

Research and Inspiration on the Reform and Innovation of Singapore Central Provident Fund Pension System to Cope With the Aging Population

Xiao Jinxi

Renmin University of China, Beijing, China

Dong Keyong

Tsinghua University, Beijing, China

From the perspective of dealing with the aging of the population, this paper conducts a more in-depth study on the reform and innovation of Singapore's central provident fund pension system (CPFPS). The study concluded that: In the face of the aging population, Singapore continues to reform the CPFPS. Singapore established and improved a multi-pillar pension system, with the CPFPS as the main pillar, the Supplementary Retirement Scheme (SRS), the Workfare Income Supplement Scheme (WISS) and the Housing Pension System (HPS) as the supplementary pillar. The reform and innovation of the CPFPS not only improved and enriched the pension system model, but also enhanced the sustainability of the pension system. The CPFPS has been combined with such social and economic policies as the SRS, WISS and HPS, thus realizing the diversification of pension accumulation, enhancing the adequacy of pension, and better coping with the aging population. Singapore's practice of reforming and innovating the CPFPS in response to the aging population has certain reference and inspiration for the reform and innovation of pension system in China and other countries in the world.

Keywords: central provident fund (CPF), CPF system, central provident fund pension system (CPFPS), pension system reform and innovation

Introduction

Singapore is a country with a high degree of population aging, and it is also one of the first regions in Asia to enter the aging population. In 2000, the proportion of the elderly population aged 60 or above reached 10.6%, making Singapore an aging society. The United Nations predicts that Singapore will age rapidly between 2000 and 2050. By 2020, more than a quarter of the population will be elderly; by 2030, one-third of the population will be elderly; and by the middle of the 21st century, Singapore's elderly population will reach 39.6%, making it one of the oldest countries in the world. There is no doubt that the aging of the population will bring tremendous challenges and pressure to Singapore's economy, society, pension, medical and other social security. Therefore, dealing with the aging of the population has become the main driving force for the reform and innovation of Singapore's central provident fund pension system (CPFPS). Over the past 30 years,

Xiao Jinxi, Ph.D. Candidate, School of Public Administration, Renmin University of China, China.
Dong Keyong, Ph.D., Professor, School of Social Sciences, Tsinghua University, China.

Singapore has continuously reformed and innovated the pension system and achieved good results. The health, wealth and career consultancy Mercer's Global Pensions Index from 2015 to 2017 ranked Singapore first in Asia and top globally¹. According to the World Economic Forum (WEF), Singapore's central provident fund (CPF) system is more sustainable and should be copied by other countries².

Academia has done a lot of research on the CPF system of Singapore, but there is little research on the reform of the CPFPS which is closely related to the CPF system. Current relevant studies mainly include: Singaporean scholars Ngee Choon Chia and Albert Tsui (2012) studied whether the CPF system can accumulate sufficient pension funds for young people. Their study found that CPF supported strong income-replacement ratios compared with OECD countries. The CPF system can provide adequate security for retirement if housing is carefully chosen and savings are wisely used. Chinese scholar Huang Guoqin (2018) made a preliminary analysis and discussion on the problems and policies of Singapore's CPFPS in the context of an aging population. Therefore, most countries in the world and China are faced with an ageing population causes under the condition of serious shortage of pension funds; from the angle of view of dealing with an ageing population, in Singapore's CPFPS reform and innovation for carding and analysis, to explore and summarize the Singapore CPFPS reform practice and experience have great theoretical significance and application value.

Overview of Singapore's CPFPS

In 1955, the British colonial government established the Singapore CPF system in accordance with the Central Provident Fund Act. The CPF system is the social security system model of the compulsory individual account accumulation fund, and is a defined contribution fund accumulation system (DC). The CPF system was originally only a pension system to accumulate pension funds for people's retirement. However, with the development of economic and social environment, the CPF system has gradually developed from a single pension system to a comprehensive social security system that includes pension, medical care, housing, family and education. However, with the expansion of the CPF system, the pension system is only a part of the CPF system, which is called the CPFPS in this paper.

Singapore Central Provident Fund Act stipulates: all the personnel participating in the work automatically become CPF members, the employer must according to the employee's income, according to the prescribed CPF contribution rate, pay CPF to the Central Provident Fund Bureau (CPFBS), deposited into the employee's CPF account. There are four sub-accounts under the CPF account, namely, the ordinary account (OA), the medical account (MA), the special account (SA) and the retirement account (RA). The funds in OA are mainly used for housing, investment, education and so on. The funds in the MA are mainly used to pay for medical expenses. The funds in the SA are mainly used for retirement and approved investments. RA is a special account for pension funds. The funds in the RA are the main source of pension funds.

Therefore, like the CPF system, Singapore's CPFPS emphasizes individual responsibility, and only through work can you gradually accumulate your own pension. The size of the pension depends entirely on the

¹ Melbourne Mercer Global Pension Index, with more than 40 different index evaluation system of retirement savings of 25 countries in the world, and according to the sufficiency of different system (adequacy), sustainability (sustainability) and integrity (integrity) to calculate the overall Index, etc.

² Lianhe Zaobao. World Economic Forum: Singapore's provident fund system is more sustainable and worthy of reference from other countries, 27 May 2017.

amount of money in the RA of the CPF, and the government does not provide a public pension covering the whole society and is not responsible for paying the pension.

Reform and Innovation of the CPFPS

The Retirement Sum Scheme (RSS) is the oldest pension scheme since the CPF system was established. In accordance with the original provisions of the CPF established in 1955, members of the CPF can receive all accumulated funds of their own provident fund as pensions in a lump sum when they are 55 years old.

However, in order to meet the needs of Singapore's economic and social development, the use of the CPF has gradually expanded from the initial single old-age security to housing security, medical security and education security. In order to avoid excessive use of the CPF for expenses other than pension security, which would affect the accumulation of pension, and to prevent members from having no pension in their old age due to mismanagement or investment failure after drawing all the provident fund at the age of 55, the Singapore government has carried out reform and innovation on the retirement savings plan. Minimum Sum Scheme (MSS) was introduced in January 1987. There is a Minimum Sum (MS) that CPF members can withdraw from their RA after they reach the age of 55, but only if they leave a MS that ensures they will receive pension each month for 20 years after they retire.

With the aging of Singapore's population and the continuous growth of Singapore's average life expectancy, the Singapore government has continuously reformed MSS. The MS amount requirement for MSS in 1987 was S\$30,000 and reached S\$171,000 in 2018. See Figure 1 for the changes of MS amount from 1987 to 2018.

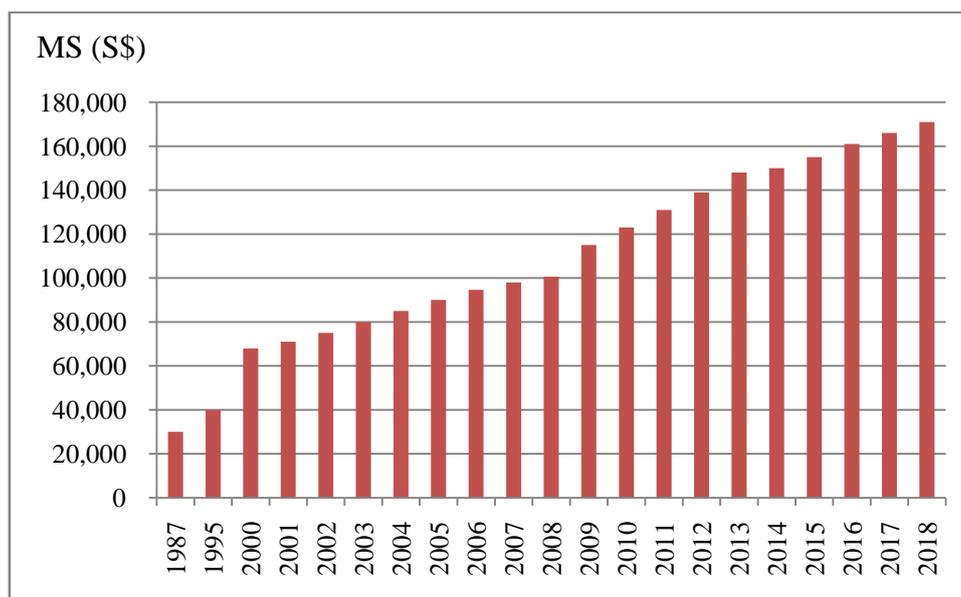


Figure 1. Changes in the MS amount. Source: Self-drawn based on data from the Singapore CPFBS.

The Minimum Sum Topping-Up Scheme (MSTU) was introduced immediately following the MSS launch in April 1987. The scheme was introduced in conjunction with MSS. Its purpose is to supplement the retirement accounts of CPF members themselves or family members to meet the requirements of CPF MS and to accumulate more funds for future retirement life.

According to Statistics Singapore, half of Singaporeans who turned 55 in 2010 will live to be at least 85. Life expectancy in Singapore could reach 88 to 90 years by 2030³. Thus, as Singaporeans live longer, it is not enough for younger CPF members to receive a 20-year pension under MSS. Thus, The Government of Singapore launched CPF Lifelong Income for the Elderly (CPF Life) in 2009. The scheme is the only pension insurance scheme underwritten by the Government of Singapore. The scheme takes all the funds of the retirement account of CPF members as annuity premium, and solves the retirement income source from the age of 65 to 85 with the principal part, and the retirement income source from the age of 85 to the age of old with the premium income part. The purpose of the scheme is to ensure that CPF members can receive the income they need for basic living under the CPF pension system for life after retirement.

According to the way of receiving pension, CPF Life originally designed 12 kinds of plans to accumulation fund members to choose, then gradually simplified, in 2018 formed the CPF Life Standard Plan, CPF Life Basic Plan and CPF Life Escalating Plan such three kinds of plans. CPF members can choose from one of the three schemes to meet their retirement needs from the age of 65.

The CPFPS and its development process are shown in Figure 2.

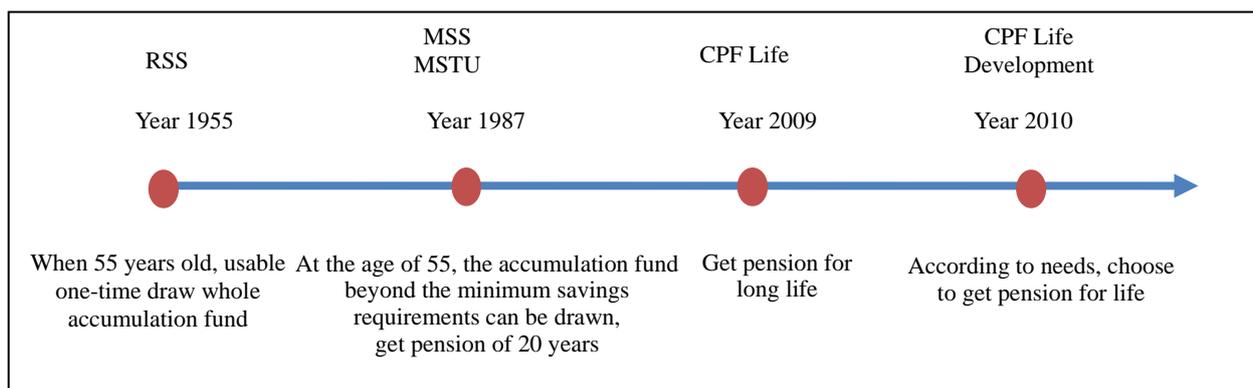


Figure 2. CPFPS and its development process. Source: Self-drawing.

CPF Life introduced the insurance concept into CPFPS in Singapore for the first time. To a certain extent, CPF members were allowed to share risks, and pension payments were combined with contributions and risk sharing, thus further strengthening the sustainability of pension and better coping with longevity risks. Therefore, the CPF Life makes up for the lack of social mutual aid in the defined contribution fund accumulation system (DC) to some extent, which is an innovation of the CPFPS in Singapore.

Reform of the CPFPS Parameters

In order to cope with the aging of the population, Singapore has also continuously reformed the system parameters, such as the CPF contribution rate and pension age to increase the adequacy of the pension.

(1) Reform of the CPF contribution rate. From the establishment of the CPF system in 1955 to 1987, the CPF contribution rate is regardless of age, and the contribution rate of CPF members of different ages is the same. Since 1988, the Singapore government has implemented different payment rates according to age groups in order to encourage employers to hire older workers and solve the problem of staff shortage in the face of an increasing elderly population and longer life expectancy. Table 1 shows the CPF contribution rate of different

³ Singapore Department of Statistics. Retrieved from www.singstat.gov.sg

age groups in 2018. It can be seen clearly that the characteristics of the payment rate of different age groups are: The older the age group, the lower the payment rate.

Table 1

CPF contribution rate of members in different age groups in 2018 (monthly income %)

Age group (years old)	Total contribution rate	Employer contribution rate	Employee contribution rate	Ordinary account (OA)	Special account (SA)	Medical account (MA)
Below 35	37	17	20	23	6	8
35-45	37	17	20	21	7	9
45-50	37	17	20	19	8	10
50-55	37	17	20	15	11.5	10.5
55-60	26	13	13	12	3.5	10.5
60-65	16.5	9	7.5	3.5	2.5	10.5
Above 65	12.5	7.5	5	1	1	10.5

Source: Singapore Provident Fund Board (www.cpf.gov.sg).

Since Singapore entered the aging society in 2000, it has gradually increased the CPF contribution rate for employees over 55 years old to help them prepare for retirement, so as to cope with the increasingly serious problem of aging population. Figure 3 shows the change of the accumulation fund contribution rate from the age of 55 and over. From Figure 3, it can be clearly seen that the employee contribution rate of the three age groups above 55 has been increasing year by year from 1999 to 2018.

(2) Reform of the pension age. The pensionable age, which was 55 in 1955, was postponed to 60 in 1993. The pension age continues to rise from 62 in 2013, 63 in 2014, 64 in 2015 and 65 in 2018, with plans to rise to 67 by 2020.

In addition, in response to the increasing number of long-serving members who choose to continue to work and save, some members have help from their families, and not everyone needs to start drawing pension immediately at the age of 65, Singapore has specially formulated the optional deferred pension scheme for life. The scheme allows recipients to start at 70 at the latest, with monthly pension increases of 6%-7% for each year of delay from 65, leading to a higher lifetime pension.

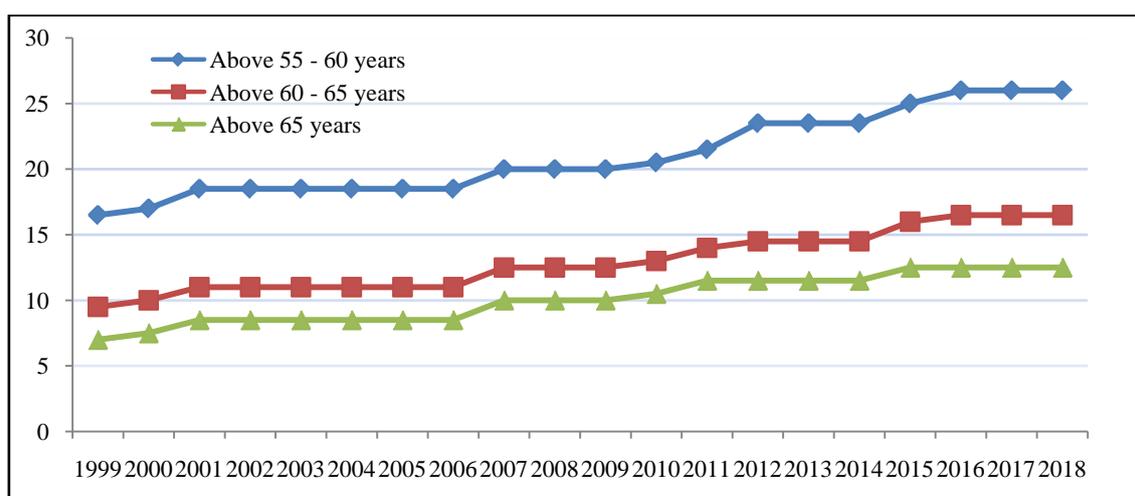


Figure 3. Changes in the contribution rate of CPF over 55 years old. Source: Singapore CPF Board (www.cpf.gov.sg), Self-drawing.

The Related System and Policy Measure That Increase Annuities

In order to cope with the aging population, while reforming the CPFPS, Singapore has also introduced a series of relevant systems and policy measures to increase and expand the pension sources, so as to help people accumulate more pension funds.

(1) Supplementary Retirement Scheme (SRS). In response to the financial needs of an ageing population, the Ministry of Finance launched the SRS in April 2001. SRS is a supplementary pension system that complements the CPFPS to compensate for the single pillar risk of the CPF funding channel and is part of Singapore's multi-pillar pension strategy.

The SRS is a voluntary individual pension savings scheme in which the contribution amount is determined by the individual with working income, but a maximum of S\$15,300 (for Singapore citizens and permanent residents) or S\$35,700 (for foreign workers) can be deposited per person per year. The plan provides that funds deposited each year can be used to offset an individual's taxable income to lower taxes. Accumulated funds (including investment income) can be withdrawn for 10 years after retirement, when the withdrawal amount is subject to 50% personal income tax.

(2) The Housing Pension System (HPS). The Government of Singapore has built public housing—Housing Develop Board (HDB) flats for low- and middle-income families through the Home Ownership Policy. About 84% of Singaporeans live in government-built HDB flats, with 94% of them owning their own HDB flats. In order to increase the pension income of the people, the Government of Singapore has launched the house-for-pension policy, which aims to supplement the pension shortage of middle- and low-income elderly people. There are three main policies of house-for-pension: rental HDB flats, big house for small house and Lease Buyback Scheme (LBS).

LBS is a scheme launched by the Singapore government in March 2009 to allow elderly low-income home owners to earn more pension income by selling their HDB flats. The main content of the plan is: turn 65 homeowners in retaining their own group home house under the condition of duration of 30 years⁴, will has its own set of houses the rest of the fixed number of year of the contract (minimum of not less than 20 years) to sell to Singapore HDB, HDB by evaluating the value of the fixed number of year of the purchased house deed, then the owner selling the house deed fill this money to the owner of accumulation fund retirement accounts in order to achieve the lowest savings plan requirements, owner can choose to stay in the rest of the retirement accounts, or in the form of cash withdrawal. On the one hand, the deed repurchase program provides the elderly with a small pension income a way to increase their pension sources. On the other hand, it enables the elderly to live in a familiar house and environment for their old age without having to move out of their original homes by selling their houses.

LBS is a pension financial innovation that combines the home ownership policy with the CPFPS in Singapore. At the same time, LBS also reflects that the CPF system, as a defined contribution fund accumulation system (DC), aims to accumulate endowment wealth and achieve the goal of endowment security while providing housing, medical care, education and other security functions.

(3) Increase more pension funds through policy measures, such as raising the CPF savings rate. To cope with an ageing population, the government has gradually raised interest rates on savings in provident fund sub-accounts. During the 40 years from 1955 to 1995, accumulation fund the deposit interest rate of each sub

⁴ The average age of HDB flats in Singapore is 99 years.

account is the same, stipulate annual interest rate is 2.5%. Starting in July 1995, taking into account the different functions of the sub-accounts, Singapore raised the savings rate for SA and RA to 3.75%, and further raised it to 4% from July 1998. Since 2010, after several more increases, the interest rates on the CPF's sub-accounts have been 2.5% on general accounts (up to 3.5%), 4% on MA (up to 5%), 4% on SA (up to 5%) and 4% on RA (up to 5%). With effect from 1 January 2016, the Government will pay an additional annual interest rate of 1% on the first S\$30,000 of CPF savings for members aged 55 and over.

Introduce Laws and Policies to Encourage Older People to Continue Working

In order to cope with the pension fund shortage caused by the aging population, the Singapore government has introduced relevant laws and policies to encourage the elderly people to continue to work, maintain their income and accumulate more pension for retirement.

(1) Introduce employment laws to encourage older persons to continue working. In 1993, Singapore introduced the Retirement Age Act, which changed the retirement age from 55 years old in 1955 to 60 years old, and raised the mandatory retirement age to 62 years old in 1999.

The Retirement and Re-employment Act came into effect in early 2012. The law states that employers are legally obliged to offer reemployment to employees who have reached the statutory retirement age of 62, provided they are in good health, perform well and wish to do so, until they are 65. From 1 July 2017, the age for re-employment will be increased from 65 to 67.

(2) Workfare Income Supplement Scheme (WISS) was launched. In 2005, the Singapore government introduced an employment incentive scheme to promote employment. The scheme aims to boost the incomes of lower-income, older Singaporean workers by giving them employment bonuses. The government plans to allocate S\$400 million to the three-year scheme. Under the scheme, Prime Minister Lee Hsien Loong said: The basic principle is that if your income is low and you are willing to work, the government will provide incentive payments to supplement your CPF, plus a cash sum to increase your income. Job rewards programme will push for a long time, making it become the existing CPF system, “3Ms” (3Ms, namely the Medisave, Medishield, Medifund) and HDB “home ownership” policy of the fourth pillar, with the help of a system to ensure that low-income people can obtain, to safeguard their interests⁵.

After three years of employment incentive scheme, Singapore changed its employment Incentive scheme to WISS in 2007. Therefore, the WISS is a long-term employment subsidy policy for the elderly and low-income workers on the basis of the Employment Incentive Scheme, which is the fourth pillar of Singapore's social safety net⁶.

From 2007 to 2017, the Government distributed S\$5.5 billion to 830,000 low-income citizens through the Employment Income Assistance Scheme⁷.

(3) Special Employment Credit (SEC). To encourage businesses to hire older, lower-paid workers and promote employment for lower-paid seniors, the Singapore government launched a SEC in 2011. The aim of the scheme is to reward employers for hiring older workers and to help them cope with the increased costs of increasing their CPF contributions.

⁵ Retrieved from www.chuguo.cn, 26 December 2006.

⁶ Ministry of Manpower. Retrieved from www.mom.gov.sg

⁷ The Straits Times, March 6, 2019.

Conclusions

To sum up Singapore's response to the aging population, the research on the reform and innovation of the CPFPS has drawn the following conclusions:

First, Singapore's CPFPS has been reformed and developed from a single pillar to a multi-pillar system. Through reform and innovation, CPFPS from a single living on the CPF system accumulated personal pension system model for the development of the CPFPS as the main pillar, assisted by SRS, WISS and pillar of pension system as a supplement to HPS.

Secondly, the innovation of the CPFPS. The introduction of insurance concept into the CPF system is an innovation of the CPFPS in Singapore. This innovation, to some extent, makes up for the lack of social mutual aid in the defined contribution fund accumulation system (DC), and ensures the lifelong security of the elderly pension income. The HPS combines the home ownership policy with the CPFPS which is a pension financial innovation. This innovation enables the CPF system, while providing housing, medical care, education and other security functions, to finally accumulate pension wealth as a destination, and achieve the purpose of pension security.

Third, the reform and innovation of the CPFPS not only improved and enriched the pension system model, but also enhanced the sustainability of the pension system.

Fourth, the CPFPS has been combined with such social and economic policies as SRS, WISS and HPS, thus realizing the diversification of pension accumulation, enhancing the adequacy of pension, and better coping with the aging population.

Inspiration

As is known to all, China has entered the aging society in 2000, and the aging rate of the population is getting faster and faster, and the aging degree is becoming more and more serious. However, there are still a series of problems in China's current pension system, such as imperfect pension system, single pension source, pension payment, increasingly heavy intergenerational burden and pension sustainability. Therefore, in the face of aging population, it is of great significance to learn from international experience to reform and improve China's pension system.

Despite different national conditions between China and Singapore, different pension system, both countries entered the aging society in 2000, the degree and speed of the aging is similar, and both countries under the influence of Confucian culture, so to learn from Singapore in dealing with population aging pension system reform and innovation of practice, can China's pension system from the following beneficial enlightenment to reform and development.

First, improve the pension system and broaden the channels of pension sources. On the one hand, we will improve the basic pension system, accelerate the development of the enterprise annuity system, and further promote the personal tax-deferred voluntary savings pension system and other third pillars in which the whole people participate. On the other hand, the establishment of housing pension encourages employees to accumulate pension and other diversified supplementary pension system. A multi-level, diversified pension system with a higher level of security will be gradually established, which is dominated by the compulsory basic pension insurance led by the government, supplemented by enterprise annuity, individual savings pension and commercial endowment insurance.

Secondly, reform the pension system parameters to enhance the sustainability of the pension system. For one thing, raise the retirement age. Judging from the fact that the average life expectancy of the Chinese population has increased significantly, the current retirement age in China is low. In fact, with average life expectancy rising, early retirement is putting increasing pressure on China's pension funds. Based on international experience, advanced economies, such as Europe, Japan and the U.S. all have retirement ages above 65. Drawing on the experience of Singapore and the world, China should consider introducing an appropriate retirement system as soon as possible, and gradually raise the retirement age or the age of receiving pension. On the other hand, reform the payment mechanism of basic endowment insurance, implement payment by age, and increase the fixed number of years of payment. Compared with the situation in Singapore and internationally, the requirement of the statutory minimum contribution period of 15 years in China is too low, which is not conducive to the accumulation of pension funds and the sustainable development of pension insurance system, especially in the age of aging population. Therefore, it is recommended to take into account the experience of Singapore and the international community, and to implement the practice of paying for work as long as it is performed. At the same time reduce the current basic endowment insurance payment rate, take the different payment rate according to the age.

Third, pension system reform should be carried out in conjunction with relevant public policies to cope with population aging. The reform of a country's pension system involves individuals, families, the country's economic and social development and other aspects. In the face of aging population, in the process of China's pension system reform, the pension system, years of contribution and contribution rate and other pension system parameters should be considered on the one hand, and employment, enterprise competitiveness and sustainable economic development must be considered on the other hand, as well as social culture and other aspects. Therefore, it is necessary to combine the pension system reform with public policies and measures, such as employment, retirement, enterprise development, family, social culture and national economic development, so as to ensure the sustainable development of economy and jointly meet the challenge of population aging.

References

- Central Provident Fund Board. (2005). *Saving For Our Retirement: 50 Years of CPF*. Singapore: SNP Editions.
- Chew, S. B., & Chew, R. (2008). Macro Objectives of the Central Provident Fund (CPF): A Review. In *Singapore and Asia in a Globalized World* (pp. 35-62).
- Chia, N. C. (2016). *Central Provident Fund: 1959-2016* (pp. 57-58). Singapore: Straits Times Press.
- Chia, N. C., & Tsui, A. (2012). Adequacy of Singapore's Central Provident Fund Payouts: Income Replacement Rates of Entrant Workers. SCAPE Policy Research Working Paper Series from National University of Singapore, Department of Economics, SCAPE.
- Dong, K. Y., & Zhang, D. (2017). Peak or Plateau: Rethinking China's Population Aging Pattern and its Impact on the Pension System. *Population and Economy*, (4), 43-53.
- Dong, K. Y., & Zhang, D. (2018). Reflections on Accelerating the Structural Reform of China's Pension System in the Context of the Aging Population plateau. *Journal of Xinjiang Normal University (Philosophy and Social Sciences)*, (6), 13-25.
- Huang, G. Q. (2018). Problems and Policy Measures of Central Provident Fund Pension System in Singapore under the aging Population. *Labor in China*, April 11, 2018.
- Jin, W. G. (2009). *Lian Yingzhou Memorial Scholarship Program Report*. Singapore: Nanyang Technological University of Singapore.
- Low, L. (1999). Ensuring a Moral and Social Economy in Singapore. *International Journal of Social Economics*, 26(7/8/9), 1078-1093.

- McCarthy, D., Mitchell, O. S., & Piggott, J. (2002). Asset Rich and Cash Poor: Retirement Provision and Housing policy in Singapore. *Journal Pension Economics and Finance*, 1(3), 197-222.
- Ministry of Manpower. Retrieved from www.mom.gov.sg
- Ng, B. K. (1996). The Role of the Central Provident Fund in Social Development, Stabilization and Restructuring: Experience from Singapore. *New Zealand Journal of Business*, 18(1), 39-51.
- Singapore Central Provident Fund Board. Retrieved from www.cpf.gov.sg
- Singapore Department of Statistics. Retrieved from www.singstat.gov.sg
- Vasoo, S., & Lee, J. (2001). Singapore: Social Development, Housing and the Central Provident Fund. *International Journal of Social Welfare*, 10(4), 276-283.
- Wang, Y. Z. (2018). *China's Social Security Development Report (2018): Reform of the Social Insurance Levy System*. Beijing: Social Sciences Academic Press.