

Study on the Relationship Between Population Fluctuation and Economic Growth

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Abstract. Births, deaths and migrations are all factors that affect population fluctuations. World population growth is slowing down, but there are large regional differences. According to the results of recent censuses, the floating population of China is on the rise, however, the natural birth rate of China is decreasing year by year, and the domestic economy is also affected, as 'The population growth rate of China has been steadily declining owing to the low birth rate of the country. The Chinese census also indicates that the population is also rapidly ageing because of increasing life expectancy in conjunction with the low birth rate'. This indicates that educational attainment and living standard are two major elements which affect the number of population fluctuation and economic growth. This study mainly analyzes the correlativity between population fluctuation and changes in economic returns through the trend of birth rate and societal changes. This essay regards as that population fluctuation and economic growth are closely related, and there is mutual influence and mutual promotion between them.

Keywords: Population flow, Birth rate, Economic growth.

1. Introduction

1.1. Research Background and Significance

The birth rate in 2023 is the lowest in recent years, and the economic growth rate has gradually slowed down, while due to the accelerated adjustment of China's economic structure, the lower birth rate will cause the trend of economic growth become negative. The most important point is that the birth rate determines the population size and social structure, so the decrease of birth rate will lead to low population growth, which will also have an impact on human capital, in this case, it will reduce the ratio of labor supply and accelerate the problem of population aging. However, as the core factor of population factors affecting economic growth, labor force plays an important role in economic growth. This means that low birth rates will further increase labor costs and pension burdens, as well as rising wage rates. To sum up, this paper mainly studies the impact of birth rate and social change on economic growth, the reason is that birth rate and economic development are a complex interrelationship, and these two factors are an important part of economic development and determine the main direction of economic growth [1].

1.2. Literature Review

By reading some articles published by international organizations, foreign public accounts and domestic and foreign authors, as a reference for this article, and then decide the structure and main points of this essay. Don Eliseo Lucero-Prisno III illustrated that 'The population growth rate of China has been steadily declining owing to the low birth rate of the country' in the abstract of 'The challenges of the low birth rate in China'. Yujie Li said that 'Total fertility rate has a negative effect on economic growth in the current period' in his article about 'The relationship between fertility rate and economic growth in developing countries'. This can be seen as foreshadowing for the entire article because Yujie Li's view is a common phenomenon. Teresa Castro Martin expressed that 'The analysis confirms that higher education is consistently associated with lower fertility' in the essay about 'Women's education and fertility: results from 26 Demographic and Health Surveys'.

1.3. Research Content and Framework

In the present study, taking Shanghai and Beijing as cases, the way of combining with birth rate and economic growth is expounded from two different perspectives: average marriage age and life happiness by analyzing different types of population flow and annual population growth rate.

2. Case description

2.1. The case of Shanghai

Shanghai, a super metropolis under the direct jurisdiction of the central government, the economic center of China. Recently, Shanghai is suffering from a severe decline in its birth rate. ‘Shanghai 2022 Population Monitoring Statistics Data’ shows that the total child-bearing rate in Shanghai has registered population is 0.7, the mean age of first birth is 30.36 years old, and the mean age of childbearing is 31.18 years old. In 2020, the country's total fertility rate was 1.3 nationwide and 0.73 in Shanghai, while last year, the figure changed to 0.7 [2]. As Shanghai, a city with a relatively developed economy and a higher level of women's education, its total fertility rate is far lower than that of the country, and it is likely to get lower and lower. Table 1 shows the number of women of childbearing age in China's permanent population, floating population and registered residence population.

Table 1. China population

Area	women of childbearing age	married of childbearing age
	population (ten thousand people)	number of women (ten thousand people)
Resident population	623.51	408.23
Floating population	333.37	225.60
Registered population	293.24	184.72

Then, this paper gives the data of the one child rate, the second child rate and the third child rate of the permanent population and the registered residence population. It can be regarded from Table 2 that the first child rate of the registered residence population is exceeded than the permanent population, but the second child rate and the third child rate are opposite [3,4].

Table 2. Child birth rate

Area	The odds of child rate (%)		
	One-child rate	Two-child rate	Three-child rate
Resident population	66.01	29.46	4.53
Registered population	73.80	24.34	1.86

2.2. The case of Beijing

Beijing, the political center in China. With the rapid development and the change of population structure, Beijing's birth population reflects fluctuations and changes from year to year. The number of registered births in Beijing in 2020 is the lowest in nearly decade, the natural growth rate in 2022 is -0.05%, the unemployment rate is 4.7%, and the city's public expenditure has increased by 3.7%. This means that the decreasing birth rate leads to the decreasing economy (in Figure1) [5-7].



Figure 1. Number of permanent residents in Beijing in 2018-2022

3. Analysis on the Problems

By illustrating the graphs, the factors which influence the birth rate includes two different aspects: The first one is the societal changes as the age of first marriage of women continues to rise, by illustrating figure 2, the number of women of child-bearing age has fallen sharply and women are highly educated. If women have higher education, even though there have great conflict between child-bearing and employment, they are no longer affected and bound by the traditional concept of child-bearing and family, on the contrary, they are more eager to participate in social activities and work to realize and improve their value. Furthermore, highly educated women will also turn fertility into their own life value. However, because the child-bearing protection system for women is not complete, and the cost of childbirth increases, women are more willing to realize their value by working. The child-bearing rate in Shanghai, through the chart analysis, the author can find that the preference for a son during the one-child policy has caused an unbalanced gender ratio and people are also reluctant to have more children [8].

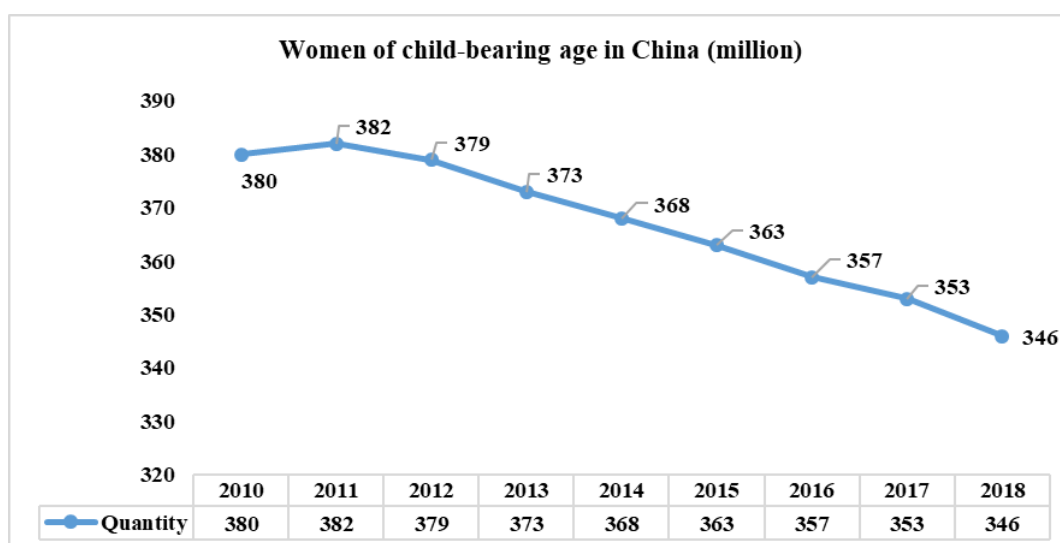


Figure 2. Women of child-bearing age in China

Source: National Bureau of Statistics

The second one is because of the high government expenditure in order to improve better living conditions. In the past, children started to work with their parents from an early age in order to make

money for the family, and may also receive benefits or subsidies because of the child's physical disability. As a result, women in many villages had a lot of children. However, under the present society, most children normally have a preference to go to school rather than bear the financial pressure of their families. From table 3, the increasing level of living standards represents to the higher cost of cultivating children. According to the Chinese birth cost Average report, China's GDP per capita is almost the highest in the world. Moreover, it can be found that the cultivating cost of one-child families is higher, and the cultivating cost of rural families and low-income families is lower. This means that having one or more children is a significant economic burden and opportunity cost, so in the case of rising housing prices, competitive education incentives, and inadequate medical care, people will not easily choose to have children. The more government expenditure is cost, the better infrastructure and social benefits like increasing pension people will have so that the elderly's living standards will be improved step by step. Thus, in this case, people no longer worried about raising children for providing for the old [9,10].

Table 3. Key indicators: China

		China	OECD
Average worker earnings(AW)	CNY	100,000.0	270,360.0
	USD	14,491.0	39,178.0
Public pension spending	% of GDP	—	7.7
Life expectancy	at birth	76.7	80.6
	at age 65	16.2	19.7
Population over age 65	% of working-age population	18.5	30.4

4. Suggestion

This paper will explain how to mitigate the effects of population fluctuations and birth rates on economic growth from two different aspects. Relevant government departments can increase maternity subsidies or related welfare measures, such as providing living or education subsidies. In terms of life, vaccines or baby products can be provided free of charge before a certain age, and certain mortgage or car loan concessions can be provided; In the field of education, some inequalities in education should be appropriately alleviated, and every student receiving education should be treated equally as far as possible. Increase fertility rates by helping to ease the burden on families to bear the cost of children. At present, there are many cases in which a woman who has given birth finds that her position will be replaced by someone else after maternity leave, and at the same time, the company does not respond and compensate, on the contrary, it seems that because the woman has had a child, the company will delay the performance of the company, so the company will find someone to replace her. This is also the reason why women do not want to give birth; women do not want to give up their efforts to achieve social achievements. This article puts forward the suggestion that the company should formulate corresponding regulations. A woman's position during childbirth can be replaced, but when she returns to the company, she should be allowed to communicate with the staff at that time about her previous work tasks, return to the corresponding position and assume corresponding responsibilities after completing the handover of work, and give some maternity subsidies depends on different situations. Also, if it is allowed, extend the rest time to ensure women's physical health [11].

5. Conclusion

According to various publications and papers published at home and abroad, the preliminary idea and article structure are obtained. Taking the population growth rate and different types of population flow in Beijing, the political center of China, and Shanghai, the trade center of China, as the main case analysis in recent years, the following conclusions are drawn: First, because women's education level is gradually increasing, they are more willing to devote their time and energy to work, so as to

increase their social value. Second, because of the improvement of living standards, the cost of children's education has gradually increased, so some low-income families cannot afford such a heavy burden; The increase in government spending has also made the elderly less worried and troubled about having no one to care for them. All in all, this essay points out that people from all aspects of society should pay attention to the fertility rate and economic growth of society, and experts in charge of fertility rate and economic growth should join hands to come up with some solutions. The reason why this study is important is that fertility rate and economic growth determine whether a country can become more developed, whether the people's happiness index can be improved, and whether the average age of human beings is the result, which is a matter of concern to the whole world. The problem in this paper is that it only cites the example of China and does not combine the global situation. The future research direction will also look for the factors affecting economic growth from the perspective of the world.

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