

Empirical Study on Whether the Mandatory Provident Fund Policy in Hong Kong Can Meet the Retirement Needs of Citizens

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ABSTRACT

Since its implementation in 2000, the Mandatory Provident Fund (MPF) system aims to provide Hong Kong residents with mandatory retirement savings scheme. However, with the changing of social and economic environment, especially the aging and the rising cost of living, whether the MPF system can meet the retirement needs of citizens has become a question worthy of further discussion. This study used empirical research approach to evaluate the effectiveness of the MPF system by collecting and analyzing a large amount of data. In addition, this study will refer to the pension system in other regions of the world for comparative analysis to find out the advantages and disadvantages of the MPF system. Through this study, it is expected that we can comprehensively evaluate the practical effect of MPF system in meeting the retirement needs of Hong Kong residents, and put forward targeted policy suggestions. The research results will provide a scientific basis for the Hong Kong government and relevant decision-making departments, help to further improve the MPF system, improve the level of pension security, so as to better respond to the changes in the social and economic environment. And ensure the retirement quality of life of Hong Kong residents. At the same time, the conclusions and recommendations of this study will also provide reference for other regions to develop or optimize pension systems.

KEYWORDS

Mandatory Provident Fund; Retirement Requirement; Empirical Study; Policy Evaluation

1. POLICY BACKGROUND

1.1. Policy Content

Before 1966, the Hong Kong governments were considering whether to set up a central provident fund in Hong Kong. Discussions of the subject were subsequently held at the Legislative Council sessions in 1987, 1991 and 1993, but no consensus was reached. In this process, the government also consulted from the public. However, due to the huge amount of money and the fear of destabilization of the government's finances, the public generally expressed that they did not support this plan. Out of so many different voices in public opinion about the old-age pension scheme. Finally, the Mandatory Provident Fund (MPF) system came into operation on 1 December 2000 [10]. The MPF system is an employment-related, mandatory and private provident fund system. Employees and self-employed persons aged between 18 and 65 are required to enroll in an MPF scheme. Both employers and employees will be required to pay an insurance premium equal to 5% of an employee's monthly salary at a combined rate of 10%, of which the employee will only have to pay 5%. The savings account will be managed by a selected private fund trustee and the employee's total contributions and investment returns over the years will be returned to the employee at the age of 65 for retirement [1].

This is the first time that the Hong Kong government formally introduce applies to all workforce retirement security program, and deliver part of all employees' salary to fund company to invest in the private sector, which promotes the development of financial industry at the same time, the society universally pay attention to whether MPF can truly satisfy labor population normal life after retirement [2]. This paper studies the policy evaluation of mandatory provident fund policy on individual savings by empirical method, and divides the receptors of MPF policy into three categories from a non-macro perspective: high-income group, middle-income group and low-income group. Based on the existing data, the future development of the policy is predicted to make up for the problem that the implementation cycle is too short to be evaluated. Our findings reveal the full extent of the MPF policy's ability to provide for employees' full post-retirement expenses, and the specific gaps between them, while maintaining the current situation. It also provides data reference for policy makers and direction for the future modification of MPF policy.

1.2. Policy Tools

The policy tools used by the MPF in Hong Kong can be broadly divided into four parts: regulation, expenditure, taxation and information. Regulation can be divided into mandatory fund purchases, regulatory roles, and licenses and restrictions. The first is mandatory fund purchase, under the Mandatory Provident Fund Schemes Ordinance, all employees and self-employed persons who have attained the age of 18 to under 65 and have been living and working in Hong Kong for a long period of time must be required to join an MPF scheme, except those who are partially exempted from the scheme. The second is the management role, employees can only appoint an independent trust company to keep the assets, the investment company should be the approved trustee. The third type is permit and restriction. The trustee is required to issue a licence from the MPFA and the trustee and the investment manager cannot be the same legal entity.

For the Expenditure, it can be divided into discounts and tax breaks for public funds. The first is discount. The government allows plan sponsors to offer appropriate discounts on integrated trust plan fees according to market competition and customer conditions, and designs different product types for different customers at the product level. The second is tax deduction, mandatory contributions from employers, employees or self-employed persons are deductible [8].

Taxation may also be divided into contribution and fund management fee. For contributions, enterprises and employees should contribute 5% of their relevant income to MPF schemes respectively, while self-employed persons should contribute 5% of their income to schemes. The fee model of fund management fee plus other fees is adopted. Fund management fee mainly includes the management fees charged by each manager respectively.

There are a variety of publicity methods in the Information, including the promotion of Hong Kong MPF in collaboration with all government departments since 2000. The corresponding cross-departmental Education and publicity Committee for MPF Schemes has been set up. Proactively liaising with employers and employees by setting up an MPF information counter, a 24-hour automated hotline and the MPFA's website [11].

1.3. Introduction.

During the 20 years of the MPF system, many problems have been exposed. First of all, it ignores the neediest people: the elderly people, housewives and the unemployed people, and the public's financial knowledge is uneven. When facing a large number of investment products, it is difficult to make a professional analysis of investment returns, and thus difficult to choose a suitable investment productions and so on. As for the practical policy effect, there are many factors affecting the ultimate beneficiary and the total spending gap. For example, low retirement payment ratio lead to low earnings, and the time cycle is short, so it is necessary to put forward a hypothesis based on the existing data for prediction. The excessive high administrative costs of MPF funds will reduce the

actual benefits, and the inflation rate will affect the actual value of the ultimate benefits [7]. This paper tries to avoid these factors influence the final result, and try to overcome them by calculating. We divide policy receptors into three part, low middle and high income employees, and deal with the collected data to forecast by setting some hypothesis, and eventually draw the conclusion of whether this policy can meet people's retirement requirement.

2. EXPERIMENTAL DESIGN

2.1. Research Influencing Factors

When comparing and calculating the benefits brought by the mandatory provident fund policy with the total expenditure of the elderly after retirement, many factors will affect the final empirical results and lead to wrong conclusions. Therefore, we need to overcome these influencing factors before carrying out the research. First, policy of mandatory accumulation fund executes cycle is too short. MPF plan is formally implemented in 2000, and the timing of contribution and the operation of the fund directly affect the final benefits, even if the earliest employees who pay the MPF still do not contribute their salaries to the account during their whole professional time, so we need to collect current data and base on it, to predict whether all of the profits of the employees to pay accumulation fund when full can meet all the requirements after retirement. Secondly, the high management cost in the provident fund investment fund makes the actual income of the fund lower. As shown in Table 1, the cost ratio (FER) of the average fund accounts for a large proportion of the overall fund's income. Among them, equity Fund management fee is the lowest (34%), while MPF Conservative Fund, Guaranteed Fund and Money market Fund even exceeded the average annual return rate in the past two decades [6]. The MPFA responded to this phenomenon by adopting the Employee Choice Arrangement scheme in 2011, which allows MPF members to switch from one MPF scheme to another each year according to their choice. The scheme increases employees' choice over their MPF investments, circumventing this phenomenon in the form of a market. After the implementation of the program, employees will be more selective, administrative costs will be correspondingly lower, and actual benefits will increase. Thirdly, inflation affects the real value of the ultimate benefits to MPF funds. Due to the long policy cycle of MPF, it often takes decades to start making regular MPF contributions until retirement at age 65 to receive full benefits. Inflation is a factor that must be considered to affect the actual value of benefits. In this paper, the calculation of the inflation rate is measured by the change of the consumer price index (CPI), and the corresponding hypothesis is proposed based on the change trend of the inflation rate in Hong Kong.

Table 1. MPF' s Annualized Return of Approved Constituent Fund and Average Fund Expense Ratio

| Type of approved Constituent funds | Annualized return from 1.12.2000 | Average fund expense ratio (FER) from 1.12.2000 | Average FER as % of annualized return |
|------------------------------------|----------------------------------|---|---------------------------------------|
| Equity fund | 4.5% | 1.53% | 34.0 |
| Mixed assets fund | 4.0% | 1.47% | 36.8 |
| MPF conservative fund | 0.7% | 0.92% | 131.4 |
| Guaranteed Fund | 1.2% | 1.88% | 156.7 |
| Bond fund | 2.7% | 1.23% | 45.6 |
| Money Market Fund | 0.6% | 0.95% | 158.3 |

Source: Adapted from Monetary Provident Fund Schemes Statistical Digest (2020, pp.13-14)

2.2. Variable Definition and Data Selection

This paper focuses on the study of whether the mandatory provident fund policy can meet the basic needs of Hong Kong citizens after retirement, because the MPF policy cycle is too long and if the study subjects' retirement time is relatively long from the present time, there will be a lot of experimental errors. According to Hong Kong In Figures, the average starting working age in Hong Kong is 25 years old. These citizens are also the first group of workers who were affected by THE MPF policies and received the full benefits of MPF when they started to work. To predict the relationship between the total expenditure and total savings after retirement by combining the MPF contributions and other data of the current study subjects, and thus to measure the effectiveness of the policy. In terms of expenditure, this paper predicts the overall expenditure of citizens born in 1975 after retirement at 65 years old [4] by combining the current consumption of the elderly over 65 years old with the average death age of 83.74 years old and the change of inflation rate. In terms of total savings, this paper is divided into two parts for statistical calculation. The first part is personal assets other than MPF, including savings and real estate under one's own name. The second part is the MPF retirement savings, i.e. the total MPF and fund income paid by the study subjects until retirement at age 65, after deducting the corresponding management fees.

Influenced by Hong Kong's unique political and economic environment, consumers invest in the real estate market and the development of the market-led economy. In this paper, Chen Jiaxi and Xv Qian made reference to the stratification of Employees in Hong Kong and divided all employee recipients subject to MPF policy into three types [3]. The first is the low income and low consumption group, whose consumption is correspondingly low due to government assistance while their income is low. Most of Hong Kong's social security policies are aimed at people with low or even no income. For example, the government directly provides land and funds to the Hong Kong Housing Authority to build public rental housing, and the rent remains low, accounting for 30.8% of the total population. And subsidized home-made housing subsidized by the Hong Kong Housing Authority, which is built by the government and belongs to welfare property housing, providing housing opportunities for the middle and lower classes, accounting for 15.0% of the total population. Both programs provided cheaper housing for low-income people, keeping their spending low. In addition, the Hong Kong government provides comprehensive social security assistance to 10% of low-income people to ensure their living standard. The second group is the middle income group. Because 53.6% of the population in Hong Kong cannot enjoy government subsidies for house purchase, and the housing price in Hong Kong is always at the highest level in the world, the income of this group exceeds the government's low income line, but the income cannot support the purchase of commodity houses. Most of the income is used to bear the rent. The third category is the high-income group, who can afford to buy commercial housing due to their high income and still have a high standard of living without government subsidies.

3. RESULTS STATISTICS AND ANALYSIS

3.1. The Current and Future Investment Amount in MPF

According to the standard the MPF investment amount, monthly salary is lower than HK\$5000 employees only employers almost 5% of the minimum amount of HK \$5000 per month for MPF investment, monthly salary between employer and employee of 5000 to HK\$20000 per month respectively 5% wage investment MPF, monthly salary above HK\$20000 more than the limit of 20000 for the standard, employers and employees share the 10% invested in the MPF. Therefore, in combination with the monthly income distribution table of The Census and Statistics Department of Hong Kong, this paper divides all employees in Hong Kong from 2000 to 2020 who have implemented the provident fund policy into three types: those below 5,000, those between 5,000 and 20,000, and those above 20,000. The results are shown in Figure 1. From the results, the low-income

group showed a stable trend in general, the middle-income group showed a downward trend, and the high-income group showed an obvious upward trend. The number of low - and high-income people is stable and not affected by small income fluctuations. Assuming that their wages fluctuate within the corresponding range during their 40 years of employment, their investment amounts are respectively

$$\text{Investigation Amount low Income} = 5000 * 12\text{month} * 5\% \text{ (rate)} * 40 \text{ (average working years)} = 120000\text{HK\$} \quad (1)$$

$$\text{Investigation Amount high income} = 20000 * 12 \text{ (month)} * 10\% \text{ (rate)} * 40 \text{ (average working years)} = 960000\text{HK\$} \quad (2)$$

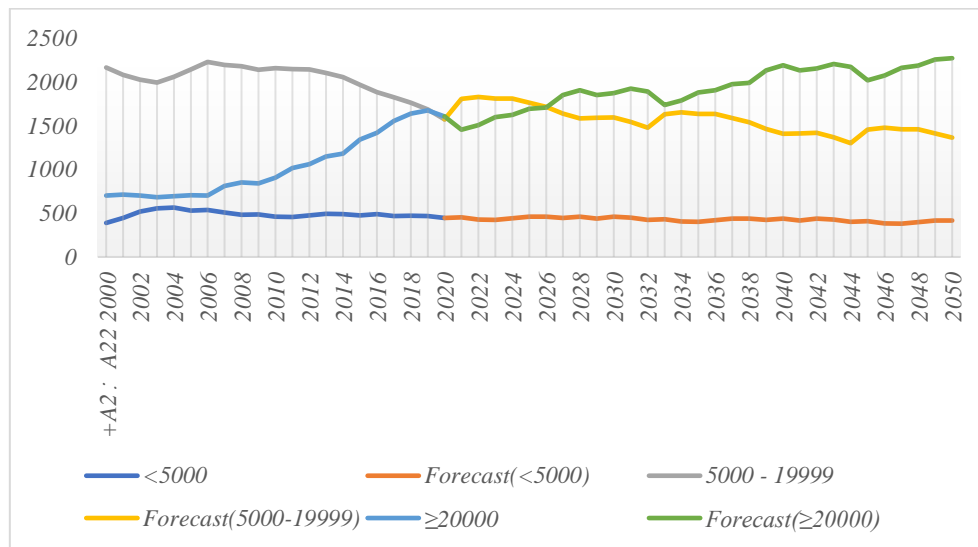


Figure 1. Monthly household income in HK, Forecast line chart 2000-2050 (HK\$)

Source: Table 4.9 in the Quarterly Report on General Household Survey

For middle-income people, their salary level is between the upper and lower limit of MPF policy investment amount, and the fluctuation of salary has a great influence on the actual investment amount. This paper divides the 5,000-20,000 into ten small intervals, and calculates the average income of the middle-income group by combining the median of each interval and the corresponding number. Figure 2 shows the number of people in ten communities with annual income between 5000 and 20000 in 2000. After dividing the area corresponding to the line graph with the median by the total number of people, we get the average median wage of 10790HK\$ in 2000. By analogy, eventually middle-income groups from 2000 to 2020, the average salary results as shown in Figure3, combined with middle-income wage change trend, this paper forecasts the middle-income income from 2020 to 2040. In combination with the results Figure3, self-improvement MPF policy since the work began in 2000 to 2040 to 65 - year - old middle-income people a total investment of HK \$618812.9.

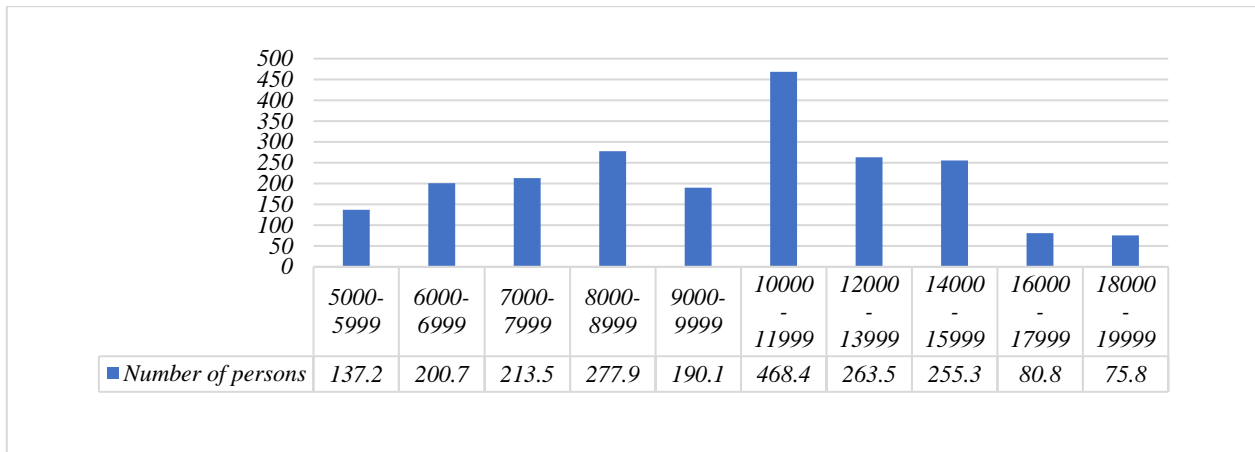


Figure 2. Monthly household income with little interval in HK, 2000Bar chart (HK\$.000)

Source: General Household Survey, Census and Statistics Department

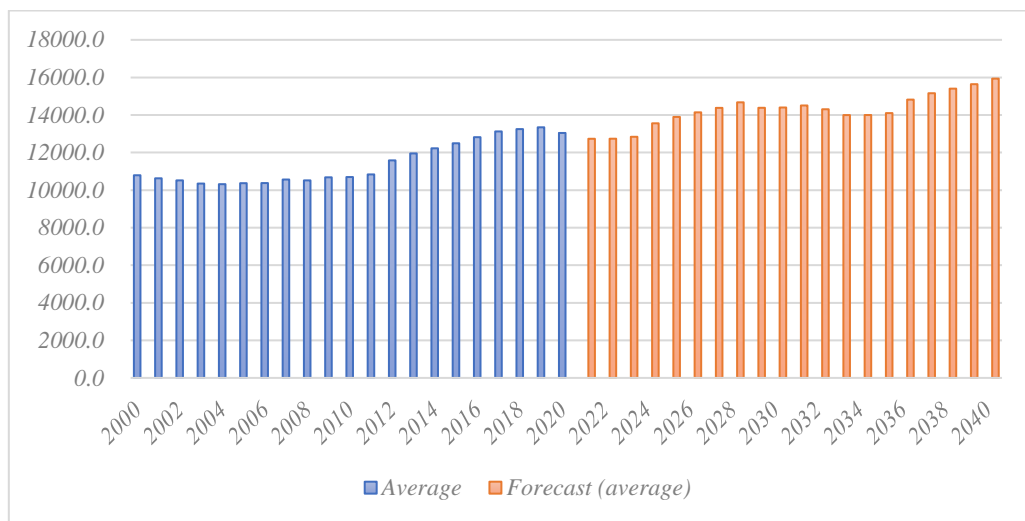


Figure 3. 5000-20000 Interval monthly average income in HK, 2000-2040Forecast bar chart (HK\$.000)

3.2. The Current and Future Income Amount in MPF

Due to the annual management fee charged to MPF income, the high management fee makes the insufficient MPF income even more insufficient. This research will use the annualized Internal Rate of Return (IRR) of the MPF system as an indicator to calculate the MPF returns, because the annualized Internal rate of return (IRR) is calculated to the 12th power of the monthly IRR, related fees and charges have been deducted to avoid the impact of the management fees of MPF funds on the results. According to the Statistical results of the MPF Schemes Authority, the IRR of MPF Has been 3.6% since the implementation of MPF in 2020 [5]. This paper assumes that the IRR of all MPF funds invested by the research subjects in their career from 2000 to 2040 remains unchanged at 3.6%. We combine the annual amount of income and the IRR to get the cumulative return Figure 3, as shown in the Figure, the returns of MPF funds of the three types of research subjects all increase exponentially. The final results were as follows: the income of all MPF funds of the low-income subjects when they reached the age of 65 in 2040 was 347762HK\$, the income of all MPF funds of the middle-income subjects when they reached the age of 65 in 2040 was 1400188HK\$, and the income of the high-income subjects when they reached the age of 65 years old in 2040 is 2120427 HK\$.

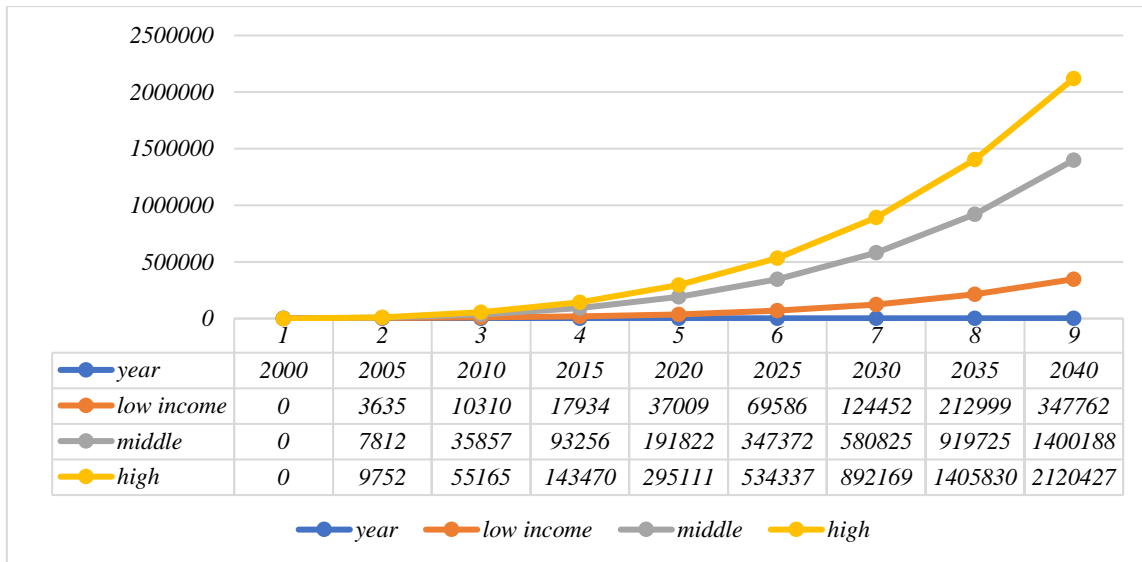


Figure 4. Accumulated earnings in HK, 2000-2040 Forecast line chart (HK\$)

Source: Mandatory Provident Fund Schemes Statistical Digest

3.3. Current Situation and Forecast of Inflation in Hong Kong

This paper uses the consumer price index (CPI) growth rate what is also the rate of inflation to reflect Hong Kong's inflation. According to the data from 2000 to 2020, the composite consumer price index data shows the forecast price index trend of 2020 to 2050. The results as shown in Figure 3, reflects in the next period of time, because of the global economic contraction, and the union of the Hong Kong exchange rate system, more than the share of imports and exports, greatly influenced by the global economy. The rate of inflation will gradually increase. Since CPI is the value calculated in the current price of fixed commodities divided by the value calculated in the base price of fixed commodities, the current inflation rate in 2040 is calculated as 121.6% according to the current situation and forecast results of the inflation in 2000 as the base period.

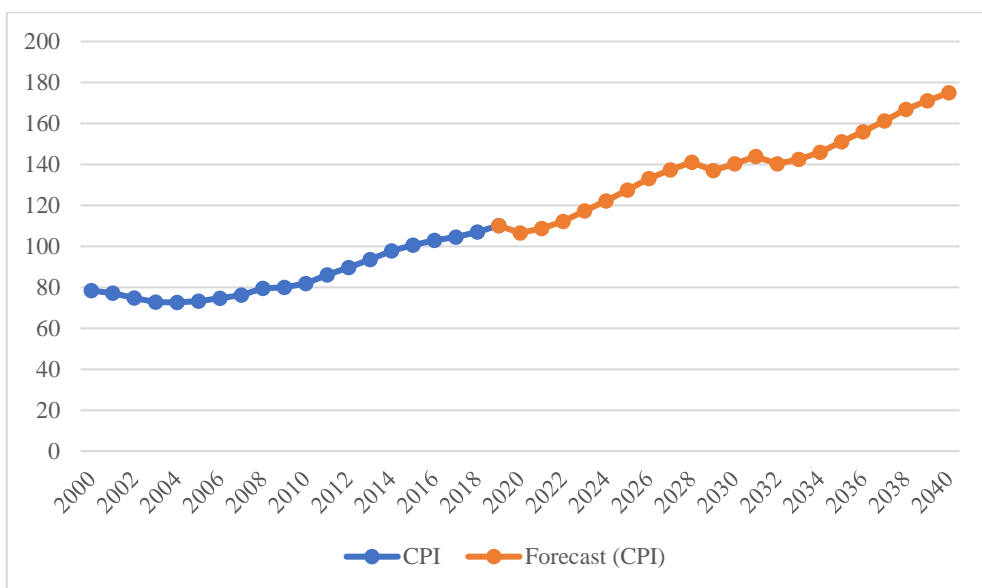


Figure 5. CPI in HK, 2000-2040 Forecast line chart

Source: Annual Report on the Consumer Prize 2020

3.4. Current Situation and Forecast of Elderly Consumption

This paper studies the retirement needs of the subjects born in 1975 based on their current property ownership rate. Because the housing ownership rate and personal current asset holding all have an impact on the consumption of the research object after retirement, this paper will study the influencing factors and the final consumption result one by one.

(1) The influence of housing ownership rate. According to the Hong Kong General Household Survey, Hong Kong householders can be broadly divided into public rental housing tenants, subsidized home Ownership Housing householders, private permanent housing tenants and private permanent householders. Among them, public rental housing tenants and subsidized owner-occupied housing householders are low-income groups. Public rental housing tenants pay an average rent of \$1576HK per month [5]. Based on the average age of death in Hong Kong of 83.74 years old, the average rent required by these subjects from retirement to death was 354,410.9 HK\$, and no additional monthly rent was required for the subsidies' housing householders. Other private permanent housing tenants and private permanent housing householders all belong to high income people, including private permanent housing tenants need to pay an average of 7325 HK\$ a month rent. According to the average death age in Hong Kong, the amount of renting from retirement to death will be HK\$1627246, while private permanent housing householders do not need to pay the rent.

(2) The impact of individual savings. Since Hong Kong did not have a sound retirement security plan before, all Hong Kong citizens have the habit of saving to meet the basic life of retirement. This paper made statistics on the savings rate of Hong Kong from 2000 to 2020 and predicted the trend of change in the next 20 years. The results are shown in the Figure 6. For the low-income group, the total savings after retirement combined with their average salary and savings rate reached 375060HK\$. For the middle-income group, combined with the annual average salary in Figure 3 and the annual savings rate change in Figure 6, the total savings at retirement is 1585121.2HK\$. For the high-income group, combined with their average salary and forecast savings rate, their total savings after retirement is 4572580.3HK\$.

After considering the influence of these factors, according to the level of consumption in 2020, the Hong Kong elderly basic budget to remove the average rent per month is HK\$2651.98 [9], comprehensive expected rate of inflation of Figure 5, the requirement of cumulative actual spending from retirement to the average death age in Hong Kong will be HK \$1077122.9.

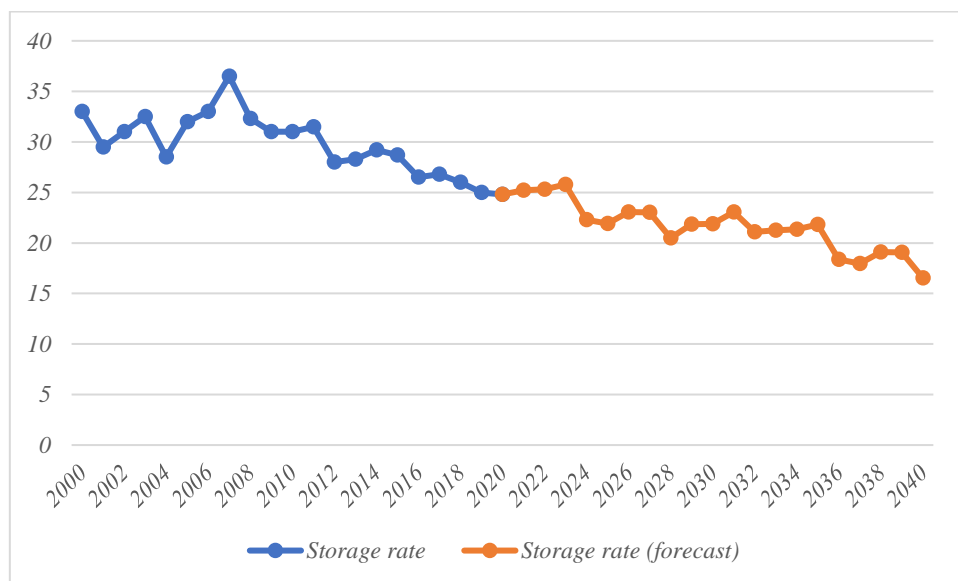


Figure 6. Storage Rate in HK, 2000-2040 Forecast Line Chart

Source: CEIC data

3.5. Empirical Results

Taking into account of the above statistics and projections on aggregate savings and aggregate expenditure at retirement for the study subjects, the final data are summarized as shown in Table 2, and according to the results in the table, it can be found that the total retirement savings of low-income people do not meet the total retirement needs, especially the estimated large deficit between total expenditure and total savings of households living in public housing. The total savings of middle-income people can basically meet the total post-retirement expenses, and the higher-income people have surpluses while meeting their basic living expenses after retirement, as can be seen in Table 2.

Table 2. Aggregate saving and aggregate consumption statement for different income and different housing groups (HK\$)

| Target classification | MPF investing amount | MPF Fund earning | Personal Saving | Aggregate saving | Basic consumption | Rent Expenditure | Aggregate Consumption | Surplus (saving minus consumption) |
|--|----------------------|------------------|-----------------|------------------|-------------------|------------------|-----------------------|------------------------------------|
| Low income (low rent tenant) | 120000 | 347762 | 375060 | 872822 | 1447563.9 | 354410.9 | 1801974.8 | -929152.8 |
| Low income (subsidized home ownership) | 120000 | 347762 | 375060 | 872822 | 1447563.9 | 0 | 1447563.9 | -574741.9 |
| Middle income (Commercial tenants) | 618812.9 | 1400188 | 1585121.2 | 3604122.1 | 1447563.9 | 1627246 | 3074809.9 | 529312.2 |
| Middle income (commercial ownership) | 618812.9 | 1400188 | 1585121.2 | 3604122.1 | 1447563.9 | 0 | 1447563.9 | 2156558.2 |
| High income (commercial tenants) | 960000 | 2120427 | 4572580.3 | 7653007.3 | 1447563.9 | 1627246 | 3074809.9 | 4578197.4 |
| High income (commercial ownership) | 960000 | 2120427 | 4572580.3 | 7653007.3 | 1447563.9 | 0 | 1447563.9 | 6205443.4 |

4. CONCLUSION

By using the available data to forecast the aggregate savings and aggregate expenditure after retirement, the study subjects are divided into six types, low-income public housing tenants, low-income owner-owned housing tenants, middle-income commercial housing tenants, middle-income commercial housing owner, high-income commercial housing tenants, high-income commercial housing owner, and by making a series of assumptions, we get the results of this paper. With the help of the mandatory provident fund policy, the final savings of low-income people can not meet the basic needs after retirement, particularly the tenants of public housing. Because of the small wage base of low-income people, leading to the correspondingly small share of the contribution of provident funds, so the final income is also very limited, and low-income people generally save less for retirement, and rarely own houses and other assets. While MPF management departments modifying the specific contents and regulation of MPF, they should try their best to help low-income

people to obtain higher earnings and meet the basic retirement needs of low-income people as far as possible. For middle-income people, they are expected to run smaller surplus between total savings and total spending, and may run out of savings in the face of major illnesses or accidents during retirement. Relatively speaking, higher-income people have higher home ownership rates, and their retirement savings are sufficient enough to meet normal needs and the cost of treatment for old-age illness.

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