

# Online Appendix for Shifting from Pay-as-You-Go to Individual Retirement Accounts: A Path to a Sustainable Pension System

Hsuan-Chih (Luke) Lin

Atsuko Tanaka

Po-Shyan Wu

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## 1 Pension Systems in Taiwan

In this online appendix, we describe the insurance pension systems in Taiwan. There are three major pension systems: labor insurance, public service pension, and national pension, and they share many similarities.<sup>1</sup> Below, we will describe the institutional backgrounds in detail.

### 1.1 Labor Insurance

The Labor Insurance Program was established in 1950. It was the first compulsory social insurance program in Taiwan. In 2015, the program covered approximately 10 million laborers (the population in Taiwan is 23.4 million). The labor insurance program offers payments including old-age benefits, survivor benefits, occupational accident medical benefits, disability benefits, and maternity benefits. The program is supported by a pay-as-you-go system. The premium equals the insured salary of each insured worker times the premium rate. The current premium rate is 8.1%. For each insured worker, 70 percent of the premium is paid by the employer, 20 percent is paid by the insured worker, and 10 percent is paid by the government.

Since 2009, there have been three types of old-age benefits: Old-age Pension Benefit, Old-age Lump Sum Benefit, and One-Time Old-age Benefit. After resigning from work and withdrawing from insurance coverage, an insured person can claim one of the three types of benefits if this individual meets the requirements. The most common benefit is Old-age Pension Benefit. Its main properties are described below.<sup>2</sup>

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<sup>1</sup>There is one newly introduced pension system: the labor pension system. It follows the IRA system and began in 2005. Since the size of this pension is small, we omit it in the model.

<sup>2</sup>Other types of old-age benefits share similar properties with slightly differences in terms of qualifications and reduction rates if individuals claim benefits earlier.

- Old-age Pension Benefit: Insures those who are at least 55 years of age with at least 15 years of insurance coverage.
- Old-age Pension Benefit: The insured person can select the better option from the following two methods.
  - Average Monthly Insurance Salary<sup>3</sup> × Coverage Years × 0.775% + 3,000
  - Average Monthly Insurance Salary × Coverage Years × 1.55%

## 1.2 Public Service Pension

The public service pension system of Taiwan was established in 1943. Since then, the framework and principles that define it as a government-financed superannuation system have remained unchanged. However, the growing financial burdens of the government have posed great challenges to the system. This prompted the government to organize a task force to review the system. The public service pension system was changed on 1 July 1995, from a totally government-financed system to a Contributory Public Service Pension Fund that is supported by funds jointly contributed by the government and the participants.

Upon the adoption of the new system, the Public Service Pension Fund (PSPF) began paying pension benefits based on years of service. The contribution rates to the pension fund by the participants ranged from 8% to 15% of their salary. The Public Service Pension Fund Management Board (PSPFMB) was set up to manage the fund. Fund participants comprise civil servants, education workers, and military personnel, totaling more than 630,000 persons. The aim of the PSPF is to secure and steady the income for these retirees so as to facilitate the recruitment of human forces for public service, boost its morale, take care of the aged and their dependents, and establish a sound and solid retirement system.

## 1.3 National Pension

The National Pension Program was established by the National Pension Act of 2008. The spirit of the National Pension Program is to safeguard people who do not take part in any social insurance program, regardless of whether they are unemployed or retired. Citizens who are over 25 years of age and under 65 years of age with their household registered in Taiwan take part in National Pension Insurance and become insured persons during the period they do not participate in labor insurance, farmer's health insurance, government employee's insurance, and insurance of military personnel (for detailed rules see the official website of the Bureau of Labor

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<sup>3</sup>The Average Monthly Insurance Salary is calculated by averaging the highest 60 months of Insurance Salary during the insurance coverage years.

Insurance). The program offers three types of annuity payments — Old-Age Pension, Disability Pension, and Survivors Pension — as well as two types of lump sum benefits: Maternity Benefit and Funeral Benefit. The National Pension Program is a pay-as-you-go system. The insurance premium equals the monthly insured amount times the premium rate. The current monthly insured amount is NT \$18,282 and the premium rate is 8%. The premium sharing ratio depends on the income of the insured person.

Those who are insured can claim the Old-age Benefit as long as they have reached the age of 60, regardless of how long their insurance period is. However, individuals can claim benefits at most 5 years earlier than 60, subject to reductions in benefits. The insured person can select the better of the following two methods:

- $\text{Monthly Insured Amount} \times \text{Insurance coverage year} \times 0.65\% + 3,628$
- $\text{Monthly Insured Amount} \times \text{Insurance coverage year} \times 1.3\%$ .