



COMPONENT ONE

**Population Aging and Its Influences on the
Economy and Society in China**

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Preface

Since China's reform and opening up, the development of economy and society in China have made remarkable achievements, and the comprehensive national strength have enhanced markedly. At present, China's GDP has become the second position of the whole world. However, China is still the world's largest developing country, the per capita GDP ranking beyond 90 and the development of economy and society is also facing with very difficult task. Especially in the 21st century, China is coming into a population aging society in an all-round way, which will bring a series of challenges to the development. On the one hand, aging has profound influences on many factors of economy development, such as labor market supply, capital accumulation, national savings, national income distribution and economy development potential, etc. On the other hand, the increasing of aging will bring a series of pressure to the social development in our country, the demand of pension, medical and nursing will increase and it will be difficult to balance the supply.

In full attention to the series of challenges brought from aging, we should see that ageing will also bring some opportunities at the same time. Ageing can increase the "consumer" population in the process of economy development, thus it can effectively expand domestic demand. In addition, it will bring some opportunities, such as developing old human resources to supplement the labor supply, developing the pension industry to upgrade industrial structure and improving the pension system to perfect the capital market, and so on. All of these can not only bring benefits for the elderly, but also can form a new economy growth point.

Overall, challenges and opportunity coexist in the process of aging, it needs to be discussed in depth and comprehensive. Despite the negative impact of aging may not be completely eliminated, replying on it timely and effectively can maximum limit the negative impact of ageing. Xi Jinping general secretary made important instructions on strengthening old-age work recently, he stressed that effectively cope with the population aging in our country, is a matter of national development of the country and of well-being of the nationals. It should be based on the current and long-term

perspective, strengthening the top-level design, improving fertility, employment, pension and other major policy and system, in order to make timely response, scientific and comprehensive response. Prime minister Li Keqiang also make instructions, he points out that we should combine aging with 13th Five Year Plan and put forward relevant policy recommendations, and pay attention to the maneuverability. The argument in response to the top design has been clear about the direction of aging. However, there are problems of aging and they interweave each other, it is still a lack of clear train of thought dealing with ageing at present. This topic will focus on the economy effects and social effects of aging based on the existing research and practice of aging, the experiences of coping with aging in the whole world, the historical evolution, development status quo and future trends of aging in our country. Besides, this topic will explore the challenges and opportunities of aging in China and put forward some ideas and suggestions dealing with aging. This topic research is based on the following premises:

One is some errors unavoidably exist as the population prediction, especially long-term population prediction will be influenced by many factors. The data on aspects such as ageing project mainly comes from the Department of Economy and society Affairs, United Nations. As an international authority in the population research, the Department release the related results according to the actual of the world's population prediction for an adjustment, and it has high credibility.

China is now opening the "comprehensive two children" policy to deal with population ageing, the policy will not change the overall trend of population age structure. Li Qiang, the dean of School of Social Science in Tsinghua university, who did a prediction of population structure in 2020, 2030, 2050 influenced by the "two child policy" and it shows that in the following 30 years, "the second child policy" is not a fundamental impact on China's population structure.

Based on the above several backgrounds and prerequisites, this topic will mainly develop from the following several aspects:

The first part is the current situation of population ageing in China's. This part mainly expounds the development and change of population age structure in China

and the present situation and characteristics of population ageing, and analyzed the state of development of economy and society in the early China's population ageing.

The second part is the development trend of China's population ageing. With the help of the data from Department of Economy and society Affairs, United Nations, we will forecast the population aging through different indicators, and comparing with the rest of the world population aging.

The third part is the analysis of China's population ageing 's influence on economy and society. This subject mainly focuses on the economy and society effects in order to explore the challenges and potential opportunities in the process of China's population ageing.

The fourth part is the experiences of dealing with aging population in foreign countries. This part will further sum up the experiences of different countries to cope with the population aging from the aspects of the economy development, social policy and pension service.

The fifth part is the possible strategy of dealing with population aging in China. This part will mainly explore the strategy dealing with population aging which is suitable for China's national conditions on the basis of international experiences for reference.

The main data sources of this report:

1. The population census data from 1953 to 2010 of China;
2. The annual data from National Bureau of Statistics, People's Republic of China;
3. Data from the Department of Economy and society Affairs, United Nations.

1 The Situation of Population Aging in China

Population ageing is an important trend in the development of the whole world. Changes of the population age structure affect every aspect of human's life extensively and profoundly, and population ageing has increasingly become a major population problem cared about by different countries in the world. As the world's largest developing country, China becomes a population aging country under the background of economy development level is relatively low, in the current and for a long time it will have a profound impact on China's economy and society development.

The fast developing trend of population aging is closely related to the decline of birth rate and mortality and the increase of life expectancy. At present, China's fertility rate has fallen below the replacement level, life expectancy and mortality is close to levels in the developed countries. As peak population born in the middle of the 20th century will go into old age, the early stage of the 21st century will be China's fastest growing period of population aging.

1.1 Population Aging and the Definition

1.1.1 Meaning and Measurement of Population Aging

Population ageing refers to the elderly population proportion growth dynamically in a country or a region because of the decrease of young population and the increase of older population. The meaning of population ageing usually contains two aspects: one refers to the elderly population increase relatively, it means the process of the rising proportion of older; Second refers to a state of an aging society.

Population ageing first produced in developed countries, it is inevitably resulted from the rapid development of economy, improvement of people's living standards, perfect of the medical security system and the progress of research and development and so on. At present, population ageing has become a common concern all over the world, it has a far-reaching influence on the economy and society development to the

countries, and it is also a sign of social progress.

Table 1-1 Measurement of Population Structure

	Young	Adult	Old
0-14/whole population	>40%	30%-40%	<30%
60+ / whole population	<5%	5%-10%	>10%
65+ / whole population	<4%	4%-7%	>7%
65+/0-14	<15%	15%-30%	>30%
median age	<20	20-30	>30

Usually in the international society, we take the proportion of population more than 60 years reached 10%, or the proportion of population more than 65 years reached 7% as a standard to measure the population aging society. In addition, the young population ratio (the proportion of population aged 0 to 14 years is less than 30%), old and young, than (the proportion of population aged 65 and above accounts for the population aged 0-14 is over 30%), the median age (the median age in the 30 years of age or older) can also be used as a measure of an ageing population.

This topic mainly adopts international general indicators (10% of the population aged over 60, 7% of the population aged over 65) as the main standard to judge the population aging, while the other as auxiliary measurements, in order to determine the severity of population ageing.

1.1.2 Process of Population Aging in China

The change of China's population age structure is not a continuous aging process, but it has experienced from a relatively young population structure to old population structure rapidly. In 1953, China became an adult population structure, then it began to be younger. In 1964, it had become a young population structure (proportion of 0-14 was more than 40%, people of 65+ is less than 4%); After the mid-1960s, with the falling of mortality rates and fertility rate, the population age structure became into adult again, by the year 1982 it had become a typical adult population; In 1990s, the median age improved further, the quantity and proportion of the older continued to rise, the aging process speed up continuously. In 2000, the fifth population census showed that population aged 65 years and above had reached 88.21 million in China, which accounts for 6.96% of the total population, China officially became aging

countries; in 2010, the sixth population census showed that the population aged 65 years and above in our country had reached 8.87 %, it increased by 1.91% compared to 2000, population ageing was further developed.¹

Table 1-2 population age structure from 1953-2010

Year	0-14/whole population (%)	65+/whole population (%)	65+/0-14 (%)	median age (year)
1953	36.3	4.4	12.1	22.7
1964	40.7	3.6	8.8	20.2
1982	33.6	4.9	14.6	22.9
1990	27.7	5.6	20.2	25.3
2000	22.9	7.0	30.6	30.8
2010	16.6	8.9	53.6	35.2

Source: counted from all previous census data in China.

1.2 The status quo and characteristics of population ageing in China

1.2.1 The aging increasing fast, and the old-age dependency ratio rises

Since the founding of new China, the population age structure is due to the change of the birth and death rates. From the data of six censuses, the quantity and proportion of elderly population is rapidly developing, the proportion of the population aged 60 and above is 7.32% in 1953 and the number rose to 13.26% in 2010, the proportion of the population aged 65 and above is 4.41% in 1953 and the number rose to 8.87% in 2010. According to the UN standard, in 2000 the proportion of the population aged 60 and above is 10.33% in our country, which marked that China has formally entered an aging society.

From the point of an ageing population development speed, China spent only 18 years in changing the population age structure from the adult structure to older structure, while other countries like France took 115years, Switzerland took 85 years, the United States took 60 years, even with high aging degree of Japan also took 25 years. The speed of China's population aging development is very fast².

At the same time, China's population aging scale is huge, the quantity of old people equals 1/5 of it in the whole world.³ China is one of the world's most populous

¹ National Development and Reform Commission. population and social development report 2014 - population changes and the public service [R]. 2015

² Sun Qixiang, Zhu Nanjun. China's ageing population analysis [J]. China's financial, 2015 (24) : 21-23

³ The national working committee office on aging. China's ageing population trend prediction research report [R]. 2006

country in the elderly and it is the only country whose elderly people are more than hundreds of millions.

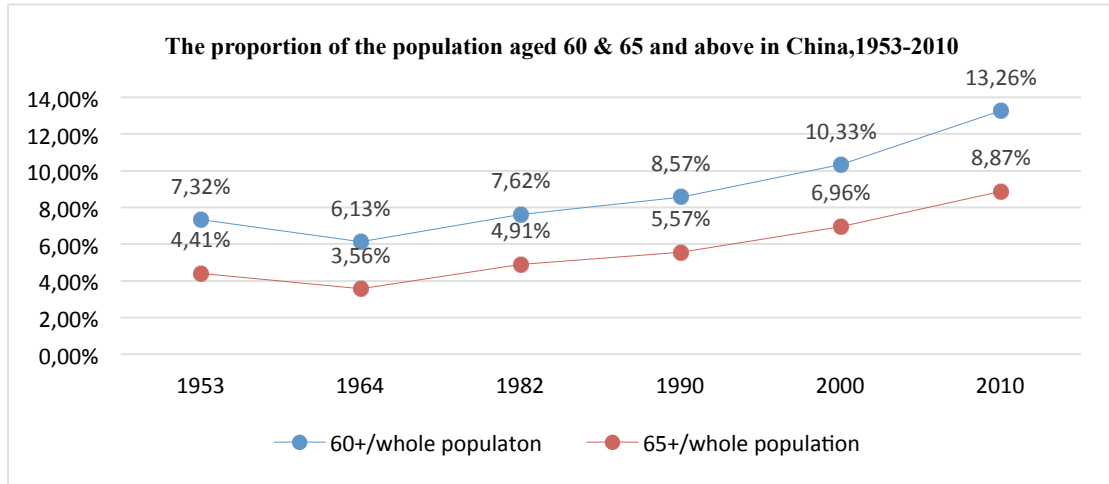


Figure1-1 The proportion of the population aged 60 & 65 and above in China, 1953-2010

source: counted from all previous census data in China.

Since entering an aging society, along with the high speed of economy development in China, people's living standard is rising. Especially due to the improvement of medical and health conditions, people's life expectancy becomes longer, and together with continuing of the family planning policy, the number, scale and increasing speed of elderly population in our country are increasing quickly. In 2000, the number of the population aged 65 and above is 88 million, and the proportion of total population is 6.96%. By the end of 2014, the number of the population aged 65 and above reached 138 million, the proportion of total population is up to 10.06%.

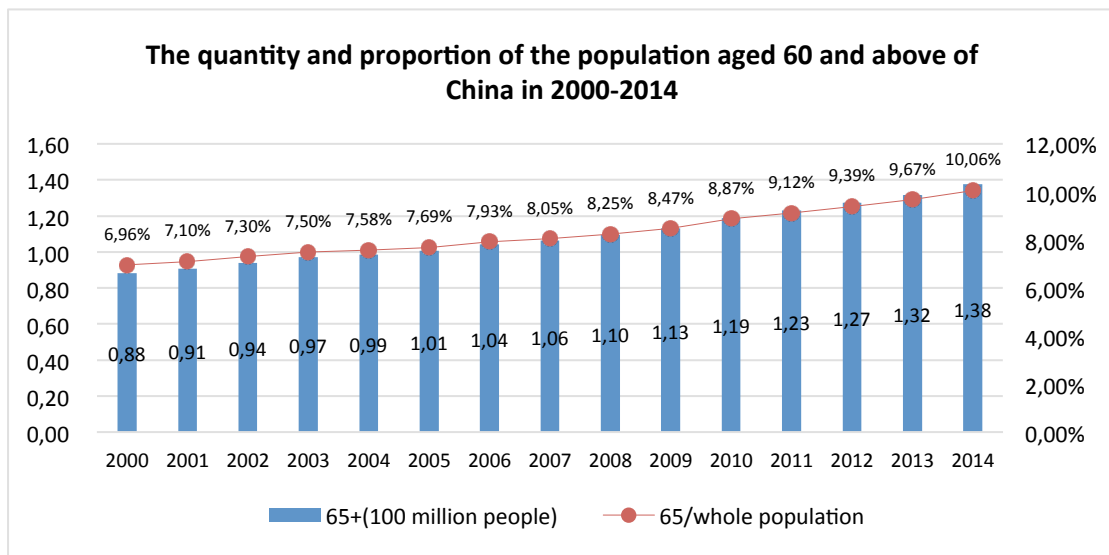


Figure 1-2 quantity and proportion of the population aged 60 and above of China in 2000-2014
sources: The annual data from National Bureau of Statistics, People's Republic of China , whereby, data of 2000 and 2010 are based on the census data, the other data are calculated according to the annual population sampling survey.

Another important performance of population aging is the change of elderly dependency coefficient. According to all the previous census data in China, the elderly dependency coefficient in China has risen from 7.44% in 1953 to 12.62% in 2010 (taking the population aged 65 and above accounts for the proportion of population aged 15-64 as the elderly dependency ratio). And what this means is that with the gradual improvement of the degree of ageing, the pension burden of the labors will be more and more heavy.

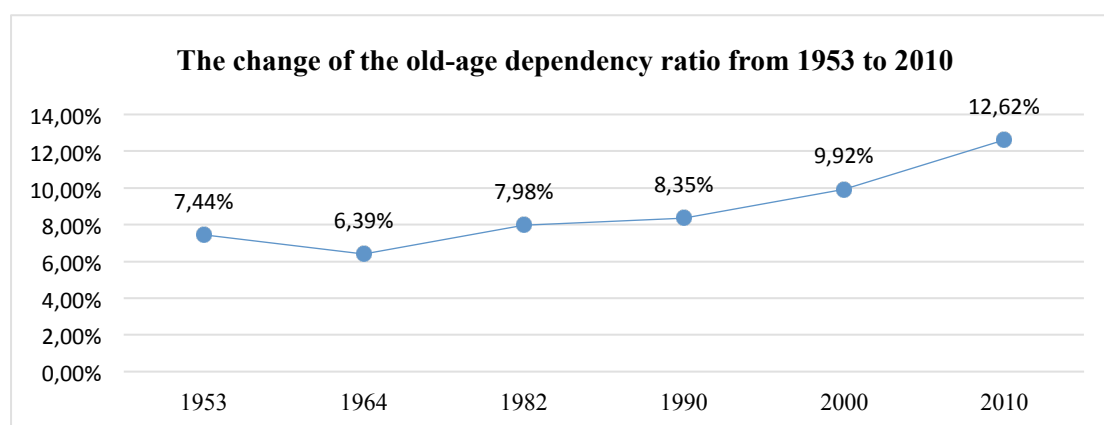


Table 1-3 The change of the old-age dependency ratio from 1953 to 2010

source: counted from all previous census data in China.

Note: elderly dependency ratio = population aged 65 and above / population of 14-65, that is, the proportion of the elderly population of working age population.

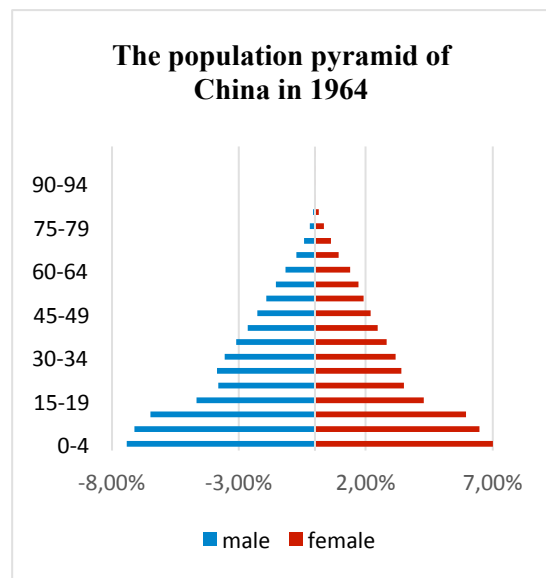
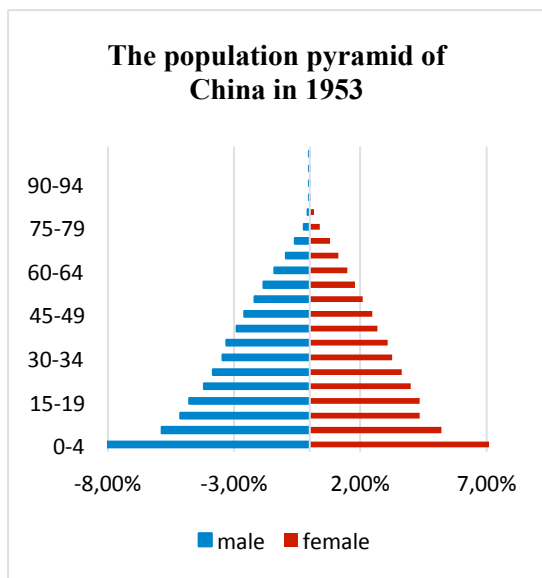
1.2.2. The bottom of the population pyramid is shrinking, the structure of population is becoming older and older.

Great changes of population age structure have taken place since the founding of the People's Republic of China. The quantity of population aged 60 and above rose from 41.5 million in the first national census in 1953 to 177 million in the sixth national census in 2010, which has been increased by a factor of 4.

Scholars have different interpretation to the changes of the population age structure in China. Generally, the changes of population age structure were summarized as three phase shift. The first phase is high birthrate and high mortality

rate, low natural growth rate, the second phase is high birth rate, low death rate and high natural growth rate, the third phase is low birth, low mortality rate and low natural growth rate. The shift of the three phases has a relatively clear reflection in China's population age structure on the pyramid.

According to population age pyramid from the six times census in China, we can see that in 1953, population age structure in our country presented a standard pyramid shape and population age structure is still young. After that, along with the rapid rise of fertility and mortality decline, the population age structure became further younger. However, China began to implement family planning starting in the 1970s, the fertility rates fell sharply. The birth rate decreased from 34.11 ‰ to 17.82 ‰ from 1969 to 1979, and the births fell rapidly, and it also made the population age structure change gradually, the bottom of the pyramid is shrinking, the middle and top of the pyramid is expanding, which is an important performance of population age structure aging.



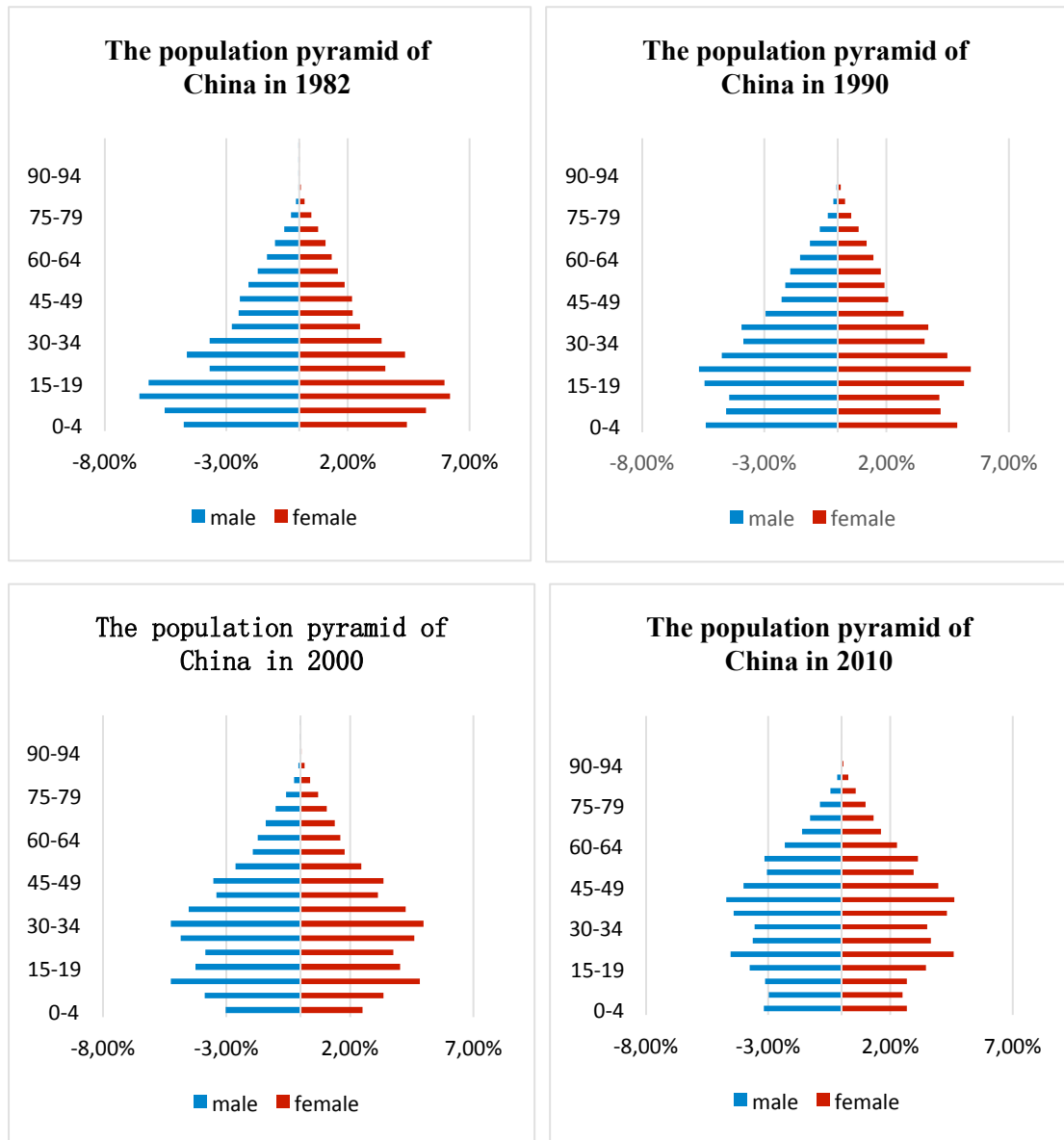


Figure 1-4 changes of population age pyramid in China from 1953 to 2010

In addition, all previous census showed that the proportion of the population of 0 to 14 decreased from 36.28% in 1953 to 17.12% in 2010, has fallen by more than half. The declining of the proportion of children is also the important performance of the aging population age structure.

Table 1-3 The whole population and population by age from 1953 to 2010

Year of census	whole population (million people)	Proportion of population by age (%)		
		0-14	15-64	65+
1953	59435	36.28	59.31	4.41
1964	69458	40.69	55.75	3.56
1982	100818	33.59	61.5	4.91
1990	113368	27.69	66.74	5.57

2000	126583	22.89	70.15	6.96
2010	133281	17.12	73.6	8.87

source: counted from all previous census data in China.

1.2.3 The life expectancy is becoming longer, the median age population is rising.

Life expectancy is an important symbol measuring residents' health level in a country or area. It is comprehensively calculated according to the death situation of baby and each age stage population, it refers to all the citizens should be lived to the age at this stage in the case of no accident. Life expectancy is one of the statistical indicators reflect lifespan, at the same time, the extension of life expectancy is also an important factor to deepen the process of population aging. Along with the gradually perfect of the economy and society development as well as the medical and health care system, life expectancy in our country continues to extend, and it had already been 43.39 years in the 1950s to the present 75.43 years. The extension of life expectancy increased the number of elderly people to a certain extent and deepen the process of the aging of the population.

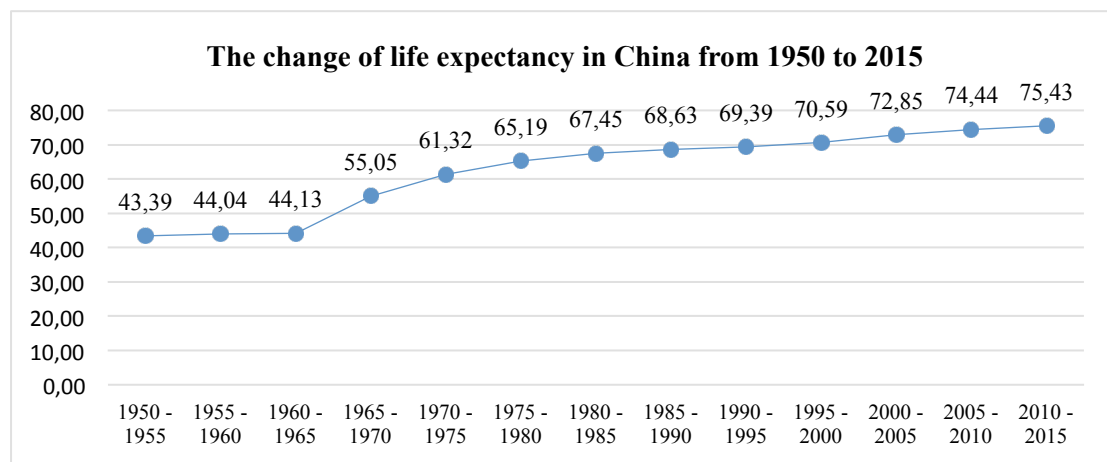


Figure 1-5 The change of life expectancy in China from 1950 to 2015

Source: United Nations, Department of Economy and society Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

The median age is also a key variable reflecting the population age structure. The upward moving trajectory of the median age can reflect the population ageing process as a whole. In the early days after foundation of People's Republic of China, as a result of rapidly rising birth rate, declining mortality, increasing new birth population, the median age population had experienced a period of decline. In the 1970s, along with the carrying out of family planning policy, new born population began to decline,

the median age of population increased year by year and it has risen to 37 at present. According to international practice, the median age indicators is a standard of dividing the population age structure types: it is a young population structure when the median age is under 20; it is an adult population structure when the median age is between 20-30; it is an elderly population structure when the median age is over 30. According to this standard, it significantly tells an elderly population structure in China now.

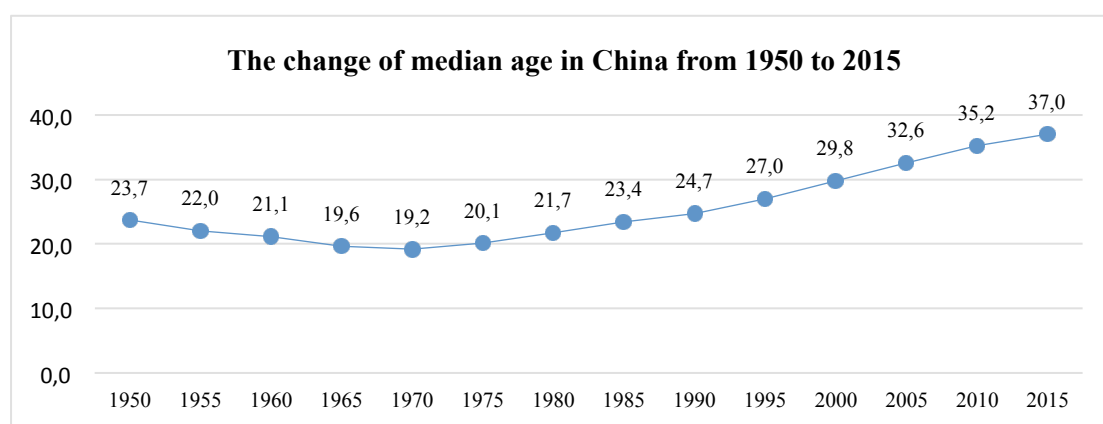


Figure 1-6 the change of the median age in China from 1950 to 2015

Source: United Nations, Department of Economy and society Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

1.2.4 The proportion of advanced ages and disabled elders is increasing.

In addition to the large elderly population and fast development of aging, the trend of advanced age is another striking feature of the population aging in our country. In 1953, the first time census of China showed that the population aged 80 and above accounts for the proportion of population aged 60 and above was only 4.37%, and by 2010 the sixth census this figure has risen to 11.68%, that is to say, there is more than a 80-year-old people in every 10 people over 60. In China, the average annual growth rate of advanced ages above 80 reached 5% from 1982 to 1990, the speed is much faster than the annual growth rate of the population aged 60 and above. From 1990 to 2010, the average annual growth rate of advanced ages above 80 was 4.1%, which is higher than the average level of the world even the developed countries.⁴As the extension of life expectancy and deepening of aging degree, the

⁴ Sun Qixiang, Zhu Nanjun. China's ageing population analysis [J]. China's financial, 2015 (24) : 21-23

proportion of advanced ages will have a tendency to rise further.

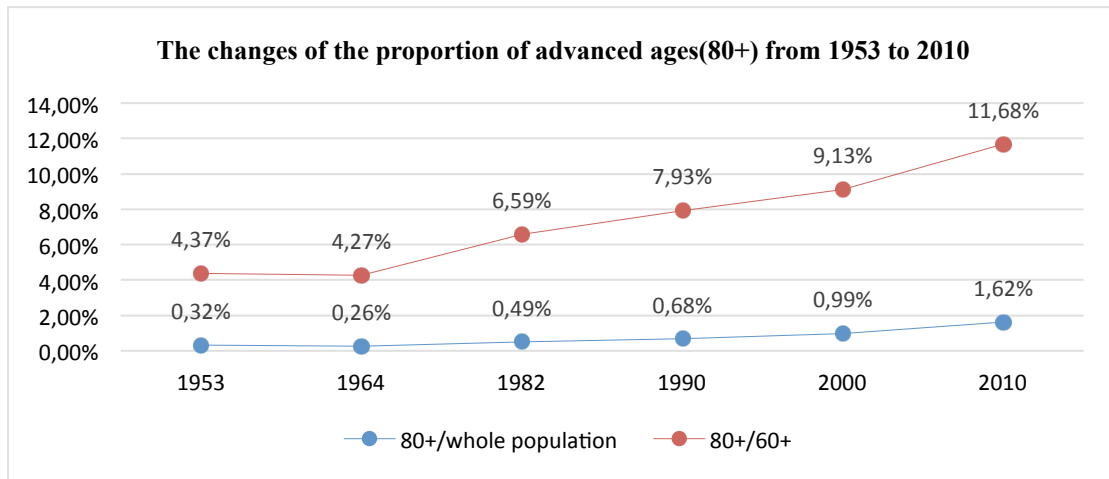


Figure 1-7 The changes of the proportion of advanced ages from 1953 to 2010

source: counted from all previous census data in China.

As the increasing of age, old people's health will also be weakening, also, advanced ages will lead to disability to a great extent. The ministry of health statistics showed that elderly people aged 60 and above was 3.2 times than the population prevalence of chronic diseases, and was 3.6 times of disability rate than the whole population. Compared with young people, the elderly will appear some age-related characteristics in physiology, the physiology is falling into a decline, the resistance is decreasing, and the possibility to be disabled is greatly increased.

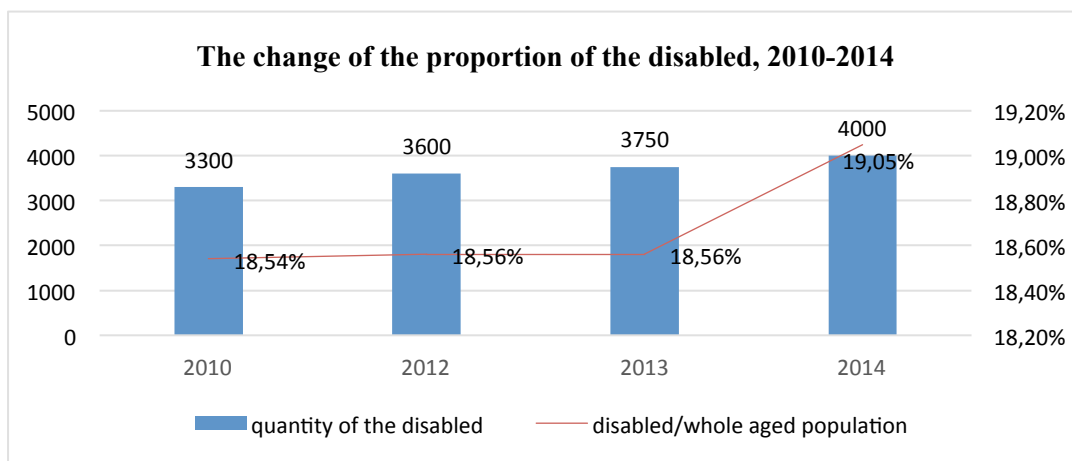


Figure 1-8 the change of disabled in China from 2010 to 2014

Source: arrange from the China Research Center on Aging and the press conference of Ministry of Civil Affairs of the People's Republic of China

China is currently the world's only country whose disability elderly population is

more than 10 million.⁵ In recent years, the number and proportion of disabled elderly people in China is increasing. In the year of 2010, the number of disabled elderly people is about 33 million, accounting for the proportion of elderly people aged 60 and above 18.54%. With the rising number of disabled elderly people, there are 40 million people fail (wisdom) among the whole 210 million old people aged 60, accounting for the proportion of elderly population aged 60 and above 19.05%. Authorities also predicts that the number of elderly population will reach 400 million by 2035, and the quantity of disability will further increase.

1.2.5 The population aging changes among different areas, the western areas surpass the formers

According to the fifth census data in 2000, China's aging population geographical distribution is consistent with the famous "Heihe–Tengchong" population distribution line. The degree of population ageing developed unbalanced among regions, the ageing is even severe in the provinces along the Yangtze river delta and several municipalities directly under the central government, while most of the western provinces have not yet entered the aging society. By 2010, the sixth census data showed that the population aging has developed rapidly and all quickly fell into an aging society in the western region provinces except Tibet, Qinghai, Ningxia, Xinjiang. Especially in Chongqing and Sichuan, the degree of population ageing is ranked among the top ageing rapidly in the whole country. The population ageing presents that the eastern region is slowing, the central and western regions are increasing, besides, with the labor force in the Midwest flowing to the eastern, this kind of situation will worsen.

⁵ Sun Qixiang, Zhu Nanjun. China's ageing population analysis [J]. China's financial, 2015 (24) : 21-23

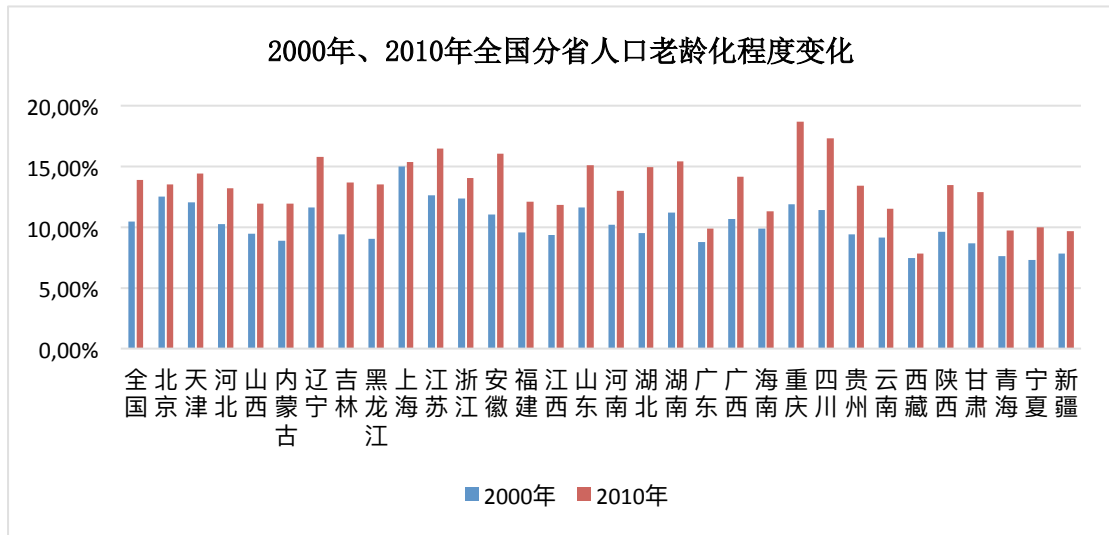


Figure 1-9 the change of degree of population aging in different provinces in 2000 and 2010
 Source: Arranged from the fifth and sixth census in 2000 and 2010 in China,
 Note: population aging means the proportion of people aged 60 and above of the whole population.

After entering the 21st century, the trend of advanced ages is becoming severe in most regions. Similar with the regional differences of ageing, the advanced ages in the part of western region surpass the formers, in addition to Shanghai, Jiangsu, the degree of the advance ages in Chongqing and Sichuan also ranks the top.

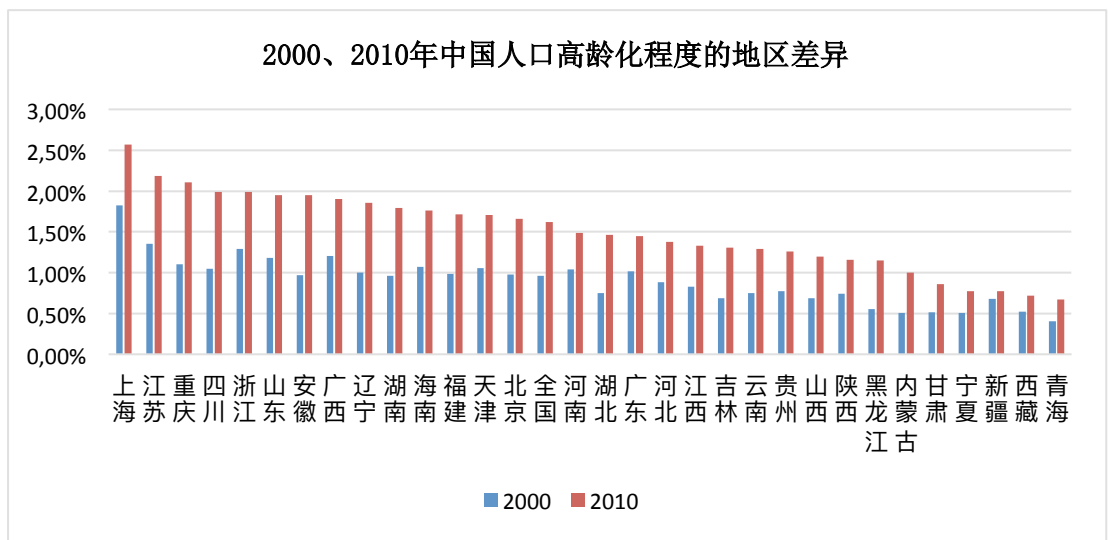


Figure 1-10 the differences of advanced ages among regions in 2000 and 2010
 Source: Arranged from the fifth and sixth census in 2000 and 2010 in China,
 Note: advanced ages means the proportion of people aged 80 and above of the population aged 60 and above.

1.3 The development of economy and society in the early ageing

1.3.1 Owed to the demographic dividend, the economy increased rapidly

Demographic dividend is a word first appeared in 1997, the *World Bank World Development Report*. The report argues that when the population structure comes to be the formation of "the top and the bottom is small while the middle is large middle" (0 to 14 years old population and population aged 65 and above is in small size, population aged 15-64 is in large scale), population dividend is more noticeable in the process of demographic transition. According to the existing research, we usually take 53% as a general demographic dividend standard, and 59% as the demographic debt standard.⁶ In general, dependency ratio of population is an important index of demographic dividend.

Table 1-4 Judging standard of dependency ratio of population, demographic dividend and demographic debt

	Demographic Dividend			Balance			Demographic Debt		
	强质型	显著型	趋强型	微弱型	平衡	微弱型	趋强型	显著型	严重型
Whole	<44	44-47	47-50	50-53	53-59	59-62	62-65	65-68	>68
Young	<25.5	25.5-27	27-28	28-30	30-33	33-35	35-36	36-37.5	>37.5
Elderly	<18.5	18.5-20	20-21.5	21.5-23	23-26	26-28	28-29	29-31	>31

Source: National Development and Reform Commission. population and social development report 2014 -- population changes and the public service [R]. 2015

According to the above indicators, in the early period of the population ageing society in China, population between 15-64 of working age group is still on the rise of demographic dividend period in a relatively long period of time (the proportion of the population between 15-64 is more than 70%, the total dependency ratio is less than 30%). This will provide a good environment for the rapid growth of the economy for China. Beginning in 2010, although China's working-age population numbers keep rising, the overall proportion began to decline. By 2014, the working age population of 15-64 became to decline for the first time⁷. Overall, China is still in the demographic dividend period.

Demographic dividend often leads to a series of opportunities: on the one hand,

⁶ Chen Youhua. demographic dividend and demographic debt: quantity definition, experience, observation and theoretical thinking [J]. Journal of population studies, 2005,06: 23-29.

⁷ Note: Take the 15-64 as the working age population is because most labour retired at the age of 60 are still at work, the second reason is the lack of statistical data of the population of 15 to 60 , the third reason is for the sake of unity with the world standards.

labor supply is adequate in the demographic dividend period, and the price is low and it can create more social wealth on the premise of full employment; On the other hand, a relatively young population age structure makes the savings rate higher, it can effectively convert savings into investment in a sound capital market so as to promote the economy development; At the same time, the social security will be at the stage of accumulated more, spending less in the demographic dividend period, which can accumulate a large number of social wealth.

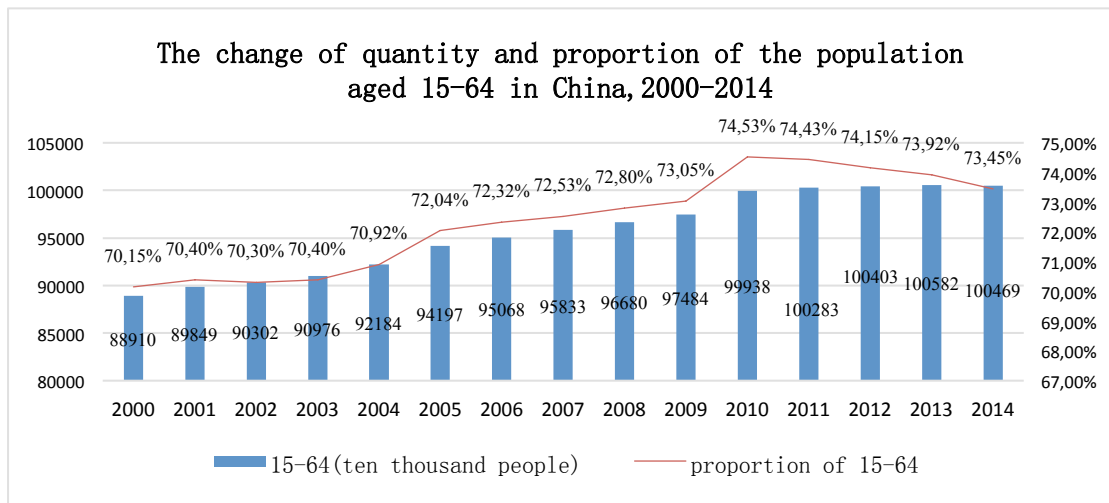


Figure 1-11 The change of quantity and proportion of the population aged 15-64, 2000-2014
Source: The annual data from National Bureau of Statistics, People's Republic of China

Benefit from the policy of reform and opening in China and the demographic dividend, China's economy development has been maintained a fast growth speed for decades. At the beginning of the 21st century of nearly 10 years, the GDP growth in China was more than 10%, which created a miracle of economy development. Because of it, the economy development level, people's living conditions have greatly improved. In recent years, along with the economy dimension increasing and the impact of population ageing and many other factors, the speed of China's economy growth is slowing down. At present, the economy growth in China has becoming gradually from rapid growth to about 6% of middle-high-speed growth especially as the demographic dividend reduce.

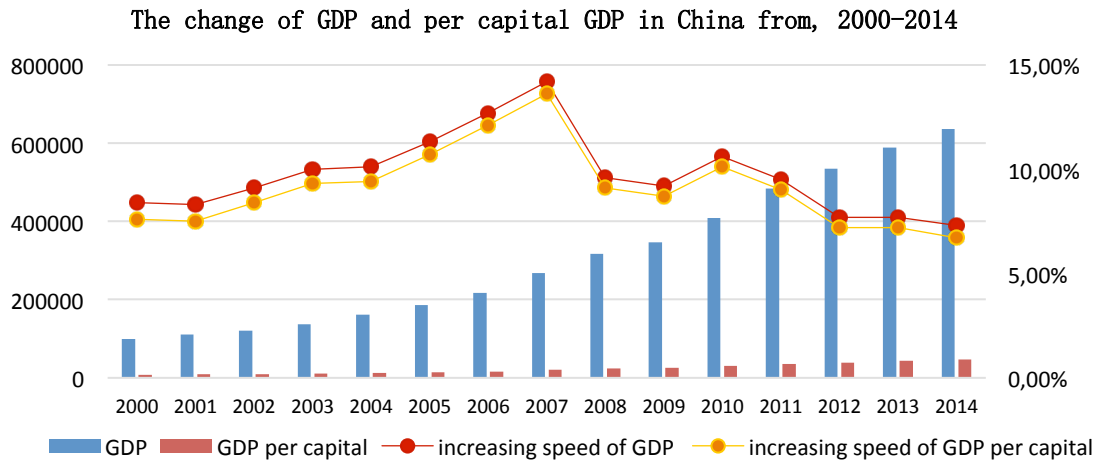


Figure 1-12 The change of GDP and per capital GDP in China from 2000 to 2014
 Source: The annual data from National Bureau of Statistics, People's Republic of China

1.3.2 The social security developed rapidly, the goal of establishing a full-covered system has realized

In terms of the pension system, China's pension system only covers the urban workers and community agencies and institutions before 2009 and there are only 219 million Chinese people was covered by the pension system by the end of 2008. In 2009, the pilot of the New Rural Pension Insurance System started and fully opened after that, in 2011, the Pension Insurance System for Urban Residents began to build, the pension insurance system has basically realized the goal of full-covered. From then on, the pension insurance system in China expands rapidly, at the end of 2014, the insured persons covered by China's pension insurance system has becoming more than 840 million.

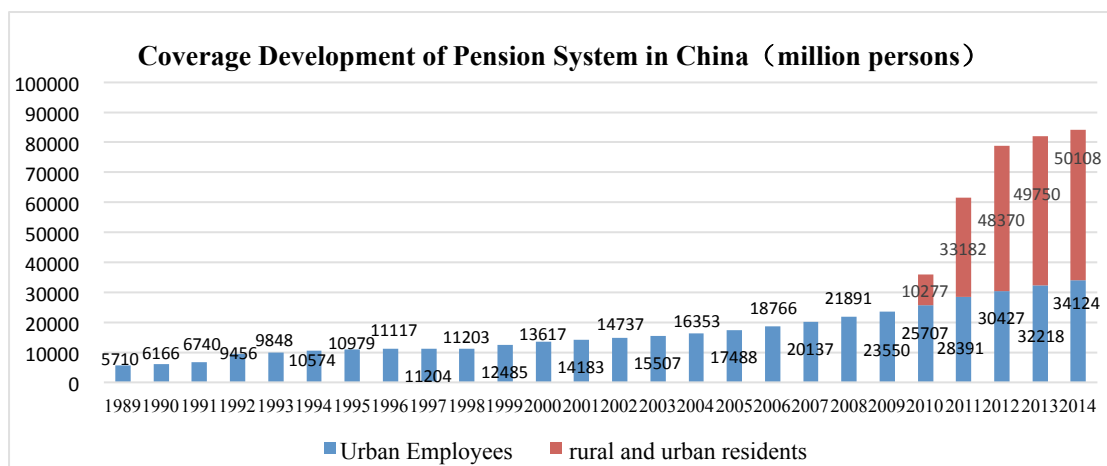


Figure 1-13 Coverage Development of Pension System in China (million person)
 Source: The annual data from National Bureau of Statistics, People's Republic of China

In terms of the medical insurance system, China's medical insurance system only covers the urban workers and community agencies and institutions before 2003 and there are only about 109 million Chinese persons who were covered by China's medical insurance system by the end of 2002. In 2003, the pilot of the New Cooperative Medical Insurance System was carried out fully opened after that, in 2007, the Medical Insurance System for Urban Residents began to build, after year of development, the Medical Insurance System has basically realized the goal of full-covered. By the end of 2014, the coverage of China's medical insurance system has becoming more than 1.33 billion.

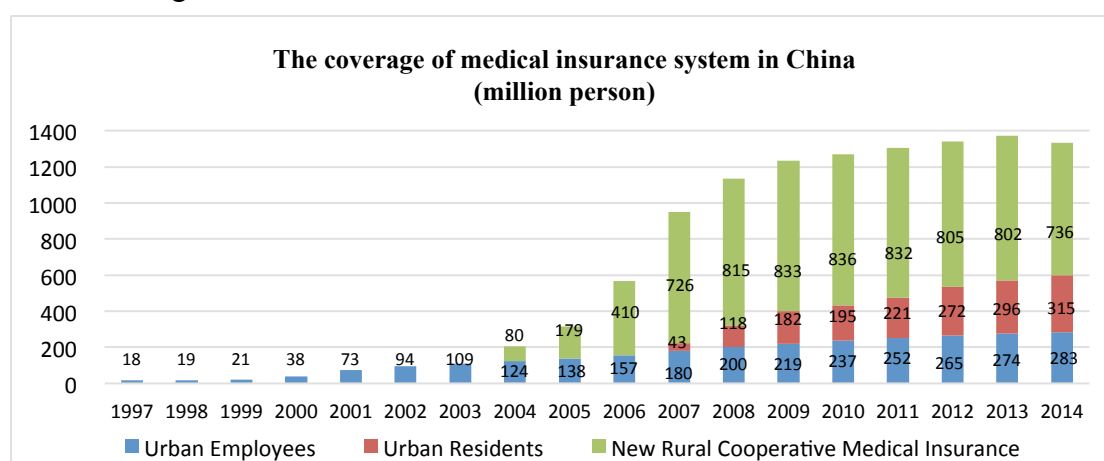


Figure 1-14 The coverage of medical insurance system in China (million person)
Source: The annual data from National Bureau of Statistics, People's Republic of China

1.3.3 China was not wealthy when it entered an aging society compared with other countries.

Compared with many developed countries of the world, the time when China stepped into the population aging society is not too early. However, the economy development level in China is not only far lower than developed countries, even it had a larger gap with the world's average level when China stepped into an aging population society along with the world overall in 2000. Developed countries are mostly step into the aging society under the condition of basic modernization, their society became old after they had been rich or their society became old when they were wealthy. Take the United States, Japan, Israel, South Korea, Singapore and so on for example, when these countries entered into population ageing, their per capita

GDP exceeded \$10000. However, China stepped into an aging society when it didn't achieved modernization. The per capita GDP was just nearly \$3976 when it entered into the ageing society in 2000, it was much lower than \$7446 of the world average.

Table 1-5 the degree of population aging and GDP per person of China compared with other countries

Countries and areas (year)	GDP per person (dollar)	aging (%)	
		Proportion of 60+	Proportion of 65+
world (2000)	7446	10.0	6.9
China (2000)	3976	10.1	6.8
American (1950)	10645	12.5	8.3
Japan (1970)	11579	10.6	7.1
Israel (1975)	12270	11.8	7.8
Korea (2000)	17380	11.0	7.1
Singapore (2000)	23356	10.5	7.2

Data sources: national population development strategy research group: the national total population development strategy research report.

In general, at the early stage of China's population ageing, the impact and influence to the economy and society development by the population age structure is not very significant, and the economy and society development has made great achievements under the impetus of the reform and opening up policy and the demographic dividend. But it is worth noting that China is still not wealthy and it has large gap with developed countries. Especially in the next few decades, the population age structure will impact the development of economy and society under the condition of population aging speed up, therefore, fully preparation must be made to cope with the aging of the population.

2 The Trend of China's Population Ageing

Along with the change of population age structure, the degree of population aging in China will continue to deepen. On the one hand, the state of fertility rates have remained low for a long time and it makes the bottom of the population age pyramid continues to narrow; On the other hand, the progress of research and development and the improvement of living conditions will make mortality decline further, which will make the top of the population age pyramid become wider eventually; In addition, the sharp drop of China's fertility rate and death rates was formed because of a series of policies economy development, therefore, China will be faced with the challenge of intensifying aging in the next few decades.

2.1 Prediction of the Development Trend of China's Population Age Structure

2.1.1 Prediction of the Development Trend of the whole population and the aged population in China

The future population trends of China involving the population policy of our country on the one hand, and also it concerns about the economy and society development goals. Different organizations and scholars have done some related prediction about the development trend of China's population aging. The changes of the future population are mainly influenced by fertility and mortality. However, the mortality is relatively stable, and it is often not included in the assumptions of

different prediction schemes, therefore, the differences among kinds of schemes mainly reflected in the data and assumptions of different future fertility.

The overall trend of the prediction of the population quantity and structure of China in the future is consistent, and there is little differences on the degree of aging prediction. All scholars predict that the population peak will be in 30s to 40s in the 21st century, and the speed of population ageing will be increased in the following thirty or forty years. Especially in around 2040, the proportion of the population aged 65 and above will be more than 20%, and to 2050, this proportion will continue to increase to be 20% to 24%.

Table 2-1 Prediction of the population age structure of China in the future by different organizations and scholars

Year	Zeng Yi		Guo Zhigang		Du Peng		Li Jianxin		UN	
	population	65+/whole	population	65+/whole	Population	65+/whole	Population	65+/whole	population	65+/whole
2000	12.71	6.8	12.69	7.1	12.74	6.9	12.88	7.0	12.70	6.8
2010	13.56	8.4	13.35	8.4	13.61	8.5	13.76	8.4	13.52	8.4
2020	14.40	12.9	14.33	11.6	14.33	11.9	14.50	11.9	14.21	11.9
2030	14.77	16.4	14.66	15.6	14.44	16.3	14.86	16.1	14.59	16.2
2040	14.81	22.4	14.62	20.4	14.29	21.9	14.70	22.0	14.48	22.2
2050	14.60	24.1	14.45	20.6	13.38	23.2	14.27	23.8	14.09	23.7

Resource: Li Jianxin. Problems of China's Population Structure [M]. Beijing: social sciences academic press,2009: P33

The Department of Economy and society Affairs, United Nations will make a comprehensive prediction about the population development of different countries according to the national population register data, census data and some important survey every two years. The most important factors that will influence the prediction are the change of population birth and mortality rates. The China's population and its structure is predicted according to the prediction of the birth rate and mortality rate.

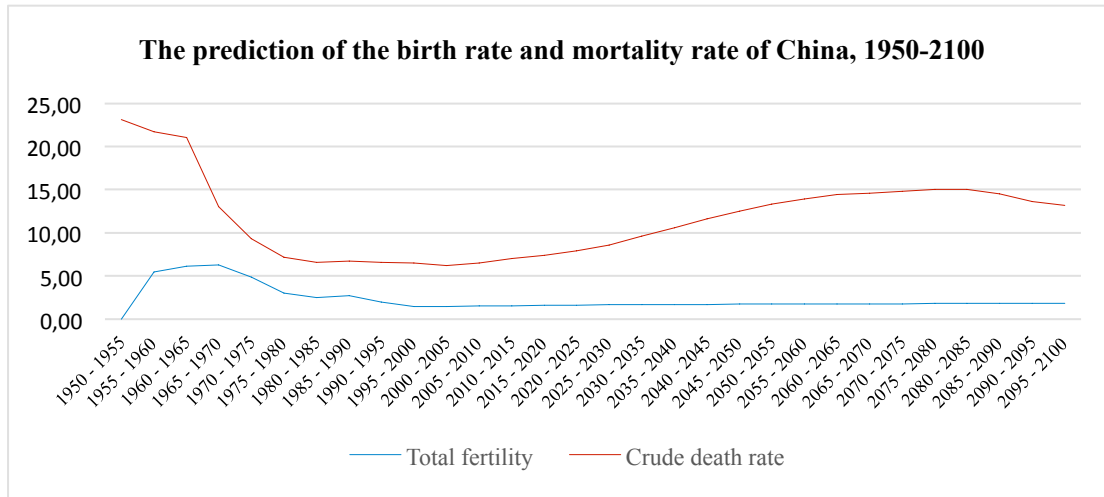


Figure 2-1 The prediction of the birth rate and mortality rate of China, 1950-2100

Source: United Nations, Department of Economy and society Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

From the perspective of the change of China's fertility rate, it has experienced a process of quickly rising during 1950 and 1970, then the fertility rate began to fall under the influence of the family planning policy, it has been basically stable at about 1.5‰ from the beginning of the 21st century until now, but the prediction data shows that China's birth rate maintained a certain rise from now on, (1.5 ‰ to 1.5 ‰, may consider the policy of second child). In the aspect of mortality, it decreased from 23 ‰ at the beginning of the founding of PRC to 6 ‰ in the 1980s, then it has remained in 6 ‰ 7 ‰ till now, but from now on, China's population mortality rates will rise from the current 7.4 ‰ to 13.2‰ in 2100.

The Department of Economy and society Affairs, United Nations, China's population will reach their peak at around 2030, then the whole population will begin to decline gradually. The population aged 65 and above will be further increased and peaked at around 2060, after that, the quantity of the population aged 65 and above will decline, but its proportion will still increase and remain at a high stage (about 33%) in quite a long period, the year 2060-2100 a plateau of severe aging.

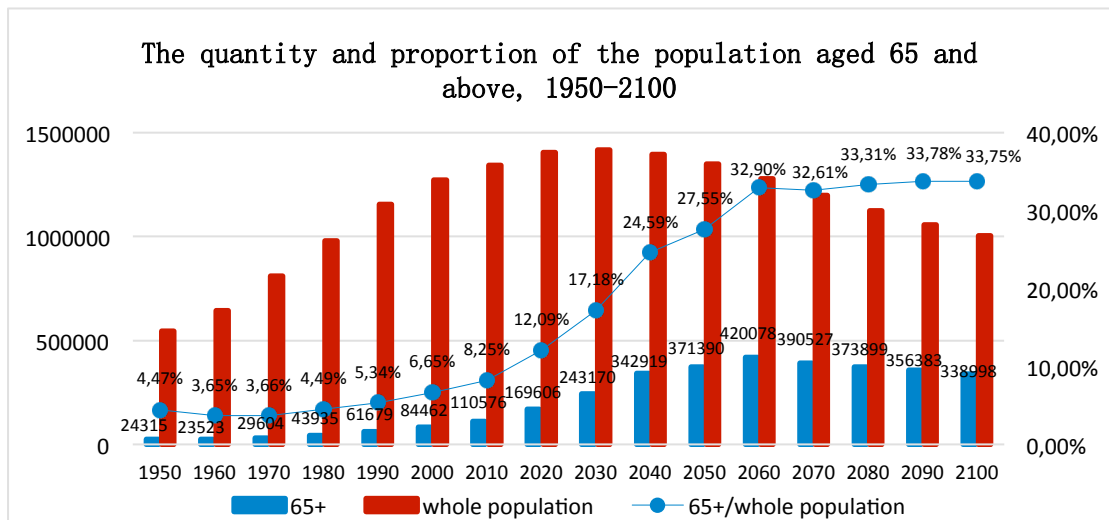
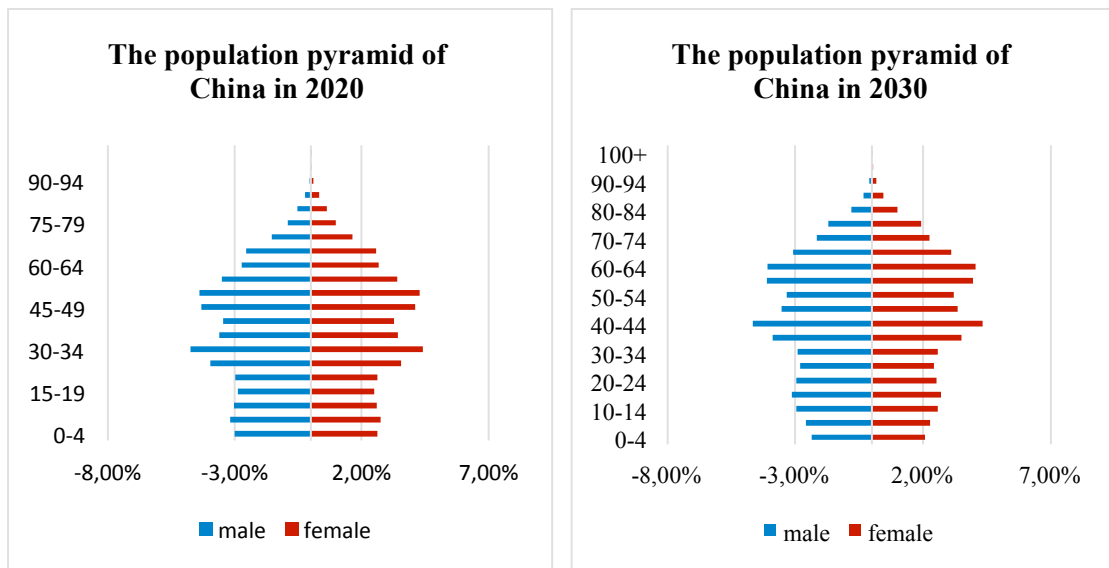


Figure 2-2 The quantity and proportion of the population aged 65 and above, 1950-2100
 Source: United Nations, Department of Economy and society Affairs, Population Division (2015).
 World Population Prospects: The 2015 Revision, custom data acquired via website.

But it is worth noting that if the total fertility rate will be higher than the existing prediction, the degree of China's population ageing may be a little slighter.

2.1.2 The prediction of the trend of China's population age pyramid

According to prediction of the Department of Economy and society Affairs, United Nations, the shape of the population age pyramid will change further in the following 30 to 40 years, the bottom of the pyramid will be shrinking continuously and the degree of population aging will be increasingly serious.



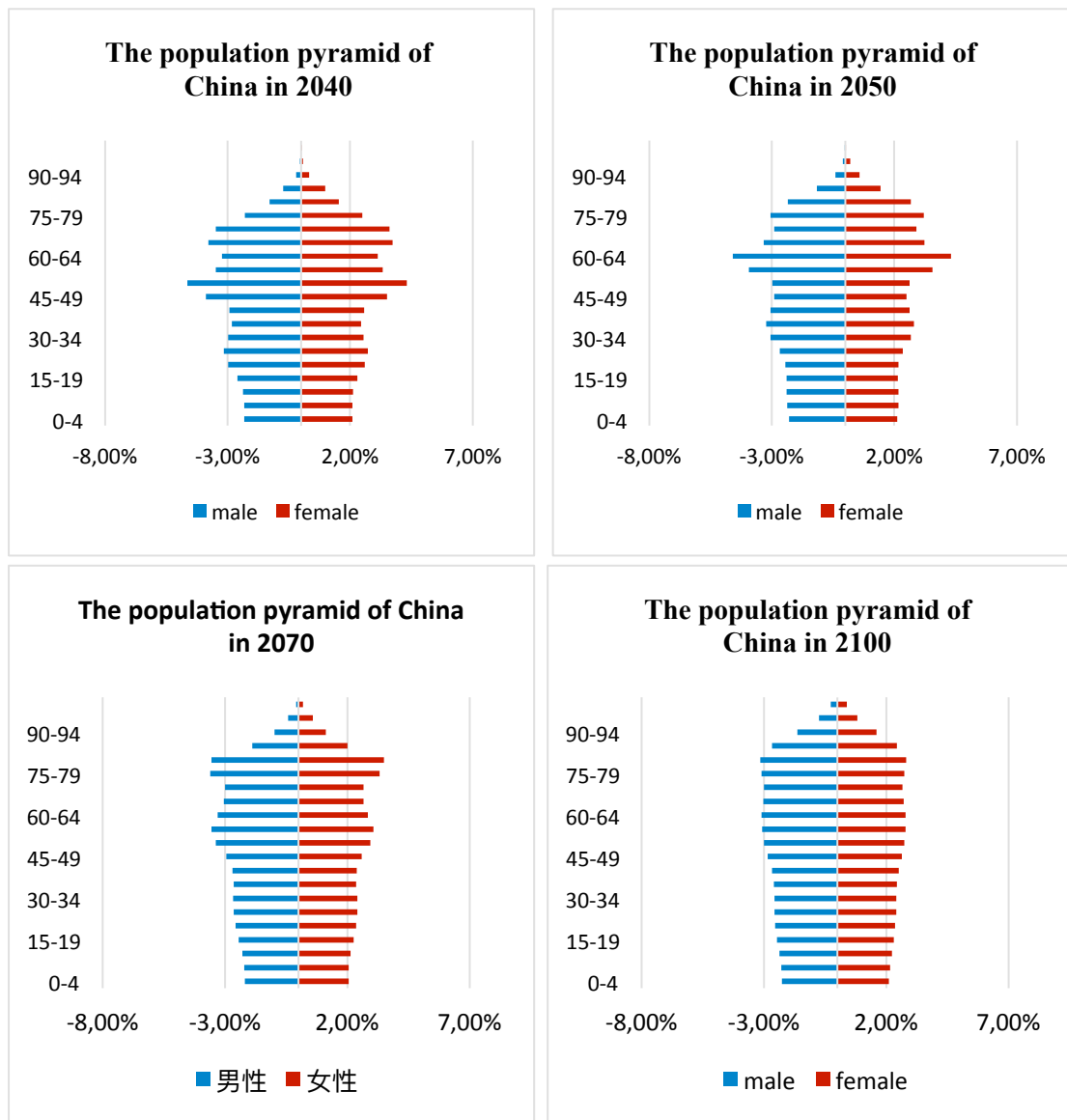


Figure2-1 prediction of the trend of China's population age pyramid
Source: United Nations, Department of Economy and society Affairs, Population Division (2015).
World Population Prospects: The 2015 Revision, custom data acquired via website.

Influenced by the twice baby boom during 1953-1957 and 1962-1973, a majority of population will reach the age of 60 in 2013-2017 and 2022-2033. Besides, caused by the inertia effect of the second population boom, the third births boom was formed in 1985-1991, and these population will go into age of 60 before, during, and after 2045-2050, it will lead population aging to go to a peak level in this period. Along with the decrease of the total population, the proportion of elderly population will continue to be high, the proportion of the population aged 60 and above will be more than 30% of the whole population until 2100, the population ageing will be accompanied by the 21st century.

2.1.3 The Prediction of the old-age dependency ratio of China.

The increase of the old-age dependency ratio is the result of the combined action of the increasing of the aged population and the decreasing of working age population, it is a typical embodiment of the population aging. The current old-age dependency ratio in China is 13%, according to the division standard of demographic dividend and population debt, it will be a balance state of population when the old-age dependency ratio is 23%-26%, a demographic dividend period when the old-age dependency ratio is less than 23%, and a population debt period when the old-age dependency ratio is more than 26%.

According to the prediction of the Department of Economy and society Affairs, United Nations, the old-age dependency ratio in China will reach 25% by 2030, which will achieve a balance state of population. However, the old-age dependency ratio will further accelerate in the following few decades, the ratio will rise to 47% by 2050. It shows that China will be in a period of population debt for a long time, which means nearly two working-age population needs to support an aging population, the pressure among generations will be enormous.

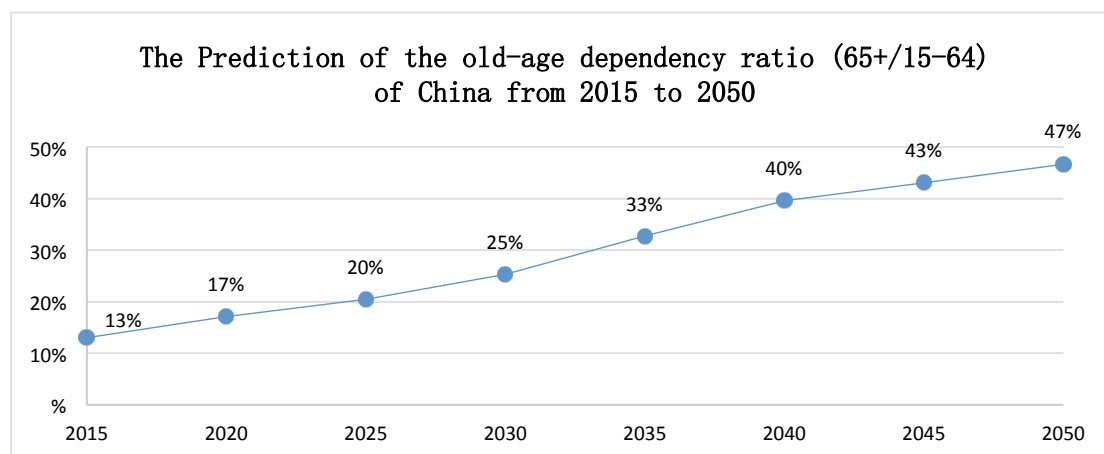


Figure 2-2 The Prediction of the old-age dependency ratio (65+/15-64) of China from 2015 to 2050

Source: United Nations, Department of Economy and society Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

2.2 The prediction of the trend of China's population change

2.2.1 The prediction of the life expectancy in China

As an important factors affecting the population aging, life expectancy will be further enhanced along with the economy and society development and the progress

of medical technology.

According to the prediction of the Department of Economy and society Affairs, United Nations, in the following 30-40 years, the life expectancy in China will increase from the current 76.5 to 82.5 years in 2050. The scale of the aged population will be widened for the increasing of life expectancy.

Table 2-2 The prediction of the life expectancy in China from 2015 to 2050

Year	Life Expectancy (Year)	Year	Life Expectancy (Year)
2015 - 2020	76.50	2035 - 2040	80.55
2020 - 2025	77.54	2040 - 2045	81.53
2025 - 2030	78.60	2045 - 2050	82.52
2030 - 2035	79.55		

Source: United Nations, Department of Economy and society Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

2.2.2 The prediction of trend of the advanced ages in China

Along with the extension of life expectancy, the quantity and scale of the population aged 80 and above will further expand. According to the prediction of the Department of Economy and society Affairs, United Nations, the population aged 80 and above in China will be more than 120 million in the coming decades. Besides, the growth rate of the population aged 80 and above will be much faster than the population aged 60. The proportion of the population aged 80 and above will reach 24.53% of the population aged 60 and above by the year of 2050, which means that there will be one population aged 80 and above in every 4 elderly people. After the year of 2060, the quantity of the population aged 60 and above will be reduced gradually, but the quantity of the population aged 80 and above will still rise. The population aged 80 and above will be over 165 million and the proportion of it will be above 41.69%.

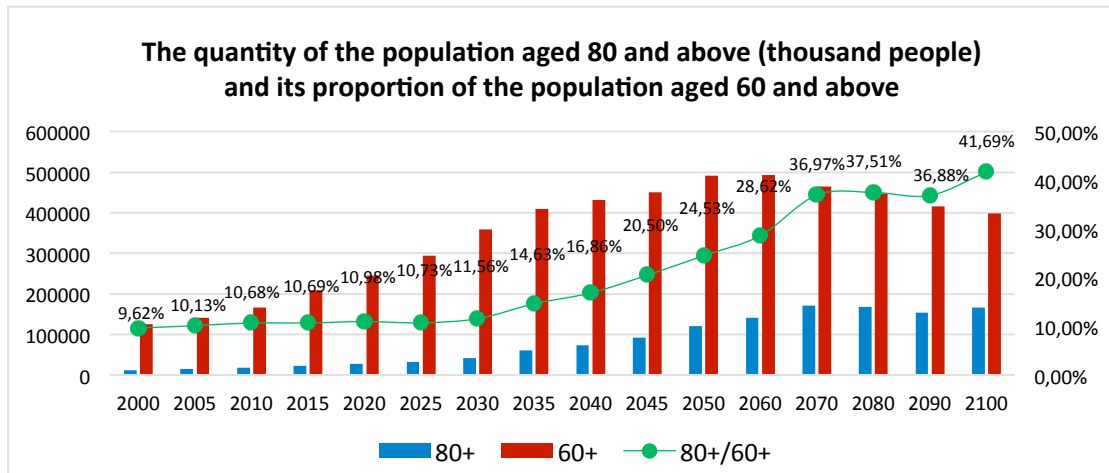


Figure 2-3 The quantity of the population aged 80 and above and its proportion of the population aged 60 and above (thousand population, %)

Source: United Nations, Department of Economy and society Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

2.3 The comparative of the trend of population aging in the whole world.

2.3.1 The comparative of the quantity and proportion of the aged population

Compared with the developed countries, the time when China step into the population aging society is relatively late. But after entering a population aging society, the speed of the development of aging in China is very quick. The degree of the population aging will be closed to the level of developed countries in about 2030, and it will surpass the level of developed countries by 2050, and it will be much higher than developing countries and the average level of the population aging in the whole world.

Table 2-3 The international comparative of the trend of the quantity and proportion of the population aged 65 and above

		2000	2010	2020	2030	2040	2050
China	Whole population	12.70	13.41	14.03	14.16	13.95	13.48
	65+	0.84	1.11	1.70	2.43	3.43	3.71
	65+/whole	6.65%	8.25%	12.09%	17.18%	24.59%	27.55%
World	Whole population	61.27	69.30	77.58	85.01	91.57	97.25
	65+	4.19	5.29	7.25	9.95	12.99	15.59
	65+/whole	6.84%	7.63%	9.35%	11.70%	14.19%	16.03%
Developed Countries	Whole population	11.89	12.33	12.66	12.84	12.88	12.86
	65+	1.70	1.98	2.46	2.96	3.25	3.41
	65+/whole	14.30%	16.08%	19.40%	23.02%	25.24%	26.50%

Developing Countries	Whole population	49.38	56.96	64.92	72.17	78.69	84.39
	65+	2.49	3.31	4.79	6.99	9.74	12.18
	65+/whole	5.04%	5.81%	7.38%	9.69%	12.38%	14.43%

Source: United Nations, Department of Economy and society Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

2.3.2 The comparative of the median age in different countries.

Overall, the median age in China will also continue to improve, and it will be gradually close to the most serious aging countries in the whole world. The median age in China will be much higher than the median age in the whole world, and population age structure will become much older.

Table 2-4 The comparative of the median age in different countries

	China	Japan	England	German	America	World
1950	23.7	22.3	34.9	35.3	30.0	23.5
1960	21.1	25.5	35.6	34.7	29.6	22.6
1970	19.2	28.9	34.2	34.1	28.3	21.5
1980	21.7	32.6	34.4	36.4	30.0	22.5
1990	24.7	37.4	35.8	37.6	32.8	24.0
2000	29.8	41.3	37.6	40.1	35.3	26.3
2010	35.2	44.9	39.4	44.3	37.2	28.5
2020	38.7	48.3	40.4	47.4	38.6	30.9
2030	43.2	51.5	41.9	48.6	40.0	33.1
2040	47.7	53.0	43.2	50.6	41.2	34.6
2050	49.6	53.3	43.3	51.4	41.7	36.1

Source: United Nations, Department of Economy and society Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

3 The influences on the economy and society of population aging

The population has the dual nature of producers and consumers, and it has internal connection with the economy and society development. On the one hand, population is the source of labor force, the quantity, structure and quality of the population determine the total supply of the economy and society; On the other hand,

the population is both consumer and demander, it is also related to the total demand of the economy and society. Therefore, it is intimately related between the population and the supply and demand of the economy and society. As a great change of the population age structure, population aging must have a profound impact on economy and society development.

3.1 The influences on the economy of population aging trend in China.

The economy growth mainly depends on the supply and demand in the whole society. Supply can create demand and the supply can drive the demand, they cannot exist effectively without the other and also they restrict each other for the same goal, that is, they work together to promote the development of the economy. The potential of economy growth is mainly decided by the production capacity and supply capacity, and production capacity and supply capacity depends on labor, capital, technology and other productive elements in a certain period. Thus, the influence of population aging on economy development can be summarized as the influence of population aging on the labor input, the capital investment and technological progress, etc.

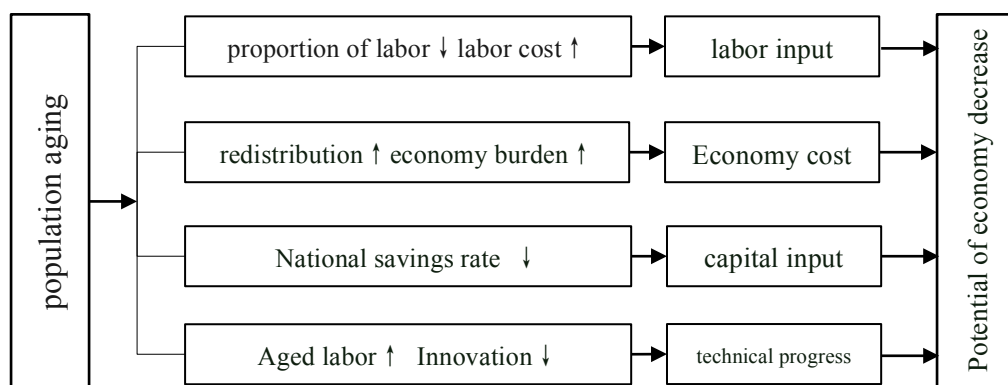


Figure 3-1 the mechanism of the influence on the economy growth of population aging

3.1.1 The proportion of Labor force is dropping and the labor cost will increase.

The most intuitive performance of population aging is the relative decline in the proportion of working age population, it means that the relative reduction of labor resources and the labor supply begin to drop, which will affect the potential development of the economy. In the process of population aging in developed countries, the widespread of the shortage of labor supply and aged labor force leads to

lacking in strength of the economy growth.

During the "Twelfth five-year" period (2011-2015), the proportion of the working force aged 15-64 began to appear the inflection point from up to down in China and the demographic dividend gradually disappear. According to the Department of Economy and society Affairs, United Nations, the working-age population aged 15-64 in China will continue to decline in the coming decades. By 2050, the working-age population aged 15-64 in China will fall to 795 million people, about 204 million less than it was in 2010. If the technology or capital cannot effectively substitute labor, then, it would be likely to bring a serious shortage of labor and the labor cost will keep rising.

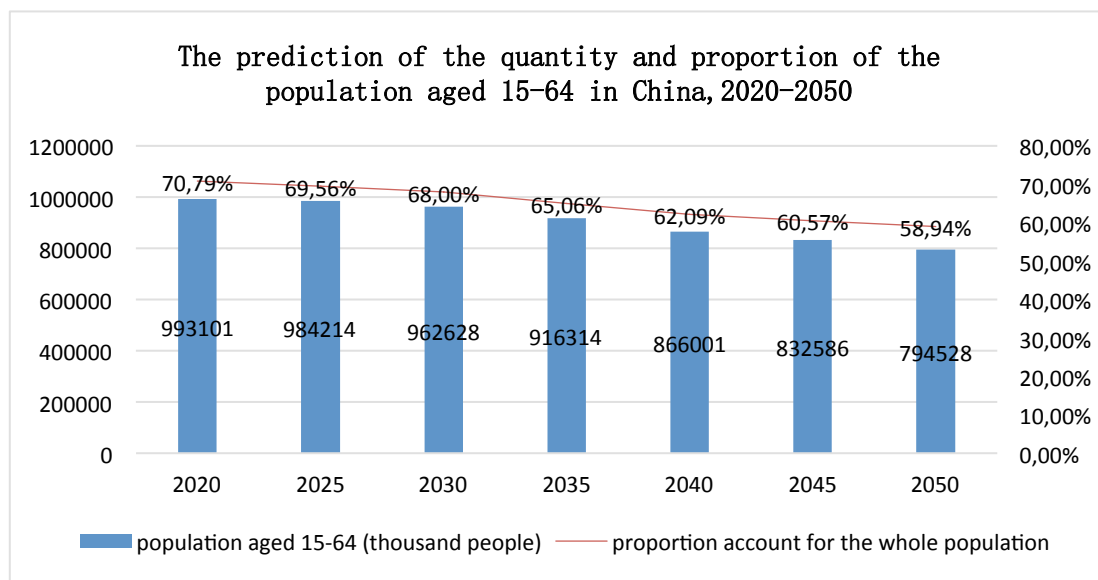


Figure 3-2 The prediction of the quantity and proportion of the population aged 15-64 in China, 2020-2050

Source: United Nations, Department of Economy and society Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

3.1.2 The cost of redistribution is increasing and the economy burden will be heavy

The increasing of the old-age dependency ratio is another important performance of the population aging, which means that fewer working-age population needs to support more elderly population, and it is bound to increase the spending of the redistribution, the economy and society burden will be increased.

According to the current situation of the development of social security in China, the strategy research team dealing with population ageing in China have made an

assumption that the pension and medical insurance are relatively in a low level and done a series of research. The research shows that the economy and society cost of the population aging in China is still increasing year by year, especially, the cost used for the aged, medical treatment, care and service as a share of GDP will increase by 6.97% in 2015 to 21.77% in 2050, increased by 14.8%, it will be close to or even greater than that of many developed countries. The increasing spending dealing with population aging in the future will not only occupy young people's consumer spending, but also reduce the accumulation of capital, and finally, it will influence the economy growth in the long-term. Overall, the economy and society burden caused by the population aging in China will be heavy for a long time.

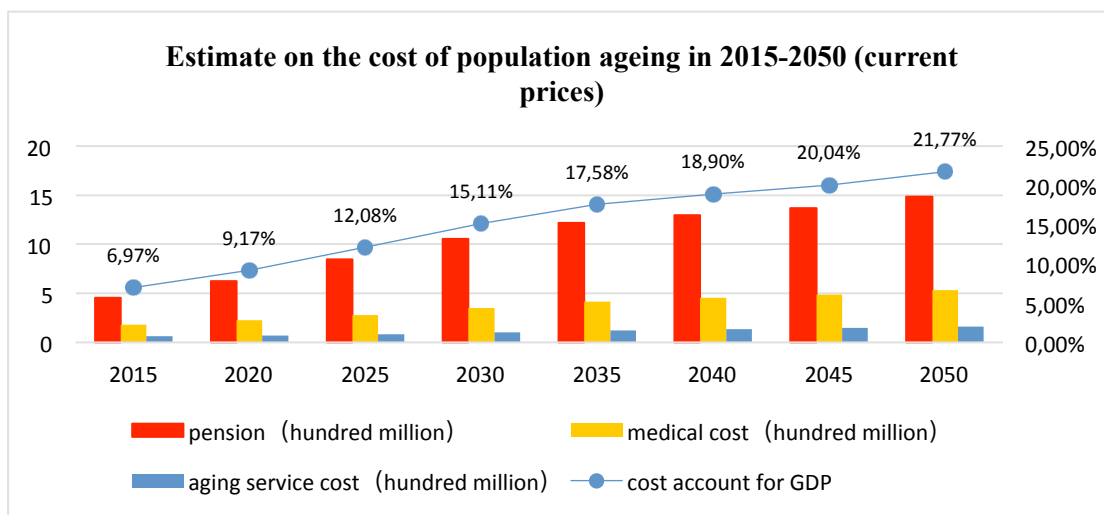


Figure 3-3 Estimate on the cost of population ageing in 2015-2050 (current prices)

Source: Based on the Research of the Strategy Research Team Dealing With Population Ageing in China, Li Jun, etc. Research on the Population Ageing and the Sustainable Development of the Economy[M]. Hua Ling Press, 2014,3

3.1.3 The national saving rate will decline and the capital accumulation will be constrained.

The capital accumulation mainly comes from investment, and the investment mainly relies on savings. Generally speaking, the national savings rate of a country is a key indicator to measure the level of savings and the potential investment growth. According to the Life Cycle Theory of saving, most people are inclined to save money actively when they are young in order to consume when they get old. Therefore, the declining of savings rate seems irreversible along with the deepening

of population ageing. The research from Cutler, Poterba, Sheiner and Summers⁸ also suggests that the population aging has often accompanied by a decreasing national saving rate and an increasing consumption rate in the process of deepening aging in a country or a region.

Specifically, the elderly is consumer population, the proportion expenditure of the economy output that is required for the aged population will continue to increase in the process of population aging. Assuming that the pension level will not be lowered (actually it is difficult to reduce), the increasing of the proportion of output for the aged will decline the proportion of investment along with the boost of the aged people. That is to say, in the process of population aging, it will inevitably lead to the rising of consumption and declining of investment in the economy development because of the increasing of the consumer population and the decreasing of investor population⁹, so that the capital accumulation will be restricted and it will finally affect the potential of the economy development.

3.1.4 The labor force is becoming aged and the technology progress will be restricted.

Technological progress is an important factor to improve the labor productivity and promote the rapid development of economy. In general, the innovation ability of young population and middle-aged population in technology is higher than elderly population. However, the consequence of population aging is that the aging population continues to grow and the young and middle-aged labor force continue to decrease. Along with the deepening of population ageing, a large number of labor force is becoming aged gradually and it will bring many restrictions to technological progress. First of all, the spending for the elderly consumer will be increased as the deepening of population ageing and it will result in an increasing of occupying of economy and society resources, so that the resources that can be used for Technology research and investment will be reduced; Second, technology research and

⁸ Cutler, David M., James M. Poterba, and Louise M. Sheiner, Lawrence H. Summers. An Aging Society: Opportunity or Challenge [J]. *Brookings Papers on Economy Activity*, 1990, (1):1-73.

⁹ Strategy Research Team Dealing With Population Ageing in China. General Report of strategy research on dealing with population ageing [R]. Beijing: Hua Ling press, 2014:15 to 16

development work have the requirement of relative youth employees, while the population ageing will reduce the supply of young workers, thus, it may restrict technology research and development and progress.

3.1.5 Result: the potential of the Economy development is dropping and the development speed is limited.

The labor supply, capital accumulation and technological progress are all affected to a great extent under the influence of population aging, which will form an obstruction of the economy development potential. According to the research from Wang Dewen (2004), When the dependency ratio of population rose 1%, the economy growth rate will slow down about 0.1%.¹⁰

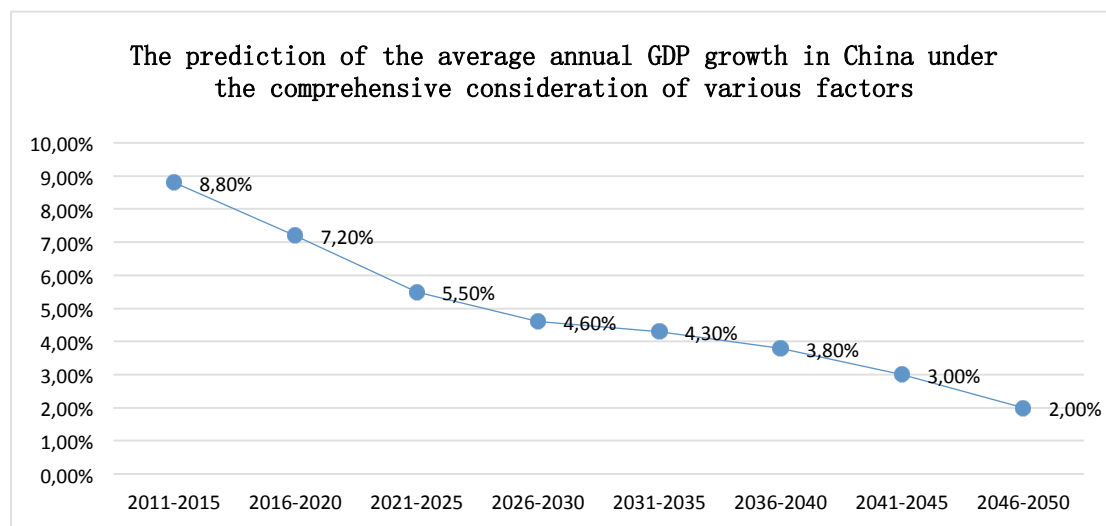


Figure 3-4 The prediction of the average annual GDP growth in China under the Comprehensive consideration of various factors such as population aging

Source: Strategy Research Team Dealing with Population Ageing in China, Li Jun, etc. Research on the Population Ageing and the Sustainable Development of the Economy[M]. Hua Ling Press, 2014,3: Page 230.

Methods: Assume that the scale return is constant, take the capital output elasticity, labor output elasticity and technological progress into consideration, calculate China's economy growth rate in the future under the situation of population aging factors.

According to the prediction from the Strategy Research Team Dealing with Population Ageing in China, and a series of assumptions will be the premise: the scale return is constant, the capital output elasticity and labor output elasticity will both keep at the stage of 0.5 in the future. If the population aging is taken into consideration, the China's annual GDP growth rate will be about 8.8% during the

¹⁰ Wang Dewen, Cai Fang, Zhang Xuehui. Saving and Growth Effects of Demographic Transition:the Population Factor in the Sustainability of China's Economy Growth[J]. Population Research,2004(5)

"twelfth five-year" period, and then it will be decreased, the possible economy growth rate in China will be at about 2% in around 2050. If the population aging is not taken into consideration, the economy growth rate may be at about 4% in 2050.

3.2 The influences on the social development of the population aging trend in China.

Population is the main part of the social development, and it will bring a series of influences on many aspects of social development when the population age structure begins to change, especially when the population ageing is growing. Most of the influences reflect in the family ties, relation between generations and social policy, etc. First of all, under the influence of population aging, the family supporting function is no longer the reality structure because of the family miniaturization; Secondly, in terms of inter-generational relations, on the one hand, the "421" family structure will increase the intergenerational conflict within the family, on the other hand, the pension burden of the whole society will be a sharp increase along with the increasing of aging population, which will bring more and more heavy pressure to the working age group and the social intergenerational contradictions will appear; In addition, the increasing population aging will not only increase the spending of pension, but also increase the pressure on health care and care insurance because of the special demand about medical treatment and nursing care, all of which will bring a series of challenges for the social policy.

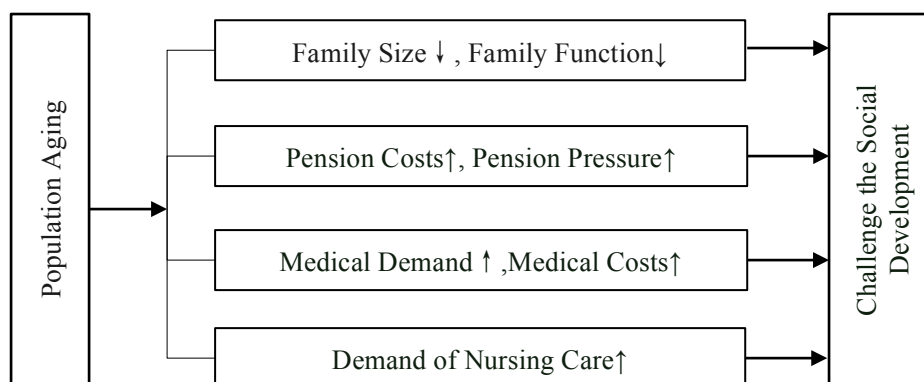


Figure 3-5 the mechanism of the influence on the social development of population aging

3.2.1 The family structure is shrinking and the family supporting function becomes weak.

The realization of the family supporting function is ultimately determined by the family structure. Under the background of population aging, the phenomenon of family miniaturization and few child will weaken the function of family supporting to a great extent.

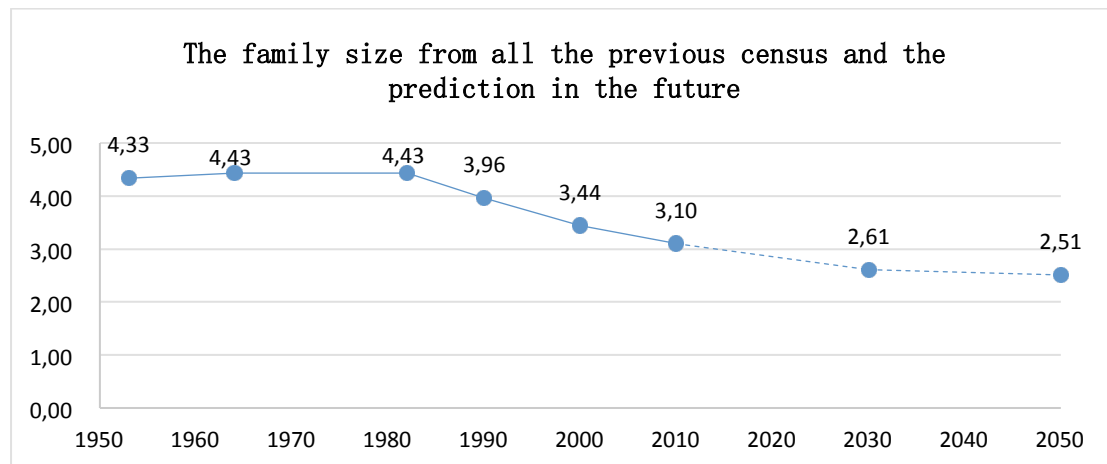


Figure 3-6 The family size from all the previous census and the prediction in the future
Source: The data of 1950-2010 comes from all the previous census in China, the data after 2010 comes from the prediction of the Strategy Research Team Dealing with Population Ageing in China.

Figures show that the average family size in China has fell from 4.33 people in 1953 to 3.10 people in 2010. According to the prediction of the Strategy Research Team Dealing with Population Ageing in China, China's average family size will be further reduced to 2.61 people in 2030 and 2.51 people in 2050. The phenomenon of family miniaturization and few children in China will continue to exist for a long time.

A series of challenges will be inevitably suffered from the case of the narrowing family structure.

The first one is that the elderly family with risks will continue to increase. As the first generation of only child parents step into aging gradually, the pure elderly family, alone and empty nest elderly family will also be increased sharply. Research has shown that by the year of 2030, the quantity of empty-nesters in China will increase to more than two hundred million, accounting for 90% of the total number of the

elderly.¹¹

The second one is that the family supporting function becomes weak gradually. The number of elderly who need to be supported is much more than the number of young people along with the changing of the "4-2-1" family structure, and it makes the traditional family supporting function difficult to achieve.

The third one is that the intergenerational burden is increasing gradually. The gradual decrease young generation need to support the increasing old generation with the accelerating aging and the young generation is facing huge pressure to support.

The Forth one is that the traditional culture will be shocked and challenged, the filial piety culture will also be weakened because of the difficulties faced with family support and collective living manner.

3.2.2 The spending of pension is increasing quickly; the sustainability of the pension fund will be challenged.

The realization of the secure of basic life of the old general in China is mainly through the pension system (including the basic pension, occupational pension and individual tax deferred pension) and family internal transfer payments. The total amount of pension for the elderly will be at a sharp rise with the deepening of the population aging, and the sustainability of the pension fund is being challenged.

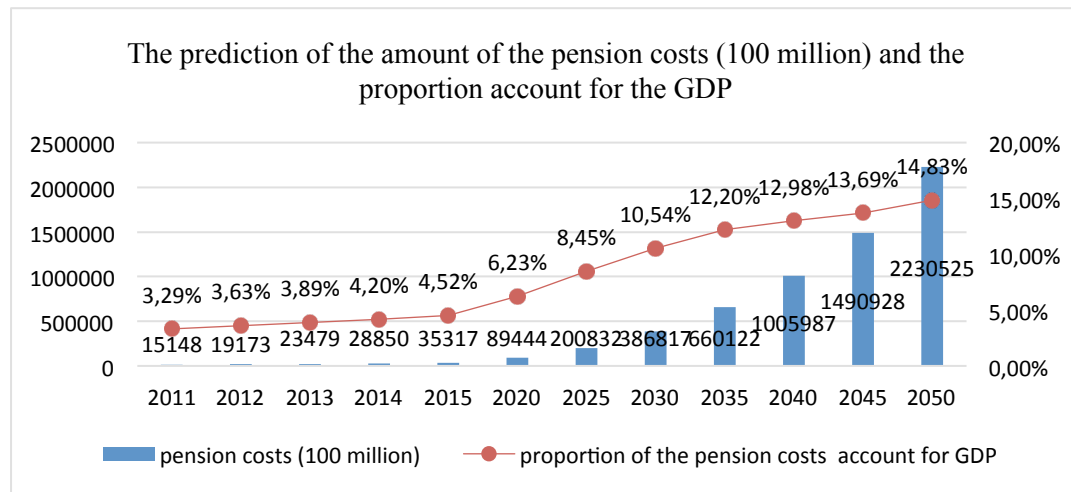


Figure 3-7 The prediction of the amount of the pension costs (100 million) and the proportion account for the GDP

Source: Strategy Research Team Dealing with Population Ageing in China, Li Jun, etc. Research

¹¹ The National Working Commission on Aging (2015/02/25). Foreign media: the empty nester is more than one billion in China and it faced the difficulties of becoming old before rich. [EB/OL]. <http://www.cncaprc.gov.cn/contents/34/73702.html> (2014/7/26).

on the Population Ageing and the Sustainable Development of the Economy[M]. Hua Ling Press, 2014,³

Note: the amount of the pension costs is an overall spending, including the basic pension, occupational pension, commercial life insurance and so on.

According to the prediction from the Strategy Research Team Dealing with Population Ageing in China, the overall pension spending as a share of GDP in China is around 4.5% at present, this percentage will increase further with the deepening of population ageing. By 2050, the overall pension spending as a share of GDP will be close to 15%.

3.2.3 The demand of health care is expanding and the pressure of medical costs will increase.

Along with economy and society development and the progress of medical technology, the demand of health care is expanding, resulting in medical expense rise quickly.

In fact, the rising of medical costs in the process of population aging is influenced by the interaction between two factors: one is the expanding of the elderly scale, the second is the increasing of the medical expenses per capita, especially population aged 75 and above. According to the experiences from developed countries, the medical expenses per capita of the population aged 65 and above is about 3 to 5 times than the young¹². The World Bank also points out that the higher the proportion of people aged 60 and above, the higher medical and health care costs share of GDP. It is because the elderly health services often include expensive technology, hospital and long-term care, the treatment is more complex than the young. Studies have shown that (Xiang Manjun, etc., 1998) in our country, the medical expenses per capita of the elderly was 2.5 times of the national average, 18% of the elderly takes up 80% of the medical treatment cost.¹³

According to the prediction from the Strategy Research Team Dealing with Population Ageing in China, the health care costs share of GDP will be increasing

¹² He Zhenyu, li xin. Expensive medical, is the health care industry ill?[N]. The Oriental morning post (Shanghai), 2015-07-07

¹³ Xiang Manjun, Meng Chen, Tang Zhe. Thinking of elderly will be given medical treatment properly from the current situation of the elderly health care in China[J]. Population Research, 1998, 05:44-47.

continuously in the following decades.

3.2.4 The demand of nursing service is increasing, professional staff and facilities need to be developed.

Disability is one of the important characteristics of aging society with the deepening of aging. The demand of elderly life care and nursing service will gradually expand along with the weakening of the family supporting function. The demand need to be realized by professional organizations and nursing staff to care, this will result in the rising of related nursing service costs.

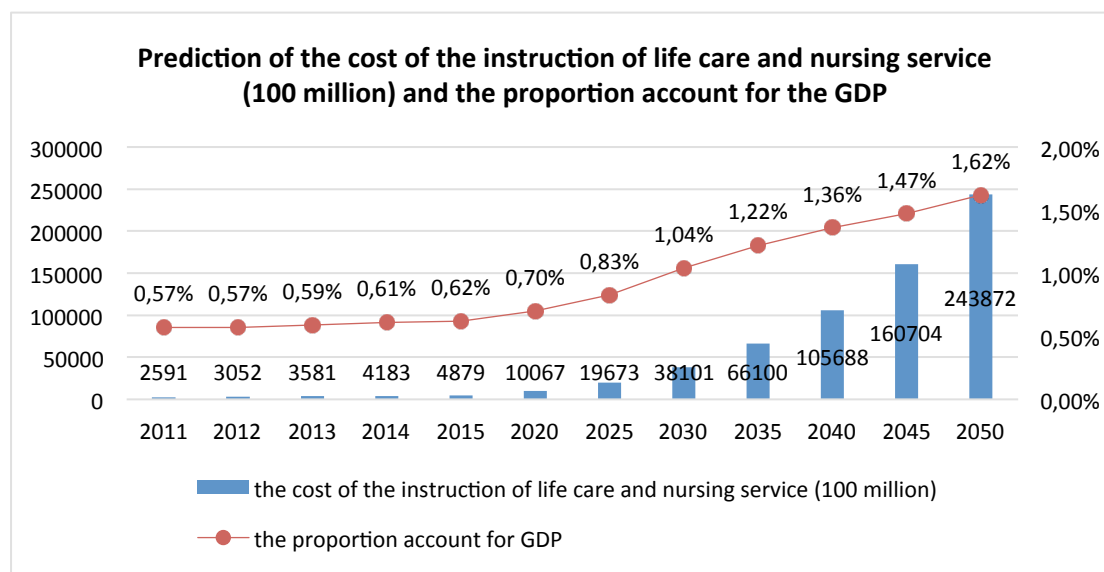


Figure 3-9 Prediction of the cost of the instruction of life care and nursing service (100 million) and the proportion account for the GDP

Source: Strategy Research Team Dealing with Population Ageing in China, Li Jun, etc. Research on the Population Ageing and the Sustainable Development of the Economy[M]. Hua Ling Press, 2014,3

According to the prediction from the Strategy Research Team Dealing with Population Ageing in China, the proportion of the cost of the instruction of life care and nursing service is just 0.6% account for the GDP, the percentage will rise to 1.6% in 2050.

3.2.5 Result: the pressure of social development is increasing, and the policy reform is facing with a series of difficulties.

With the speeding up of the population aging process, the contradictions between diversified requirements of the elderly and the limited resources of the supply is increasingly severe. The contradiction between supply and demand should be released through a variety of policy reform to meet the needs of the elderly. However, the

deepening process of population ageing brings a lot of sustainability problems to all the policies related to the elderly life and it will be facing more and more challenges with the deepening of the population aging in the next few decades. Therefore, we need to be well prepared before the peak of the population aging in order to win precious time dealing with the deepening of aging.

3.3 Opportunities of economy and society development brought by the trend of population ageing in China.

Population aging has become a worldwide problem and has produced a serious of challenges to the economy and society development in the whole world. But at the same time, the population ageing will also bring some direct or indirect opportunities, such as boosting domestic demand to some extent, driving the development of older industries in an all-round way so that to creat the new economy growth point, besides, it can also promote to perfect the capital market and conducive to cultural development.

3.3.1 Opportunities of balanced population and improving the quality of human resources.

Large quantity of population, high bearing pressure of environment are important factors that restrict China's economy and society development. The population aging curbs the trend of population growth and it is conducive to balance the development of the population. This will help to ease the tensions between population and resources, environment, rapid population growth is contained, beneficial to alleviate environment of tension between population and resources.

In addition, the current population aging in our country is not so severe and there are a large number of young healthy seniors continue who have a lot of experiences. They are valuable wealth of human resources and they have the ability to further play a role in the labor market. In real life, a large number of retirees receive restart again into the job market, shows that they have willing of re-employment. Therefore, making full use of the old human resources, playing its leading role further, can not only form the secondary demographic dividend, but also help the young workers to

improve the quality of human resources.

3.3.2 Opportunities of upgrading the industrial structure and developing older industries.

The potential of the economy growth mainly depends on the production factors such as labor, capital and technology. However, the cost of labors will be rise because the population of working age are decreasing along with the deepening of population aging. At this point, continue to develop labor-intensive industry has no advantage. Therefore, most of the companies begin to seek capital, technology and other production factors to replace labor force. Thus, it will promote the transformation of industrial structure from labor-intensive to the technology/capital intensive structural gradually, and it is conducive to promote the upgrading of industrial structure.

At the same time, the demand of the elderly population is becoming increasingly diverse, and the amount of the elderly demand will also rise greatly, which can provide good opportunities for the rapid development of the older industries.

3.3.3 Opportunities of perfecting the pension system and the capital market.

In recent years, the pension system in China is strengthening and the multi-pillar pension system has also been gradually improved. The coverage of the pension system and the size of the pension fund are growing. The huge pension fund need to preserve or increase the value, but the traditional way of single operation is difficult to guarantee the benefit of the fund. So a good capital operation is necessary, which can bring a stable source of capital to the capital market and can effectively promote the perfection and development of the capital market. In addition, most of elderly population reserves a large number of pension funds when they were young and they will have large financial wealth management requirements when they get old, this will create new opportunities for the development of aging financial.

3.3.4 Opportunities of promoting the development of economy, society, and culture.

The trend of population aging may compress the proportion of the production investment to a certain extent on the one hand, but on the other hand, the increasing of the aged population can effectively promote the consumption and thereby give

impetus to the coordinated development of economy, society and culture. On the economy front, the increasing of the aged will help to boost the domestic demand and promote the economy development; In terms of society, the multiple demand of the aged population will help to perfect the pension system, the medical insurance and related service system and promote the construction of livable environment, also it can be an important driving force for the adjustment of public policy and social governance; In culture, the elderly is the main body of mass cultural activities and they have plenty of free time after retirement, it is conducive to increase the cultural supply. The collision of cultural activities will be likely to open up new field culture, and it is good for the development of new activities and practice so as to promote the developing of culture.

4 Experiences of dealing with population aging in foreign countries

4.1 The phenomenon of population aging in global

With the development of society and economy, the birth rate is reducing, the mortality rate is dropping and the life expectancy is becoming longer after entering into the industrialization. Population ageing has become a worldwide, global issue.

The research report of the second United Nations world conference on aging in 2002¹⁴ showed that:

(1) The population aging phenomenon is unprecedented. There is not a similar situation happened in the history of mankind. The number of elderly people in the world will be much more than young people by the year of 2050, and this phenomenon has already taken place in developed countries in 1998;

(2) The impact of population aging is profound. In the field of economy, it will shock the economy growth, saving, investment, consumption, labor market, pension and tax; In the field of society, it will affect the family structure, life care, medical care and some other aspects;

(3) Population ageing will continue for a long time and this phenomenon is expected to persist in the 21st century.

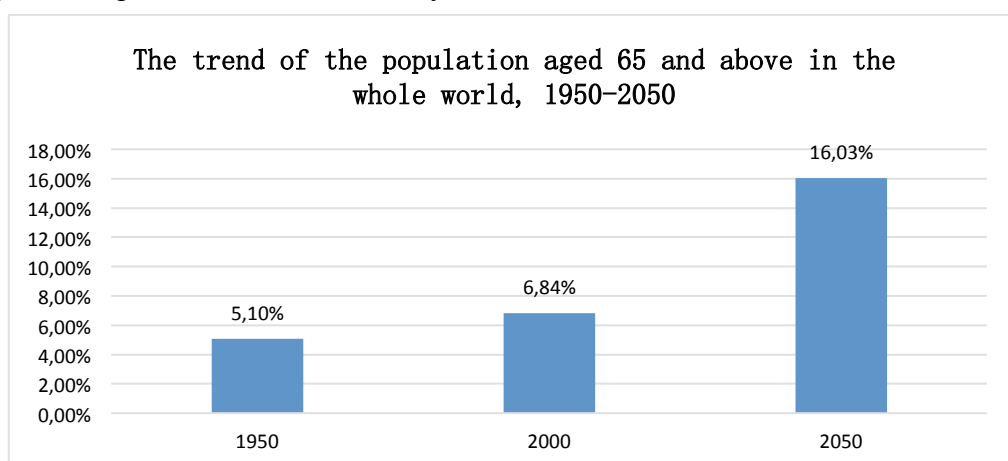


Figure 4-1 The trend of the population aged 65 and above in the whole world, 1950-2050
Source: United Nations, Department of Economy and society Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

According to the prediction of the Department of Economy and society Affairs, United Nations, the quantity and proportion of the aged population will continue to increase, the proportion of the population aged 65 and above will reach 16.03% in the whole world by 2050.

4.2 A series of challenges brought by the global population aging.

4.2.1 The economy level.

(1) The quantity and proportion of labor force decline, and the labor costs

¹⁴ UN, the World Population Aging 1959-2050, Conference on Aging in Madrid, April 8 to 12, 2020

increase. Labor force is the basic elements that affects production, the declining of the proportion of the working age population is deepening under the background of population aging. According to the prediction of the Department of Economy and society Affairs, United Nations, in the next few decades, the proportion of the global working age population will show generally a downward trend, especially in high-income and middle-income countries, the downward trend of working age population is particularly apparent.

Table 4-1 Changes of the proportion of working age population (15-64) in global (%)

	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
Whole world	63.0	64.7	65.7	65.7	65.2	64.9	64.7	64.2	63.7	63.3	62.7
High-income	67.2	67.6	67.7	66.5	64.9	63.4	61.9	61.0	60.0	59.3	58.4
Middle-income	62.8	65.1	66.5	66.8	66.5	66.5	66.3	65.8	65.1	64.5	63.7
Low-income	52.2	52.5	53.0	54.1	55.4	56.7	58.0	59.3	60.4	61.4	62.2

Source: United Nations, Department of Economy and society Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

On the basis of the other elements, the fell of the proportion of the working age population can lead to labor shortages to a certain extent. The absolute number of labor force has already declined in some European countries, including Germany, France and Greece. The reduction of this Labor shortages will undoubtedly promote the wages rise, cause labor costs rise, so that it will influence the vitality of enterprises.

(2) The old-age dependency ratio will enhance, and it will increase the pressure on social and economy costs. The process of population aging is caused by the increasing of the number and proportion of the aged population, that means the increase of the old-age dependency ratio. More and more people are living on pension, and less people involved in production and work, thus the cost of economy and society development will increase.

(3) People involved in work and tax are decreasing, revenue will decline. The decline of working-age population means people participate in the work and pay taxes will reduce continuously, resulting in the decline of fiscal revenue.

(4) Labor force have to pay high tax and it will impact the activity of labor and enterprise. Due to the decline of labor on the number and proportion, the labor taxes

have to be increased to meet the demand of growing elderly population. It will affect the production enthusiasm of the enterprises and labor to a large extent.

4.2.2 The social level.

(1) The family structure changes and the supporting pressure of their children rises. When life expectancy is extending continuously and the fertility rate is relatively low, the family structure will inevitably change. More and more aged population need to be raised by fewer children, the support pressure will be heavy, especially in several countries care much more on family supporting function.

(2) The cost of pension is increasing with significant pressure. The working age population is decreasing along with the deepening of population aging, which means less population pay for the pension system and pensioners population are more and more. This will lead to less accumulation of pension and more spending and it will bring huge pressure of the pension funds.

(3) The demand of health care increases and it will strength the pressure of medical costs. With the increase of age, the body function of the elderly begins to fall and various medical and health demand will continue to increase, which will lead to the sharp rise in medical costs. At the same time, the crowd pay for medical treatment are falling so that it will greatly increase the pressure of the expenditure of the medical insurance fund.

(4) The life expectancy extends, postponing retirement age is concerned broadly. Under the pressure brought by population aging, postponing retirement age has become the focus of many countries even though a lot of challenges is still there.

4.2.3 The service level.

(1) The original living patterns face challenges and the demand of new way of living becomes diverse. The condition of the traditional family supporting mode has been more and more weak and different countries begin to explore diversified way of living and the way of supporting, but it is still faced with the contradiction between the demand and supply.

(2) The needs of nursing way are becoming diversify and the professional demands for nursing are enhancing with the increasing of disabled or dementia elderly.

The disabled or dementia elderly are becoming more and more and they need diversify and professional nursing. However, the supply of nursing cannot match the demand and it needs to be further improved.

(3) The quantity of labor force is not that much and the nursing staff team is insufficient. Contrary to the need of improving of the professional nursing staff, the decline in the number of labor add the difficulty of increasing the nursing service supply.

4.3 Experiences dealing with aging at the international level.

4.3.1 In the level of economy development.

(1) Postponing retirement age, utilizing the human resource of the elderly. Raising the retirement age is an important way dealing with population ageing in many countries. On the one hand, it can shorten the time receiving pensions and the leisure time after retirement, it can also alleviate the pressure on the economy development brought by population aging and enhance the vitality of economy development to some extent; On the other hand, it can fully utilize the aged manpower resource and enrich the labor supply. Most developed countries take some reform of the retirement system and put forward the strategic concept of "Living Longer, Working Longer". In the process of operation and practice, many countries have adopted a gradual way to delay the retirement age, the United States plans to raise the retirement age from 65 to 67 in 25 years through 2002 to 2027 gradually, Britain plans to raise the retirement age for women to 65, the same with men during 2010-2020, then to achieve the retirement age of 68 synchronous between men and women in 2050. Delaying retirement age is a world trend under the background of population aging, in spite of national differences in the implementation path, the goal is the same.

(2) Paying attention to the investment of human capital , raising labor productivity. Keeping the economy sustained and healthy is the fundamental guarantee to cope with population aging. In the case of rising labor costs, many countries began to strengthen the human capital investment. They want to

improve the labor productivity by education, training and technology research. For example, many developed countries emphasize the lifelong education and vocational education in order to enhance the value of human capital; Also the developed countries attach great importance to the investment of research to foster talents. In Sweden and Finland, for example, their percentage of research spending as a share of GDP are at 3.5%, in Germany, the percentage is 2.5%¹⁵. This has contributed to the improvement of labor productivity laid a good foundation coping with the population aging.

(3) Developing the elderly industry to promote the adjustment of economy structure. The population aging brings a series of challenges to the social and economy development, but also it offers great opportunities such as elderly industry development. A series of elderly industry such as aging service, elderly health care products and aging finance has a huge development space along the diversity demand and increasing consumption ability. Many countries in the world attach great importance to the development of elderly industry in order to meet the needs of the elderly and improve their life quality, and also, it can effectively promote the adjustment of economy structure.

(4) Actively encourage birth to supplement the labor supply. One of the deepening of population aging the decline of fertility. Western developed countries have realized that population ageing may lead to serious problems since 1970s. In order to fundamentally improve the population age structure and increase the labor resources supply, they took a series of measures to improve the level of fertility, including encourage childbirth directly and reduce the economy burden of raising children.

(5) Absorb international migration, increase the cheap labor resources. Absorbing international migration is also one of the measures dealing with population ageing in many developed countries. But they are not blind when absorbing international migration, usually they will set up a series of threshold and attract high

¹⁵ the Strategy Research Team Dealing with Population Ageing in China, Li Jun, etc. general report of countries dealing with an ageing population [M]. Hua Ling Press, 2014:83

quality talents from other countries. Take America for example, they are receiving technological / commercial immigration or student. This can not only complement the high quality of labor resources and enhance the vitality of economy development, but the inflows of young immigrants can ease the population aging to a certain extent.

4.3.2 In the level of social policy.

(1) Reform the pension system and increase life equality of the elderly. Along with the ascension of old-age dependency ratio, the cost of pension is increasing and it challenges the sustainability of the pension system. In order to meet the demand of the elderly, developed countries reform the pension system unceasingly to guarantee its sustainability. On the one hand, they try to raise the pensionable age and restrict early retirement in order to restrain the growth of pension spending; On the other hand, many countries begin to develop a multi-pillar pension system and almost all OECD countries have already established a multi-pillar pension system.

(2) Improve the services of the medical and health system, reduce the spending of health care. The developed countries take a series of measures improving the medical and health service system. On the one hand, they take preventive health care reform direction, turn "treatment" to "prevention". On the specific operation, they pay attention to the research of reducing the incidence of chronic diseases in the elderly and improve the efficiency of the medical and health institutions to reduce the health care spending; On the other hand, developing multiple level medical insurance system and adhering to the combination of government and market function, so that it can meet the diversified health care demand and ensure the healthy development of the medical insurance system.

(3) Construct the long-term care insurance system to meet the care demand of the elderly. The disabled or dementia elderly who need long-term care are increasing with the deepening of population aging. In order to meet all kinds of care demands of the elderly, the United States, Germany, Japan and other countries have established long-term care insurance system. The system can not only separate the aged care from the medical insurance and medical services, so that it can help to reduce the health costs of the elderly, also it can promote the development of elderly care market to be

more professional so as to meet the demand of the elderly effectively.

(4) Develop aging finance to increase the pension income. Pension problem is ultimately a question of money. In order to realize the security of the pension funds and effectively support the demand of the elderly, the value of the pension fund must be preserved or increased on the premise of guarantee the safety. Developed countries often strengthen the joint of pension and financial market to achieve this goal and develop aging financial actively. On the one hand, they usually strengthen the construction of the multi-pillar pension system and integrate with financial markets, so as to realize a better value; On the other hand, many countries take care of the innovation of the aging financial product and the aging financial services so that to meet the demand of the elderly.

4.3.3 In the level of aging service.

(1) Attach importance to the social supporting function and innovate the way of supporting. Affected by population ageing, the diversified social supporting ways continue to improve along with the weakening of family supporting. In many developed countries, they try to provide diversified social supporting ways and aging service to meet the demand of the elderly by innovating the way of supporting. In the UK, nearly 80% of the elderly choose the way of community care when they get old instead of living with their children¹⁶. Community care can be realized through residential services, family care, elderly community center, elderly apartments and some other ways. This model of "community care" is followed by welfare states in Europe and the United States and it has become the dominant way of supporting the elderly.¹⁷

(2) Explore the standardization of aging service and promote the quality of aging service. Many countries focus on the standardization of aging service in the process of establishing the long-term care insurance system, especially, a series of index systems are established to determine the level of service for the disabled or dementia so that

¹⁶ Tang Zhongxin. Community care: the dominant way of supporting the elderly in the UK [J]. Journal of communities, 2004, 14:26-27.

¹⁷ Qi Feng. The community care in the UK and its enlightenment [J]. Journal of northwest population, 2010, 06: 20-24.

they can provide the effective services. The standardized model of care should be the long-term care insurance in Germany and Japan, they formulate a series of rules of self-care ability identification, service standards for different degree of self-care ability, the nursing plan and so on.¹⁸ The specialized care services targeted for the elderly can improve the quality of the aging services effectively.

(3) Encourage social forces to participate in aging services in order to provide diversified services. Social forces are a nonnegligible factor providing aging services, it has natural advantages in the avoidance of market failure and government failure and it also has the impetus to full understand the needs of the elderly and take their own advantages to provide the services. From the point of the status of the United States, Japan and other countries, social forces assume an important role in aging services, including service providing, personnel training, education propaganda and so on, and they have already accumulated strong social influences. On the one hand, it can improve the efficiency of aging services and reduce the cost of public welfare service for the elderly. On the other hand, diversified services can meet the demand of the elderly better.

(4) Pay attention to the family supporting function. As a traditional concept, family supporting function is never ignored but further perfected in some east Asian countries, because they consider the family supporting has an irreplaceable advantage of kinship. In Japan, for example, they attach great importance to the family supporting function. The government in Japan provides very comprehensive assistance in order to encourage the elderly care service return to the family, such as family care-givers door-to-door service, home care and many other service projects. It can not only provide a more convenient way for the elderly, but also reduce the costs of the construction of old-age service facilities.

¹⁸ Zhang Qi, Zhang Dong. Research on the adaptability of “9064” endowment pattern in Beijing[M]. China Labor & Social Security Publishing House, 2014

5 Possible Strategies Dealing with population aging in China

The population ageing in China is increasingly severe. There is a warning from UN and some other relevant international organizations: population phenomenon is an event which will last for a long period of time and it must have enough preparation to solve the problem.¹⁹ At present, the strategy dealing with population aging in China still lack of overall train of thought and the preparation of thought, material and system is insufficient. There is no time left to prepare for the population aging before it reaches the peak at around 2030. We must seize every opportunity when the population aging degree is not so serious in the current and do our best to meet the challenges brought by the ageing peak.

5.1 The strategy of economy development dealing with population aging.

5.1.1 Developing human resources of the aged to replenish the labor supply.

The current retirement age in China is relatively low compared with many other countries in the world. The life expectancy at retirement is 15 to 20 years or even longer at present. Most of these retirees have relatively rich experience in technology and management after decades of accumulation of experiences, they will still in a very healthy state in a long period of time and have the possibility and willing to continue to work in the corresponding field. On the one hand, working after retirement can not only accumulate more wealth before they get older, but also it can reduce the mentality of loneliness and boredom to help it maintain good state of mind and body. On the other hand, the development of human resources of the aged can provide labor resources with rich experiences and improve labor productivity, and also it can help to form the secondary demographic dividend and promote the economy development.

¹⁹ Research group of the Party School of the Central Committee of CPC, Xu Zezhou, douyupei. Speed up to establish and perfect our country's aging service system [J]. Journal of the Chinese party and government cadres, BBS, 2011 01:16-19.

5.1.2 Enhancing the investment on research and development (r&d) to improve the labor productivity.

The development of modern research and development, makes the economy growth mechanism change a lot and it has greatly raised the labor productivity. At present, the proportion of investment on r&d as a share of GDP in China is far less than many developed countries. According to the data from *The Forecast of Global Research and Development Spending in 2014* jointly issued by the Battelle Memorial Institute and Journal of Research and Development, in 2014, the r&d spending as a share of GDP in Israel reached 4.2%, and the proportion were between 3.4% ~ 3.6% in Japan, South Korea, and Sweden, in the United States of the r&d spending accounted for 2.8%. The data from the National Bureau of Statistics of PRC shows that the China's r&d spending as a share of GDP is 2.05% in 2014, which has a large gap with developed countries. In order to dealing with the challenge of population aging, we must focus on the r&d to substitute and further increase the investment of r&d, in response to the challenges posed by labor shortages.

5.1.3 Developing the aging industry vigorously to promote the transformation of economy structure.

The population aging brings a series of challenges, but also it brings some corresponding development opportunities. With the rapid increase of the elderly population, the consumer demand especially the aging service is also increasing rapidly, which will drive the development of the tertiary industry, such as aging service, health care, aging finance and living things for the elderly. The development of the aging industry can not only bring benefits to satisfy the needs of the elderly and provide a rich variety of aging products to the elderly, but also it can effectively promote the economy structure transformation and form a new economy growth point.

5.1.4 Perfecting the income distribution pattern to increase the effective consumption demand of the elderly.

Consumption is the important engine to stimulate the economy growth. The aged population is an important consumer group along with the deepening of population

aging and the consumption of the elderly has great significance to the development of the economy and society. But it's worth noting that the consumer demand that can promote the economy growth must be effective consumer demand, so we should make sure the consumer demand of the elderly is effective so that they will have the ability to pay for their demand. At present, the disposable personal income of the elderly in China is at a low stage and the payment capacity is limited, so the willingness to consume is not strong, this is not good for the improvement of life and cannot promote the development of the economy. Therefore, we need to reform the income distribution pattern to improve the income of the elderly, such as perfecting the social security system, strengthening the transfer payment of tax and increasing the transfer payment among family internal and so on. Only in this way, the consumption ability of the elderly can be strengthened, the diversified demand can be realized and the development of economy can be stimulated.

5.2 The strategy of social policy reform dealing with population aging.

5.2.1 Postponing the retirement age timely to alleviate the pressure of the pension fund.

Under the background of the deepening of population aging, the pensionary is increasing gradually but the population pay for the pension is becoming less and less, which will lead to severe pressure of the pension fund in China. Postponing the retirement age is an important measure dealing with population aging and alleviating the pressure of the pension in many developed countries. At present, the retirement age or the pensionable age are low in China compared with the international development experience and the status quo of China's economy and society development and it is necessary and urgent for China to delay the retirement age. Although the policy is facing many disputes, it still represents the general trend and it is a necessary path to deal with population ageing. Of course, it is important to note that this process must be carefully designed, walk step by step and balance the relationship among parties.

5.2.2 Reforming the pension system to enhance the risk resistance ability of the elderly.

The risk of unsustainable pension system is a challenge in China under the background of the population aging. This problem forces us to strengthen the systematic reform of the pension system. On the one hand, the pension age can be delayed to constrain the growth of the pension cost, and actuarial relationship between treatment and pay of pension can be strengthened to better realize the balance of the pension system; On the other hand, we should take some structural reform of the pension system. In China, the existing pension system mainly depends on the first pillar, we should draw lessons from international experience to construct the multi-pillar pension system with Chinese characteristics: establish the PAYG first pillar with social pooling accounts; refill and separate the personal accounts, to constitute the second pillar with enterprise annuity and occupation pension; develop the third pillars pensions with implementation of preferential tax policies as soon as possible, in addition, improve the zero pillar of the national pension, develop the fourth pillar of internal transfers among families and so on. Only the risks are shared by the multi-pillar pension system and the role of the different main body is full played, the anti-risk ability of elderly group can be better improved.

5.2.3 Perfecting the health care service system to realize the goal of healthy aging.

The rapid development of population aging brings the increasing of the financial burden of disease and the cost of health care, which impact the medical and health service system of China and it must be effectively answered. Firstly, we must implement the strategy of healthy aging. At present we face with the problem of "unhealthy" longevity in the elderly, it is related to the ignorance of preventive but only pay attention to the treatment of disease to some extent. We must turn the treatment of passive to prevention of positive in order to improve the health level of old age; Secondly, most old people suffering from chronic diseases, the chronic care determines the quality of the elderly life to a certain degree, so we must take good care of the chronic through perfecting the community health services and family

doctor; Thirdly, the multi-level medical security system should be built to meet the diversified demand of the medical and health care.

5.2.4 Exploring long-term care insurance system and paying attention to the care needs of the elderly.

The proportion of disability and dementia will continue to increase with the deepening of population aging, and the care needs will also increase. The satisfaction of this need not only rely on the professional nursing personnel and facilities, but also the payment capacity. In order to solve these problems, developed countries like America, Japan and Germany have established a relatively perfect long-term care insurance system to meet the demand of the elderly who need long-term care. They successfully address these issues achieve good results. We will face a lot of care needs along with the aging and disability in China, try to build a long-term care insurance system as a long-term planning and timely to explore may also help to solve the problems of the long-term care services.

5.3 The strategy of aging service development dealing with population aging.

5.3.1 Innovating the way of supporting to meet the demand of aging service.

Social supporting has become the option of the elderly to improve the quality of elderly life along with the weakening of the family supporting function. Diversified supporting ways must match the economy development, the living habits of elderly and traditional culture. At present family supporting, community supporting and institution supporting are the main supporting ways for the elderly in China, which accord with the diverse demand of the aged. However, the position of the diversified supporting ways in China at present is not clear and it must be improved. First, the main body of the family and community supporting should be confirmed and the supporting facilities should be strengthened. Second, the institution supporting should be positioned accurately and the service quality need to be improved. Besides, the other supporting ways like reverse mortgage loan and mutual supporting can also be explored to meet the demand of diversified aging services.

5.3.2 Encouraging social forces to participate in aging services in order to improve the service supply effectively.

The demand of aging services of increasing along with the economy and society development. Compared with the rapid growth of the aging service demand, the aging facilities and services are not enough in China and it has a big gap with the diversified aging service demand. As we all know, the supply only from a single channel of the government will not match the aging service, kinds of forces participate in different ways will be a better way. In China, we should first perfect the supply of the aging service from the government, also we need to strengthen the social forces to participate in diversified aging service supply through a series of preferential policies. Only in this way can we realize the diversification of aging service supply upgrade the quality of the aging services continuously.

5.3.3 Attaching great importance to the construction of the human resources for aging services to raise the professionalization.

The demand of the older caregivers is increasing in China with the deepening on the advance age and disability. However, the older caregivers in China is in a serious shortage. Based on the international standard of 3 disabled old man with 1 caregiver, in China we need about 10 million older caregivers. According to a survey data, the older caregivers in China are less than 1 million and the ones who have certification are less.²⁰ In order to improve the specialization aging service, we must pay attention to the he construction of the human resources for aging services and improve the quality of the aging services through developing the vocational education reserve forces and strengthening personnel training of the caregivers.

5.3.4 Constructing better living environment suitable for the elderly to improve the comfort level of the elderly.

Good living environment suitable for the elderly is very important to improve the quality of the elderly. At present, the convenience of the living environment and the integrity of the service facilities for the aged in China are facing with a series of

²⁰ China news, the aging industry in China is facing with a shortage of talents, urgently short of caregivers [DB/OL]. HTTP: // http://www.chinanews.com/jk/2014/12-15/6875330.shtml

problems. The hardware and software of the elderly living environment should be further strengthened. In the aspect of hardware, it is necessary to strengthen the construction of public infrastructure services for the elderly, including the reformation of elderly-Oriented housing, the construction of community aging facilities, the supply of community aging service and the construction of barrier-free environment and so on; On the software side, we should continuously strengthen the construction of aging culture, promote the respect for the elderly, form the social atmosphere of harmony, so that the elderly are able to enjoy a good social environment in physical and psychological.

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