

The Impact of Changes in Population Structure on the Economic Development in China and the US

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Abstract: With the passage of time, science and technology have become increasingly developed, and the national economy has also made progress. Many countries are facing a common problem - the growth rate of the population has become increasingly slow. This article will conduct research on the question of how population changes influence the national economy. It is known that population is the main part of economic activity and the most fundamental variable of economic development. The increase in population is the basis of economic growth, and the growth of the economy depends on the population, and the growth of the economy usually contributes to the increase in population. In order to explore the impact of population changes on the national economy in China and the United States, this article mainly uses literature reading and analysis to conduct in-depth research on this topic. This paper proposes that population change has become an important factor in the economic development of a country. Population decline represents a decrease in the number of labor forces in the country, and the problem of population aging has intensified. Generally speaking, this will have a negative impact on the economic development of the country.

Keywords: population, economic development, influence, China, US

1. Introduction

The population and economic situation of a country have always been closely linked. Appropriate population size, population growth rate, and age structure will help to develop economy. Otherwise, it will hinder or even hinder the economic development. A nation's population should be proportional to its level of production and development. Overpopulation can result in excessive economic burden, low per capital income, and unemployment. Too small population will result in idle resources and slow economic growth. The population growth rate should be coordinated with the growth rate of social wealth, and either too fast or too slow is not conducive to economic development. Changes in the rate of population growth depend on two factors: fertility and mortality. When a country's fertility rate is greater than its mortality rate for a certain period of time, there is a positive population growth during that period; When the fertility rate is less than the mortality rate, the population shows negative growth; When the fertility rate and mortality rate are equal, the population remains unchanged, known as zero growth. For example, the United States experienced a baby boom after World War II. After the generation born at that stage reached the age of adulthood, the number of labor forces in the United States rose rapidly, greatly promoting the economic development of the United States. However, when this generation reached the retirement age, the number of labor forces

would plummet, and the issue of aging was prominent. In a given period, if the proportion of young people is relatively high, it will help to develop production and raise the standard of living; on the other hand, if the proportion of middle and old people in the population is relatively high, the amount of wealth creation will be reduced, and the production will inevitably be affected. China is also facing the challenges of population aging and negative population growth. In this paper, the author will take China and the United States as two major countries to explore whether demographic changes will have an impact on the national economy.

2. The Impact of Chinese Development

2.1. Analysis of the Change of Population in the Chinese History

By understanding and analyzing China's history, it can be better understood the impact of population growth or reduction on China's economy. Looking back on the history of Chinese population, it can be seen that in the first year since the founding of the PRC, the Chinese Mainland's population reached 550 million. The continuous growth of population has also stimulated the development of the national economy. During this period, agriculture was the focus of the economic development of New China. Therefore, the increase in population may be due to the desire to obtain more support and benefits in the family. However, due to the underdevelopment of the medical care system in the early stage, many people (including infants) died of disease. In the next few years, due to the rapid progress of the health industry, many epidemics that endanger the people, such as smallpox, malaria, dysentery, and schistosomiasis, have been effectively controlled, and the mortality rate of China's population has dropped significantly. From 20 % in 1949 to 11% in 1958, almost half of the total. However, the birth rate of the population has not declined, and the infant mortality rate and the mortality rate of children under five have also declined [1].

According to the survey results, along the track of rapid growth, China's total population has reached a huge scale of 8.9 billion in 1973. In the early 1970s, each couple had an average of six children; By 1980, each couple had only 2.31 children. In the next ten years, the fertility rate and mortality rate fluctuated little and remained at a relatively stable stage. Until 1990, they fell again. By 1996, China's average fertility rate had fallen further below 1.8. Population growth has changed from fast to slow. Under the strong impetus of family planning, the national birth rate dropped from 33.43 % in 1970 to 17.82 % in 1979; The natural growth rate of population dropped from 25.83 % in 1970 to 11.61 % in 1979; According to the estimates of some scholars, the total fertility rate of China's population in the 21st century is basically stable at 1.6 or lower. Except for the slight increase in 2016 and 2017 due to the release of the accumulated second child fertility potential due to the adjustment of the fertility policy, the other years are between 1.3 and 1.6. After the policy changes, the birth rate and population growth rate in the following years have never been repeated, and have maintained a downward trend until the negative growth phenomenon has appeared in recent years.

2.2. The Changing Process of China's Population

China has made great achievements in adhering to comprehensive decision-making on population and economic and social development. From the reform and opening up to the middle of this century, the relationship between China's population and economic development can be divided into three stages (See Figure 1). First, between 1970 and 2010, it was in the early part of the demographic dividend. Phase II, from 2010 to 2035, is the latter part of the demographic dividend period. The third stage will be from 2035 to 2050, with a steady decline in the total population and a high degree of aging, which can be called the post population dividend period. At that time, China will still be the second most populous country in the world, but its population structure is basically at the same level as that of developed countries.

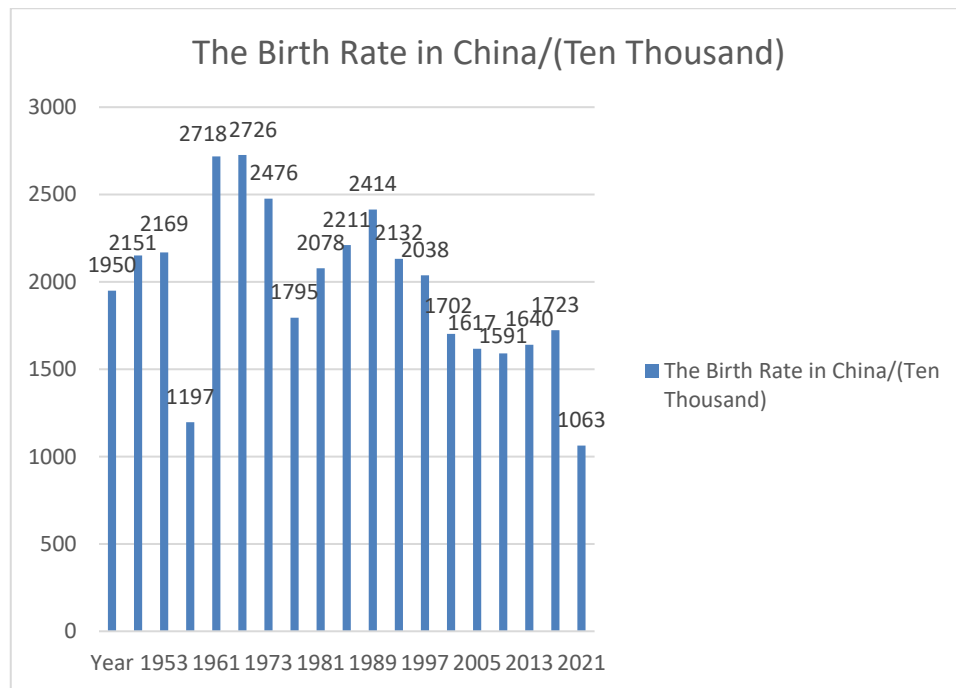


Figure 1: The birth rate in China [2].

The decline of population will indeed have a certain impact on the national economy. [2]. First of all, with the passage of time, after experiencing the baby boom in the past, the Chinese government officially promulgated the one-child policy in September 1980, requiring a family to have only one child. The purpose of this policy is to limit the sustainable development of China's population, control the birth rate and save resources at that time. However, in the long run, this may have solved the problem of resource scarcity in China at that time, but it will largely limit the sustainable development of China's labor force and exacerbate the aging of China's population.

In the view of China at that time, it is a great idea for China in 1980. In this era of serious shortage of resources, the one-child family could save a lot of resources for the country. In the process of economic and social construction, they also cultivated high-quality talents for the country. More importantly, China is increasingly advocating education and quality training, and the concept of fertility in the whole society has undergone profound changes. But it must be said that, for the Chinese, this policy has not only solved the problem of poverty, but also accelerated the transition of Chinese population, economic and social development, and made a historic change in the pattern of population reproduction, thus relieving the pressure on the resources and the environment.

2.3. The Impact of Population Decline on the Chinese Economy

In the process of rapid development, it is historically inevitable for China to face issues such as low fertility and aging in advance, and it is also a challenge that later developing countries will face sooner or later. Currently, China is in the second half of the demographic dividend period. There are still many favorable factors for economic development due to population. First, there is an abundant labor force. Second, the comparative advantage of having a relatively light population burden still exists. The potential energy of the total population is gradually emerging. The scale effect of a large population can support the innovation and development of each industry segment [3].

The above content is only applicable to China in the early stage (1980), but now it seems that the continuous decline of population will have a great impact on all aspects of China, especially the labor force. Although science and technology are more and more innovative and developed, China's labor

resources are still very important, because the reserve of labor force is the main force of the country's economic development. According to the survey of China's population in recent years, it is found that China's population and labor force have been in a declining stage, which means that China's population development has officially entered a new negative growth stage, and it is difficult to reverse in a short time. For the sustainable development of society, stable population growth is a necessary condition. If there is negative population growth, it will have an important impact on social development and economic development. As is all known, whether now or in the past, one of the main reasons for the rapid development of China's economy is that China has an extremely large number of labor resources, with the advantages of demographic dividend and cheap labor. But according to the current rate of population decline, China is likely to lose these advantages in the future.

On the other hand, in contemporary society, more young people pursue their own career development and cultural level improvement, so they are not willing to spend much time, money and energy on childbearing (See Figure 2) [4]. This move not only limits China's birth rate, but also aggravates the problem of China's aging population. With the passage of time, China's aging population is increasing, but the labor force is decreasing [5]. China's pension, medical care and insurance will be affected by changes in the population structure. If the population continues to grow negatively, the number of people who pay social security will decrease and the number of people who receive social security will increase. In such a cycle, it will inevitably lead to the emptiness of social security funds, and then affect the use of pensions and medical care.

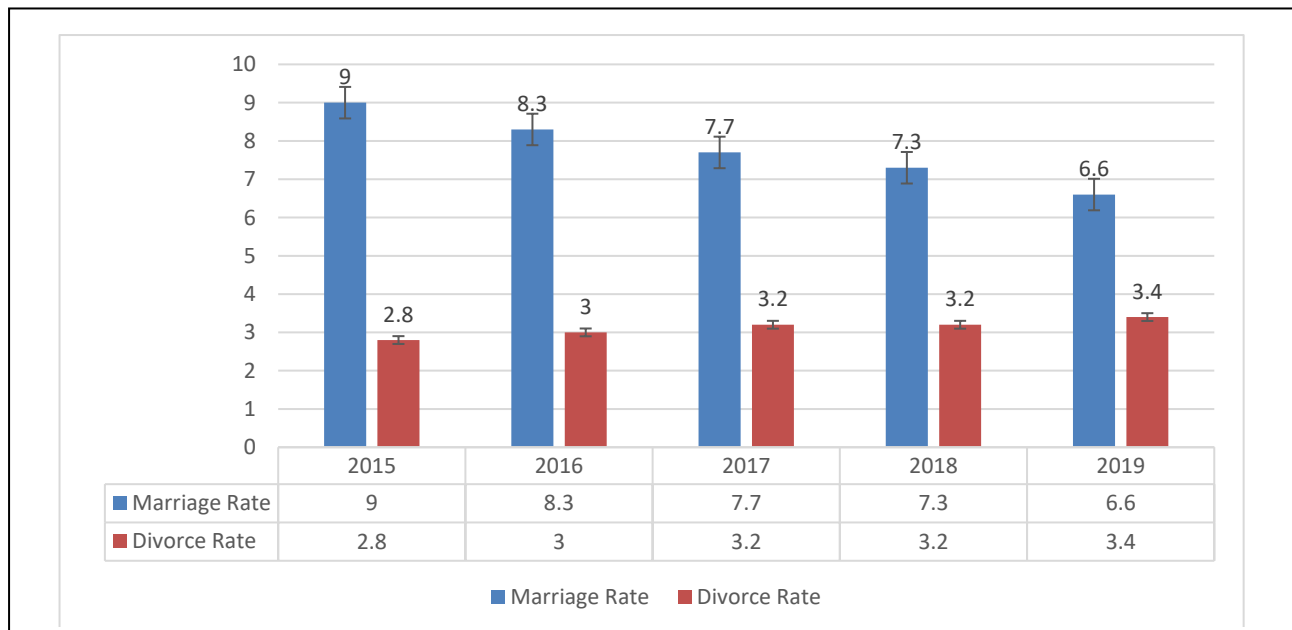


Figure 2: The marriage rate and divorce rate[5].

Another characteristic of the change in China's population structure is that the number and proportion of the single population are increasing. According to the data of the Ministry of Civil Affairs, the number of single people in China has reached 240 million in 2018, of which 77 million live alone [5]. It is expected that this number will reach 92 million in 2021 [6]. In addition, China also shows a trend of declining marriage rate and rising divorce rate. However, compared with the major developed economies in the world, the proportion of unmarried population in China is still relatively low, and the percentage of unmarried population in China is only 18.9%. From the perspective of historical development trend, with the improvement of economic level, the proportion of single population will be higher and higher [7].

3. Impact of American Development

3.1. The Population Change in the US

People have always been the key element of economic development, and population has always been one of the important fields of economic research. So what's the impact of America when they have the population change?

The US Census Bureau released the preliminary results of the 2020 census last month. The latest data shows that the population of the United States in 2020 is 331 million, an increase of 7.4% over 2010, the lowest growth rate since the Great Depression in the 1930s. The 2010's was the second lowest period of population growth in the history of the United States. Among the 50 states, the population growth rate of 37 states slowed down in 2010 compared with the previous 10 years, and three states experienced population loss [8].

It has to be said that the United States has long been one of the fastest growing industrialized countries. This was especially true in the second half of the 20th century, because of the "baby boom" after World War II and the increase of immigrants in the 1980s and 1990s. However, the birth rate of the United States began to decline around the beginning of the economic recession in 2007-09. In recent years, according to the survey, the results of the 2020 census show that the United States is in the lowest population growth decade in history (See Figure 3).

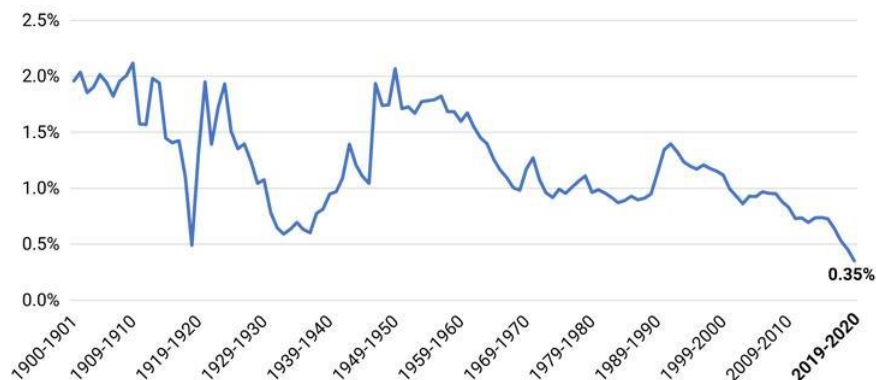


Figure 3: The US annual population change [9].

According to the data, from July 1, 2019, to July 1, 2020, the population of the United States increased by only 0.35%, less than half of the level in 2000. This is at least the lowest annual growth rate since 1900. The average birth rate in this year has decreased by about 0.5 percentage points compared with that ten years ago, and the average birth rate per woman has increased from 2.1 to 1.6 this year. This sharp decline can be attributed to the prevalence of the COVID-19 virus to a certain extent, because COVID-19 has not only brought higher mortality, but also brought people's immigration restrictions. However, for the population of the United States, the number of immigrants is crucial. According to such birth rate and death rate, it is expected that the population growth rate of the United States will also be negative in the coming decades.

At the same time, another huge problem has emerged in the United States population - a significant change in the population structure. In the United States, the white population has declined significantly, which is unprecedented. The proportion of the white population has decreased from 63.7% in 2010 to 57.8% in 2020. During this decade, the number of white people has decreased by 5.9%. Following this trend, the proportion of the white population is likely to be less than 50% after ten years. On the contrary, the population of Hispanics is growing very fast, and even in California,

Hispanics have surpassed 34.7% of whites by 39.4%, becoming the largest ethnic group in California. In these statistics, it can be found many interesting phenomena. For example, in the past decade, the population of the United States has only increased by 7.4%, which is the lowest level since the 1930s. The root cause is the decline in the fertility rate in the United States. "The problem of declining fertility has occurred in many countries, so it seems not surprising at this point. However, it is worth considering that the main population in the United States with declining fertility is white people.". According to the current survey, the proportion of white children has decreased to 47.3%, which has fallen below 50%. Although the growth rate of Asian descent is the highest, due to the limitations of the recognition population base, the proportion of Asian descent is lower than that of Hispanics. In the past decade, the Hispanic population has increased by nearly a quarter to 62.1 million, accounting for 18.7% of the total population of the United States, up from 16.3% a decade ago (2010). At this rate, the proportion of the white population will soon be less than 50%. Although many people may think this is not a very serious problem, in fact, this demographic change will affect the politics and economy of the United States.

3.2. The Impact of Population Decline on the American Economy

The above situation (Figure 4) shows that the state of sustained negative population growth is unfavorable for the U.S. economy: the aging population and the decline of the birth rate will change the original population structure of the United States, resulting in a series of problems, such as the supply of labor is far below the demand, the situation of the U.S. population in a certain region will become more and more serious, the number of unemployed people will increase, and the demand for relief will also increase [9]. Like China, the problem of population aging in the United States is very obvious. According to the data, from 2010 to 2020, the population of the United States over 55 years of age increased by 27%, which is more than 20 times the overall growth rate of the population under 55 years of age (1.3%).

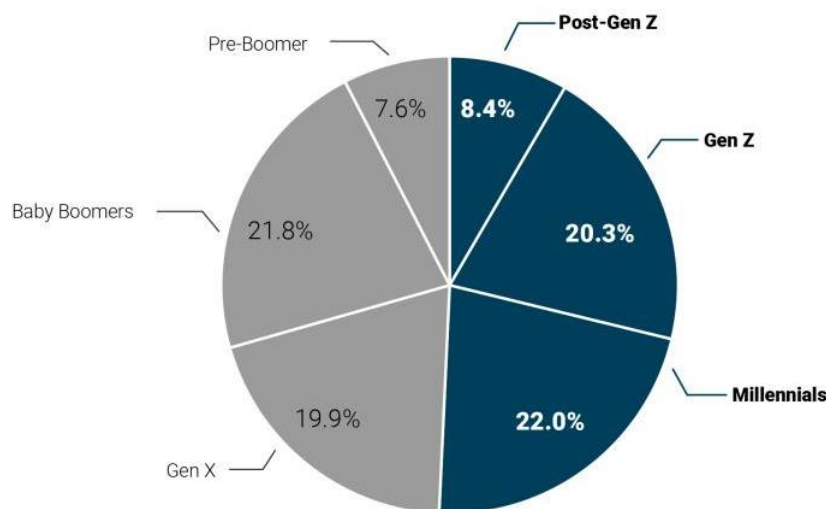


Figure 4: The share of US population by generation [9].

As mentioned above, the change of population structure has a profound impact on the economic level. The demographic change of the United States is not only reflected in the decline of the national birth rate and the increase of the number of elderly people, but also reflected in the decline of the number of white people. The decline of the white population is the main reason for the stagnation of the United States population, especially the young people under the age of 18. From 2010 to 2019, the white population in the United States decreased slightly by nearly 17000. Compared with other

racess and ethnic groups, the decline of white population is mainly due to its older age structure, resulting in lower birth rate and higher mortality rate compared with its population size. Experts predict that in the next three decades, white people will change from majority to minority; It is estimated that by 2060, nearly one fifth of the population of the United States will be foreign-born [10].

Population is the foundation of a country and also lays the cornerstone of a country's economic development. Therefore, the composition and change trend of population will also affect the country's economic progress and the development of politics, science, medical care, education and other aspects to varying degrees. The population change and social problems in the United States highlight the problem of insufficient motive force for population growth, which will further lead to insufficient motive force for economic development in the future, thus exposing its shortcomings in economic competition with other countries.

4. Conclusion

Generally speaking, in the course of economic development, people have two functions: first, they are the final recipients of economic development, and second, they are the important inputs to the economic growth and the transformation of the economy.

In addition, from a demographic perspective, future demographic changes in China and the United States will depend on the birth rate, mortality rate, and population migration of their respective countries. As both China and the United States are currently at stable low mortality levels, fertility levels will become a major factor affecting their future demographic and structural changes. There are many factors that affect fertility and mortality, and their impact is usually slow and gradual. For example, changes in family attitudes may lead to a gradual decline in fertility, while improvements in medical standards may lead to a sustained decline in mortality. However, there are other factors that can lead to sudden changes in fertility and mortality, such as war and natural disasters, leading to an increase in mortality and a decrease in fertility. This sudden change has far-reaching implications because it ultimately determines the number of labor forces in a country at different times, and thus determines the speed of economic development at different times.

In the interrelations of population and economy, the economy plays a decisive role, which is the basis of population's survival and development. Man is the subject of all economic activities. They not only take part in the production process as the decisive factor of productive forces, but also become the final destination and end of the production process as the main consumer. If there is no population, there will be no consumption, there will be no material goods, and therefore no economic activity. Therefore, the development of population not only reflects the development of economy, but also influences and limits the development of economy.

However, the current period is a critical one in which population contradictions overlap, development patterns alternate, and new and old driving forces shift. The country should maintain strategic focus and promote a balance between population development and the external environment. In the relationship between population and economic development, it is necessary to handle several relationships well. The first is the relationship between coping with long-term employment pressures and addressing the imbalance in the labor supply and demand structure. The second is the relationship between controlling the rise in labor costs and cultivating high-quality and efficient consumer markets. The third is the relationship between giving play to the decisive role of the market in factor allocation and maintaining a reasonable population distribution.

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