***An Increase in Retirement Age in China: The Effects on Old-age Pension Systems***

# Abstract:

Driven by the low fertility rates, higher aging population rates and improved medical facilities, many countries have extended the retirement age in order to effectively and efficiently manage various socioeconomic factors associated with retirement. Moreover, retirement age also influences the old age pension system. This dissertation studies the factors which motivate policy makers to extend retirement age and its impact on the old age pension systems in China. In addition comparative analysis of Japan and United States of America is conducted in order to give useful insights to the Chinese policy makers to introduce reforms. The finding of the case study suggest to gradually increase the retirement age and initiate the process from teachers and public servants whose jobs are easier and more secure than others.

Table of Contents

[Abstract: 2](#_Toc502152859)

[1.0. Introduction: 5](#_Toc502152860)

[2.0. Literature Reviews: 7](#_Toc502152861)

[2.1. Aging – A demographic Fact of China: 7](#_Toc502152862)

[2.2. Retirement Status in China: 7](#_Toc502152863)

[2.3. Existing Old-age Pension System in China: 8](#_Toc502152864)

[2.4. Executed Reforms in Old-age Pension Systems in China 9](#_Toc502152865)

[2.4.1. Old-age Pension System in Rural China 10](#_Toc502152866)

[2.4.2. Old-age Pension System in Urban China 11](#_Toc502152867)

[2.5. Relationships between Retirement Age and Old-age Pension Systems: 13](#_Toc502152868)

[2.5.1. Existing Literatures and Analysis 13](#_Toc502152869)

[1.6. Comparative Study of USA, Japan and China for Retirement and Old Age Pension Systems 16](#_Toc502152870)

[3.0. Methodology 18](#_Toc502152871)

[3.1. Research Method: 18](#_Toc502152872)

[3.2. Case study 18](#_Toc502152873)

[3.3. Comparative analysis: 19](#_Toc502152874)

[3.4. Limitations of the Research: 20](#_Toc502152875)

[3.5. Ethical issues 20](#_Toc502152876)

[4.0. Findings and Discussion: 21](#_Toc502152877)

[4.1. Progressive Retirement Age and Old Age Pension System: 21](#_Toc502152878)

[4.1.1. In USA: 21](#_Toc502152879)

[4.1.2. In Japan: 23](#_Toc502152880)

[4.2. Lessons for China from the case of Japan and USA: 25](#_Toc502152881)

[4.3. Future Prospects of Pension Policy Reforms in China: 26](#_Toc502152882)

[4.4. Expected Impact of Pension Policy Reforms: 27](#_Toc502152883)

[5.0. Conclusion: 29](#_Toc502152884)

# Introduction:

Improved medical facilities and high quality living standards have led to improved life expectancy rate. On the other hand, aging population is another important concern of few countries. China is one of them. Chinese life expectancy has increased to over 75 years (Chen, 2015). Mr. Weimin Yin, the Minister of Human Resources and Social Security, highlighted that the people aged 60 and above are projected to make up nearly 39% of the country’s population by 2050. In China, one-child policy is an important factor behind aging population and decline in number of young workers. Chen (2015) stated that current support ratio of young worker to retiree is 3:1, while the tendency is sinking to 1.3 workers supporting each retiree. Rapidly aging population exerts a lot of pressure on pension benefit. It is an important concern of Chinese Government that the aging population may put pressure on the pension funds. Moreover, the youth will face pressure to facilitate the old age citizens in financial terms as China maintains multi- generation family system. In order to manage this problem in advance, it is the responsibility of the state to take measures.

During the Three Session of the Twelve National People’s Congress, Yin (2015) communicated the plan of the state to the journalists about introduction of new policies of retirement which aim to extend the mandatory retirement age gradually. As suggested by most social specialists, delaying retirement age must be considered comprehensively to reduce conflicts between employers and employees, and it is a gradual and multiyear process.

There actually exist gaps in current old-age system. Changes of retirement age will widen this gap. Moreover, due to considerable distinctions between rural and urban areas in China, their old-age pension systems are quite different. It is necessary for the Chinese government to introduce reforms in the dual track pension system in order to adjust raising retirement age.

There exists relation between retirement age and old –age pension plans. State designs the pension plan keeping in view the retirement age and number of retirees each year. This rule is seen not only in China, but also in USA, Japan and other countries. It is seen that states like USA and Japan have introduced gradual retirement age delaying plans and continuous reforms in old-age pension mechanisms according to their demographic structural changes. These reforms offer guidelines for Chinese policy makers. However, Ayres and Cracknell (2015) claimed that case study and comparative analysis cannot fully reflect all the changes which have been made to pension systems over that time (Pensions: international comparisons, 2015) and data would go out of date.

The relationship between the retirement age and pension system is researched by numerous analysts. Literature confirms that the design of old age pension influences the working choices of old age workers and the selection of retirement age. For example in USA, people started to stop working at the age of 62 years when the state introduced the minimum age for the social security funds (Burtless and Moffitt, 1984). Retirement timings are significantly influenced by the magnitude of benefits of retirement (c.f. Fields and Mitchell, 1984; Coile and Gruber, 2004; and Gustman and Steinmeier, 2009). In USA, benefits of leaving the job earlier encourage the workers to stop working and enjoy the retirement life. In Japan, a lot of incentives are given to the workers (Oshio, et al. 2011). Due to facilities offered to the retirees, supply of labour force lessens. Retirement benefits offered at age of 60 and work penalties for the workers between the ages of 60- 64 years discourage the old age population to stay on the job in the later stages of life after the official age of retirement (Oshio and Oishi, 2004).

This research work explores the impact of raising retirement age on the old age pension system in China. Moreover, it attempts to relate the cases of old age pension plan reforms incorporated in USA and Japan in order to develop better understanding of the relationship between two variables in policy reform/’s of China.

This dissertation is is divided into five chapters: Introduction, literature review, methodology, results and Conclussion. The introduction section explains the trend of raising retirement age and core agenda to be examined. Chapter II gives an overall background of current retirement situation, old-age pension system in China and old-age pension system reforms both in rural and urban areas. Finally, it attempts to develop a better understanding of relationships between retirement age and old-age pension system. Chapter III is the section about methodology used in this work along with discussion on ethical issues. Chapter IV converses on the cases of USA and Japan. It also discusses the utility of study of these cases for Chinee policy makers. The final section V concludes whole efforts of this work and its practcal implications. In addition, there is an Ethics Form attached as appendix at the end.

# Literature Reviews:

## Aging – A demographic Fact of China:

China has the highest aging population rate. With the development of medical conditions and continuous improvement of life standard, Chinese life expectancy has increased to over 75 years today (Chen, 2015). Statistics tell that about 132 million citizens were 65 years old and above in 2015 comprising of 15 % of total population. It will push up to 331 million by 2050 (Allianz Global Investors, 2015). According to a forecast, around 39 % of populations will fall in the age category of 60 and above by the year 2050. It is argued by Rix and Fisher (1982) that China is facing “negative demographic developments” (Rix & Fisher, 1982, p. 16).

With high aging rate, burden on state to facilitate old age community increases. The one-child policy helped China to mitigate a lot of economic challenges. The elderly community of China has more inherited resources than their parents had. On the other hand, this policy has resulted in highest rate of aging population. Taking care of elderly is going to be one of the biggest challenge for the state of China in the years to come.

On the other hand, the Chinese government has pushed through one-child policy all over the country since 1980, which led to a decline of young workers’ quantity. Chen (2015) stated that current support ratio is three young workers to one retiree, while the tendency is sinking to 1.3 workers supporting each retiree. It is clear that the rapidly aging population in China has a huge impact on generations. These factors make China one of the fastest countries in terms of the growth in the percentage of people over 65 (He, 2015, p. 2).

## Retirement Status in China:

In china, retirement age has been an important topic of discussion since years. With highest rate of aging population, state is under pressure and public policies regarding retirement benefits are insufficient to meet the needs. In China, legal retirement age for men is 60 years and for women, it varies according to the nature of their job. Those who work in public sector or achieve distinctive ranks retire at the age of 55 years while who work in factories or frontline may retire as early as 50 years of age. This retirement age was set in early 1950s when the average life expectancy of Chinese people was under 45 years. Statistics also show that the median working life is forecasted to rise by 15.5 years, from 32.5 years in 2005 to 48 years in 2050 (Allianz Global Investors, 2015). Thus, the Chinese government has set out to ease the restrictive one-child policy and is planning to make further variations to raise the retirement age.

During the Three Session of the Twelve National People’s Congress, Yin (2015), Minister of Human Resources and Social Security, explained in a media briefing that China is going to introduce new policies of retirement which aim to extend the mandatory retirement age gradually. Although he indicated that adjustments to retirement age must be considered comprehensively. It is a gradual and multiyear process and may have plenty of blowback. Wong (2015) argued that state will have to put much efforts to implement the new retirement plans. Social media has its own voice in this regard. Most of the critics believe that state will have to face a lot of difficulties in winning hearts and minds of general masses (Wong, 2015, p. 4).

Stance of the employees and employers regarding this amendment also matter a lot for the success of plans. Haacke (2015) explained that by increasing the retirement age, labour contracts will also need changes. The cost of the organizations will increase. An old age worker costs more than a younger one. The scope of social facilities also vary according to physical fitness of the workers. Employees will have to spend more life on job and have less time to enjoy their leisure life.

Job opportunities may also shrink in case of increased retirement age. It will be difficult for an adult to get a desired job if it is already occupied by an old age worker. In this way solution to one problem may lead to rise of another problem. Unemployment may rise (Zhou, 2016) leading to increased dissatisfaction in general masses. A counter argument made by Yin (2015) was that various job structures accommodate workers of varying demographics. Moreover, Wong (2015) argued that, in China, number of working-age people between 16 and 59 years old began shrinking in 2013, causing burden on old-age pension system. That is why most officials and economists advocate delaying retirement age in order to ease the dependency burden on adults and fiscal pressure caused by rapidly aging population.

##  Existing Old-age Pension System in China:

The old-age pension scheme in China can be divided into several parts based on different groups depending upon nature of organization (public and private) and residence of organization (rural and urban). Zeng (2011) argued that with various levels of funds to be managed, Chinese old-age pension scheme is highly complex. For rural residents, participation to national social security system is voluntary and the funds of old-age pension are managed by over 2,000 local municipal government segments (Chen, 2015). In urban areas, the old-age pension scheme is called employee social insurance pension system which consists of individual accounts and pay-as-you-go pensions (another pillow is voluntary private savings). It demands 8% and 20% contribution by the employee and employers respectively in the social insurance pension scheme (Economic Daily, 2016). This means workers need to pay 28% of their salaries to make a contribution to their old-age pension. Each local government takes responsibility of this scheme in their own areas. The scheme has covered about 320 million participants so far (Economic Daily, 2016).

Dual track pension system is being practised in China. Public and private employees are offered two different pension systems. There are almost 8 million public servants and 32 million private sector servants recipients of pension under this system (Allianz Global Investors, 2015). As mentioned earlier, private enterprise employees contribute 8% by their own salary in their pensions, while public servants contribute none of their salary.

Despite numerous old-age pension input by those in employment, rapidly aging population still exerts a lot of pressure on pension benefits. Statistics indicate that the surplus of rural old-age pension is used to balance the deficit in urban areas (Allianz Global Investors, 2015). For instance, Chen (2015) mentioned that aggregate surplus was around 200 billion RMB by 2015. Government also established a social security reserve fund which amounts 1.2 trillion RMB. This fund is created to ease the public pension deficit in the future. He further predicted that this new strategy will help to curb the potential 41.5 trillion RMB deficit expected in 2050. The government is expected to face pressure to raise salaries to compensate for the required contributions as well. However, this must not be the ultimate solution. It is obligatory for the Chinese government to push up retirement age and reform the old-age pension system.

##  Executed Reforms in Old-age Pension Systems in China

Due to considerable differences between the rural and urban areas in China, such as demographics and the level of economic development, their old-age pension systems are quite change. The rural and urban areas of China practise different pension schemes. These are discussed in detail in the sections below;

### Old-age Pension System in Rural China

In rural China, pension system is more commonly known as the rural resident’s pension system or national social security system (He, 2015) which is particularly designed for rural areas. The origin of this system can be tracked back from last century. In the early 1990s, individuals’ premium contributions were subsidized by funds from the local collections and the government (Zeng Y. , 2011, p. 558). This old-age insurance program begun initially as a pilot project in Shandong province and spread throughout the country rapidly. There are statistics showing that by the end of 1995, 14% of the rural population (approximately 61 million rural residents) between 20 to 60 years, participated in the program (Economic Daily, 2016). Three years later, the number of participants rose by 20 million, and about 890,000 rural residents who were over 60 years old received monthly payments. However, Zeng (2005) said that the program was limited to about 10% regions. A decline of participations from 1999 to 2004 was seen. Afterwards, the number of beneficiaries reached to about 54 million.

Only 9% of the total rural population was part of this scheme till 2004. Official explanation of this situation was pension scheme reforms while the critics argue that trust deficit was the major cause of less participation from rural areas. There was a growing doubt about the sustainability of the program (Zeng Y. , 2005, p. 1049). This doubt was backed by the rapid population aging and fiscal shortages. Later in 2006, taking rural Beijing as an experimental place, the local government established a formal old-age pension system to include more people (over 3 million residents in rural Beijing) (Allianz Global Investors, 2015). Afterwards, an announcement was made by China’s State Council to launch the New Rural Old-age Insurance Program. At the beginning of this program, it covered only 10% of the regions with intensions of complete coverage for rural residents to be achieved before 2020” (Zeng Y. , 2011, p. 558). According to Chen (2015), the latest rural residents pension system was started in September 2009, and by the end of September 2010, 838 counties (out of 2,010 counties) in all 27 provinces and four municipalities were part of this new rural old-age insurance program. Fortunately, participations were not as limited as several years ago. Zeng (2011) also stated that there were 67.2 million rural residents who joined the new Rural Old-age Insurance Program until 2010, and the number even increased to more than 500 million at the end of 2013. It is clear that the development of the New Rural Old-age Insurance Program is much faster than initial plans in 2009. As explained by Chen (2015), it is optional for rural residents to join the program. All premiums under this program are operated by local governments (sometimes referring to the central government) to ensure a basic income for all elderly participants. Each participant pays 55 RMB a month to participate and after 60 years, they receive old-age pension between 100 and 500 RMB monthly (Economic Daily, 2016). Although millions of rural elderlies have received monthly pension under the program, Chen (2015) argued that, compared with urban areas, benefit payments for rural elderlies are far less generous.

### Old-age Pension System in Urban China

In 1952, typical benefits plan introduced in China covered employees of state owned enterprises in urban areas. The economic reforms in the late 1970s in China had a great influence on that pension scheme. According to those plans, state owned enterprises directly provided pensions to their employees, supported by fiscal subsidies (Allianz Global Investors, 2015). The pension system was part of the "iron rice bowl”, an all-encompassing social security system for employees who worked for state-owned enterprises. It is not a perfect beginning but a historical process in China’s social security.

Since then, the pension system has been undergoing far-reaching structural reforms. According to a survey in 1992, the old-age pension recipients were 74% of the elderly who were 60 years old or over in urban areas. Additionally, China established the National Social Security Fund in 2000 which aimed to alleviate the financial impact of demographic developments (Clarks, d’Ambrosio, McDermed, & Sawant, 2004). Shortly after that, outsourcing occupational funds were created for private companies to extend the coverage of old-age pension system and initiate several pilot projects.

 In 2004, the Enterprise Annuity system was created, which is a voluntary occupational pension system. The reforming program is a mixture of defined benefit and defined contribution components. This means individuals can get a part of benefits from a government-managed social plan. Along this, their own contributions are also greatly subsidized. After the positive results of pilot reform, these reform were extended to northeast China in 2004, like Heilongjiang Province, Jilin Province and to another eight provinces in 2006. Finally, the reforms spread across the country (Zeng Y. , 2011, p. 562). Currently, management of the old-age pension system is multilevel, i.e., it is decentralized from a national level, provincial level and county level. Local recommendations are taken into consideration as well.

There are three pillars of urban old-age pension system, the public pillar, voluntary occupational pension and voluntary private savings. The public pillar consists of a pay-as-you-go scheme and funded individual accounts. In accordance with the law, a pay-as-you-go portion is financed exclusively by employers’ contribution of 20% of salary, while the funded portion is 8% of salary contributed by employees themselves. At the beginning of this old-age pension system, the pay-as-you-go scheme was designed to replace 35% of the employee's final salary, and the funded individual accounts aimed to provide a replacement rate of 24% to meet a total contribution rate nearly 70% of their final salary.

Due to the faster and faster development of economy and improvement of living standards, the replacement rate has dropped to around 45% (Allianz Global Investors, 2015). In 2006, the contribution rate was changed to 17% from employers’ contribution in the pay-as-you-go scheme, while the funded individual accounts were divided into two parts: 8% contributions were still from employers and employees only needed to make a 3% contribution. However, according to Zhang (2014), the funded individual accounts were often emptied to support the pay-as-you-go portion in recent reforms, which was called “empty accounts” (Zhang, 2014, p. 2). Specifically, Zhang (2014) argued that local governments took capital from funded individual accounts to compensate pension deficits in the pay-as-you-go scheme and to pay out benefits.

 From 2001, the central and local governments took measures to refill the funded individual accounts through fiscal transfers. The government accepted to fill empty accounts with funds equivalent to 5% of salaries, including 3.75% financed by the central government and the remaining 1.25% financed by the local government. He also mentioned that once the empty accounts have been filled, the balance increases by 1% of salaries each year until 8% is reached (He, 2015, p. 135).

The old-age pension in urban areas also follows a rule that the old employees follow the old approach and new employees follow the new approach. Being specific, workers in state owned enterprises who were employed before the reforms remain covered by the defined benefit plan while the new workers in state owned enterprises, private and collective enterprises and the self-employed follow the new program. Until 2014, overall coverage rate of urban old-age pension system has been in excess of 80% among urban residents (Allianz Global Investors, 2015).

There is still a huge group called rural migrant workers who work in urban areas, but are not basically covered by the urban old-age pension system. Although it is allowed to the employers and rural migrant workers to participate in the urban old-age pension system, both parties are unwilling to join the scheme. By participating in the scheme, labour will cost high to employers. They prefer not to join the pension plans. On the other hand, rural migrant workers prefer immediate lump sum salary rather than old-age pensions. Furthermore, the statistics show that the amount of rural migrant workers is about 150 million (Economic Daily, 2016) and they are all from different areas with high mobility which impedes participation to a great extent. State has taken primary steps to encourage employers and rural migrant workers to join in the urban old-age pension system. The steps include reduction in the contribution rate of the public pillar from 28% to 14% with sole contribution from employers in some cities. At the same time, it is extremely urgent to establish and improve a trans-regional old-age pension system for rural migrant workers.

## Relationships between Retirement Age and Old-age Pension Systems:

### 2.5.1. Existing Literatures and Analysis

Since Yin (2015) disclosed that the mandatory retirement age would be extended, there has been a lot of opposite voice which mostly refer to the old-age pension system. In comparison to China, the mandatory age of retirement in Japan and USA was from 55 – 60 years of age (Clark, 1991). The high occupancy of older employees remain concerned about the old – age pension systems as to how the volatility of environment will impact their pension plans. In China, delayed retirement age is the raising concern.

Due to the relatively perfect old-age pension system in OECD countries, there have been a mass of literatures discussing the relationships between retirement age and old-age pension systems. For instance, Duval (2003) analysed the effects of old-age pension system on retirement age of older males in OECD countries. Compared with Japan or Korea, the implicit tax rates on continued work are higher and more widely dispersed across most Continental European Countries. The governments offer diverse measures to motivate extended retirement, like the pension accrual rate and availability and generosity of benefits (Warshawsky, McCall, & Worth, 2006, p. 79). As declared by Duval (2003), the implicit tax rates on continued work have a considerable impact on the leaving of older males from labour market in OECD countries. People are in the age groups of 55-59, 60-64, 65 years old and over (Warshawsky, McCall, & Worth, 2006, p. 77), they have to decide when to retire on account of the implicit tax rates on continued work embedded in old-age pension system. This means the eligibility of retirement is not equal to getting old-age pension. It is obvious to see that different retirement ages bring significant influence to the provision of old-age pension not only in China, but also in OECD countries.

People in different age groups have distinguished consideration of their own old-age pension. There have been ample researches based on the classification of old-age pension receipts by sex, age, region and job or through establishing simulation models such as the World Bank’s Pension reform Options Simulation toolkit (Warshawsky, McCall, & Worth, 2006). The more extensive data collected, the more accurate forecast would be made on expenditures and revenues of the old-age pension systems. Nevertheless, taking the difficulties of collecting sufficient data into consideration, Zeng (2011) preferred to choose the simpler modelling method which only requires commonly available demographic data and estimates of pension program parameters. Zeng (2011) also pointed out that this kind of analysis can usefully serve as a sentinel warning system for governments in managing pension programs in situations where the detailed age-sex-sector-specific data on labour force participation rates, unemployment rates, earnings pro les, contributions and pay-outs, etc. are required for specifying sophisticated actuarial models is not available or not accessible (Zeng Y. , 2011, p. 565). Additionally, in some other literatures, researchers aim to explore the response of employees to various old-age pension plans offered by insurance companies. Taking Spain as an example, Ballester (2014) found that investors make their decision to invest in a specific pension plan depending on past returns and the company administering the plan. He used fixed effects panel data methodology corrected by heteroscedasticity, serial correlation and cross-sectional dependence (Ballester, 2014, p. 129). It is the panel data model that helped to analyse the behaviours of employees in different old-age pension plans from diverse dimensions such as fiscal benefits, retirement ages, the growth rate of net new money, the legal nature of insurance management companies (Blitzstein, Mitchell, & Utkus, 2006, p. 4) and even custodial fee. All of these existing research results regarding the relationships between retirement age and old-age pension system can be referred to getting a better understanding of the relationships in China in this dissertation. In the following section, the study extends relationship between increased retirement age on old-age pension plans in China, USA and Japan.

**2.5.2.** Case of China:

The increase in the retirement age is a double edged sword for both employees and respective employers. As per a survey conducted and published in Economic Daily (2016), talented professionals can be retained for a longer period of time to contribute to the society. In contrast, the blue collar workers should be offered an early retirement. In the instance of increase in the retirement age, there will be no requirement for a rehire contract (Haacke, 2015, p. 4). However, strict restrictions on employee termination impede the recruitment of younger workers and higher costs for older workers may also increase the burden on employers. It is inevitable for the Chinese government to face the impact of retirement age on the old-age pension system not only in terms of employment but also in context of social reaction. Statistics show that the percentage of people over the age of 60 is going to rise from 15% to 39% in the future (Economic Daily, 2016)

The deficit problem in current old-age system and changes of retirement age will influence the demographics. As argued by Zeng (2011), the factors such as population aging and the inevitable long-run consequence of fertility and mortality decline pose a serious threat to the financial viability of public pension programs (Zeng Y. , 2011, p. 566). It is to be noted, that one child rule, implemented in China from 1970s to 2015 has strictly controlled fertility rate. Meanwhile, living and medical standards are also improved leading to increase in average life expectancy rate.

The increase in the retirement age shall have corresponding effects on the rate of employment as it will be difficult to replace the older workforce. There will be varying impacts of the older work force as the older workforce can advantage the companies or firms with their ample experience but with no levels of energy. The younger workforce shall be full of zeal and energy. Therefore in a market economy system, delaying retirement could promote employment (Zhang, 2014).

## Comparative Study of USA, Japan and China for Retirement and Old Age Pension Systems

 China is not the first one to initiate the process of increasing retirement age and bring reforms in the old age pension schemes according to the changing demographics. There are various other states following this trend. Data from cross national levels provides an insight regarding the institutions, cultures and various socio- economic combinations which contribute in the process of retirement. The outcomes of such policies also help to understand the possible impacts of such reforms in China. The literature from US Health and Retirement Study (HRS) and Japanese study of Aging and Retirement (JSTAR) will help the researchers to conduct a comparative analysis of retirement age and old age pension systems of USA and Japan in the later parts of dissertation.

In comparison with other developed countries, Japan and USA have larger old age working population but the conditions of health and life expectance also vary. By 2008, Japanese and USA old age population of 50-64 years had 73.1% and 70.7% participation rates respectively in the labour force. These rates are higher than the average of G20 and OECD countries (OECD, 2011). Moreover, trend of working above the retirement age (in the ages of 65- 69) is also higher in these countries. Populations in both of these states are aging fast. Comparatively, Japanese population is aging fast in comparison with USA. The reasons are low fertility rate and excellent health conditions (Hurd and Yashiro, 1997). Life expectancy in Japan, by 2010, was 86.4 and 79.6 for women and men respectively (World Bank, 2012). Life –cycle models gives an insight on the retirement age. According to this, the retirement decisions are influenced by the mortality rates. Span of working life is motivated by the expectations regarding life expectancy (Hurd et al., 2004).

Both, Japan and USA, offer an effective and efficient public pension (social security system) and private pension (employer- sponsored) system. There are three tiers in Japanese pension system; first is National Pension Program (NP) which offers basic pension. According to OESD (2011), this flat pension was 792,100¥ annually till 2008 for the 40 years of services. The pension plan is offered to those who contribute minimum of 40 years of their life in services. At the age of 60, an early pension can be availed. Provisions for the survivors and spouses is also offered in accidental cases (SSA, 2011). Second tier is the Employees’ Pension Insurance Program (EP). Except self- employed and civil employees, it covers all the workers from private sector. For the civil employees, separate scheme is offered. Employees who give services of 25 years receive this pension at age of minimum of 60 years (SSA, 2011). Third tier is based on the employers driven pension. About two third of the employer –provided (EP) participants are the part of this tier (Oshio and Oishi, 2004).participants of this tier may take their pension in lump- sum amount or as annuity. They may choose both facilities together. Although, in Japan, employees take retirement at the age of 60 years normally (Shimizutani, 2009) but the employers help the retirees to seek new jobs according to their skills. Sometimes the employers hire the retirees again in the same firm at varying designations (Clark and Ogawa, 1997; Oshio and Oishi, 2004).

The pension system in US is also elaborate and efficient. It has many similarities with Japanese system. According to their system, full retirement benefits are offered to all the participants of the social security system at their full retirement age. According to their law, full retirement age is 66 years for those born in 1945 and increases gradually to the age of 67 years according to birth coherence (SSA, 2012).

Married life is another factor influencing the demographics. It is found that the trend of old age marriages in USA is more than in Japan. 82% of old age citizen marry in USA while 69% of Japanese old age citizens marry. This old age marriage also leads to lower fertility rate. People make fewer children in such case. In Japan and USA child birth per family is 1.95 and 3.16 respectively. However, in Japan, traditional multi-generational family system still prevails. It means that the older people live with their own children instead of old citizen homes like in USA. 48% of the older population in Japan and 25% of the US old age citizens live with their own junior generations. In China, system is similar to Japan. Parents live with children in their old ages.

The health problems also affect the retirement age decisions. In USA, widespread health issues are reported in comparison with USA. The life style of USA leads to more health issues while that of Japan is healthy and disease repellent. In comparison with USA, only 26% people report below average health problems.

This dissertation explores the relationship between the increasing retirement ages on the old age pension systems at public levels in China. Moreover, it conducts a competitive analysis of pensions systems in China versus those practiced in developed countries like United States of America and Japan.

# Methodology

## Research Method:

There are three types of research methods; quantitative, qualitative and triangulation. In general, quantitative research methodology is a powerful tool to understand the social world. According to Bryman (2011), quantitative approach is usually used to describe a social phenomenon and evaluate the changes over time. Francis and Mary (2015) also stated quantitative methods could be applied to identify factors that influence an outcome. Quantitative approach is used to examine whether an existing theory could be applied to a specific phenomenon or issue (Creswell, 2014, p. 163) and the results are highly expected to be generalized in a broader range of areas.

There are two sources of data collection in research; primary and secondary. Primary data is the first hand data collected through various data collection techniques like survey, interviews, etc. while the secondary data is collected from the existing pool of knowledge. This research uses secondary data as this data collection technique could better assist to achieve the objectives. Secondary sources are valuable due to their numerous advantages like wide coverage of literature, time effectiveness, low cost, comparative analysis and trend analysis.

The dissertation, at first, is aimed to get a better understanding of the relationships between retirement age and old-age pension systems. Further, the technique of grouping individuals based on various demographic groups is used to illustrate how the retirement age changes and how it affect old-age pension system. This research adopts case study as a research method.

## Case study

In this method, data is collected from numerous sources using different techniques. The research is conducted over a span of time in order to analyze the development in the process over a defined span of time. In order to study the development of the subjects under discussion, case studies are conducted. It is a popular research method in the domain of business and business administration. Within the boundaries of particular set of situations and environments, the case studies help to analyze problems. As per the design of the case study, it is categorized into three types; explanatory, exploratory and descriptive.

Explanatory case study answers why and how of a situation. The research is conducted on the occurrence of any worth mentioning situation or event. Such case studies focus on the events in the real life scenarios. For example; investigation of reasons of global financial crises. While the descriptive case study is slightly different. It aims at the sequence of events after their occurrence. Cultures are explained with the help of descriptive case study along with discovery of key factors which result in development of that culture. Exploratory case study answers what or who of a situation. In these case studies, additional data is collected through various other data collection techniques like interviews and experimentation.

In this research, descriptive case study is conducted. In order to analyze the relationship between retirement age and old age pension systems in China, detailed literature is used. Moreover, similar examples of two developed countries Japan and USA who have been going through similar changes are discussed in order to enhance the understanding of process.According to Tellis (1997), case study can be based on quantitative materials or qualitative materials, or even combining the two. Meanwhile, case study allows for both quantitative and qualitative analyses of the data (Zainal, 2007, p. 3).

## Comparative analysis:

This research compares the retirement age and old age pension reforms of Japan and United States of America (USA) with China in order to develop better understanding of international practices and reactions on these two important demographic concerns. Japan and USA are the two developed countries with finest mechanisms. Englund (1999) argued that comparative research method is a common process in researches to identify distinctions and similarities of the subjects under discussion. Criticism, discussion and conclusion can be drawn from a profound comparative analysis (Englund, Quigley, & Redfearn, 1999, p. 103). As pointed by some researchers, comparisons appear to pervade all forms of human decision making (Francis, Soothill, & Dittrich, 2001, p. 729), from daily choices of individuals to important policies regarding social problems. Comparasions are likely to provide indispensable guidance and justification for decision-making process.

This work aims to explore how old-age pension system is affected by raising retirement age in China. It must be closely related to government decisions which expressed in the form of public policies to resolve social problems. Chodosh (1999) also argued that decision-makers and scholars cannot be expected to make verdicts understandable without comparing them with similar cases. Japanese study of aging (JSTAR) and U.S Health and Retirement study (HRS) provide a detailed insight on the demographic changes, health reforms and retirement policies in Japan and US respectively. It is found beneficial to study Chinese case in comparison with Japan and US as both countries provide grounds to study current retirement policies and old age pension mechanisms of China.

## Limitations of the Research:

There are few limitations of this dissertations which are due to limited resources. Comparative studies contain few deficiencies. According to Englund, et al. (1999), comparative method has at least four aspects of inadequacies; first is that there is no specific research method second is that it is innately uniform, which means that each process of comparison is indistinguishable from any another (Englund, Quigley, & Redfearn, 1999, p. 103), third is conclusions of a comparative analysis may not be generalized due to varied contexts and the diversity of comparisons. In other words, comparitive studies lack generalizability. The studies conducted above give an insight ony for the countries with similar circumstances. Fourth shortcoming is that the comparison is extremely complex and thus difficult to grasp. Englund, et al. (1999) claimed that if the complexities of comparison cannot be easily grasped, any attempt to do so carries a significant risk of inaccuracy and distortion (Englund, Quigley, & Redfearn, 1999, p. 104). It has to say that, to an extent, the unavoidable complexity of comparison impedes the development of comparative methodology. There certainly exist some of these problems in this dissertation. For example, literatures on old-age pension system and retirement age changes in USA and Japan are quite informative but limited. However, their social development is extremely complex due to their relation to various factors and their continuous reforms. Thus, it is hard to grasp all the relevant information or do a comprehensive comparative analysis.

## Ethical issues

As argued by Babbie (2004), ethical issues are related to both other individuals and researchers themselves, while these issues are easily overlooked by researchers. There is a need to raise the awareness about the ethical issues in the whole process of research. Ethical considerations usually refer to confidentiality of documents, privacy of participants, originality of the content, etc. Before starting this dissertation, the researcher was bound to fill in the ethics form issued by the research ethics committee of the School for Policy Studies at the University of Bristol (see Appendix). Because this research intended to carry out secondary data analysis, it was unnecessary for the researcher to provide extra forms except answering question eleven. The form clarifies that the data is all collected from publically accessible website, books and journals. No particular permission were required even for the content mentioned in fourth chapter (Chapter 4). Aapproval for the conduction of this project was taken from the concerned supervisor. The form also clarifies that this document will be kept confidential with the help of secured computer ID and password and all the data would be deleted in February, 2017.

# Findings and Discussion:

## Progressive Retirement Age and Old Age Pension System:

### In USA:

Since 1935, a lot of adjustments have been incorporated in the retirement age in USA. At that time, a candidate could avail full retirement privileges at the age of 65 years. As stated by Schieber and Shoven (1997), in USA, the legal retirement age depends on the year of birth. For instance, people who were born in 1943 retired at 65 years of age, then one year later of birth, the work time will add to 2 month until they reach the age of 66 years. At that time, most of the workers availing old-age pensions had a defined benefit plan (Samwick & Skinner, 2004). It was the responsibility of employers to invest and contribute to meet promised pension benefit payments when the employee retired (Samwick & Skinner, 2004, p. 332). Nevertheless, the pattern was reformed to defined contribution benefits like 401(k) plans. In 1980s, new reforms were introduced on the basis of rising need of financial contribution from both employers and employees. The government of USA made a plan to adjust the retirement age only rising by 2 years from 2003 to 2027 (Bernhard, 2006). Until 2015, the mandatory retirement age was still 66 years. No changes were incorporated till that time. From the experience of USA, it is clear that the changes in the retirement age and neutralising its adverse impact is a long and technichal process involving various social and economic aspects of society.USA took more than 20 years as an interim period to reach the desired destinition.

In the old-age pension system of USA, it is allowed to retire earlier than the mandatory retirement age. According to Schieber and Shoven (1997), the earliest retirement age is 62 years. Those who retire at this age receive merely 70% of full old-age pension. Only those who retire at the mandatory age are qualified to draw full benefits. Schieber and Shoven (1997) also mentioned that employees working till the age of 70 years or above can receive extra one-third old-age pension along with a full regular pension.The positive aspect of this system is that this type of old-age pension system places an emphasis on social equity. However the negative side is that it is difficult for most of the individuals to decide when to start drawing old-age pension benefits, especially for those who are between the legal retirement age and 70 years old. For instance, in 2015, it must be an important topic for a lot of employees who are reaching at age of 66 years whether to start the old-age pension benefits at full retirement age or to delay the benefits in order to gain greater pay-outs in the future (Hebein, 2012, p. 307).

Hebein (2012) also used theoretical economic models of old-age pension system to explain that because of uncertain lifetimes, social security tends to create an income and substitution effect (Hebein, 2012, p. 308). Although this effect tends to encourage early retirement, there are other factors like family, health and work climate that need to be considered. He dealt with the issue by dividing retirees into two groups, high and low income retirees. There are substantial incentives for high income retirees to delay the beginning of drawing old-age pension benefits and to relocate to lower tax states, while the incentives are not as attractive to lower income individuals for whom social security benefits are not taxed and who are less likely to have the resources to delay the start of social security.

As mentioned in Section two, there are two old-age pension plans named; defined benefit and defined contribution. When comparing the two plans, Sialm, Starks and Zhang (2015) summarized that the flows into funds from defined contribution assets are more volatile and exhibit more performance sensitivity than non-defined contribution flows. In other words, the pensions of defined contribution are more discriminating than defined benefit. This old-age pension pattern of defined contribution achieved fast development, and the famous 401(k) plans in USA is always seen as a typical example of defined contribution pension. The participation rate of employees in 401(k) plan had been more than 50% by the end of 1993 (Poterba, 1997). Samwick and Skinner (2004) did surveys regarding implementation and effectiveness of 401(k) plans and the results suggest that 401(k) plans are generally as good as or better than defined benefit plans in providing for retirement, particularly those in later years. If workers switch jobs, they can use their funds in numerous attractive venues. They can purchase houses, boats, etc. rather than reinvesting money in another scheme (Samwick & Skinner, 2004, p. 341). In addition, retirees seldom reinvest money immediately after the retirement (Samwick & Skinner, 2004, p. 340), therefore it helps to reduce the risk of spending their retirement wealth too early. Inevitably, 401(k) plans have limitations and cannot reach defined benefit plans in some respects (Mitchell, Utkus, & Yang, 2006). Firstly, it is a critical thing to pay a lot of fees for running 401(k) balances. The second limitation of 401(k) plans is minimal (or no) contribution rates. While fewer than 5 percent of workers without defined benefit plans who are offered 401(k) plans fail to contribute in any form, legislation that sets minimum contribution rates could improve retirement benefits substantially for the bottom decile of pension benefits (Samwick & Skinner, 2004, p. 337).

### In Japan:

As is the case of most developed countries, Japan has been unavoidably facing problem of rapid population aging for a long. The reasons behind this issue are same as of China; improved medical facilities leading to increased life pan and a decline in birth rate. According to Repass (1999), when the population of Japan was over 125 million at the end of 20th century, there was a declining growth rate that dropped to 0.25 percent in 1999 (Repass, 1999, p. 2). Moreover, the life expectancy is prolonged to 83 years for Japanese women and 76 years for Japanese man. These trends indicates Japan enjoys better health facilities and social cultures. Repass (1999) predicted that by the year 2020, Japan will turn into a society where one out of every four persons will be 65 years old. (Repass, 1999, p. 2). Japanese government acknowledges this social problem and its impacts on employment, retirement and pension benefits as well. For instance, there exist lack of job opportunities for older people who are willing to continue the work after retirement. Enterprises have to pay higher labour costs for older employees. The nationwide simulation results express that almost three equator of the eligible employees stick to their jobs till they reach their retirement age. The added costs in terms of wages, contributions to social pensions and so on would rise from ¥0.4 trillion in fiscal 2013 to a projected ¥1.9 trillion per year by 2025 (Japan Nekin Service, 2016). There are greater financial demands of old-age pension payments for retirees. The Japanese government set out to make adjustments of retirement age, its old-age pension system reformed at the same time.

Campbell (1997) noted that in 1944, when Japan started carrying out National Pension System, the legal retirement age was 55 years. Almost 10 years later, the age limit was increased to 60 years. This age limit kept on rising gradually. In 1990, the Japanese government encouraged the elderlies to work up to 65 years, which was finally written in the law as a formal and legal retirement age (Campbell, 1997). From 1990 to 2000, the old-age pension pay-outs were distinguished by age stages. Employees who are between the age of 60 and 64 years got the pension which was a combination of the National Pension System and their own salary. Contrary to this, those who are 65 years or above can receive full old-age pensions irrespective of whether they continue to work or not (Japan Nekin Service, 2016). Actually, the retirement age changes in Japan never stop. In April 2006, it occurred that an earlier retirement was set 62 years, then the government gradually pushed up the retirement age again. According to Schreiber (2013), the mandatory retirement age has been increasing with the ratio of 1:3. It means that the retirement age increases by one year after every three years. This patter will continue till 2025 (Schreiber, 2013), till it will reach 65 years. Okumura and Usui (2014) stated their findings that recent pension reforms that raised the pensionable age were a direct result of increasing the retirement age.

As thoroughly explained earlier, currently, the Public Pension System in Japan consists of three parts: National Pension System, Employees’ Pension Insurance and Mutual Aid Pension. The statistics show that National Pension which is also called Basic Pension covers all groups of retirees, half of them participate Employees’ Pension, and only about 7% of people are participations of Mutual Aid Pension (Japan Nekin Service, 2016). Undoubtedly, Mutual Aid Pension may make a contribution to old-age pension systems as a new mode. But in this case analysis, it will focus on National Pension and Employees’ Pension which primarily comprise the retirement income in Japan. Kitao (2015) highlighted that employees are able to establish their own individual retirement accounts, which is a type of “employer-based pay-as-you-go public pension in Japan” (Kitao, 2015, p. 116). It implies a massive increase in government expenditures in the magnitude of 40% of total consumption at the peak (Kitao, 2015, p. 116). This part of old-age pension invested for many years by individuals really generates a significant rise in capital, which provides a major relief for the government budget and helps individuals themselves to save more for retirement as well. As mentioned above, population aging has been a big social problem in Japan, Sakamoto (2009) noted that the Japanese government has to keep adequacy of National Pension benefits to reduce the poverty in old ages and support the development of Employees’ Pension plans to enrich the life after retirement.

## Lessons for China from the case of Japan and USA:

The reason of this whole comparative study is to extract some beneficial points from the cases of Japan and USA who are developed states and whose few demographic problems are similar to China. Analysis of the patterns of the process in USA and Japan to delay retirement and summarize proper criterion for the Chinese government to make possible retirement policies is in the following section.

From the cases above, it is clear that both USA and Japan have undergone a long period of raising the retirement age and adjusting the old-age pension system according to the new social environment. In Japan, this series of reforms is mostly led by the Japanese government through making rules and laws. Contrary to this, in USA, there are three levels of old-age pension. Various incentives are added to encourage employees to delay retirement age or continue work after retirement. However, there is never ‘one size fits all’ approach for policy makers to motivate older workers to delay their retirement (Bernhard, 2006). It indicates that both the central and local governments and human resources supervisors need to seek for particular and practical incentives for the delaying retirement of older workers. As Flynn (2010) argued that working experience of older workers has a significant influence on their attitude toward their jobs and plans for their retirement (Flynn, 2010, p. 320). Workers in different social environment have their own working and living characteristics, therefore it is wise for policy makers to adjust the old-age pension system to obviously distinguished groups of older workers.

Flynn (2010) argued that the diversity of older workers can provide policy makers with advantages. For instance, in UK, approaches to recruit older workers are mostly based on the business case. It works well for those who have definite employers and organizations. They are allowed to work flexibly and able to remain in work. This approach may lack favour for those employees who do not enjoy favours and good reputes (Choi, Laibson, Madrian, & Metrick, 2004, p. 132). The other incentive called working tax credit introduced by the UK government also supports the opinion made above. Working tax credit particularly motivates those older people relying on incapacity benefits. They can still work more than 16 hours per week. It excludes high income workers. There are some other financial incentives, like pension augmentation- all of these aim to encourage the older workers to delay retirement or extend their working life. Additionally, motivation like lifelong learning programme led by employer or government, can offer the older people a better chance to make the transition between occupations and industries as well (Clarks, d’Ambrosio, McDermed, & Sawant, 2004). Nevertheless, it seems a decent way to group older workers according to shared characteristics, so that policy makers could provide targeted motivations to distinguished types of older workers to extend retirement age.

## Future Prospects of Pension Policy Reforms in China:

The operation of old-age system in China has similarities to OECD countries. USA and Japan carry similarities with case of China in various degree such as population aging, working pressure of youth and the pension fund deficits. It will be good for the Chinese government to apply some efficient approaches to carry out proper policies to delay retirement age while minimizing the adverse impacts. According to a theory of using typologies to identify groups of the older workers, some analysts debated that the government may lift retirement age of older females first (Flynn, 2010). In most cases, gender appears to be one of the popular and easily defined demographic characteristics. Currently, most researchers hold an opinion that the women are more inclined towards longer working lives than men in part because they live longer and are less able to afford retirement (Bernhard, 2006, p. 177). In accordance with the law, in China, the retirement age of female workers in public sectors is 55 years and for frontline female worker, it is only 50 years. In order to ensure a smooth implementation of all the planned reforms, it is suggested that distinctive measures should be taken for diverse sectors. Flynn (2010) argued that the government may first raise retirement ages for females, bringing them at the same level with their male counterparts before making further changes (Flynn, 2010, p. 5). Moreover, female teachers and public servants would lead the way, and female workers would eventually follow the rules (Flynn, 2010, p. 5).

When Yin (2015) first announced the plan of delaying retirement age publicly in March, 2015, he pointed out that there exist no consensus of public on this issue. People from various age groups, designations and family backgrounds have their own interests which influence their opinions (Wong, 2015, p. 3). This is actually the first revision of China’s official retirement policy since the 1950s, thus, it must face much resistance. To avoid revising the policy repeatedly, policy makers prefer relieving public worries and make it widely recognized first. Yin (2015) said that the changes of retirement policies and old-age pension system would only be made after public consultation. He further claimed that the detailed plans were expected to be exposed in 2017. The executed reforms would take five more years to produce results. Furthermore, in order to be accepted by the public and help the public to adjust to the increasing retirement age, the retirement policies would be implemented gradually in small steps. It is evident from the case of USA that time plays positive role in the final results of such policies. USA has spent more than 20 years on raising retirement age and the Japanese government also adjusted mandatory retirement age many times over recent decades. Nevertheless, their steps of reform never stop. Wong (2015) suggested that a steady approach can be taken to increase the retirement age by three months each year or the other potential scenario might involve a two-month increase in the first year followed by another four months the following year.

## Expected Impact of Pension Policy Reforms:

From the analysis made above, this is an inexorable trend to make reforms in the retirement age in China. Simultaneously, according to interrelationship between retirement age and old-age pension system as explained in in Section 2, these reforms will have impact on dual track old-age pension system, the pension fund deficits and the coverage of public and occupational old-age pension system. Firstly, raising the retirement age will drive the reform of dual track old-age pension system. As mentioned above, public servants do not contribute in their pensions, but the workers in private enterprises have to contribute 8% of their salary to the old-age pension system. Even when they are retired, generally, state owned or government workers will receive more old-age pension than others. It is found that jobs in government and state owned enterprises are much more stable and guaranteed, so people prefer to do jobs in public sector. This policy is discriminatory. Most researchers have pointed out that this phenomenon is actually unfair for the private sector workers (Ballester, 2014). It is expected that the reforms may have two important aspects;

1. Implementation of increasing the retirement age policy may possibly be carried out from female teachers and leaders. Afterwards it will be implemented on the frontline workers.
2. The state owned and private enterprises should contribute 5% by their own salary in their pension. This could be a valuable opportunity for the government to treat the general masses equally and promote the process of democracy in China.
3. Secondly, delaying retirement age may relieve the pressure of deficits in current old-age pension system in some way. Specifically, some critics have argued that it is an obvious defect of national pension fund management which empties the funded individual accounts to support the pay-as-you-go portion. This practice has raised the risk that current workers and future retirees who have already paid into the system will not be able to receive pension (Wong, 2015, p. 3). Longer working life means that employers and employees would provide more funds to the national pension system to compensate the empty accounts. As stated by Chen (2015) in an interview, one of the largest challenges in providing a secure retirement system (Chen, 2015, p. 4) and the current old-age pension system needs to be designed to keep pace with increasingly improved living standards.
4. To match the future retirement changes, in the light of 401(K) plans in USA and Employees’ Pension Insurance in Japan, the Chinese government has given a great impetus to establish private sector pension fund. For example, Yin (2015) said that private sector pension fund in China received 2.33 trillion Chinese Yuan in revenue and paid out 1.98 trillion Yuan, closing the year with a net fund size of 3.06 trillion Yuan (Economic Daily, 2016, p. 5) in 2014. The central and local governments are also trying to seek better ways to put the funds in, instead of just depositing them in banks and investing a small portion in government bonds (Wong, 2015, p. 3). All these measures taken by the Chinese government aim to increase old-age pension funds and meet their obligations to current and future retirees.
5. There must be a standardized old age pension policy indifferent of rural and urban regions. It is beneficial to expand the coverage of public and occupational old-age pension systems by raising retirement age. As pointed by Nicolaas (2015), it is likely that retiremnet age changes will have a considerably different influence across the regions in China. Due to relatively low coverage in rural areas (Zeng Y. , 2011), the Chinese government should pay more attention to the large differences between rural and urban situations. The rural residents mostly participate in the national pension system and its coverage basically depends on the amount of old-age pension funds. Increasing the working life will enrol more workers to contribute to the national pension system, which supports a larger part of rural residents.
6. The enterprises play a significant role in the old-age pension system of rural migrants and urban workers. According to Nicolaas (2015), it should be noted that the occupational pensions are becoming more popularized through the Enterprise Annuity system and the government still keeps looking for new patterns of old-age pension system with higher returns. Currently, large enterprises are the main participants in the occupational pensions while medium-sized and small enterprises may need more policy support in the future.

 Although implementation of reforms is full of challenges. The implementation of new policies of old-age pension system in new economic environment, like inadequate cognition and regional distinctions (Allianz Global Investors, 2015), the Chinese government must be ambitious to carry out the reforms discussed above. In fact, it may exacerbate the financial strains (Nicolaas, 2015, p. 4) by expanding the coverage of old-age pension system, while as argued in the previous paragraph, raising the retirement age can relieve the financial pressure of the system. Thus, raising retirement age and old-age pension system reforms must be comprehensive and never be in the fragmented parts.

# Conclusion:

The extension in the retirement age of Chinese workers is mandatory in order to control the dependency load on the state and on the youth. In this work, the current situation of retirement age in China and the history of its old-age pension system is explained in detail. The relationships between retirement age and old-age pension system is very sensitive. Delaying retirement age influences old-age pension system in various socio- economic dimensions. As discussed earlier, the motivations for increasing the retirement age are driven primarily from the long-term needs of the state to maintain the consistency and sustainability of old-age pension system.

Aging is very important demographic issue. Japanese population is aging faster than United States but China still leads the list. In both Japan and US, fertility rate is low and life expectancy is high respectively (Hurd and Yashiro, 1997). In 2010, life expectancy for women was 86.4 and for men 79.6 years in Japan while in US it was 80.7 and 75.9 years respectively (World Bank, 2012). In the light of life- cycle model, retirement age decision is backed by the mortality rate. Hence, the life spans motivate people to peruse shorter or longer on- job lives (Hurd et al., 2004). Other health measures lead to other results. Both Japan and United States offer public pension plans under section of social security mechanisms just like China but the processes are different.

 Japanese pension system has three tiers; first tier is known as National Pension Program (NP). Under this program, basic pension is paid to retirees under flat rates. Second tier is based upon the earnings. Pension is paid according to the earnings of the candidate along with NP. This cumulative pension is paid under Employee’s Pension Insurance Program (EP). This program covers the private sector retirees and excludes self- employed and civil workers. Civil servants are paid pension under a different pension scheme. Both of these tiers incorporate disability factor. A person with disability is paid more than the standardised retirement benefits. The definition of disable is set by the state as a person who cannot neither live independently nor contribute towards the job as per requirements (SSA, 2010). Such person is not bound to work till set retirement age and is given additional benefits. Third tier is the employer provided pension. This pension plan cover almost two third of the EP participants who belong to private sector (Oshio and Oishi, 2004). Employees have option to take their pension as a lump sum or annuity. They can choose both in portions. Retirement age of employee in Japan is 60 years (Shimizutani, 2009). Employers help their employees to seek new jobs after retirement. Sometimes they hire them again in same firm at different designation (Clark and Ogawa, 2997). This shows the willingness of old age people to work in Japan (Oshio and Oishi, 2004). This is contrary to the Chinese culture. People prefer to enjoy their retirement life. In Japan, according to new retirement reforms, employers are bound to provide their employee with work opportunity up to age of sixty four years if they wish to work. It is prohibited to set retirement before 60 years.

The social security system of United States has some similarities with Japanese system. According to their plan, all retirement benefits including pension are paid to the retirees aged 66 years if born in 1945. Gradually the retirement age changes in coherence with 67 years (SSA, 2012). In US pension is paid in a single tier. Pension is paid based upon contribution of the worker during his working life. This mechanism resembles with EP of Japanese. In China, pension system is divided on the basis of rural and urban territories contrary to that in Japan and US. US workers can enjoy the retirement benefits if and only if they are 40 years old or above. Using progressive formula, the monthly income of the worker is average indexed. Workers normally claim benefits between age of 62 and 70 years (SSA, 2012). Their social security program, just like Japan, includes the disability factor. Additionally, this system also benefits the spouse of the working deceased and widow. If case of disability, person must meet the set criteria regarding last working activity and medical conditions. Contrary to the US system for disable and diseased, the Japanese system is less efficient. It does not offer much facility to the work force. Although the state is taking actions to improve the mechanisms of facility for the disable and family of diseased people, still it needs a lot of efforts. On the other hand it is found that the proportion of people availing disability benefits is increasing in USA. The participation of female workers is also increasing. It is a positive sign for the economy of USA. It will lessen the dependency rates but the state has to keep in mind that the increasing female work force is also leading to an increase in future pension funds (Autor and Duggan, 2006).

Comparative analysis of USA and Japan also provides guidelines for Chinese policy makers. There exist numerous similarities among China, USA and Japan, such as population aging, job opportunities for youth, increasing dependency burden and the pension fund deficits. This dissertation concluded some suggestions for Chinese old-age pension system reforms in the future. Policy makers have to do a lot of preparation to relieve public worries and make policies of delaying retirement age widely recognized. In order to be accepted by the public and help the public to adjust to the increasing retirement age, the delaying retirement policies would be implemented gradually in small steps. Wong (2015) suggested that a steady approach can be taken to increase the retirement age by three months each year. Another proposition is that a two-month increase in the first year followed by another four months the following year will also work in Chinese scenario (Wong, 2015, p. 3).

In accordance with the law, in China, the retirement age of female workers in public sectors is 55 years and for frontline female worker, it is only 50 years. Based on the theory of using typologies to identify groups of older workers, it is suggested that the government may first raise retirement ages for females, bringing them at the same level with their male counterparts before making further changes (Flynn, 2010, p. 5). In addition, female teachers and public servants would lead the way, and female workers would eventually follow (Flynn, 2010, p. 5).

The extension in retirement age will have immense impact on the old age pension benefits. Along with pension system, changing retirement age will influence other socio- economic situations. Raising retirement age may relieve the pressure of deficits in current old-age pension system. In other words, raising the retirement age will prop up the old-age pension system. Then, raising retirement age will drive the reforms of dual track old-age pension system. This may be a good chance to unify the payment policies of pensions for all workers working in government, state owned and private enterprises which will lead to equity in the general masses. Last but not least, it is beneficial to expand the coverage of public and occupational old-age pension systems by raising retirement age. So, it is important for the state to initiate the process of retirement age and progress gradually besides the efforts to take general masses in confidence.

**Bibliography:**

Allianz Global Investors. (2015). Pension Systen Design. Retrieved August 21, 2016, from http://www.pensionfundsonline.co.uk/content/country-profiles/china/105

Ameriks, J. (2004). How Do Retirees Go from Stock to Flow? . In O. S. Mitchell, & S. P. Utkus (Eds.), Pension Design and Structure (pp. 237-258). Oxford: Oxford University Press.

Bahari, S. F. (2010). Qualitative Versus Quantitative Research Strategies: Contrasting Epistemological and Ontological Assumptions. Jurnal Teknologi, 55, 17-28.

Ballester, C. P. (2014, June). Determinants of equity pension plan flows. Estudios de Economía, 41(1), 125-148.

Bernhard, E. (2006). Reforming Early Retirement in Europe, Japan and the USA. Oxford: Oxford University Press.

Blitzstein, D., Mitchell, O. S., & Utkus, S. P. (2006). Understanding the Uncertainties of Retirement. In D. Blitzstein, O. S. Mitchell, & S. P. Utkus (Eds.), Restructuring Retirement Risks (pp. 3-9). Oxford: Oxford University Press.

Bryman, A. (2011). The nature of quantitative research. In Social Research Methods (pp. 61-81). Oxford: Oxford University Press.

Campbell, J. C. (1997). Retirement in Japan. Asia Society, 7(13).

Chen, P. (2015). China’s Retirement System: What Does the Future Hold? DC DIMENSIONS.

Chodosh, H. E. (1999, October 25). Comparing Comparisons: In Search of Methodology. Retrieved August 31, 2016, from HeinOnline: http://heinonline.org/HOL/Welcome?message=Please%20log%20in&url=%2FHOL%2FPage%3Fhandle%3Dhein.journals%2Filr84%26collection%3Djournals%26id%3D1039%26startid%3D1039%26endid%3D1146

Choi, J. J., Laibson, D., Madrian, B., & Metrick, A. (2004). Employee Investment Decisions about Company Stock . In O. S. Mitchell, & S. P. Utkus (Eds.), Pension Design and Structure (pp. 121-136). Oxford: Oxford University Press.

Clarks, R. L., d’Ambrosio, M. B., McDermed, A. A., & Sawant, K. (2004). Sex Differences, Financial Education, and Retirement Goals. In O. S. Mitchell, & S. P. Utkus (Eds.), Pension Design and Structure (pp. 185-206). Oxford: Oxford University Press.

Creswell, J. W. (2014). Quantitative Methods. In Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (pp. 155-182). Sage Publication.

Clark, R. and N. Ogawa (1997). “Transitions from Career Jobs to Retirement in Japan,” Industrial Relations 36(2): 255–270.

Duflo, E., & Saez, E. (2004). Implications of Pension Plan Features, Information, and Social Interactions for Retirement Saving Decisions. In O. S. Mitchell, & S. P. Utkus (Eds.), Pension Design and Structure (pp. 137-156). Oxford: Oxford University Press.

Duval, R. (2003, 11 25). The Retirement Effects of Old-Age Pension and Early Retirement Schemes in OECD Countries. OECD Economics Department. OECD Economics Department Working Papers, OECD Publishing.

Economic Daily. (2016, July 26). Ministry of Human Resources and Social Security of the People's Republic of China. Retrieved August 21, 2016, from http://www.mohrss.gov.cn/SYrlzyhshbzb/dongtaixinwen/buneiyaowen/201607/t20160726\_244219.html

Englund, P., Quigley, J. M., & Redfearn, C. L. (1999). The Choice of Methodology for Computing Housing Price Indexes: Comparisons of Temporal Aggregation and Sample De®nition. Journal of Real Estate Finance and Economics, 19(2), 91-112.

Fehr, H., Kallweit, M., & Kindermann, F. (2012). Pension reform with variable retirement age: a simulation analysis for Germany. Journal of Pension Economics and Finance, 11, 389-417.

Flynn, M. (2010). Who would delay retirement? Typologies of older workers. Emerald Insight, 39(3), 308-324.

Francis, A.-Y., & Mary, A. Y. (2015). Quantitative Methods (1st ed.). Berlin: LAP Lambert Academic Publishing.

Francis, B., Soothill, K., & Dittrich, R. (2001). A new approach for ranking "serious" offences--The use of paired-comparisons Methodology. BRIT. J. CRIMINOL, 41, 726-737.

Hurd, M., and N. Yashiro. (1997). The Economic Effects of Aging in the United States and Japan. Chicago, IL: University of Chicago Press.

Hurd, M. D., J. P. Smith and J. M. Zissimopoulos (2004). "The Effects Of Subjective Survival On Retirement And Social Security Claiming." Journal of Applied Econometrics 19(6S): 761-775.

Haacke, O. (2015, April 01). China’s Mandatory Retirement Age Changes: Impact for Foreign Companies. Retrieved August 21, 2016, from https://www.uschina.org/china%E2%80%99s-mandatory-retirement-age-changes-impact-foreign-companies

Hammond, P. B., & Fore, D. (2006). Restructuring the Defined Benefit Pension. In D. Blitzstein, O. S. Mitchell, & S. P. Utkus (Eds.), Restructuring Retirement Risks (pp. 167-185). Oxford: Oxford University Press.

He, X. (2015, March 10). China Economics. Retrieved August 21, 2016, from http://www.ce.cn/xwzx/gnsz/gdxw/201503/10/t20150310\_4777433.shtml

Hebein, F. (2012, May/June). How Long Should An Individual At Full Retirement Age Delay Receiving Social Security Benefits? The Journal of Applied Business Research, 28(3), 303-316.

Holden, S., & VanDerhei, J. (2006). The Role of 401(K) Accumulations in Providing Future Retirement Income. In D. Blitzstein, O. S. Mitchell, & S. P. Utkus (Eds.), Restructuring Retirement Risks (pp. 37-51). Oxford: Oxford University Press.

Hsin, P.-L., & Mitchell, O. S. (1997). Managing Public-Sector Pensions. In S. J. Schieber, & J. B. Shoven (Eds.), Public Policy Toward Pensions (pp. 247-266). London: The MIT Press.

Japan Nekin Service. (2016). National Pension System. Retrieved August 21, 2016, from http://www.nenkin.go.jp/international/english/nationalpension/nationalpension.html

Jia. (2016, July 03). Analyzing and learning the reform of pension systems in Japan. Retrieved August 21, 2016, from http://wenku.baidu.com/link?url=3bxYG89JIh0T2sospAyiJh5HireEfWYrofUzxp0Y0LyIObg7yzn4Nr-lFLwgze13c\_av6CdCegV2kXRXWY4qvVKYgcmkeY1GDysm0tmvjCq

Kitao, S. (2015). Pension reform and individual retirement accounts in Japan. Journal of The Japanese and International Economies, 38, 111-126.

Lan, J. (2015, November 10). How does Japan delay retirement to deal with aging? Retrieved August 21, 2016, from http://www.southmoney.com/touzilicai/baoxian/201511/443919.html

MacFarland, D. M., Marconi, C. D., & Utkus, S. P. (2004). “Money Attitudes” and Retirement Plan Design: One Size Does Not Fit All. In O. S. Mitchell, & S. P. Utkus (Eds.), Pension Design and Structure (pp. 97-120). Oxford: Oxford University Press.

Mitchell, O. S., Utkus, S. P., & Yang, T. (2006). Dimensions of 401(K) Plan Design. In D. Blitzstein, O. S. Mitchell, & S. P. Utkus (Eds.), Restructuring Retirement Risks (pp. 186-203). Oxford: Oxford University Press.

Nicolaas, G. (2015). An Increase in the Retirement Age in China: The Regional Economic Effects. Economics Discussion Working Papers. The University of Western Australia, Department of Economics.

OECD. (2011). Pensions at a Glance 2011: Retirement Income Systems in OECD and G20 Countries. OECD Publishing. http://dx.doi.org/10.1787/pension\_glance-2011-en.

OECD. (2012). OECD Health Data 2012: How Does Japan Compare? http://www.oecd.org/els/healthpoliciesanddata/BriefingNoteJAPAN2012.pdf

Oshio, T. and A. S. Oishi (2004). “Social Security and Retirement in Japan: An Evaluation Using Micro-Data.” in J. Gruber and D. A. Wise (Eds.). Social Security Programs and Retirement around the World: Micro-Estimation. Chicago, IL: University of Chicago Press: 399-460.

Oshio, T., A. Oishi and S. Shimizutani (2011). “Social Security Reforms and Labor Force Participation of the Elderly in Japan.” Japanese Economic Review 62(2): 248-271.

Oshio, T. and S. Shimizutani (2011). “Disability Pension Program and Labor Force Participation in Japan: A Historical Perspective.” National Bureau of Economic Research Working Paper 17052, May. Cambridge, MA: NBER.

O'Dwyer, L. M., & Bernauer, J. A. (2013). Quantitative Research for the Qualitative Researcher (1st ed.). Los Angeles: Sage Publications LtD.

Okumura, T., & Emiko Usui. (2014, May). The effect of pension reform on pension-benefit expectations and savings decisions in Japan. Applied Economics, 46(14), 1677-1691 .

Pensions: international comparisons, SN/SGS/00290 (February 24, 2015).

Poterba, J. M. (1997). The Growth of 401(K) Plans: Evidence an Implications. In S. J. Schieber, & J. B. Shoven (Eds.), Public Policy Toward Pensions (pp. 177-196). London: The MIT Press.

Repass, M. E. (1999, July 30). Change: Retirement in Japan and the Resulting Challenges for Japanese Adult Education. Retrieved August 21, 2016, from https://theses.lib.vt.edu/theses/available/etd-080299-145701/unrestricted/Repass.pdf

Rix, S. E., & Fisher, P. (1982). Retirement-Age Policy: An International Perspective (1st ed.). New York : Pergamon Press.

Sakamoto, J. (2009). The Current Situation of Retirement Income Provisions in Japan: Social Security Pension Schemes and Corporate Pension Plans. Asian Social Work and Policy Review, 3, 122-141.

Samwick, A. A., & Skinner, J. (2004, March). How Will 401(k) Pension Plans Affect Retirement Income? THE AMERICAN ECONOMIC REVIEW, 94(1), pp. 329-343.

Samwick, A., & Skinner, J. (1997). Abandoning the Nest Egg? 401(K) Plans and Inadequate Pension Saving. In S. J. Schieber, & J. B. Shoven (Eds.), Public Policy Toward Pensions (pp. 197-218). London: The MIT Press.

Schieber, S. J., & Shoven, J. B. (1997). Policy Directions for Pensions. In S. J. Schieber, & J. B. Shoven (Eds.), Public Policy Toward Pensions (pp. 313-326). London: The MIT Press.

Schieber, S. J., & Shoven, J. B. (1997). The Consequences of Population Aging on Private Pension Fund Saving and Asset Market. In S. J. Schieber, & J. B. Shoven (Eds.), Public Policy Toward Pensions (pp. 219-246). London: The MIT Press.

Schieber, S. J., & Shoven, J. B. (1997). The Economics of U.S. Retirement Policy: Current Status and Future Directions. In S. J. Schieber, & J. B. Shoven (Eds.), Public Policy Toward Pensions (pp. 1-40). London: The MIT Press.

Schreiber, M. (2013). Mandatory retirement takes a leap forward. Tokyo: The Japan Times News.

Selnow, G. W. (2004). Motivating Retirement Planning: Problems and Solutions. In O. S. Mitchell, & S. P. Utkus (Eds.), Pension Design and Structure (pp. 43-52). Oxford: Oxford University Press.

Sethi-Inyengar, S., Huberman, G., & Jiang, W. (2004). How much Choice is Too Much? Contributions to 401(K) Retirement Plans. In O. S. Mitchell, & S. P. Utkus (Eds.), Pension Design and Structure (pp. 83-96). Oxford: Oxford University Press.

Sialm, C., Starks, L. T., & ZHANG, H. (2015, April). Defined Contribution Pension Plans: Sticky or Discerning Money? THE JOURNAL OF FINANCE, 70(2), 805-838.

Social Security Administration (2011). Social Security Programs Throughout the World: Asia and the Pacific, 2010. SSA Publication No. 13-11802 (p. 99-106). Washington, DC: US Social Security Administration.

Social Security Administration (2012). Annual Statistical Supplement, 201. Washington, DC: US Social Security Administration: 9-18.

Shimizutani, S. (2009). “A New Anatomy of the Retirement Process in Japan.” Center for Intergenerational Studies, Institute of Economic Research, Hitotsubashi University PIE/CIS Discussion Paper 458. http://hermes-ir.lib.hitu.ac.jp/rs/bitstream/10086/17692/1/pie\_dp458.pdf, October.

Tencent Statistics. (2013, November 25). Pension replacement rate of some countries. Retrieved August 21, 2016, from http://news.qq.com/bigdata/41.htm

Wang, H. (2014, February). On Prolonged Retirement. Journal of Guangxi Youth Leaders Colledge, 24(1), 71-74.

Warshawsky, M. J., McCall, N., & Worth, J. D. (2006). A Regulatory Framework for Strengthening Defined Benefit Pensions. In D. Blitzstein, O. S. Mitchell, & S. P. Utkus (Eds.), Restructuring Retirement Risks (pp. 71-87). Oxford: Oxford University Press.

Wong, C. H. (2015, March 10). China Sets Timeline for First Change to Retirement Age Since 1950s. Retrieved August 21, 2016, from http://blogs.wsj.com/chinarealtime/2015/03/10/china-sets-timeline-for-first-change-to-retirement-age-since-1950s/

World Bank (2012), Life Expectancy at Birth, Total (Years). http://data.worldbank.org/indicator/SP.DYN.LE00.IN.

Zainal, Z. (2007, June). Case study as a research method. Jurnal Kemanusiaan, 9, 1-6.

Zeng, Y. (2005). Population aging, pension de cits and old age insurance program in China. Economic Quarterly, 3, 1043-1066.

Zeng, Y. (2011). Effects of Demographic and Retirement-Age Policies on Future Pension De cits, with an Application to China. PoPulation and develoPment Review, 37(3), 553-569.

Zhang, S. (2014, November 28). Adjustment of Retiment Ages in China: taking experience from Japan. Retrieved August 21, 2016, from http://www.crifs.org.cn/crifs/html/default/waiguocaizheng/\_content/14\_11/28/1417156787296.html

Zhou, X. (2016, July 26). Delaying retirement age will not lead to difficulties in youth employment. Retrieved August 21, 2016, from http://weibo.com/ttarticle/p/show?id=2309351000474001391319365625