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4-1-1990

# Urbanization, Rural-Urban Migration, Government Policies and Socioeconomic Development in China

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**Urbanization, Rural-Urban Migration,  
Government Policies and  
Socioeconomic Development in China**

**A Thesis**

**Presented to the**

**Department of Economics**

**and the**

**Faculty of the Graduate College**

**University of Nebraska**

**In Partial Fulfillment**

**of the Requirement for the Degree**

**Master of Arts**

**University of Nebraska at Omaha**

**by**

**Di Cao**

**April, 1990**

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## Thesis Acceptance

Acceptance for the faculty of the Graduate College,  
University of Nebraska, in partial fulfillment of the  
requirements for the Master of Arts, University of  
Nebraska at Omaha.

### Committee

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<i>Deter T. Suzuki</i>	<i>Public Admin.</i>

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## Acknowledgements

I would like to express my gratitude to Dr. Bon Song Lee, who inspired me to choose the thesis option three year ago and guided me on the main framework and the structure of this thesis. I would also like to thank Dr. Arthur M. Diamond, Jr., who spent enormous time reading all versions of the thesis and took patience to correct errors. He also made constructive suggestions through my revisions. I really appreciate Dr. Kim Sosin and Dr. Peter Suzuki for making many valuable comments and suggestions to improve the quality of this thesis. I am also indebted to my friend Barbara Scott, who did the proofreading for the second draft.

## Abstract

This thesis is an attempt to characterize two aspects of Chinese urbanization and rural-urban migration: the influence of government policies and the effect of socioeconomic development. Because of frequent changes in government economic development strategies, ideology, population control, etc., rural-urban movement fluctuates significantly along with the policy changes.

On the other hand, socioeconomic development in terms of higher literacy, more industrial and commercial establishments, intensive

employment of agricultural machinery, etc., does seem to have a strong effect on the level of Chinese urbanization despite the government policies that have played a negative role for most of the time. An empirical analysis is done to validate this argument. The outline of this paper is as follows:

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# Urbanization, Rural-Urban Migration and Socioeconomic Development in China

## Introduction

As a country moves from an agricultural economy toward an industrial economy, urbanization becomes inevitable. The process of urbanization, characterized by massive migration from the rural areas to the urban areas, is a result of socioeconomic development in terms of industrial, commercial and educational advancement. China is no exception to the rule. However, urbanization differs from country to country in its nature, extent, rate, and timing. In some countries, there is a complex network of major urban centers, secondary cities and small towns, while for others urban development is heavily concentrated in a single city. Rates of urbanization vary widely and tend to be not only closely related to the stage of urbanization, but also related to government policies. Since about 80% of the Chinese population is engaged in agricultural activities, and the country plans to join the industrial countries by the year 2050, urbanization becomes an important and critical issue for both economists and state policymakers in China.

Under the current family planning program, it is predicted that by the year 2000, the Chinese population will be in the neighborhood of 1.25 billion, which is about a 25% increase over its current

population. Because the Chinese population is one-fifth of the total world population, and because China has achieved dramatic economic success since its open-door policy began in 1978, the study of urbanization has become important. People may also want to know more about the rural-urban distribution of its population at the national and regional levels, since planning for the future cannot be well-executed without a balanced awareness of past trends, patterns and relationships.

While a retrospective understanding may not be sufficient, it is important because possible future deviations from the trend can be better understood and tackled. Urbanization and rural-urban migration are significant aspects of population redistribution that need to be carefully incorporated in a national development policy for the future. This thesis is an attempt in that direction. It examines urbanization and rural-urban migration as they are related to government policies as well as to socioeconomic development in China.

The main issues that are to be discussed in this thesis are the following: (1) What have the internal migration trends and patterns been since 1949? (2) To what extent has rural-urban migration contributed to the growth of the urban population? (3) How have government policies affected rural-urban migration? (4) What socioeconomic factors have affected the rural-urban migration? (5)

What suggestions can be provided for the guidance of the Chinese urbanization.

What is meant by "urbanization"? There have been several different viewpoints regarding the definition of "urbanization." According to Davis (1965) "urbanization" refers to the proportion of the total population concentrated in urban settlements, or a rise in this proportion. Some economists claim that "urbanization" is virtually the transformation of rural population to urban population. However, I prefer the definition set forth by Pernia (1977),

". . . The level or degree of urbanization is the proportion (percentage) of the population living in urban places; urbanization as such (or the process of) means the rise in the urban proportion; the rate of urban growth is the percentage change in urban population during an interval (and similarly for rate of rural growth); the tempo or pace of urbanization is the difference between the urban and the rural rates of growth; and primacy is the ratio of the population of the largest city to the combined populations of the next three largest cities."

This defines the meaning of "urbanization" in a way such that it is comprehensive and precise. I will largely use and cite this definition to guide my writing henceforth.

At this stage two distinctions have to be made. One is the difference between economic development and economic growth. Economic development usually refers to quantitative and structural changes while economic growth refers to gross increases in national product. Another one is the difference between urbanization and urban growth. Urbanization studies the change in both urban and rural population while urban growth deals only with urban population growth.

From the experience of many countries that have gone through the development, urbanization is unambiguously the result of an economic development process. But we need to understand why economic development necessarily leads to urbanization. There are various theoretical explanations for the causation. The two most appealing theoretical discussions explaining the causes of urbanization are the income elasticity approach and the open-economy approach (Tolley, 1987). The income elasticity approach, also called the closed-economy approach, basically says that people have to spend their income on either agricultural or industrial products. This relationship can be described in terms of income elasticity as the following:  $S_a E_a + S_i E_i = 1$ , where  $S_a$  and  $S_i$  are shares of income spent on agricultural and industrial product respectively and  $E_a$  and  $E_i$  are income elasticities. At an early stage of development, the per capita income is low. A large share of income has to be spent on the consumption of agricultural product. The

income elasticity of demand for agricultural products will be high and almost close to unity. As development continues, the income elasticity for agricultural products will gradually decline and the income elasticity for urban industrial products will increase. As a greater and greater share of income is spent on industrial product, capital accumulation takes place. More and more people are needed to fulfil the demand for industrial product.

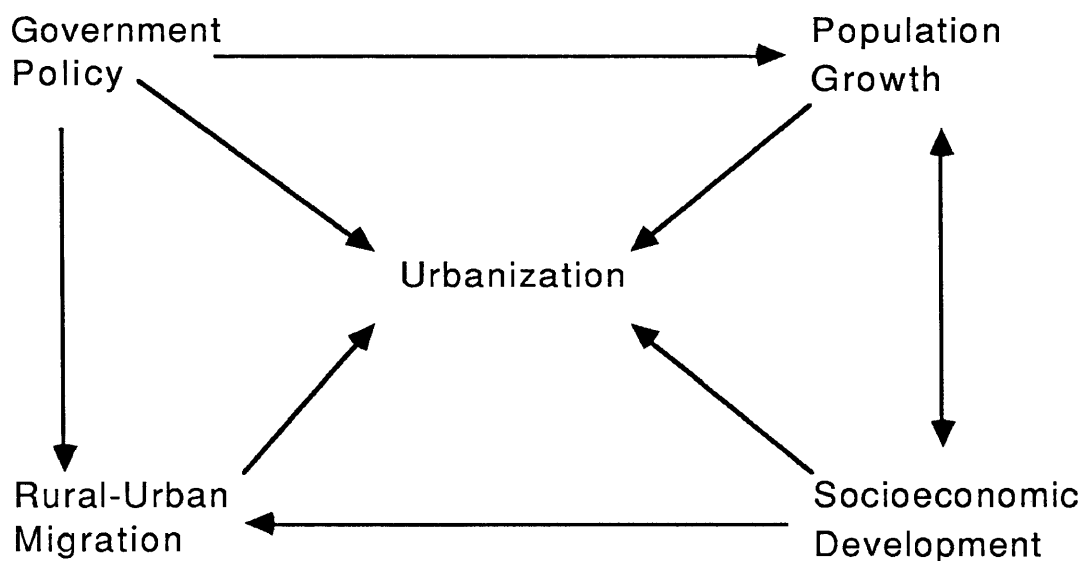
The open-economy approach, however, assumes the existence of international trade. The growth of urban population is primarily determined by increased efficiency in industrial production. This can be explained by comparative advantages developed in the urban area. The rationale behind this is that specialization is related to international and domestic trade. The urbanization is intensified during the process of development in countries that have achieved development by specializing in manufactured products due to the fact that the transfer of production technologies between countries is less costly for industrial product than for agricultural product. As specialization in industrial production deepens, the country will be more competitive in selling its product in the international market. This will in turn increase foreign demand for the specialized product and the production has to be increased. More job opportunities are created and therefore more people migrate to the urban area.

Many studies have been done about urbanization in developing countries. Major findings revealed in the past include the following two features. First, since World War II, urbanization in developing countries has been mainly caused by a high rate of natural increases in the existing urban population, accompanied by the worsening of poverty and inequality. Second, urbanization in developing nations has been viewed as problematic because it takes place at a faster rate than economic development. The terms 'pseudo-urbanization' and subsistence urbanization were developed to describe this situation. There have been many suggestions for avoiding these problems. One of them is an equality-oriented development policy to slow down rural-urban migration. This idea has influenced many policymakers of developing nations, including China. However, one of the significant findings of research on rural-urban migration in LDCs is that rural-urban migration contributes to, rather than retards, economic development. A recent study of Korean rural-urban migration by Lee (1987) has shown that rapid rural-urban migration in Korea did not lead to increasing urban unemployment. Rather it helped rural areas achieve significant improvement in standards of living through reducing the fertility level. A study of Taiwan migration by Spear, Liu and Tsay (1988) has also indicated that rapid rural-urban migration in Taiwan did not bring about any unemployment problems. Their study shows that the majority of migrants to Taipei become better-off financially several years after

their migration in comparison to the local residents and those who did not migrate.

In this thesis, I will explore urbanization from several different perspectives. However, we ought to be aware that first, the urbanization process involves the whole population, not just those who live in towns, cities and metropolitan areas; second, politics and government policies can greatly affect the level of urbanization, especially in a country where the central planning economy dominates; and third, the growth of urban population is considered relative to the rural population rather than in absolute terms.

Figure 1: Factors Affecting Urbanization





I have developed a diagram to demonstrate the relationships between urbanization and the factors that can affect the level of urbanization and the interrelationships among these factors.

The diagram exhibits that urbanization is basically influenced directly by four factors: government policy, population growth, rural-urban migration and socioeconomic development. Each plays a different role and affects urbanization in different ways. Some of these factors, however, tend to have interactions with one another, such as the influence between population growth and socioeconomic development. This is typically true for the case of China. The four components of the diagram are described below.

Population Growth--- Both the fast population growth and the higher fertility could have a direct positive effect on urbanization in two ways: (1) an acceleration in population growth is usually faster in the rural sector than in the urban sector. The rural surplus labor force is a push factor contributing to urbanization; (2) higher fertility is a rural push factor to rural-urban migration. On the other hand, higher fertility allows a larger dependency burden which tends to retard mobility. Indirectly, population growth has a negative effect on socioeconomic development.

Socioeconomic Development---This can affect urbanization in three different ways: (1) directly, because socioeconomic development in terms of higher per capita industrial productivity, intensive use of agricultural machinery, higher literacy and better communication systems tends to stimulate rural-urban migration; (2) directly, because urban development in terms of more industrial and commercial investment, which in turn creates more job opportunities, could attract rural people to urban areas and could increase the capacity of urban areas; and (3) indirectly, through its negative effect on population growth.

Rural-Urban Migration---This could be considered as part of urbanization itself. Greater and faster rural to urban migration will increase the urbanization level. However, as a country reaches an advanced economy, rural-urban migration and urban-rural migration can be reversible. This holds true in countries like the United States, Canada, Japan and many European countries.

Government Policy---This is a somewhat complicated factor due to the fluctuation of policy. (1) It can affect urbanization in both positive and negative ways. A government can adopt a policy which speeds up the pace of urbanization through more capital investment and by allowing labor mobility. A policy can also be made to discourage urbanization, such as using systems like household

registration in China to limit rural-urban migration. (2) It can also affect urbanization both directly and indirectly. It affects urbanization directly because imposition of policies and regulations can sometimes achieve effective results. By issuing food coupons only to urban residents, for example, rural people will find it difficult to stay in cities. This will be analyzed in detail later on in this paper. It affects urbanization indirectly because government policies could influence population growth, socioeconomic development and rural-urban migration, which in turn affect urbanization.

After an introduction about the Chinese urbanization trends and patterns, much attention will be paid to analyzing two major factors of urbanization, government policy and socioeconomic development. Since rural-urban migration is in fact a part of urbanization, it will be discussed along with these two factors. However, some theoretical discussions are provided for rural-urban migration itself in the section of literature review. I hope the literature review will enrich the theoretical background of this paper. Since population growth is a big topic in its own right, less attention will be paid to it here. However, it will be mentioned from time to time when necessary.

## Urbanization Trends and Patterns

### Natural Increase

Table 1 is designed to provide some basic chronological statistics about the Chinese population and Table 2 contains population census surveys at three different times. Since 1949, the Chinese government has conducted three population censuses. They were in 1953, 1964 and 1982 respectively. The 1953 census reported a total of 583.16 million; the 1964 census revealed a total of 685.55 million and the 1982 census reported a total 1008.18 million. Between 1953 and 1964, the annual population growth rate was 1.48 percent and between 1964 and 1982, it was 2.17 percent. However, the population growth rate was estimated to be over 2.6 percent a year from 1964 to 1970---the highest level since 1949. Of the total population increase of some 466.5 million between the end of 1949 and the census of 1982, about 130 million, or 28 percent, occurred during these six years. Though part of this was due to the fall of the death rate, the main component of this population boom was the rise in births. Between 1963 to 1965, the birth rate was about 40 per 1,000. The 1960s stand out as China's first "true" baby boom period even though the birth rates for the rest of the 1960s were either the same as or slightly lower than those of the 1950s.

The Chinese Population continued to increase during the 1970s, reaching 970.9 million by the end of the decade. At the beginning of the 1980s, the rate of natural increase was lower than at any time since 1949 due to the government family planning program. The annual increase in absolute numbers has gone up substantially because of the large base population. Table 1 is given to show the change of the Chinese population from 1949 to 1982, including annual increases and vital rates (statistics pertinent to lives). Table 3 is the total population by sex surveyed in 29 provinces in 1982, while Table 4 gives population by residence.

### General Trend

Since 1949, the growth of the urban population and the increase in the level of urbanization in China have undergone change in several stages. On the whole, the increase of urban level has been steady over the years. If we examine Table 5 and Figure 3, we will find out that the general trend can be summarized as the following:

1. The urbanization level has been quite low during the three decade period. The growth has been steady but slow and the increase of the level of urbanization was small. In 1949, China's urban population was only about 10.6% of the total population. By 1982, this figure went up to 15.06%. This number was much lower than both average levels of developed countries and even far behind the average level

of the developing nations. During the same period, urban population had an annual increase of about 3.0%, which is higher than the 1.92% rate of annual increase of the total population.

2. The growth of the urban population in China since 1949 can be characterized as cyclical corresponding to its social, political and economic development rather than as a linear progression. Such a trend is clearly demonstrated in Figure 2 and Figure 3. Basically, we can observe an increasing trend between 1949 to 1960, when economic development was guided by a Soviet model. The decreasing trend was shown during 1961 to 1964, when the national economy suffered from the failure of the Great Leap Forward movement and the three year natural disaster. Again, a declining trend was observed during the ten year Culture Revolution (1966-1976). Beginning in 1977, an increasing trend is evident which is due to the government policy toward economic reform.

### Rural-Urban Differences

Besides the socioeconomic development that causes rural-urban movement, the disparity between life in cities and in the country, along with a rapid increase in rural population, are additional forces that stimulate rural-urban migration process. The majority of the rural population have lower incomes and less access to public services and entertainment facilities compared to the population in

cities. Table 6 reveals the per capita income for urban and rural populations in 1964, 1981, 1982 and 1983. In 1964, the average annual income for the urban population was 222 yuan, but for the rural population was only 97 yuan, which was even less than half of the urban income. It is also far below the national average. This phase continued until 1983 when the income difference did shrink in terms of percentage, but the differences between the rural and urban average increased in terms of absolute terms.

Table 7 gives a more precise picture than Table 6 of the urban-rural differences in the quantity of durables they have, which is significant since durables in China usually reflect a person's or a household's wealth. It is true that rural residents own more investment durables while urban residents own more consumption durables. However, the selected items are considered common durables for both rural and urban residents except TV sets. The common durables include sewing machines, bicycle, watches, radios and TV sets. The time periods chosen are 1978, 1980 and 1983. The durables are measured in number per hundred people. Between 1978 to 1983, the quantity of durables owned by urban dwellers is generally many times that owned by rural population. Though the percentage increase in durables for the rural population was higher than that of the urban population, the increase in durables in absolute terms was still far behind that of the urban inhabitants. In addition to money wage differences and wealth disparities, state employees, who are mostly

in cities, also get a variety of benefits that are not enjoyed by the rural population such as free medical care, subsidized housing and assured pensions.

### Regional Disparities

The geographic distribution of the population in China is unbalanced. Generally speaking, the eastern provinces and municipalities along the coast are densely populated. These densely populated areas have three distinguishing characteristics. First, most of them are situated along the coast. Second, most of them surround the three largest provincial level municipalities, Beijing, Tianjin and Shanghai; Third, most of them are centered along the lower part of the major rivers like the Yellow River, the Yangtz River and the Pearl River.

On the other hand, population is sparsely distributed in the west regions, where the weather is cold and dry and the land is mountainous and covered with much desert. Examples are provinces like Tibet, Inner Mongolia, Ningxia, Gansu, Qinghai and Xingjiang, whose population densities range from 1.6 to 59 people per square kilometers in 1982. In the same year, these six provinces and autonomous regions were only 6 percent of the total population but contained about 55 percent of the nation's land. Because of the population imbalance, for years the government has tried to take



steps to fill the western remote regions with the surplus population from the cities and from the densely populated areas. The first large-scale population transfer was initiated during the 1950s, when people were settled in Gansu, Qinghai, Xingjiang and Inner Mongolia. Because of the rough soil and harsh climate, many of these settlers have returned to their eastern homes. The second large-scale population transfer was during the ten-year Culture Revolution (1966-1976), when millions of young people were sent from urban areas to remote rural areas. Many of these young people have also gradually returned to their home cities after 1976. All this indicates that using mandatory policies and administrative orders rather than using market forces to move people from the densely populated areas to the remote sparsely populated provinces does not automatically lead to the expected result.

High population density in the provinces along the coast reflects both the large rural population and the concentration of urban population. In 1983, there were 166 cities; only a few of which were in the sparsely inhabited provinces in the western part of China and most of these were small cities. For reasons of national security and to have balanced economic development, the government decided to relocate and build the factories that were related to the national defense away from coast cities. This action had an impact on the distribution of the urban population by the late 1950's. Table 8 shows that in 1947, nearly two-thirds of the Chinese urban

population lived in the eastern coastal provinces and municipalities. By 1973, more than half of the urban population inhabited the western part of the country.

Table 9 provides the number of Chinese cities by population size from 1957 to 1986. During this period, the number of cities doubled from 178 in 1957 to 353 in 1986. In 1957, there were only 10 cities over 1 million population. In 1986, almost 30 years later, this number became 23, an increase by 130%. During the same period, the increase for cities with population of 500,000 to 1 million went up from 18 to 31, a 72% increase; for cities with population of 200,000 to 500,000, the number was increased by 59, from 36 to 95, an increase of 164%; for cities with population under 200,000, the number increased from 114 to 204, a 79% increase. In terms of percentage, the cities with population between 200,000 to 500,000 had the fastest growth. In terms of absolute number, the cities with population under 200,000 gained most.

### Comparison

China has a relatively low urbanization level as a result of government policies since 1949 aiming at controlling urban population. From 1949 to 1982, China's total population increased from 542 million to 1015 million, a total increase of 87.27% with an annual growth rate of 1.92%. During the same period, urban

population went up from 57.7 million to 152.9 million, a total increase of 165% and an annual growth rate of 2.997%. Though the growth rate of urban population is faster than that of total population, we do not observe any significant change in the urbanization level of China simply because the majority of its population still live in the rural area. The urbanization level in China was 10.6% in 1949 and was 20.8% in 1982. Part of this increase is due to administrative change. For examples, towns were upgraded to cities in the late 1970's and early 80's. According to R. Kirkby's (1985) estimation, China's urban population was only 15.06% rather than 20.8% of its total population in 1982.

Table 10 permits comparison of China's urbanization level with some of the level of selected Asian countries. I have selected three countries, Thailand, South Korea and Japan, which have similar cultures and had somewhat similar economic backgrounds in the early 50's, because at that time China, South Korea and Japan had just recovered from the war. Column 2 of the table shows that in 1950, the urban population in China was 11.2%, which was much the same as the urban level in Thailand and about 7% lower than that in South Korea. Japan, however, had the highest urban population level, 37.4%, because its industrialization began much earlier than most Asian countries. By 1980, the percent of urban population in China had increased only 3%, from 11.2% to 14.2%. During the same period, urban population in Thailand increased 6.5%, which was higher than

the increase in China, though it was not an impressive figure compared to the increases in South Korea and Japan. South Korea experienced a record growth rate of its urban population, from 18.4% in 1950 to 57.3% in 1980, a total increase of 38.9%. Japan also had a very high urban population growth rate, from 37.4% to 76.2% during the same period. In fact, Japan's urbanization level was even higher in 1970 and was low in 1980 because of the suburbanization. One characteristic all three countries had in common was that their annual percentage change of urban population had showed a faster growth rate in comparison with their annual percentage change of rural population. This phenomenon can be observed by comparing column 5 and column 6 of the table. China, on the other hand, had only a slightly higher urban population change over its rural population change. Between 1960 and 1970, the annual percentage change of its urban population was even lower than its rural population change. This had led its urban population increase to be a negative number, -0.29%. (The reasons are the Great Leap Forward movement and the Cultural Revolution which will be discussed in detail later.)

The comparison not only demonstrates that China's urbanization process had been unusually slow but also that China was far behind the neighboring countries that had similar economic conditions in the early 50's. The comparison also suggests that China had slow

economic growth between 1950-1980 since the urbanization level reflects a nation's economic achievements.

Table 11 compares the urbanization levels of China and the U.S. using some historical data. The reasons I chose the U.S. are that the two nations are very much the same in terms of land size of; also China and the U.S are the first and the third largest nations in the world in terms of population; and most importantly the U.S. has experienced its own urbanization--from a low urban level to highly urbanized. China can learn much from the experience of the U.S.

Table 11 shows that in 1949, China's urbanization level was only 10.6%, a level that occurred in the U.S. more than 100 years ago. The urban level of the U.S. was 15.3% in 1850, even higher than China's urban level, 15.1%, in 1970. The difference in time period is 120 years. In 1982, China's urban level reached 20.6%, a 10% increase after 33 years. However, this number is only equivalent to the U.S. urban level in the early 1860s. It took 33 years for China's urbanization level to increase about 10% from 10.6% in 1949 to 20.6% in 1982. However, it took only about 20 years for the U.S. to have the similar increase. Column 4 shows that a 10.4% increase of urban level occurred during the 20 year period 1850-1870. Even at the early stage of urbanization, the U.S. had much better performance than China did. From the above comparison, we may conclude that China's urbanization level is about 100 years behind

the U.S. urbanization level. This number also gives us a rough idea about the difference in terms of living standard between these two nations since urbanization level reflects a country's economic achievements. The above comparison also proves a significant influence of Chinese anti-urban policies. As the remark made by Kirkby (1985) that China's anti-urban policies root in the peasantry background of the Chinese leadership and the Marxian doctrine.

## **Government Policies toward Urbanization**

There has been a growing consensus that urbanization is spatially bound and manipulable. And therefore the study of urbanization and focus on the government's role in manipulating urbanization are becoming important approaches to the study of urbanization. The usefulness of these approaches in guiding development policy may be another reason for their increasing popularity. A number of significant works have shown successful results in analyzing governments' role in urbanization. In order to obtain a precise measure of China's urbanization, it is important to take account of government policies aimed at rural-urban migration, urban population control and related issues. This is because China's urbanization has been greatly influenced by and, to a certain degree, distorted by the central government policies in terms of regulations on rural-urban migration, urban employment and the urban registration system. Any attempt to study China's urbanization without taking China's government policies into consideration may bring out a biased conclusion. There have been cases where some economists tend to use only socioeconomic factors to evaluate China's urbanization, and sometimes they find themselves unable to explain some of the test results. These people forget that the Chinese case is somewhat different from that of many other developing countries where the market economy dominates. As long as the central planning economy prevails in China, migration designed by the

central government can have a large effect on its urbanization. With this in mind, I include this section in the thesis, with the hope that my explanation relating government policies to urbanization will more fully explain China's urbanization than a study limited to socioeconomic factors.

### The Ideology

For years, urbanization has occurred slowly in China. This is very much due to government policies and politics. The main ideology that has been employed by the Chinese government is the slogan "Eliminating the Three Differences." These three differences are the difference between factory workers and farmers, the difference between mental and manual laborers and the difference between the city and the country. Under the guidance of this ideology, the government's intentions have been focused on equality and balanced development which concerns location of industries and rural development. In the late 50's, the Chinese government began a number of policies aimed at balanced development to encourage industrial decentralization, hoping the policies would in turn help rural development. These policies included expanding elementary education in the rural areas, establishing more clinics in the rural areas and encouraging the development of rural industries through tax credit policies. Most important of all was the moving of hundreds of large factories from big cities to small towns, and from the



relatively developed coast areas to the remote western areas. Meanwhile, the household registration system was set up to restrict rural-urban migration.

### The Household Registration System

Here I would like to explain a little bit more about the Chinese household registration system. Basically, it is the system under which all households are registered in their locality and are divided into two categories: rural for those engaged in agricultural activities and urban for those employed in state-owned units, which are usually in cities. Under the household registration system, neither a household nor an individual can migrate without getting an official permit. It is extremely difficult for those registered rural to change their status to urban. A person registered rural will find it difficult to live in a city because of the system of allocation of housing, coupons, foodstuffs and jobs with state-owned units are tied to one's household registration status. This system serves as a barrier to free permanent migration since only urban households have access to foodstuffs and urban housing at the government subsidized prices. At the same time, the practice of the state employment policy has created tremendous difficulties for the rural peasants to migrate to cities. Even the informal sector has been largely restricted in terms of its scale. Instead of allowing the market forces to work and having to face a high urban unemployment rate, the state employment

policy has been used to avoid problems in this regard. For these reasons, it was literally impossible for a person who is registered rural to stay in urban areas for a prolonged period. The main purpose of this practice is to control the growth of the urban population. Higher education, military service and state recruitment are the only major legal channels for changing one's household registration status.

### The Soviet Model

Between 1949 to 1957, the periods of Post-War Reconstruction and the First Five-Year Plan, the Soviet economic model was adopted by the Chinese government. Basically, the Soviet model proposes that the key to a nation's economic success is to develop the heavy industry first, then the light industry, and finally agriculture. The Chinese imitation of the Soviet model resulted in large emphasis on urban industrial development, accompanied by thousands of Soviet experts coming to China to help establish heavy industry plants and a number of heavy industry centers. This development policy recruited many rural farmers to the newly established and expanding factories in cities. The policy continued until 1960, when Sino-Soviet relations suffered from a series of disputes. The rural-urban migration trend is very much reflected in columns 6 and 9 of Table 5 as well as in Figure 3.

## The Great Leap Forward Movement

In 1958, the beginning of the Great Leap Forward movement, the commune system was established. The rural communes were a way to stem the drift to cities. Urban communes were also established in cities to restrict migration among cities. Though many workers were recruited from the rural area to work in thousands of factories in cities, most of them had to return to the country three to four years later due to the failure of the movement. This fluctuation is clearly evident in Figure 3.

Beginning in the late 50's, the government called on young urban high school graduates to settle in the country. One reason for doing this was probably to solve the urban unemployment problem that was not admitted by the government. Another reason was to reduce the urban rural difference, based on the hope that the young can contribute to rural development.

## The Cultural Revolution

In 1966, the reversal of rural-urban migration reached its peak. A nationwide campaign urged millions of young urban high school graduates to settle in the country, especially in the remote areas like Tibet, Xingjiang, Inner Mongolia, Yunnan, Qinghai, Ningxia Guizhou. This time every young person was forced to go, with no exceptions.

Accompanied by this movement was the relocation of many universities from the cities to small towns in the rural areas with the intent to improve rural education and to eliminate rural-urban differences. Many doctors were also relocated, whose roles were to provide more services to the rural area and to train more barefoot doctors there. Many factories and plants were also moved from big cities like Shanghai and Tianjing to the southwest of China and other part of the country. If we again look at Table 5, we can find the net rural-urban migrations in column 9 were mostly negative during the ten-year Cultural Revolution (1966-1976). In Figure 3 also, this trend can easily be seen. The urban population growth rate was lower than the rural and the total population growth rates during this period. This movement had great influence on China's urbanization level and pattern even many years later.

### The Recent Government Policy

Control of the big cities and development of the medium cities and small towns have been the objective requirements of the social and economic development of China, and have also served as a basic state policy on urban planning. The government has repeatedly advocated the establishment of small towns and satellite cities and probably will continue to do so many years into the future. However, since the economic reform began in 1978, the government has lifted previous restrictions and is now allowing the coexistence of the informal

sector along with the state-owned formal sectors. Farmers who have sufficient capital now can set up their own businesses in cities. The government even provides low-interest loans to those who have the potential to grow. Most food coupons were abandoned after the reopening of the free market. Once again, part of the impact of the policy changes is explicitly shown in Figure 3.

Though these policies have increased the free movement of labor, many farmers in the informal sector still remain rural in their registrations and are usually given temporary urban residency as long as they keep their business in cities. After all, the new policy does have a positive impact on rural-urban migration. This is reflected by the urban percentage change beginning from 1976 in Figure 3.

Overall, the change in government policies is the main cause of the fluctuation in urban population growth. Chronologically, the whole process reveals ups and downs, which may be explained by changes of policies and turns of events, affecting the natural rate of population increase and the movements of people in and out of the urban areas of the country. Before 1960, government policies served as a positive factor for rural-urban migration. Between 1960 and 1976, government policies were generally aimed at discouraging and controlling urban population growth. Urban population growth rate was negative during this period. Since 1977, the urban population

growth rate has gone up tremendously and has been faster than the rural and total population rate due to the economic reform, which has softened some early restrictions and provided more opportunities for rural-urban movement. It must be noted that despite the relaxation of government control over migration, permanent rural-urban migration is still as difficult as before. The household registration system and other state policies restraining rural-urban migration have not yet changed. As a result, rural-urban migration is temporary in nature.

## Literature Review

The study of migration has for years captured the attention of economists, demographers and sociologists. Articles and books concerning this matter are numerous. The questions posed are essentially: Why do people migrate? What kind of people migrate? What are the determinants and patterns of migration and the impact of migration on the economy and the society as a whole?

Most empirical findings on rural-urban migration are related to migrations in LDCs. Many theories have also been proposed through the years. Among these theories the push-pull theory, the cost-benefit theory and the shadow wage theory are the ones used most frequently to explain rural-urban migration.

### The Push-Pull Theory

The push-pull theory used to be predominant in the discussion of rural-urban migration. The theory says that migration decision making can be explained by socioeconomic imbalances and the demographic differences between rural and urban areas. Some socioeconomic and demographic factors serve to "push" migrants out of their rural residence and into the urban areas while other factors work as a "pulling" force to draw migrants from rural to urban areas. Jansen (1969) noticed that in most cases migrants do not know why

they moved. The push-pull theory is a convenient tool to analyze the rural-urban migration decision process since it focuses on the forces causing people to move. It also reveals the combination of factors involved. Some empirical findings based upon LDCs seem to support the theory. However, as discussed shortly, the push-pull theory is no longer accepted by many scholars.

Commonly identified "push" forces are unfavorable conditions like lack of sufficient or productive land, poor educational opportunities and facilities, presence of natural disaster, absence of medical services, shrinking of usable land, overpopulation etc. The relationship between rural-urban migration and the above-mentioned "push" forces have been observed and empirically tested. Examples of this kind are numerous. The recent civil war in Afghanistan has led many of its civilians to flee to cities in Pakistan. Because of dry weather conditions in many African nations, many of the rural residents had to leave their land and enter cities to seek a better life. In the Zhejiang provinces of the eastern part of China, many farmers have been resettled by the government to other provinces through the years because the land/labor ratio is shrinking.

Empirical findings by Pandey (1977) on a case-study in India showed that rural "push" pressures were a significant cause of rural-urban migration. A similar study done by Martine (1975) in



Colombia also indicates the significant relationship between rural-urban migration and rural poverty. According to these studies, rural poverty contributes to rural-urban movement. But other findings have shown that the main causes of rural-urban migration are forces from both rural and urban areas, not just rural "push" forces alone. Earlier studies of Chile by Herrick (1965) and of Costa Rica by Carvajal and Geithman (1974) support this viewpoint. Both of them found that there was little variation in migration to cities with changes in unemployment rates. Their studies showed that unemployment in cities and towns are not important factors in migration. Other factors should also be taken into consideration. Suggestions include adding measures of structural change and individual characteristics. Butterworth and Chance (1981) cited the studies done by Romero and Flinn (1976) in Columbia. Romero and Flinn found that the commercialization of the agricultural sector of Columbia, resulting in changes in socioeconomic structure of the countryside, had brought about large migrations. They also found that individual characteristics were important in predicting migration. They conclude that structural and personal factors should be jointly considered when analyzing rural-urban migration. Similar studies done earlier by Ianni (1970) and other researchers had yielded a similar result. They point out that the relative retardation in the rural sector should not be viewed as an indication of absence of progress, but rather is related to changes in the technical and social conditions of production in several of the agricultural regions.

Other forces that have been suggested for inclusion in "push-pull" analyses are political factors or the presence of revolution or war.

The pull forces are the result of capital formation occurring in the course of urban development, which provide job opportunities for rural migrants. Studies of rural-urban migration in LDCs have showed that the "pull" factors explain more about rural-urban migration and have received greater attention than push factors. In developed nations, a similar result has also been observed. Generally, there is a close correlation between the level of urbanization and the level of economic development. An immediate example would be that the percentage of urban population in developed countries is much higher than that in developing countries.

In addition, the urban metropolitan area offers some special features that attract migrants from rural areas. There are migrants moving into cities with the hope of finding better jobs or a better life. There are also migrants who want to move to cities to seek educational opportunities. Other attractions, or "pull" forces, include searching for better health facilities, recreational activities and joining friends and relatives. There is sufficient evidence that these motivations do contribute to rural-urban migration. Because of structural differences between regions and differences in migrants' characteristics, urban attractions work differently from region to region and from person to person.

The advantage of the push-pull theory is that it is easy to explain the rural-urban migration in terms of push and pull factors. However, the theory fails to separate push forces from pull forces in a dynamic economy. In some cases, rural-urban migration may be the result of a combination of both factors. As Chance and Butterworth (1981) point out "In short, the polar view of migration considered as a simple push-pull mechanism is at best confusing, at worst misleading, and in need of considerable revision in light of current research." Bogue (1977) criticizes the push-pull theory in comparison to the cost-benefit theory. He says that push-pull theory tends to regard migrants as the equivalent of a billiard ball which is set in motion by external forces, while cost-benefit approach views the migrant as putting himself in motion after taking stock of the external forces and interpreting their implications for his well-being. Bogue further points out that the push-pull approach would undertake to explain migration by correlating the volume and directions of migration flows with "objective" indices of external conditions. On the other hand, he says, the cost-benefit approach would undertake to explain migration by collecting information about the particular combination of forces the individual migrant perceives and the interpretation he places on them.

## The Cost-Benefit Theory

According to Bogue (1977), the cost-benefit theory, or rational decision making, is designed to replace the traditional push-pull theory. He gave two reasons for this assertion. Firstly, in industrially developed countries, the flow of migrants continues and even increases. It becomes a movement between similar environments rather than movement between different environments. Under this circumstance, correlations between the volume and composition of the major migration flows and the objective characteristics of the environment at origin or destination tend to be low. Secondly, it is possible to develop a cost-benefit hypothesis that can subsume the traditional push-pull theory as a special case, and hence reinforce the new with the old.

According to the cost-benefit theory, migration is a kind of investment by migrants, who hope to make enough earnings to cover the cost of moving. The theory assumes that people have good information on which to base their expectations. Their decisions to migrate are simply made by the difference between the benefit and cost. The benefit consists the difference in earnings between their present location and their possible new location. The cost is simply the expense needed for moving. Only if the benefit is larger than the cost, would a person migrate. Todaro (1969) describes the rural-urban migration in LDCs as a two-stage phenomenon. In the first

stage, a rural worker migrates to the urban area and spends some time looking for a job in the urban formal sector. In the second stage, the migrant obtains an urban formal sector job after a certain period of searching. With respect to the decision to migrate, he incorporates the probability that a new migrant will obtain an urban formal sector job. As he puts it:

". . . the decision to migrate from rural to urban areas will be functionally related to two principal variables: (1) the urban-rural real income differential and (2) the probability of obtaining an urban job."

Because the rural-urban wage difference is high, many rural migrants are induced to move to the urban labor market in the expectation of obtaining employment in an urban formal sector with high wage. This kind of trend continues despite high urban unemployment rates. For the past two decades, the Todaro cost-benefit theory has dominated the theoretical discussions about the rural-urban migration and has been widely accepted in explaining the fast rural-urban migration in many developing nations and why the urban unemployment rate has remained high. However, the Todaro model has recently been challenged by some researchers. Williamson (1984) questioned the model by asking that if migrants were rational, (1) how was it that wage differentials between rural and urban areas persisted and perhaps even widened; and (2)

migration to cities continued in the face of urban unemployment, where the latter was defined to include low productivity underemployment? He argues that because of widespread poverty and illiteracy in developing nations, migrants do not have good information with which to form their expectations. Most of them rely on rumors of job opportunities to make their migration decision. A study by Grindal (1973) on Ghanaian migrants suggests that they are misled by stories from returning migrants. The stories were one-sided, stressing only the good part of city life rather than the bad part. Many of these migrants found after their arrival that jobs were not easy to obtain. They felt that the bitter urban life was quite unexpected. According to Todaro, the probability of finding employment is the proportion of the urban labor force actually employed. However, empirical studies by Sabot (1979) show the contrary result in which the employment probability is defined as the ratio of the net number of jobs created over a four-month period to the number of unemployed.

Empirical findings have revealed mixed results on the quality of migrants' information on the prospects for employment and the cost of moving. A survey done by Speare, Liu and Tsay (1988) with Taiwan data shows that more than half of the migrants to Taipei had some information from their relatives and friends in the city before they moved. According to their survey, 60 percent of the migrants had accurate information, 33 percent had moderately accurate

information and only 7 percent thought the information was inaccurate. However, their study shows that most migrants do not know the precise cost of moving. Their findings did not say how people estimate the benefits and costs of the migration. A national survey of migrants in the United States (Morrison, 1977) disclosed that two-third of all migrants had no alternative destination other than the place they actually moved. Six out of ten migrants relied only upon one source of information for job hunting in a new environment; information about jobs is obtained mostly from friends and relatives (49%) or through special trips to examine the situation (33%). Because the migrants are so heavily dependent on family and friends for information in deciding where to move, quite often, their destination choices are very limited.

A study done earlier by Speare (1971) on Taiwan shows that very few migrants did the estimation of how much they could make before they consider moving. In a similar study of the Indonesia case by Temple (1975), he found most migrants to Jakarta did not make their migration decision based upon cost-benefit analysis. They made their decision to migrate to Jakarta simply because there were no jobs available for them at the villages they inhabited initially. Findings by Speare (1986) also on the Indonesia case for the early 1970's shows that there was a continuing migration flow even though there had been little systematic difference between rural and urban wages for persons with similar sets of characteristics.

The employment of the cost-benefit models can partially explain the relation between migration and income differentials but it ignores the relationship between migration and other factors like demographic change, infrastructural change and cultural change. The theory also fails to explain why people migrate without information about their expected income and how people figure out the difference between the cost and the benefit. There is not much evidence to support the theory that people's decision to migrate is based upon cost-benefit analysis. In addition, we do not know whether migrants' expectations are rational or not since they may not have perfect information. If the migrants do not have perfect information about their expected income and their expected cost of moving, the cost-benefit model results in biased estimation.

The policy implication of the Todaro model is somewhat troublesome. The model only shows one-way movement of labor forces. The urban unemployment rate will remain high as long as there exists a rural-urban wage differential. If one new job is created, the number of rural to urban migrants will exceed one. Therefore, policies that can be used to improve urban development will lead to an even worse unemployment problem. Solutions to such a problem should take place only in rural areas. These solutions may include restrictions to rural-urban migration and improvement of the rural infrastructure. Some recent studies show that rural-urban migration may not be a



bad thing as far as both personal and social welfare are concerned. Especially those who are educated can contribute more if they are employed in the urban formal sector. It is socially optimal to have an educated laborer be employed in the urban formal sector since his or her marginal product of labor there is higher than if he or she is employed in rural sector. Paradoxically, the improvement of rural infrastructure can lead to a stimulation for rural-urban migration. If rural education conditions and entertainment facilities are greatly improved, the desire for urban life will be stronger among rural residents and could lead to a greater motivation for rural-urban migration. This is the opposite of the intended result of the Todaro policy.

### The Shadow Wage Theory

As suggested by Mazumdar (1976), the shadow wage theory states that each individual migrant tries to maximize his or her personal income. While a migrant looks for a job in the urban formal sector, he can find employment in the urban informal sector. The wage that this migrant makes in the informal sector is described as a shadow wage. According to Mazumdar, the shadow wage depends on the rate of urban unemployment and the volume of induced migration, which in turn form the migration function in terms of the probability of obtaining an urban job by the ratio of the employed to the total labor force in the urban area. Without the urban informal sector, the cost

to the migrant during his search for a job in urban formal sector will be higher because the migrant has to be financed by his rural family. With the existence of the urban informal sector, however, the migrant can seek employment in the urban informal sector to finance himself. In this case, the cost to the migrant is small, given the percentage rate of growth of employment in the formal sector and the effective rate of discount used by the migrant. The number of migrants will therefore be large. But in both cases, social costs are positive according to Mazumdar (1987) both because labor's marginal productivity is low in the urban informal sector, and because the costs of urban infrastructure are high due to excessive migration. The marginal product of labor will be zero if the migrant is financed by his rural family during his search for an urban formal sector job.

Mazumdar points out that usually there is a time span between the time of migration and the time of getting a job in the urban formal sector. Many of these migrants either will have to be supported by their rural family or by themselves. Because in many developing nations, the urban informal sector is large, entry into the informal sector is relatively easy. To maximize his personal income, a potential migrant will make his decision to migrate based upon his ability to bear the cost of migration. Without the informal sector, the migrant has to be financed by his rural family members. The size of induced migration will be small because the cost is big. But with the

possibility of working in the informal sector, the effect of the shadow wage on rural-urban migration will be positive and large. Hence the number of migrants will depend on the magnitude of the shadow wage. The proportion of migrants employed in the informal sector depends on the percentage rate of growth of employment in the formal sector.

Harris and Sabot (1982) believe that a general migration and job search model incorporating wage dispersion and imperfect information provides a more realistic description of labor market behavior in LDCs than conventional models. The model, based upon the micro-approach that recognizes the fact that individual behavior in a world of imperfect and incomplete information is not the same in terms of decision making, provides a basis for a framework within which one can analyze the impacts of policy actions. They point out that the widely accepted Harris-Todaro model reflects only a special case of the general model. Because the Harris-Todaro model ignores the economic value of the remaining unemployed as a job search activity in the urban formal sector, it tends to exaggerate the impact of rural-urban migration on the urban unemployment problems.

A recent study by Cole and Sanders (1985) has indicated that there has been a growing urban informal sector in developing nations. Because entry to this sector is relatively easy and capital investment is small, more and more migrants find their jobs in the informal

sector. Their survey on Mexican data found that because of the easy entry many migrants now move to urban areas with the expectation of finding long-term employment in the urban informal sector rather in the urban formal sector.

Shadow wage theory provides us two policy implications (Mazumdar, 1976). First, because of the existence of the urban informal sector, a migrant can seek employment in this sector before getting a job in a formal sector so that his cost is minimized. In addition, he has to give up his job in the rural sector. Without being employed in the informal sector, the migrant has to be self-financed and the cost is higher. Here we have to realize that the loss is not only to himself but also to the society as a whole. To avoid this loss, policy-makers in LDCs need to create job opportunities in the urban informal sector for those who seek urban formal sector jobs. This will be socially optimal policy. Unfortunately, many people do not realize this. Instead of providing job opportunities, they try to limit the scale of the informal sector and this is economically unwise. Second, the consumption effect tells us that migrants employed in the the informal sector provide goods and services at low prices to people working in the formal sector. At the same time, they consume the products produced by the formal sector. In a way, the people in the formal sector benefit from the existence of the informal sector. This tells us that rural-urban migration is good for the economy. Many policymakers in LDCs have not realized this sound result. Rather,

they try to adopt policies aimed at controlling rural-urban movement. Since the consumption effect associated with urban informal sector stimulates the urban economy, the policies adopted to restrict the growth of urban informal sector in LDCs should be implemented with great caution.

## **Empirical Findings**

To identify the determinants of rural-urban migration, there are two basic approaches. They are the micromigration function and the macromigration function. The micromigration function employs data on the personal characteristics of rural-urban migrants. On the other hand, the macromigration function studies the inter-area migration flows using the characteristics of the areas involved in the migration process as independent variables. The data that the micromigration function requires are difficult to obtain and hence the widespread use of the microfunction is not easy. The macromigration function is in much more common use. The application of the function has achieved satisfactory results. These results not only have been successful at explaining various rural-urban flows, but also at distinguishing the rural-urban flows of different kinds.

Most studies on developing nations have showed that rural-urban income differentials, population density, socioeconomic development pull-push factors and a person's education all contribute to rural-urban migration. But some findings revealed different results. A study on internal migration in Peru by Falaris (1979) shows that the distance between the residence of migrants and the destination to which these migrants are moving is negatively correlated with the migration flows. The distance of migration involves the magnitude of cost of moving. The further the distance between the residence and

the destination of migration, the higher the opportunity cost. This finding supports the cost-benefit hypothesis discussed previously. Wages at destination have positive and significant coefficients, as predicted by the model. This finding also supports the cost-benefit theory, in which expected earnings is a factor influencing migration. The positive coefficients of the education at origin shows that migrants' educational level positively affects rural-urban migration though it is not statistically significant. The negative sign of the coefficients of the education at destination indicates that the higher level of education at destination increases the competition for migrants who have low educational attainment and hence discourage rural-urban migration. The employment rate coefficient at origin had the expected sign but was not significantly different from zero. The Falaris model successfully reinforces the cost-benefit theory. His results provide a strong explanation for internal migration in Peru. His findings are also in accord with other findings done on Latin American countries. However, if his model had included some of the economic variables concerning industrialization, which works as a "pull" force, and structural variables concerning the improvement of rural infrastructure, which serves as a "push" force, the result could have been more comprehensive.

Pandey (1977) tested the relationship between urbanization and socioeconomic and demographic variables in India. In his model, the selected independent variables are man-land ratio, size of

nonagricultural sector, intensity of cropping, per worker income, literacy rate and growth rate of population. Two points are worth mentioning here. First, the estimated coefficient of man-land ratio is negative and significant. This is against the common rural-pressure theory of urbanization as well as against most empirical findings of rural-urban migration. Second, the literacy rate is negatively correlated with urbanization though it is statistically insignificant. As for the negative sign, he believes that the spread of rural literacy decreases the pace of rural-urban migration. This proposition is contrary to most empirical results done in studies of developing countries. It might be true in developed nations where there is a high level of education and a modern rural infrastructure. But in developing nations, the literacy rate is usually low. Once an increase in the literacy rate occurs it should encourage rural-urban migration rather than slow down the pace of migration. In particular, empirical findings in almost all Asian nations have indicated the positive relationship between the rural literacy rate and rural-urban migration.

The insignificance of literacy rate in the Indian regression may be real because often the rural-urban migration may be dominated by the inequality of income distribution problem, which is serious in India. In an article by Mazumdar (1987), he states that:



"Although in sheer numbers migration stream are not dominated by higher-education groups, evidence from most countries shows that the more educated have a greater propensity than others to migrate. This is not merely due to age selectivity and the fact that the young tend to be more educated than the elderly."

As an example, he cited Colombia where the migration rate was observed to increase monotonically with education and was four times higher for those with higher education than for those with none.

The example cited by Mazumdar may not be observed in all LDCs, but Pandey certainly ignores the fact that the educated are more qualified for urban jobs. They usually have better information about the job opportunities and also better judgement about the information. In addition, they are more inclined to urban life. His explanation is contradictory to most empirical results in rural-urban migration and hence his model should be reevaluated. Modification of the model may be necessary.

Recent studies with cross-sectional data in Taiwan by Spear, Lui and Tsay (1988) include some interesting findings about the relationship between urbanization and industrialization. Their results showed a negative correlation between urbanization and industrial establishments. Their explanation for this are: (1) Usually the

expansion of labor intensive industry would create new job opportunities. In Taiwan, however, labor is underutilized in the tertiary industries. Improvement in performance and productivity can be accomplished only by increasing the amount of work by the existing urban labor force and by transferring some of these people to more productive posts rather than hiring migrants from rural areas; (2) Because Taiwan is overpopulated, the expansion of industries in the urban areas is severely restricted due to the scarcity of the land. For this reason, many industries were located in the country where the land is inexpensive, the surplus rural labor is relatively cheap and the location is convenient for the transportation network. As a result, dispersed industrial establishments have substantially reduced the rural-urban migration.

Taiwan's experience can be studied by other developing nations, where the fast rural-urban movements have caused many social problems, such as a shortage of urban housing, high urban unemployment and urban poverty. Taiwan's experience may provide a way to slow down the large inflow of rural population. Another interesting finding regards the economic success of migrants, compared both to those who do not move and to the Taipei residents. The comparison shows that though the migrants have difficulties getting jobs at the early stage of their migration, they are usually successful financially about five years after their migration. The average income of the migrants is higher not only than those who do

not move, but also higher than the average income of the already established urban residents. This finding suggests that migration may not be a bad thing at all. This is contradictory to the concerns of many other developing nations, where migration is usually accompanied by unemployment and poverty.

The generalization of Taiwan's experience, however, has certain limitations. First, Taiwan is geographically unique and this is not the case for many other developing nations. The establishment of industry in the rural areas does not bring about much inconvenience in transportation and communication because of Taiwan's limited land size. Second, the rural population in Taiwan has better education than the rural population in most other developing nations. This makes it possible for the large-scale dispersion of industrial establishments in its rural areas.

Recent research on Chinese urbanization and rural-urban migration has resulted in numerous articles. However, few empirical studies have been done in the area due both to limited data availability and also to the poor quality of the data. Because of this, most articles and publications are multivariate verbal explanations along with some tables and graphs rather than multivariate statistical analysis. One of the few exceptions is a paper by Victor F. S. Sit (1985). Using cross-sectional data, he estimated a multiple regression in order to learn the impact of industrialization, agricultural productivity, and

transportation on urbanization. He tested the relationship in three different years: 1953, 1958 and 1981. The results from all three years showed that per capita industrial output has the most significant impact on the urbanization pattern. Followed in strength are the agricultural factors, which add further support to the rationality of the pattern since agriculture has continued to be so important in China. His regression analysis has revealed that the occurrence of regional variation in the rate of urbanization in favor of the interior was due to the organized population movement from the east coast to the inland. Hence, the government's aim to disperse development may have been achieved spatially, particularly since the pattern of urbanization closely follows the pattern of industrialization.

Another study done by Yeh and Xu (1984) on Chinese urbanization indicates that because urbanization is measured by the proportion of total population in the province living in urban areas, the level of urbanization can be low if there is a large rural population to counteract the large urban population. They find that the level of urbanization in the provinces of China is inversely related to the number of cities and the level of urban population. Their study shows most of the relatively highly urbanized provinces are located in the western and northern part of China. Coastal provinces with the largest proportion of cities and urban population only show a

moderate level of urbanization because of the low level of their rural population.

Yeh and Xu further explain the variation in the urbanization level of provinces through the influences of natural, political, economic, population and historical factors. They believe, among these factors the economic and population factors play a more important role than other factors. In particular, they use industrialization and population density as explanatory variables to explain the provincial variation of urbanization level. Their regression results suggest that in China highly urbanized provinces are associated with high industrialization. In addition, highly urbanized provinces are also associated with low population density and large area. The authors' interpretation of their results is that provinces with a low urbanization level are usually those that have low per capita economic output. This is the case found in many LDCs as well as in industrialized nations. However, provinces with industrial cities in the northwest and northeast part of China are large in area and do not have a large rural population. The increase in urban population due to industrial development will encourage urbanization. In addition, these provinces are less affected by the government policy of controlling the growth of large cities and the promotion of rural development than provinces in the south and coastal areas, where population pressure is serious and the household registration system for restricting rural-urban migration is strictly enforced.

Yeh and Xu's regression results are similar to those of Sit. However, both analyses are conducted with few explanatory variables and provide less information than would be desirable. In my regression, I have included more variables and the results are expected to be more informative.

Some cautions about the study of Chinese migration have to be taken into consideration. Because of the household registration system and the equality of pay, some of the difficulties that we have not seen in many developing countries may appear in the Chinese model, viz:

1. For a long time, the rural-urban migration has not been a easy task for rural residents. This is because housing and food coupons are provided only to those who registered urban. Hence one migrating to a city without an official permit will find that living in a city for long is practically impossible.

2. Job allocations are controlled by the government. Migrants without permission can only try the urban informal sector, which provides only limited job opportunities. In addition, the scale of the urban informal sector is restrained by government. Therefore migrants who do not have good education and particular skills may never be able to enter the urban formal sector since most urban formal sector jobs are allocated through official channels rather than on a competitive

basis. Usually migrants who have education have access to the urban formal sector.

3. The traditional attitude of potential migrants has been prejudiced against urban informal sector jobs (though the attitude is changing). Many of the educated rural population would rather stay on farm than get a job in the urban informal job if an urban formal sector job is not available. One reason for the attitude is that they may believe that working in the urban informal sector will cause them to lose face with their friends and relatives. However, there is a sign indicating that this stereotype is changing.

## **Socioeconomic Development and Urbanization**

After the theoretical discussion about the determinants of rural-urban migration, attention now will be paid to the socioeconomic impact on the urbanization. Generally speaking, there are three major paths to rural-urban migration in China: (1) government recruitment--in which case the rural people are recruited by the state-owned urban formal sector due to the new industrial establishments or urban expansion; (2) military service--it is quite common that after retiring from serving several years in the military, one will be likely to be assigned a job in cities or towns; (3) higher education--it is almost certain that after graduation from colleges or technical schools, one can work in a state-owned unit, which usually is located in cities. Other means of migration may include administrative promotion and marriage. Administrative promotion has been used as a way to migrate to cities since promotion normally changes one's job from country to city. Marriage is another common channel to migrate to cities. Though it is not often mentioned either by official publications or by other researchers, migration with marriage is a very common practice. In recent years, the urban informal sector has been growing very rapidly after the government lifted its restrictions on the sector in 1976. More urban informal sector jobs are available now to the rural-urban migrants. Working in the urban informal sector becomes one of the main streams of the migration. No matter which type of migration people



practice, their desire to migrate and their migration practices are more or less influenced by the level of socioeconomic development.

#### The Model

The model that I have set up is based upon Figure 1 in which has been explained and justified before. The model can be expressed as follows:

$$UR = f(AM, IND, SIZE, INRAT, LITCO, SHARE, POST, CINEMA)$$

where

UR = percent of urban population or level of urbanization  
in the province

AM = per capita horse power of agricultural machineries  
employed in the rural areas

IND = per capita industrial productivity in the province

SIZE = provincial size

INRAT = urban-rural income ratio

LITCO = county literacy

SHARE = share of food expenses to the total expenses in  
cities

POST = number of post offices in rural area

CINEMA = number of cinemas in rural area

The dependent variable is the level of urbanization (UR) in the province. Eight independent variables are used in the regression analysis. Among the eight, seven are socioeconomic variables and one is a geographic variable. The socioeconomic variables are agricultural machinery employed in the rural area (AM), per capita industrial productivity (IND), urban-rural income ratio (INRAT), county literacy (LITCO), share of total food expenses to total expenses in the urban area (SHARE), number of post offices in rural area (POST) and number of cinemas in rural area (CINEMA). The geographic variable is the size of each province (SIZE).

Each of these independent variables contributes to urbanization. The per capita industrial productivity reflects the level of industrial and commercial establishments in the urban areas. Higher per capita industrial productivity may serve as a pull factor to draw people from the rural to the urban area. The share of food expenses to total expenses in cities is a variable used to measure the real income in the urban areas of each province. A higher share of food expenses may reflect a lower level of real income. This may have a negative impact on rural-urban migration since it is assumed that it is the difference of the expected real income that motivates people to migrate to the urban area. The urban-rural income ratio gives the income differentials between urban and rural areas. On the one hand, the larger the difference, the more likely rural-urban migration will

occur according to the push-pull theory or the cost-benefit theory as characterized by Todaro. On the other hand, some empirical findings suggest that on many occasions people are too poor to migrate since basic expenses are needed for transportation etc. If the urban-rural income differentials are too large, rural-urban migration may be discouraged. Hence, the sign of urban-rural income ratio is ambiguous. County literacy, agricultural machinery, post office in rural area and cinema in rural area are variables measuring rural infrastructural development. High county literacy motivates people to migrate to urban areas since more education means better qualifications for migrants in searching for urban jobs. The more education one has, the more able the person will be to find ways to migrate. Therefore, there should be a positive relationship between urbanization and county literacy. The agricultural machinery variable is included because the more farm machines are employed in a rural area, the fewer people will be needed for farming and hence the greater the likelihood of a rural surplus labor pool. These people will be pushed to the urban labor markets. We, therefore, would expect a positive impact on urbanization. The more post offices in a rural area, the better the communication system the rural residents have. This allows the rural population to have more information about urban life and urban job opportunities. Thus, a positive relationship is expected between the number of post offices and the level of urbanization. By the same token, more cinemas in a rural area signifies that the people have better entertainment

facilities. This should also have a positive impact on urbanization because rural people will be more knowledgeable in urban life styles. Size of province is a geographic variable. The larger the size of a province, the more difficult it is for the rural population to migrate because of increased distances. The longer the distance, the higher the cost that will be associated with migration. We should expect a negative impact of this geographic variable on urbanization.

I assume that the effects of socioeconomic variables on urbanization occur only after some time lag. That is to say that we have to use the socioeconomic variables collected at time  $t$  to explain their influences on urbanization at time  $t+n$ . Since this is the case, we can rewrite the equation in a slightly different fashion:

$$UR_{t+n} = f(AM_t, IND_t, SIZE_t, INRAT_t, LITCO_t, SHARE_t, POST_t, CINEMAT_t)$$

where subscript  $t$  and  $n$  denote the time period. All terms in parenthesis are in time period  $t$ . The appropriate time difference between  $t$  and  $t+n$  is about eight to ten years. If  $n$  is too small, say only 2 to 3 years, we might not get the significant results from the regression since it takes some time to change people's behavior and life style. We should not expect that rural-urban migration happens overnight. If  $n$  is too large, the results will be harder to interpret because the longer time period increases the likelihood that factors not included in the model will influence the results.

## The Data

As is the case for many other developing nations, it is somewhat difficult to capture an accurate picture of urbanization in China because of inadequate data. Generally speaking, this is mostly due to the backward statistical system and the frequent political movements. The adequacy of the data is often deficient along three dimensions: the reliability of data, the consistency of data and the availability of data.

(1) Reliability of data---during several periods of internal political chaos, many statistics were exaggerated for political propaganda purposes. This is especially true during the movement of the Great Leap Forward (1958-1960) and the Cultural Revolution (1966-1976). Though some of the statistics have been revised later by officials and economists, most revisions are done based upon arbitrary estimates rather than scientific adjustments.

(2) Consistency of data---difficulty occurs because of changes of administrative regions and changes of some statistical categories. An example of the former change may be that a county town in 1960's was upgraded to a city in 1970's. All the statistics originally were categorized rural all of sudden became urban. Examples of such are numerous.

(3) Availability of data---during the eras of political movement, very little attention was paid to data collection. The statistical bureaus from the central government to local government were disbanded during the Cultural Revolution. For instance, no urban population data were recorded for 1966 and 1970. The data estimated by the government years later are restricted in terms of precision and correctness. Even when statistical data were recorded, some items were not included.

In addition to the data problem, there have been some constant administrative changes going on in China, which lead to changes in the definition of an "urban" area. For instance, the data on the urban population numbers released by some publications include an urban agricultural population while other publications do not. This increases the difficulty in using these numbers in empirical analysis. Being fully aware of this can help us to interpret our regression results more soundly. With these problems in mind, one can make adjustments when interpreting the empirical results.

The latest available statistics of the urban population levels for 29 provinces are for 1986. I have had a great difficulty obtaining all categories of the socioeconomic data prior to 1982. The most complete available statistics started in 1982. Finally, I did obtain the data which could be used for the regression; but they were far from

satisfactory. As I mentioned earlier, the ideal data employed for the empirical analysis should be about 8 to 10 years prior to the urbanization level. Since I only have data for about 4 years, the regression results from the lagged effect model may be adversely affected.

Table 12 contains data on the independent and dependent variables for 29 provinces, autonomous regions and municipalities. Tibet was omitted from the regression analysis because statistics on three of the independent variables were not officially reported. The endogenous variable, urbanization level, is the population in towns and cities, including urban agricultural population, divided by the total population. It is measured in percentages. The data obtained for this variable for 1986 are from the Statistical Yearbook of China, 1987. Initially, I intended to use an urban population measure that excludes urban agricultural population. Due to lack of data, however, I have to employ a measure that includes urban agricultural population. Among the seven independent variables, agricultural machinery, per capita industrial productivity and county literacy are from 1982 and urban-rural income ratio, share of food expenses to total expenses in cities, number of post offices in rural areas and number of cinemas in rural areas are from 1983. Although this difference in time may affect our estimates, we here assume the change during this period is small, and hence would have only a trivial effect on our analysis.

Agricultural machinery is the total agricultural machineries in use in 1982 as measured by per capita rural horse power. The existing statistics are not immediately ready for use. The way that I computed the variable was by dividing total agricultural machinery in terms of horse power in each region by that region's rural population. The per capita industrial productivity is the value of 1982 industrial output divided by the 1982 population in each province. It is measured in the Chinese currency, Yuan. The provincial size is simply the geographic size of each province, measured in square kilometers. The urban-rural income ratio is the 1983 urban per capita income divided by the 1983 rural per capita income. The county literacy is the percentage literate population in the county area of each province from the 1982 Second National Population Census. The share of food expenses to total expenses is the 1983 urban residents' monthly expenses on food divided by total monthly expenses in each region's urban area as represented by the capital of each province. It is also measured in the Chinese currency Yuan. Both the number of post offices in the rural area and the number of cinema in the rural area use 1983 data. Both of them are measured in numbers per 10,000 of rural population.



## Regression Results

Before the regression models are estimated, I have computed the correlation matrix of the variables from which we can be guided what kind of regression result we may expect. The correlation matrix is shown in Table 13. Of eight independent variables, six of them are positively related to the level of urbanization. They are agricultural machinery, per capita industrial productivity, county literacy, the share of food expenses to total expenses in cities, the number of post offices in the rural area and the number of cinemas in the rural area. The correlation of these variables to the level of urbanization are 0.840, 0.586, 0.659, 0.090, 0.232 and 0.623 respectively. The rest of the two independent variables, the size of province and the urban-rural income ratio, are negatively correlated to the level of urbanization. The correlation coefficients for these two variables are -0.170 and -0.621 respectively.

Table 14 gives the regression results of the lagged effect model using level of urbanization as dependent variable. Regression I includes all the explanatory variables and the results are quite good. The estimated regression equation explains 84 percent of the total variation. The associated F ratio is 12.527. All except one of the estimated coefficients of the independent variables have the expected signs. The exception is the share of food expenses to total expenses in cities. Initially, we assume that the higher share of food

expenditures to total expenses means lower level of real income and the rural-urban migration becomes less attractive. The variable would therefore be negatively related to the level of urbanization. The estimated positive sign may indicate that a large share of food expenses to total expenses results from people having a higher standard of living in cities, like a sign of which would be the consumption of high-quality food. In China, the urban area which has higher food share might be the area where more favorable food allocations by government are available. Also, other attractions that a city offers can dominate the effect of a higher share of food expenses to total expenses. Therefore, a higher share of food expenses to total expenses in cities will encourage rather than discourage rural-urban migration.

The per capita industrial productivity has a positive sign, similar to results of most other studies. This suggests that industrial and commercial establishments serve as a pull factor to draw people from the rural to urban areas. The regression results presented by Sit (1985) and Yeh and Xu (1984) have indicated similar conclusions. The size of province coefficient has a negative sign. This implies that the cost of migration is involved since the distance the migrants have to travel has to be taken into consideration. The farther the distance, the higher the cost of migration. This will tend to discourage rural-urban movement. This result is in accordance with most empirical findings in LDCs. The positive sign of the urban-rural income ratio

tells us that in China if the urban-rural income gap widens, rural residents will be pushed to cities. Rural-urban migration is encouraged if the urban-rural income ratio is high. Surprisingly, the four variables of rural infrastructural development are all positive in sign. This finding is contrary to the suggestions made by Todaro to resolve the worsening urban unemployment problem. One of his suggestions is to improve the rural infrastructure so that rural residents will remain on the farm rather than migrate to an urban area. My results show that improvement of the rural infrastructure will increase rather than decrease rural-urban movement.

In regression I, the coefficient of the agricultural machinery variable and the county literacy variable are statistically significant at the five percent level. The coefficient of the share of food expenses variable is statistically significant at the ten percent level. Regression II shows that dropping the insignificant variables slightly enhances the significance of the remaining variables. Note that the coefficient of the share of food expenses variable becomes statistically significant at the five percent level and the coefficient of the post office in the rural areas becomes statistically significant at the ten percent level. The R-square in regression II remains unchanged but both the adjusted R-square and the F statistics are improved. The significant determinants of provincial urbanization are agricultural machinery, county literacy, share of food expenses and the number of post offices in the rural areas. Regression III shows the further

improvement of statistical significance after the variables per capita industrial productivity and number of cinemas in rural area are dropped from the regression II.

The reason behind the significance of county literacy is worth mentioning here. Beginning in 1977, the entrance examination system was restored for entering technical schools and pursuing college education. It quickly became another legitimate way for rural youth to migrate to cities. Rural areas with higher literacy mean that either people there pay more attention to education or they are traditionally well-educated. As a result, young people there have a better chance to pass entrance examinations for colleges and universities. In China, one often hears that some villages are traditionally known for a high admission rate to colleges. Another way to explain this is that the more education the rural people receive, the more likely that they will have strong desire for urban life and, hence, will find ways to go to cities.

Contrary to most empirical results, though the estimated coefficient of the provincial size variable is negative, it is not statistically significant. There may be three reasons for the insignificance of this estimate. First, because of the household registration system implemented by the Chinese government, it is almost equally as difficult for the rural residents who live far away from cities as for those who live nearby cities. Rural residents who desire to migrate to

urban areas are discouraged regardless of distance of their residence. Second, the government policies of establishing more medium and small cities have resulted in removal of industries from urban areas to remote areas or small towns. These policies, to a certain extent, have worked to discourage the rural-urban migration to large cities. This explains that the distance of migration, or the size of province, is less evident in China. Third, due to the relatively low cost of transportation, the distance of rural-urban migration may not be a major consideration. The points mentioned above can be the major explanation of this phenomenon distorted by the Chinese government policies.

The study on the Chinese Urbanization and Rural-Urban Migration can be more effective in the future when some relevant statistics become available. For example, the regression results may be improved by using the number of rural-urban migrants during a time period as the dependent variable instead of using the level of urbanization. An independent variable that might be very useful in predicting the urbanization level and rural-urban migration is the rural fertility rate. Unfortunately, they are not available at this time.

## Conclusions

1. In retrospect, for the past three decades the Chinese urbanization process has been unusually slow because Chinese government policies have played a negative role in urbanization through various restrictions on rural-urban migration. In comparison with some other nations, China's urbanization trend shows an unstable and a slow increase. By restraining educated labor from entering the urban formal sector, the country's economy eases productivity since marginal productivity of labor can be enhanced if this labor can work in the urban formal sector. In a way, the policy aimed at controlling rural-urban migration may be a barrier to the nation's economic development.

2. Because of the different social systems, factors influencing urbanization can differ from country to country. In the Chinese case, both government politics and socioeconomic development are the two major influences on the level of urbanization. However, for a long time these two major influences had the opposite impact on the Chinese urbanization.

3. Despite the negative impact of government policies, socioeconomic development does contribute to the growth of the urbanization level. Though the main channels of migrating from the rural to the urban sectors urban had been limited in ways to government recruitment,

higher education and military service, some socioeconomic elements have contributed to the rural-urban migration. The growing trend of the urban informal sector shows a sign that more and more job opportunities are available for rural-urban migrants.

4. Because of the influence of government policies, some of the socioeconomic variables that have a substantial influence on the urbanization level in other developing countries do not seem to have any significant impact on Chinese urbanization. As indicated in our example, the per capita industrial productivity is not very highly correlated with the level of urbanization. This may indicate that the the impact of industrialization and commercialization on urbanization in China has been to a certain extent distorted by government politics. Similarly, the statistical insignificance of the provincial size variable is also distorted by the government policies.

5. Because urbanization has been proven to be inevitable in the process of economic development, any effort made toward restraining the transformation of population from the traditional rural sector to the urban formal and informal sectors is bound to fail. Hence, better ways need to be found to regulate urbanization through rural-urban movements. Though the current state policies such as Control Big Cities and Development of Small Cities and Townships are good attempts in the long run, practical means of operationalizing these policies have to be utilized. Instead of using

administrative restrictions, effective policy instruments may include the decentralization of the decision-making to individuals through a system of economic incentives aimed at accommodating rural-urban migration flow. The policy instruments could include lifting the household registration system, providing some financial and technical assistance to rural migrants, and encouraging the expansion of the urban informal sector so that more job opportunities will be available to the migrants.

6. My regression results show that contrary to Todaro's prediction, the improvement of rural education, commercialization, communication and entertainment facilities actually increased the Chinese rural-urban migration. My regression results also prove the paradox of the policy implications suggested by Todaro.



Figure 2: Chinese Population Growth

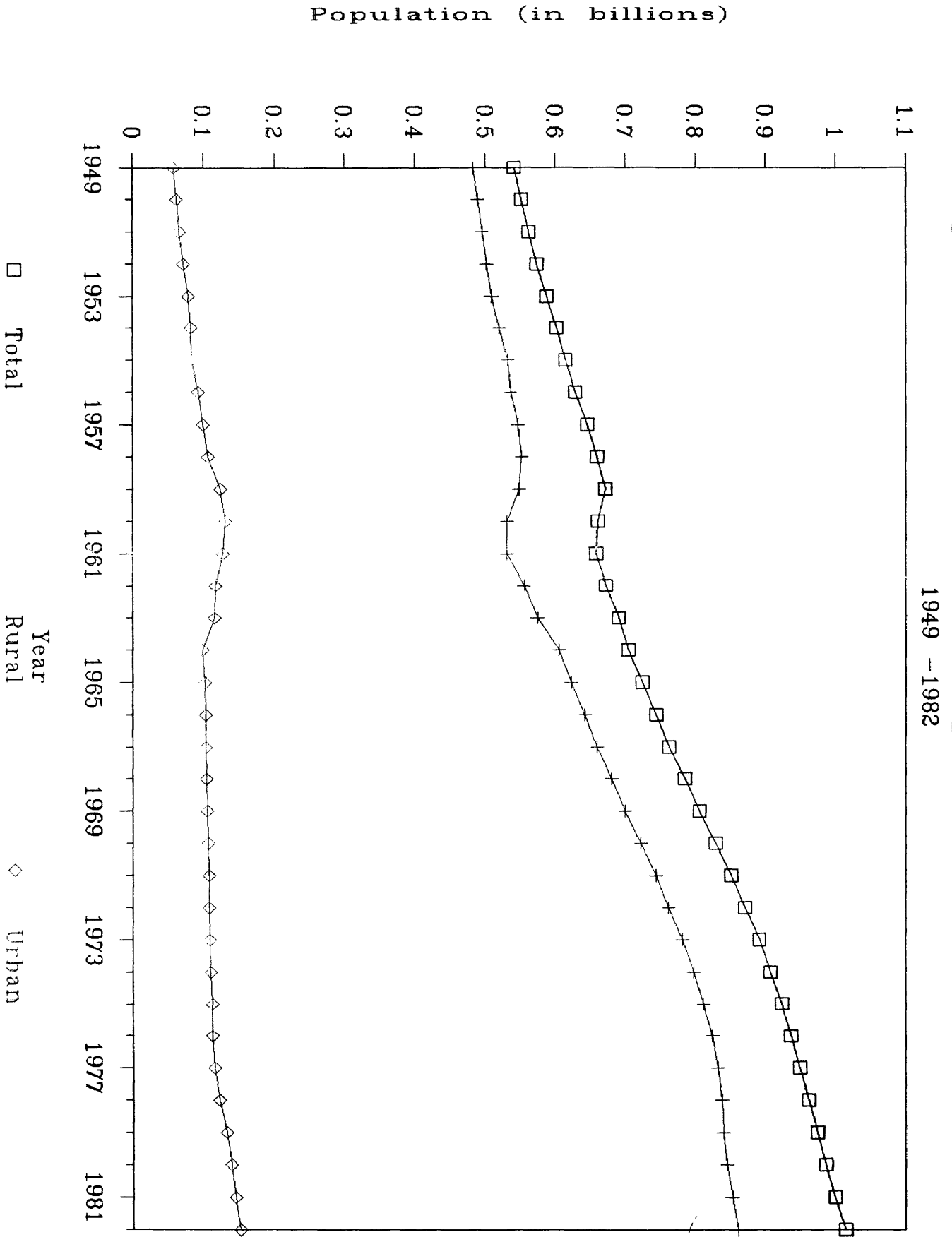
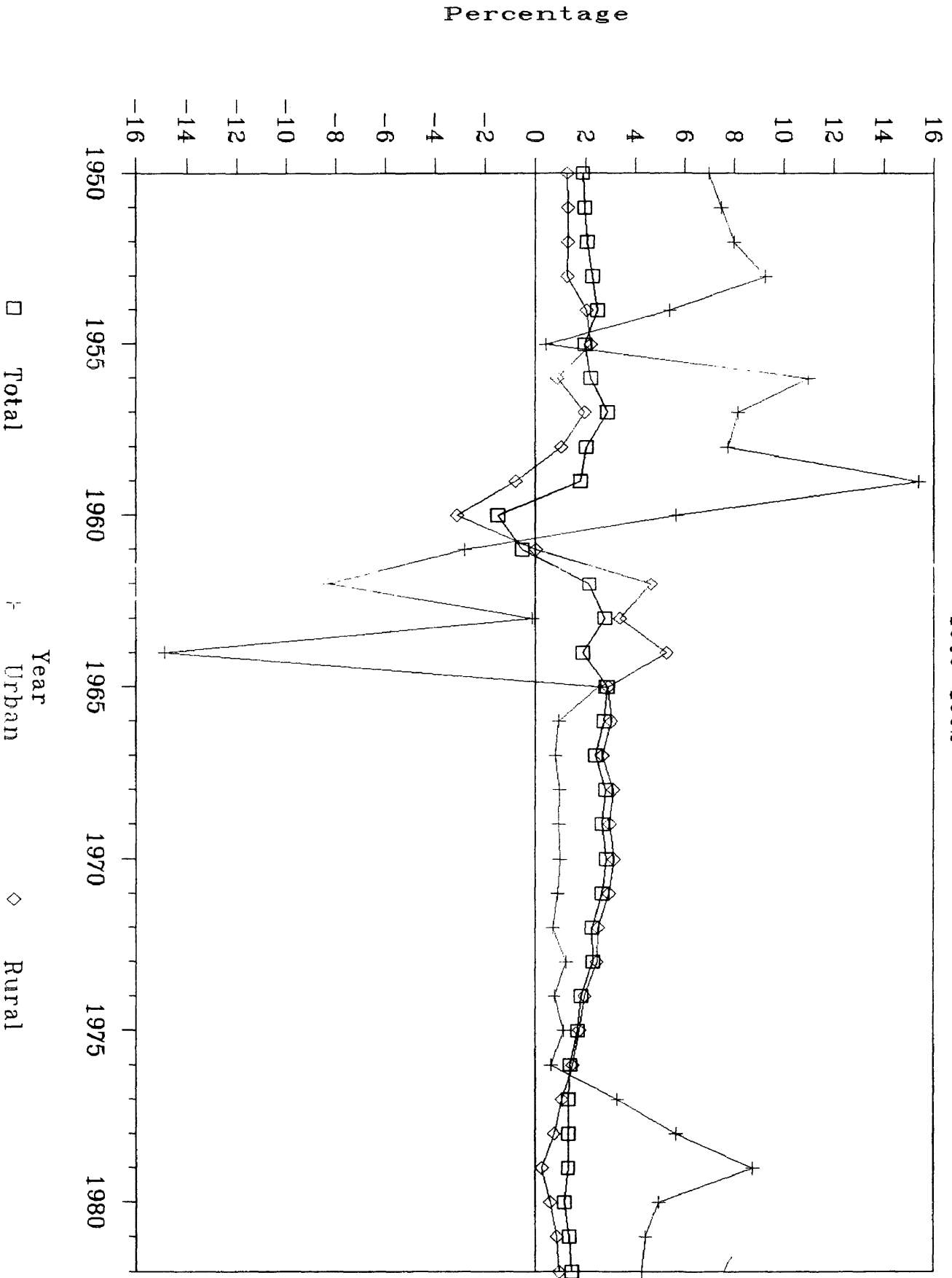


Figure 3: Chinese Population Change (%)  
1949-1982



**Table 1: China's Population Totals, Annual Increases and Vital Rates (Absolute Figures in Millions; Birth and Death Rates per 1,000 Population), 1949-1982**

Year	Year-end Population	Net Gain in Year	Birth Rates	Death Rates	Natural Increase
1949	541.67	—	36	20	16
1950	551.96	10.29	37	18	19
1951	563.00	11.04	37	17	20
1952	574.82	11.82	37	17	20
1953	587.96	13.14	37	14	23
1954	601.72	14.70	38	13.2	24.8
1955	614.65	11.99	32.6	12.3	20.3
1956	627.80	13.63	31.9	11.4	20.5
1957	646.53	18.25	34.0	10.8	23.2
1958	656.63	—	29.2	12	17.2
1959	—	6.77	24.8	—	10.2
1960	—	—	—	25.4	—
1961	—	—	18.1	14.3	3.8
1962	—	—	37.3	10.1	27.2
1963	691.22	—	43.6	10.1	33.5
1964	694.58	—	39.3	11.5	27.8
1965	725.38	—	38.1	9.1	28.5
1966	742.06	16.68	35.2	8.9	26.3
1967	760.32	18.26	34.1	8.1	25.7
1968	781.98	21.66	35.8	8.3	27.5
1969	803.35	21.37	34.3	8.1	26.2
1970	825.42	22.07	33.6	7.6	26.0
1971	847.79	23.37	30.7	7.3	23.4
1972	867.27	19.48	29.9	7.7	22.3
1973	887.61	20.34	28.1	7.1	21.0
1974	904.09	16.48	25.0	7.4	17.6
1975	919.67	15.61	23.1	7.3	15.8
1976	932.67	12.97	20.0	7.3	12.7
1977	945.23	12.57	19.0	6.9	12.1
1978	958.09	12.85	18.3	6.3	12.0
1979	970.92	12.83	17.9	6.2	11.7
1980	982.56	11.63	—	—	12.0
1981	996.22	13.67	20.91	6.36	14.55
1982	1008.18	—	—	—	—

Sources: (1) The statistics appeared in Population Bulletin, Vol. 38, No. 2, April 1983, compiled by H. Yuan Tien from Tian Zueyuan, "A Survey of Population Growth since 1949," and Hou Wenruo, "Population Policy," in Liu Zheng, et al, China's population: Problems & Prospects (Beijing: New World Press, 1981) pp. 32-54 and 55-76; and various reports of the State Statistical Bureau, 1979-1982.

(2) Latest official figures for 1980 are: net population gain: 10.64 million: birthrate: 16.98; death rate: 6.3; rate of natural increase: 10.64. See M. Li, "Rural Areas are the Focal Point of China's Population Problem," Population and Economics, No.6 (1982) pp3-7.

**Table 2: Population of Provinces, Autonomous Regions, and Municipalities, 1953, 1964, and 1982, and Population Density, 1964 and 1982**

Provinces, Autonomous Regions, Municipalities	Population (in Millions)			Persons per Square Kilometer	
	1953	1964	1982	1964	1982
Beijing	2.77	7.57	9.23	452	549
Tianjin	2.69	4.28	7.76	553	687
Hebei	37.88	41.41	53.01	210	282
Shanxi	14.31	12.35	25.29	116	162
Neimonggu	7.33	6.24	19.27	10	16
Liaoning	20.56	29.50	35.72	185	245
Jilin	11.29	17.89	22.56	84	120
Heilongjiang	11.90	21.39	32.67	43	69
Shanghai	6.20	10.82	11.86	1745	1913
Jiangsu	40.93	44.50	60.52	434	590
Zhejiang	22.87	28.32	38.88	278	382
Anhui	30.66	31.24	49.66	224	356
Fujian	13.14	16.76	25.87	138	213
Jiangxi	16.77	21.07	33.18	126	199
Shandong	48.88	55.52	74.42	363	486
Henan	44.21	50.32	74.42	301	446
Hubei	27.79	33.70	47.80	180	255
Hunan	33.23	37.18	54.01	177	257
Guangdong	36.74	42.80	59.30	101	280
Guangxi	17.59	20.84	36.42	101	158
Sichuan	65.68	67.96	99.71	120	176
Guizhou	15.04	17.14	28.55	97	162
Yunnan	17.47	20.51	32.55	52	83
Tibet	1.27	1.25	1.89	1.0	1.6
Shaanxi	15.88	20.77	28.90	101	141
Gansu	11.59	12.65	19.57	28	43
Qinhai	1.68	2.14	3.90	3	5
Ningxia	1.94	2.16	3.90	32	59
Xingjiang	4.87	7.27	13.08	5	8
<b>Total</b>	<b>583.16</b>	<b>685.55</b>	<b>1008.18</b>	<b>74</b>	<b>101</b>

Sources: Population: 1953: Hu Huanyong, et al (eds.), Papers on Population Studies, Shanghai, East China Normal University Press, 1988, pp.18; 1964: Liu Zheng, et al, Population Statistics, Beijing: Chinese People's university Press, 1981) pp. 62-63; 1982: State Statistical Bureau, Communique on Major Figures in the 1982 Population Census, Xinhua-English, Beijing, October 27, 1982, in Foreign Broadcast Information Service, No. 82-208, October 27, 1982. Persons per square kilometer: Population Analysis Section, General Office of the Census and State Statistical Bureau, 1982

Table 3: The Total Population , July 1, 1982 (in millions)

Province*	Population			Percentage	
	Total	Male	Female	Male	Female
Beijing	9.23	4.67	4.56	50.6	49.4
Tianjing	7.76	3.94	3.82	50.8	49.2
Hebei	53.01	27.13	25.88	51.2	48.8
Shanxi	25.29	13.16	12.13	52.0	48.0
Neimonggu	19.27	10.05	9.22	52.2	47.8
Liaoning	35.72	18.23	17.50	51.0	49.0
Jilin	22.56	11.55	11.01	51.2	48.8
Heilongjiang	32.67	16.72	15.94	51.2	48.8
Shanghai	11.86	5.91	5.95	49.8	50.2
Jiangshu	60.52	30.77	29.75	50.8	49.2
Zhejiang	38.88	20.17	18.72	51.9	48.1
Anhui	49.67	25.76	23.90	51.9	48.1
Fujiang	25.87	13.31	12.56	51.4	48.6
Jiangxi	33.19	17.11	16.07	51.6	48.4
Shandong	74.42	37.74	36.68	50.7	49.3
Henan	74.42	37.95	36.47	51.0	49.0
Hubei	47.81	24.55	23.26	51.3	48.7
Hunan	54.01	28.05	25.96	51.9	48.1
Guangdong	59.30	30.31	28.99	51.1	48.9
Guangxi	36.42	18.85	17.57	51.8	48.2
Sichuan	99.71	51.45	48.27	51.6	48.4
Guizhou	28.55	14.64	13.91	51.3	48.7
Yunnan	32.55	16.50	16.05	50.7	49.3
Tibet	1.89	0.94	0.96	49.4	50.6
Shaanxi	28.90	14.97	13.94	51.8	48.2
Ganshu	19.57	10.12	9.45	51.7	48.3
Qinhai	3.90	2.00	1.89	51.5	48.5
Ningxia	3.90	2.01	1.89	51.5	48.5
Xinjing	13.08	6.73	6.35	51.5	48.5
Military	4.24	4.13	0.11	97.4	2.6
Total	1008.18	519.42	488.76	51.5	48.5

Data sources: The third national census conducted in July 1982

Table 4: Urban and Rural Population, July 1, 1982 (millions)

Province	Total Population	Urban Population						Rural Population
		Total	%	Cities	%	Towns	%	
1	2	3	4	5	6	7	8	9
Beijing	9.23	5.97	64.7	5.60	93.8	0.37	6.20	3.26
Tianjing	7.76	5.33	68.7	5.14	96.4	0.19	3.60	2.43
Hebei	53.01	7.26	13.7	6.05	83.3	1.21	16.7	45.75
Shanxi	25.29	5.31	21.0	4.25	80.0	1.06	20.0	19.98
Neimonggu	19.27	5.56	28.8	3.19	57.4	2.37	42.6	13.71
Liaoning	35.72	15.13	42.4	11.88	78.5	3.25	21.5	20.59
Jilin	22.56	8.94	39.6	5.52	61.7	3.43	38.3	13.62
Heilongjian	32.67	13.31	40.7	8.77	65.9	4.34	34.1	19.56
Shanghai	11.86	6.98	58.9	6.32	90.5	0.65	9.50	4.88
Jiangsu	60.52	9.57	15.8	6.75	70.5	2.83	29.5	50.95
Zhejiang	38.88	10.00	25.7	6.86	68.6	3.14	31.4	28.89
Anhui	49.67	7.03	14.2	4.89	69.6	2.15	30.4	42.63
Fujian	25.87	5.48	21.2	3.31	60.4	2.17	39.6	20.39
Jiangxi	33.18	6.45	19.4	4.22	65.4	2.23	34.6	26.73
Shangdong	74.42	14.19	19.1	8.69	61.2	5.50	38.8	60.23
Henan	74.42	10.77	14.5	7.19	66.8	3.59	33.2	63.65
Hubei	47.81	8.28	17.3	5.47	66.1	2.80	33.9	39.53
Hunan	54.01	7.67	14.2	5.07	66.1	2.60	33.9	46.34
Guangdong	59.30	11.04	18.7	7.12	64.5	3.92	35.5	48.26
Guangxi	36.42	4.31	11.8	2.48	57.5	1.83	42.5	32.11
Sichuan	99.71	14.23	14.2	9.88	69.4	4.35	30.6	85.48
Guizhou	28.55	5.40	18.9	4.06	75.2	1.35	24.8	23.15
Yunnan	32.55	4.22	13.0	2.43	57.6	1.78	42.4	28.34
Tibet	1.89	0.18	9.5	0.11	61.1	0.07	38.9	1.71
Shaanxi	28.90	5.49	19.0	4.06	74.0	1.43	26.0	23.41
Ganshu	19.57	3.00	15.3	1.98	66.0	1.02	34.0	16.57
Qinhai	3.90	0.80	20.5	0.69	86.3	0.11	13.7	3.10
Ningxia	3.90	0.88	22.6	0.67	76.1	0.21	23.9	3.02
Xingjiang	13.08	3.71	28.4	2.62	70.6	1.10	29.4	9.37
Total	1003.94	206.31	20.6	145.25	70.4	61.06	29.6	797.63

Sources: The Third National Population Census.

Percentages are in italics. Column 4 is the percentage of urban population to the total population. Column 6 and column 8 are the percentage of city population and the percentage of town population to the to the total urban population respectively.

**Table 5: Growth of China's Total And Urban Populations and Implied Net Migration to Urban Areas (1949-1982)**

Year	Total Popn.	% Incr.	Urban Popn.	% of Total	% Incr.	Urban RNI	Expect Urban	Net Mig.
1	2	3	4	5	6	7	8	9
1949	541.67	—	57.65	10.6	—	—	—	—
1950	551.96	1.9	61.69	11.2	7.0	1.9	58.75	2.94
1951	563.00	2.0	66.32	11.8	7.5	2.3	63.12	3.21
1952	574.82	2.1	71.63	12.5	8.0	2.8	68.17	3.47
1953	587.96	2.3	78.26	13.3	9.2	3.1	73.85	4.41
1954	602.66	2.5	82.49	13.7	5.4	3.4	80.95	1.54
1955	614.65	2.0	82.85	13.5	0.4	3.1	85.08	-2.23
1956	628.28	2.2	91.85	14.6	10.9	3.0	85.37	6.48
1957	646.53	2.9	99.49	15.4	8.3	3.6	95.16	4.33
1958	659.94	2.1	107.21	16.2	7.8	2.4	101.91	5.30
1959	672.07	1.8	123.71	18.4	15.4	1.9	109.19	14.52
1960	662.07	-1.5	130.73	19.7	5.7	1.4	125.47	5.26
1961	658.59	-0.50	127.07	19.30	-2.80	1.0	132.07	-5.00
1962	672.95	2.18	116.59	17.33	-8.25	2.7	130.52	-13.93
1963	691.72	2.79	116.46	16.84	-0.11	3.7	120.95	-4.49
1964	704.99	1.92	99.17	14.07	-14.84	2.6	119.44	-20.27
1965	725.38	2.89	101.70	14.02	2.55	2.2	101.32	0.38
1966	745.42	2.76	102.66	13.77	0.95	1.6	103.32	-0.66
1967	763.68	2.45	103.49	13.55	0.81	1.6	104.30	-0.81
1968	785.34	2.84	104.51	13.31	0.98	1.8	105.35	-0.84
1969	806.71	2.72	105.48	13.08	0.93	1.5	106.08	-0.60
1970	829.92	2.88	106.54	12.84	1.00	1.6	107.17	-0.63
1971	852.29	2.70	107.51	12.61	0.92	1.6	108.29	-0.78
1972	871.77	2.29	108.27	12.42	0.70	1.4	109.02	-0.75
1973	892.11	2.33	109.63	12.29	1.26	1.3	109.62	0.01
1974	908.59	1.85	110.45	12.16	0.75	1.0	110.73	-0.28
1975	924.20	1.72	111.71	12.09	1.28	1.0	111.51	0.20
1976	937.17	1.40	112.43	12.00	0.64	0.9	112.76	-0.33
1977	949.74	1.34	116.17	12.23	3.33	0.9	113.46	2.71
1978	962.59	1.35	122.78	12.76	5.69	0.9	117.22	5.56
1979	975.42	1.33	133.57	13.69	8.79	0.9	123.86	9.71
1980	987.05	1.19	140.28	14.21	5.02	1.0	134.84	5.44
1981	1000.72	1.38	146.55	14.64	4.28	1.1	141.87	4.68
1982	1015.41	1.47	152.91	15.06	4.34	1.3	148.46	4.45

Data Sources: (1) R. J. R. Kirkby, *Urbanization in China: Town and Country in a Developing Economy 1949-2000 AD*, Columbia University Press, New York, 1985, 107-108, 114-115, 121-123. (2) All data are year-end. (3) Urban population include only urban non-agricultural population. (4) Expected urban population is calculated from the previous year-end's urban population total (column 4) and the urban rate of natural increase for the current year (column 7). (5) Column 9 is the implied net migration to the urban areas. Entries in entries in column 9 are derived from subtraction of column 8 from column 4.

**Table 6: Per Capita Income for Urban  
Dwellers and Rural Dwellers (Yuan)**

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Year	Average	Urban	Rural
1964	120	222	97
1981	265	476	213
1982	311	509	260
1983	357	549	299

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Data source: The Chinese Social Statistics, The  
State Statistical Bureau, Beijing, August 1984



**Table 7: Number of Durables Owned by Urban  
and Rural Dwellers (per 100 people)**

Items	1978	1980	1983	% increase(83/78)
<b>Sewing Machine</b>				
Average	3.5	4.7	7.5	114.3
urban	8.6	11.2	16.6	93.0
Rural	2.4	3.2	5.3	120.8
<b>Bicycle</b>				
Average	7.7	9.7	15.4	100.0
Urban	23.3	27.9	37.4	60.5
Rural	4.3	5.6	10.2	137.2
<b>Watch</b>				
Average	8.5	12.9	22.2	161.2
Urban	29.3	44.4	59.5	103.1
Rural	4.0	5.8	13.5	237.5
<b>Radio</b>				
Average	7.8	12.1	20.9	167.9
Urban	20.2	29.6	36.3	79.7
Rural	5.1	8.1	17.3	239.2
<b>TV set</b>				
Average	0.3	0.9	3.5	1100.0
Urban	1.3	3.5	12.6	870.0
Rural	0.1	0.3	1.4	1300.0

Data source: The Chinese Social Statistics, The State Statistical Bureau of China,  
Beijing, August 1984

**Table 8: Regional Distribution of Urban Population, China 1947-1976**

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Region	1947	1964	1973	1976
Eastern Coast	65.3	53.2	47.3	47.8
Western Part	34.7	46.5	52.7	52.2
Total	100.0	100.0	100.0	100.0

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Source: (1) Youren Wu, "Socialist Urbanization in Our Nation," Population and Economy, No 2, 1980, pp 7-12

**Table 9: Number of Chinese Cities by Population Size 1957-1986**

Year	Total	Cities with Popn. over 1 Million	Cities with Popn. of 1/2-1 million	Cities with Popn. of 1/5-1/2 million	Cities with Popn. under 200,000
1957	178	10	18	36	114
1960	199	15	24	32	128
1961	208	15	22	33	138
1963	174	15	18	54	87
1965	171	13	18	43	97
1970	176	11	21	47	97
1975	185	13	25	52	95
1978	192	13	27	60	92
1979	216	16	27	67	106
1980	223	15	30	70	108
1981	233	18	28	70	117
1982	245	19	29	70	127
1983	289	19	29	73	168
1984	300	19	31	81	169
1985	324	21	31	94	178
1986	353	23	31	95	204

1. All city population are registered as non-agricultural residents.

2. Data source: Beijing Review, Vol. 30, No. 27, July 6, 1987

**Table 10: Urbanizational Level and Its Related Indices for China and Selected Asian Countries 1950-1980**

Country	% of Urban	Annual Increase	Urban Pop (thousand)	Annual % Change(Ur)	Annual % Change(Ru)
<b>China</b>					
1950	11.2	---	61690	---	---
1960	19.7	1.03	130730	1.84	0.81
1970	12.8	-0.29	144240	2.29	2.58
1980	14.2	0.25	191400	1.75	1.50
<b>Thailand</b>					
1950	10.5	---	2060	---	---
1960	12.5	2.04	3296	4.81	2.77
1970	14.8	2.03	5351	4.96	2.93
1980	17.0	1.70	7633	3.62	1.92
<b>South Korea</b>					
1950	18.4	---	3750	---	---
1960	28.3	5.80	6997	6.44	0.64
1970	37.9	4.51	12175	5.70	1.19
1980	57.3	8.02	21434	5.82	-2.20
<b>Japan</b>					
1950	37.4	---	31203	---	---
1960	63.5	10.81	59333	6.64	-4.17
1970	83.2	10.30	85509	3.72	-6.58
1980	76.2	-4.48	89187	0.42	4.90

Data source: (1) Thailand, South Korea and Japan 1950-1970, United Nations 1973a: Table 20  
 (2) Thailand, South Korea and Japan 1980, Demographic Yearbook, United Nations 1985  
 (3) The Chinese Date: Statistical Yearbook of China 1986, State Statistical Bureau, PRC, Economic Information & Agency, Hong Kong

**Table 11: Comparison of Sino-US Urbanization Level**

China		U.S.	
Year	Urban Level	Year	Urban Level
1949	10.6	1850	15.3
1952	12.5	1860	19.8
1957	15.4	1870	25.7
1962	12.4	1900	39.7
1970	15.1	1930	56.1
1978	12.5	1950	64.0
1980	16.4	1970	73.5
1982	20.6	1980	74.0

- Data sources: (1) U.S. data is compiled from Historical Statistics of U.S. Colonial times to 1970; U.S. Department of Commerce, Bureau of the Census
- (2) U.S. data for 1980 comes from Statistical Abstract of the U.S. 1988, 108th edition, U.S. Department of Commerce, Bureau of the Census
- (3) 1982/3 China Official Annual Report, English Edition, Hong Kong, Kingsway International Publications Ltd., 1982
- (4) Statistical Yearbook of China 1981, Hong Kong, Economic Information and Agency, 1981

Table 12: Variables Used for Regression, 29 Provinces  
Municipalities and Autonomous Regions in China

Region	UR 86	AM 82	IND 82	SIZE	INRAT 83	LITCO 82	SHARE 83	POS 83	CINE 83
Beijing	67.18	1.028	2477.5	16.8	1.25	77.45	64.88	0.6	5.00
Tianjing	70.70	1.442	2728.7	11.3	1.47	73.75	65.60	0.5	5.00
Hebei	35.84	0.511	433.8	180.0	1.98	68.20	61.25	0.3	2.00
Shanxi	56.95	0.717	527.6	150.0	1.74	73.54	61.45	0.7	2.50
Inner Mong	45.69	0.496	355.7	1200.0	1.89	65.56	59.66	0.9	2.00
Liaoning	68.98	0.724	1333.4	140.0	1.24	80.37	65.78	0.6	5.00
Jilin	63.54	0.638	638.1	180.0	1.17	75.74	65.02	0.7	3.33
Heilongjia	61.16	0.856	821.7	460.0	1.44	74.62	65.17	0.6	3.33
Shanghai	63.31	0.679	5368.6	6.2	1.23	76.49	65.87	0.5	0.59
Jiangsu	32.84	0.424	831.5	100.0	1.65	62.85	65.22	0.5	0.71
Zhejiang	43.73	0.373	593.3	100.0	1.63	67.83	67.30	1.0	1.25
Anhui	29.27	0.266	292.9	130.0	1.74	50.97	66.60	0.4	1.00
Fujian	43.72	0.265	338.7	120.0	1.86	60.31	71.57	0.9	1.25
Jiangxi	29.32	0.189	292.8	160.0	1.45	65.40	69.04	0.6	1.11
Shangdong	57.21	0.684	493.9	150.0	1.53	61.24	64.74	0.4	1.43
Henan	21.44	0.301	293.4	160.0	1.97	60.76	61.76	0.3	1.43
Hubei	47.24	0.420	570.1	180.0	1.88	66.43	67.33	0.5	2.00
Hunan	32.99	0.251	335.6	210.0	1.91	74.83	64.07	0.5	1.43
Guangdo	59.00	0.422	459.0	210.0	2.01	75.65	72.76	0.6	0.93
Guangxi	38.17	0.231	243.7	230.0	2.15	74.07	63.21	0.4	2.00
Sichuan	27.35	0.136	302.3	570.0	2.19	66.43	67.71	0.6	1.25
Guizhou	30.05	0.094	183.8	170.0	2.23	50.25	69.12	0.5	0.91
Yunnan	28.96	0.186	244.9	390.0	2.02	48.29	65.71	0.5	1.00
Shaanxi	39.53	0.389	392.6	190.0	2.34	63.56	60.54	0.6	1.25
Gansu	39.30	0.409	421.6	450.0	2.81	47.84	64.27	0.5	1.00
Qinhai	33.98	0.343	362.5	720.0	2.18	45.20	62.71	0.5	3.33
Ningxia	40.09	0.493	365.0	60.0	1.93	50.97	60.70	0.4	3.33
Xingjia	43.21	0.481	354.7	1600.0	2.25	65.61	62.69	1.0	1.43

Data sources: (1) Urbanization level (UR) is from the Statistical Year book of China 1983; (2) Agricultural machinery (AM) is from the Statistical Yearbook of China 1983; (3) Per capital industrial (IND) is from Poston and Gu's Socioeconomic Development, Family Planning, and Fertility in China, Demography, Vol. 24, No. 4; (4) Urban-rural income ratio(INRAT), Share of food expenses to total expenses in cities (SHARE), number of post offices in rural area (POST) and number of cinemas in rural area (CINEMA) are all from the Statistical Yearbook of China 1983; (5) County literacy (LITCO) is from the Third National Population Census of China 1985.

**Table 13: Correlation Matrix of Variables Used in Regression**

	UR	AM	IND	SIZE	INRAT	LITCO	SHARE	POST	CINEMA
UR	1.000 (0.00)	0.840 (0.00)	0.586 (0.001)	-0.170 (0.39)	-0.621 (0.00)	0.659 (0.00)	0.090 (0.65)	0.232 (0.23)	0.623 (0.00)
AM		1.000 (0.00)	0.592 (0.001)	-0.159 (0.42)	-0.560 (0.002)	0.508 (0.006)	-0.182 (0.35)	0.026 (0.90)	0.734 (0.00)
IND			1.000 (0.00)	-0.286 (0.14)	-0.540 (0.003)	0.435 (0.02)	0.059 (0.76)	-0.064 (0.75)	0.246 (0.21)
SIZE				1.000 (0.00)	0.407 (0.03)	-0.172 (0.38)	-0.300 (0.12)	0.488 (0.01)	-0.107 (0.59)
INRAT					1.000 (0.00)	-0.597 (0.001)	-0.168 (0.39)	-0.075 (0.71)	-0.459 (0.01)
LITCO						1.000 (0.00)	0.076 (0.70)	0.213 (0.28)	0.367 (0.05)
SHARE							1.000 (0.00)	0.167 (0.40)	-0.236 (0.23)
POST								1.000 (0.00)	-0.019 (0.92)
CINEMA									1.000 (0.00)

Note: (1) Total number of observations equals 28;

(2) The numbers in parentheses are the probabilities that reject null hypothesis  $\rho = 0$ .

**Table 14: Selected Regression Results with Urbanization Level as Dependent Variable**

Variables	Regression 1	Regression 2	Regression 3
Constant	-51.3369 (-1.364)	-53.1134 (-1.930)	-55.0451 (-2.126)
Agricultural Machinery (AM)	30.7153 (3.472)**	30.7531 (3.657)**	37.0184 (7.333)**
Industrial Productivity (IND)	0.0012 (0.709)	0.0012 (0.779)	
Provincial Size (SIZE)	-0.0011 (-0.195)		
Urban-Rural Income Ratio (INRAT)	0.3204 (0.060)		
County Literacy (LITCO)	0.3016 (1.751)**	0.3039 (1.993)**	0.3316 (2.282)**
Share of Food Expenses (SHARE)	0.7784 (1.561)*	0.8180 (1.952)**	0.8371 (2.097)**
Post Office in Rural Area (POST)	12.6858 (1.306)	11.4955 (1.599)*	10.2269 (1.489)*
Cinema in Rural Area (CINEMA)	1.1903 (0.729)	1.1835 (0.785)	
R-Square	0.84	0.84	0.83
ADJ R-Square	0.77	0.79	0.80
F- Ratio	12.527	18.417	28.762
Number of Observations	28	28	28

The numbers in parentheses are t statistic values.

\* \*significant at the five percent level

\* significant at the ten percent level



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