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Can a "Compulsory Savings" Scheme Enhance the Future Happiness of Society? A survey of the Mandatory Provident Fund (MPF) scheme in Hong Kong

Wai-kee Yuen[*]
Wan-Ling Chu

Abstract

Ageing populations are and will continue to be a major issue for most Asian countries in the future. Hong Kong's population is ageing so rapidly that the Hong Kong government has predicted that by 2033, 27 % of the population will be over the usual retirement age of 65.The Mandatory Provident Fund (MPF) policy was introduced in 2000 as a retirement protection system. The core purpose of the MPF is a "compulsory saving" scheme to secure future well-being in retirement. This paper uses an ordered probit model to review achievement of the MPF scheme in terms of self-reported, expected happiness in retirement. A surey, conducted by "Economics and Well-being Research" of Hong Kong Shue Yan University in February 2007, used randomly selected telephone numbers from residential telephone directories to collect the data. A total of 543 respondents were successfully interviewed. This paper aims to answer the following two questions: 1) what are some of the identified determinants of expected happiness in retirement? 2) What can other countries learn from the experience of implementing the MPF in Hong Kong?

[*]Department of Economics, Hong Kong Shue Yan University, Braemar Hill, Hong Kong, China.

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1. Introduction

Ageing populations are and will continue to be a major issue for most Asian countries in the future. China, Hong Kong, Singapore, and South Korea, will facing ageing populations issues around 2030, with a quarter of people above 65 years of age.[1] Hong Kong's population is ageing so rapidly that the Hong Kong government has predicted that by 2033, 27 % of the population will be over the usual retirement age of 65 (Census and Statistics Department). World Bank's (1994) recommended three pillars of provision: a mandatory state pension as a safety-net; a mandatory privately-managed pillar, and voluntary personal savings to handle the ageing population issue.

Sharing World Bank's recommendation, in 2000, the Hong Kong Government introduced a retirement protection scheme called the Mandatory Provident Fund (MPF), a compulsory savings scheme. The aim of MPF is to force the public to save to support part of their retirement expends so as to secure future well-being in retirement. The MPF is an employment-based retirement protection system that compels both employees and employers to make regular contributions (5% of monthly income). An employee earning less than the minimum level of income (HK$ 5,000 per month) is not required to make contributions but may choose to do so. However, an employer must contribute 5% of the employee's income whatever the employee's decision. The maximum level of income considered for contribution purposes is HK$ 20,000 per month. According to the

[1] Singapore system starts to creak SOCIAL SECURITY: John Burton considers the welfare-light policiesthat other Asian countries might seek to emulate, John Burton, Financial Times, London (UK), Mar 14, 2007.

Mandatory Provident Fund Schemes Authority annual report 2007 by end of March 2007, 97.5% of the total employed population was covered under MPF schemes.

Indeed other countries in Asia have similar pension fund framework. Singapore has the Central Provident Fund[2], which intends to cover part of the retirement income, healthcare costs and mortgage payments, mainly for apartments in subsidized public housing projects. India has the New Pension System (NPS), which combines mandatory and voluntary membership (See Shah 2000). In September 2003, South Korea released a proposal for the conversion of the retirement allowance scheme into a corporate pension scheme. The policy agenda of South Korea government is to reform South Korea pension system towards multi-pillar pension arrangements. (See, Hazel Bateman, 2007)

This paper intends to review the success of the MPF, as a compulsory savings scheme, from the point of view of expected happiness in retirement and will answer the following:

1) What are some of the identified determinants of expected happiness in retirement?
2) What can other countries learn from the experience of implementing the MPF in Hong Kong?

Indeed there is growing literature relating life satisfaction and retirement, e.g. Michalos and Orlando (2006) find that young people are significantly less satisfied with life than retirement groups. Chen (2001) discusses how major life events, such as retirement may affect the life satisfaction experienced as part of the ageing process. Gall and Evans (2000) compare the pre-retirement expectations and the quality of life of male retirees in later retirement. One of the major problems faced by retired people is the dramatic drop in income. Dorfman (1992) and Richardson and Kilty (1991) have shown that retired people can improve their happiness by improving their financial state. Ruut (2005) uses the term “Happy lifetime” (i.e. how long and how happily people live) as an indicator to measure quality of life.

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[2] Central Provident Fund Board, http://mycpf.cpf.gov.sg/Members/Gen-Info/mbr-Gen-info.htm

The rest of this paper is organized as follows: section 2 start by describing the survey used to collect the empirical data and then goes on to illustrate how the statistical facts were extrapolated. Section 3 discusses the construction of the empirical models. Section 4 describes and evaluates the empirical results. Section 5 contains the conclusion and policy implications.

2. Survey and Statistical Summary

"Economics and Well-being Research" of Hong Kong Shue Yan University carried out a survey to collect data for this research project during the first two weeks of February 2007. Randomly selected telephone numbers from residential telephone directories were called which led to a total of 543 respondents being successfully interviewed. The margins of sampling error were estimated to be ±4.29% at a 95% confidence level. Since the majority of Hong Kong's population is Cantonese speaking, the original questionnaires were written in Chinese.

2.1 The questionnaire design

The questionnaire consisted of two main parts. The first part collected personal details about the respondents, such as gender, martial status, level of education, age and monthly income (in HK$). The second part focused on questions relating to the MPF and happiness issues. The responses to these questions were rated using an ordinal scale. Table 1 reports the distribution of the respondents.

Table 1: Distribution of the respondents

Gender		**Age**		**Education**		**Monthly Personal Income HK$**	
Male	55.1%	18-24	32.4%	Primary school or below	4.6%	Below $5000	10.1%
Female	44.9%	25-34	28.9%	Secondary school	28.7%	$5000 to $7999	21.9%
Martial Status		35-44	22.3%	Post Secondary school	25.2%	$8000 to $14999	38.3%
Married	57.6%	45 or above	16.4%	College or University	41.4%	$15000 to $29999	21.7%
Unmarried	42.4%					$30000 or above	7.9%

Questions 1 and 2 in part two of the questionnaire review respondents' self-reported, expected happiness in retirement.

Table 2: Self-reported expected happiness in retirement

1) Do you expect your retirement life to be happy?				
1=Certainly not happy	2=May not be happy	3=The same	4=May be happy	5=Certainly happy
1.84%	7.18%	39.04%	45.49%	6.45%

2) Do you think that the MPF can provide you with a happy retirement life?			
1=Certainly cannot	2=May not	3=May provide	4=Certainly can
16.39%	50.64%	30.76%	2.21%

Table 2 shows that over 50% expect to have a happy life in their retirement. It is interesting to note that less than 10% of the respondents think that they may not or will certainly not have a

happy life in their retirement. However around 67% of the respondents think that the MPF cannot or may not be able to provide them with the happy retirement life they anticipate. From the stance of statistical facts, it seems that the MPF scheme cannot enhance expected happiness in retirement.

Table 3: Care about MPF

3) Do you care about your MPF account?			
1=Certainly do not care	2=May not care	3=May care	4=Certainly care
7.92%	30.57%	51.57%	9.94%
4) Do you know the yield of your MPF investment in the last year?			
1= Know		2= Do not know	
65.7%		34.3%	
5) Do you know the administration fee of your MPF account in the last year?			
1= Know		2= Do not know	
20.63%		79.37%	
6) Do you know the estimated accumulative value of your MPF account by the time you retire?			
1= Know		2= Do not know	
28.73%		71.27%	
7) Do you know how to calculate the yield of your MPF investment?			
1= Know		2= Do not know	
33.33%		66.67%	

Questions 3 to 7 of part two explore whether respondents care about their obligatory investment in the MPF. The summary statistic of Question 3 in Table 3 shows that around 60% of the respondents claim to care their MPF account. In addition, question 4 also shows that around 65% respondents know the yield of their MPF account in the last year. However the statistical results from questions 5 to 7 show that respondents know little about the MPF. Around 79% of the

respondents do not know the administration fee for the MPF. Approximately 71% of the respondents do not know the estimated accumulative amount of their MPF by the time they retire and about 66% do not know how to calculate the MPF yield. The statistical result implies that although the people of Hong Kong care about their MPF account, they have limited knowledge about how the MPF works. Without the requisite knowledge and understanding about the MPF scheme, it is reasonable for respondents to claim that the MPF cannot provide them with a happy life in their retirement. This has serious policy implications for the Hong Kong Government. Further information needs to be supplied to the general public to help them understand the mechanism of the MPF scheme.

Table 4: Retirement Age

8) When do you expect to retire?				
Age 30-39	Age 40-49	Age 50-59	Age 60-69	Age 70 or above
3.68%	20.26%	52.30%	20.99%	2.76%

The final question, question 8, of part two asked the respondents to estimate when they will retire. Table 4 shows that most of the respondents (around 75%) expect to retire before the usual retirement age of 65 years old.

3. The Empirical Ordered Probit Model

This paper adopts the commonly used ordered probit model[3] as the workhorse to manipulate the ordinal scale dependent and independent variables (see: Miyata 2003, Greene 2000). Winkelmann (2005) used an ordered probit model to identify the intra-family correlation of happiness. Tsou and Liu (2001) also used an ordered probit model to investigate the elements that

[3] A detailed description of the ordered probit model can be found in the technical appendix.

determine happiness in Taiwan. This paper models self-reported, expected happiness in retirement with the following function in linear form:

$$HAPP = f(MARTIAL, AGE, EDU, GENDER, INCOME, MPF\_HAPP, RETIRE\_AGE, ADMIN\_FEE, MPF\_YIELD, CARE\_MPF, ACCUM\_MPF, CAL\_MPF) \quad (1)$$

Table 5: Notation of Variables

Dependent Variable	
HAPP	Self-reported, expected happiness in retirement (1=Certainly not happy, 2=Maybe not happy, 3=The same, 4=Maybe happy, 5=Certainly happy)
Independent Variables	
MARTIAL	Martial status (1=Married, 2= Unmarried)
GENDER	Gender (1=Male, 2=Female)
AGE	Age (1=18-24, 2=25-34, 3=35-44, 4=45 or above)
EDU	Education (1=Primary school or below, 2=Secondary school, 3=Post-Secondary or equivalent, 4=College or University)
INCOME	Monthly personal income in HK$ (1=Below $5000, 2=$5000 to $7999, 3=$8000 to $15000, 4=$14999 to $29999, 5=$30000 or above)
MPF_HAPP	Data collected from question 2: “Do you think that the MPF can provide you with a happy retirement life?” (1=Certainly cannot, 2=May not, 3=May provide, 4=Certainly can)
RETIRE_AGE	Data collected from question 8: “When would you expect to retire?” (1=30 to 39, 2=40 to 49, 3=50 to 59, 4=60 to 69, 5=70 or above)
ADMIN_FEE	Data collected from question 5: “Do you know the administration fee of your MPF account in the last year?” (1= Know, 2= Do not know)
MPF_YIELD	Data collected from question 4: “Do you know the yield of your MPF investment in the last year?” (1= Know, 2= Do not know)

CARE_MPF	Data collected from question 3: "Do you care about your MPF account?" (1= Certainly do not care, 2= May not care, 3= May care, 4= Certainly care)
ACCUM_MPF	Data collected from question 6: "Do you know the estimated accumulative amount in your MPF account by the time you retire?" (1= Know, 2= Do not know)
CAL_MPF	Data collected from question 7: "Do you know how to calculate the yield of your MPF investment?" (1= Know, 2= Do not know)

It is worth mentioning that the estimated coefficients only influence the conditional probability that a certain value of the dependent variable will appear. A positive estimated coefficient indicates that: an increase in the ordinal scale of the independent variable influences the dependent variable, so that the conditional probability of the dependent variable (falling into a higher ordinal scale) increases; the inverse occurs with a negative estimated coefficient. (See: Boccaletti and Moro, 2000). In the cases where the independent variables are discrete, the discrete change in the conditional probability can be evaluated at the average of the independent variables. (See: Rivera, 2001).

4. Empirical Results

Table 6, model 1.1, presents the empirical results of equation (1). Table 6, model 1.2 amends model 1.1 by dropping the independent variables that are insignificantly different from zero at conventional levels of significance.

Table 6: Determinants of self-reported, expected happiness in retirement

Dependent Variable: Self-reported, expected happiness in retirement (HAPP)				
	Model 1.1		Model 1.2	
Determinants	Coefficient	Std. Error	Coefficient	Std. Error
ACCUM_MPF	-0.0349	0.1159	-	-
ADMIN_FEE	0.1930	0.1335	-	-
AGE	-0.0489	0.0651	-	-
CAL_MPF	-0.1396	0.1145	-	-
CARE_MPF	0.2845**	0.0712	0.2457**	0.0657
EDU	0.1135*	0.0592	0.148**	0.0506
GENDER	0.1581	0.0972	-	-
INCOME	0.0967*	0.0546	-	-
MARTIAL	-0.0561	0.1126	-	-
MPF_HAPP	0.3904**	0.0692	0.3960**	0.0681
MPF_YIELD	0.1813	0.1146	-	-
RETIRE_AGE	-0.1199*	0.0677	-0.1561**	0.0644
Note: 1)** means significantly different from zero at a 5% significance level 2) * means significantly different from zero at a 10% significance level				

Model 1.2 shows that the conditional probability of respondents in terms of self-reported, expected happiness in retirement increases as respondents: 1) respondents believe that MPF can make them happy in their retirement, 2) having higher levels of education; 3) claiming that they care about their MPF account; and 4) those who expect to retire early. However, expected happiness in retirement does not depend on current income level, information about the current yield of MPF, information on how to calculate the MPF yield and information relating to the accumulative amount of MPF. It seems that expected happiness in retirement depends on lifetime

wealth, thus information relating to current wealth does not affect respondents' happiness in retirement.

5. Conclusion and Policy implications

5.1 What are some of the identified determinants of expected happiness in retirement?

The empirical results in model 1.2 show that expected happiness in retirement correlates positively how much they care about their MPF, and whether they believe that MPF can make them happy in their retirement. This implies for the MPF scheme to enhance respondents' expected happiness in retirement, the respondents need to believe in the MPF as a retirement protection scheme.

Moreover, empirical results in model 1.2 show that expected happiness in retirement correlates positively to respondents' level of education that means people of higher education tend to be more confident about having a happier life in their retirement.

Conversely, model 1.2 also shows that expected happiness in retirement correlates negatively to a respondent's age at retirement (i.e. they are less likely to be happy if they will retire later). It does not appear to be sound policy to increase the retirement age, especially when trying to promote expected happiness in retirement.

5.2 What can other countries learn from the experience of implementing the MPF in Hong Kong?

Having examined the experiences of Hong Kong residents, any country, which would like to implement a compulsory saving scheme to enhance future happiness, needs to ensure that the general public understand and care about the benefits of the scheme. Since retirement plan concerns of lifetime wealth instead of current wealth, information about the current yield, information on how to calculate the yield and information relating to the accumulative amount, do not affect expected happiness in retirement. The policy implication is that government needs to highlight the

future benefits of a compulsory savings scheme so as to make the general public to care about the compulsory saving scheme.

Indeed similar compulsory saving schemes can be implemented to enhance happiness in different ways, e.g. by reducing future poverty, financing future education and by financing future health care. Recently the Hong Kong Government issued a public consultation on another compulsory savings scheme, which will finance future health-care in the region.

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Technical Appendix

The happiness ordered probit model used in this paper is:

$$\text{HAPP}_i = X_i\ \beta' + \varepsilon \qquad \text{(A1)}$$

where *HAPP* is the self-reported happiness in retirement, *X* is the vector of the independent variables also in the ordinal scale β is a vector of the coefficients to be estimated, and ε are independent and identically distributed random variables. The subscript *i* indicates an individual.

$$HAPP_i = \begin{Bmatrix} 0 & if\ \ HAPP_i \le \gamma_1 \\ 1 & if\ \gamma_1 < HAPP_i \le \gamma_2 \\ & \vdots \\ k & if\ \gamma_k < HAPP_k \end{Bmatrix} \qquad \text{(A2)}$$

where γ represents the limits of *HAPP*. The empirical model to be estimated becomes an ordered probit model. The log likelihood function to be maximized is:

$$l(\beta,\gamma)=\sum_{i}^{n}\sum_{j}^{k}\log(\Pr(HAPP=j\left|Xi,\beta,\gamma\right))\cdot l(HAPP=j) \quad \text{(A3)}$$

The conditional probabilities of observing each ordinal level of $HAPP_i$ are given by:

$$\Pr(HAPP_i=0\left|X_i,\beta,\gamma\right)=F(\gamma_1-X_i^{'}\beta) \quad \text{(A4)}$$

$$\Pr(HAPP_i=1\left|X_i,\beta,\gamma\right)=F(\gamma_2-X_i^{'}\beta)-F(\gamma_1-X_i^{'}\beta) \quad \text{(A5)}$$

$$\Pr(HAPP_i=k\left|X_i,\beta,\gamma\right)=1-F(\gamma_k-X_i^{'}\beta) \quad \text{(A6)}$$

where F is the cumulative distribution function of ε. It is worth mentioning that the magnitude of the coefficient (β) does not reveal the effect of the independent variables (X'_i) on the dependent variable *(HAPP)*.