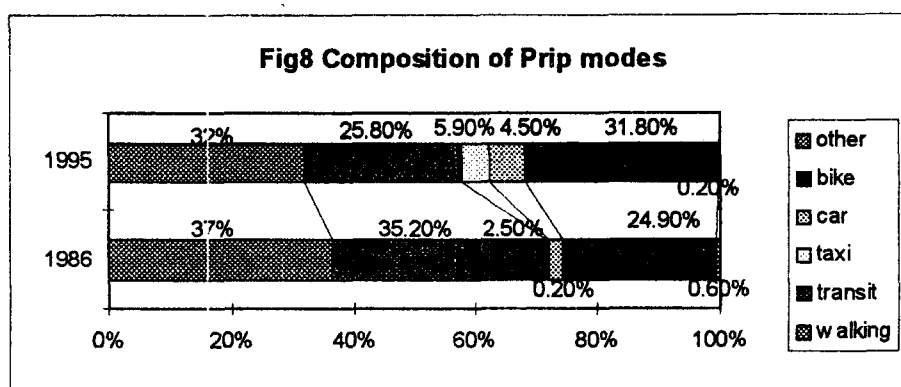


The rapid increase of motorized vehicles reflects that the raise of economic level makes the person trip demand for motorized vehicles represented by automobiles get released. With the rise of purchase power, the affordable obstacle for automobiles and motorcycles is disappearing. Because of the high urban population density and shortage of roads and parking facilities, the municipality government adopts uncompromising constrained measures to the growth automobiles and bicycles. Though it hasn't become popular for citizens to buy automobiles, yet taxis are favored by citizens. At the present there are 40 thousand taxis in Shanghai. In the urban areas nearly every a thousand people share five taxis.

The person trips of Shanghai citizens per day per capita rose from 1.79 times in 1986 to 1.95 times in 1995. One of the reasons that person trips increased was that business trips

became more active. The increase of spare-time recreation and studies with the raise of income was also the reason that average person trips rose. Besides, the persons from other provinces and cities for economic activities also made the trip amount of Shanghai increase.

As for the person trip mode, the proportion of motorized vehicles, bicycles and mopeds rises rapidly; While that of public transport decreases obviously. This kind of variation trends seriously deviates from the objectives of forming a high efficient transportation system in the city of Shanghai with dense population and intense land. It also reflects that the services provided by the present public transportation in Shanghai cannot meet the requirements of people. So developing the public transportation framed by urban rail transportation and based on bus lines is the most important task for the development of transportation in Shanghai.



3 The future perspectives

The general objectives of the city development in Shanghai in the future is to build the city into one of the centers of economy, finance and trade in the world. The social economy will be further developed. In perspective, the city transport development will lie in the following aspects:

- City public transportation will be greatly developed. The public transport network will be enhanced framed by rail transportation and based on buses to stimulate the formation of rational transport modes mainly consisting of public transportation. According to the plan by 2010 more than 100 kilometers of rail network well integrating with bus lines will be built in the city;
- To counter the existing shortage of roads, road construction will continuously be strengthened. The general capacity of roads is to be increased by expanding the width of existing roads, building new roads and constructing high capacity roads for motorized vehicles;
- Roads and rails will extend to the peripheral areas of the city to facilitate the realization of the planning intention that the city is to be developed along axial and the

development of city groups neighbouring Shanghai metropolis, and to enhance the transportation of Shanghai and other provinces and cities;

- The using efficiency of roads is to be enhanced by raising the level of road management, carrying out traffic demand management and considering the application of intelligent transport system technology.