

# Public Pension Systems in an Ageing Society with Low Fertility: A Comparison of Japan, China, and Korea

SATO Itaru

We analyzed the impact of population change for the public pension systems of three countries: Japan, China, and South Korea. Since there are official estimates such as the 2019 actuarial valuation for Japan and the 2023 financial calculation for South Korea, we used these estimates. Since there are no such official estimates for China, we constructed a simple model and performed mechanical estimation.

The results show that in Japan, only in the case of low fertility or low mortality, the reserve of the national pension will be depleted about 90 years from now, or the replacement ratio will fall below 50%. In the case of China, the reserve is rapidly declining, with the result that the basic corporate employees' pension insurance system will be depleted in 2035. In South Korea, the reserve will be depleted by 2055. This schedule for reserve depletion in China and South Korea remains virtually unchanged regardless of whether high, medium, or low fertility assumptions are made. This may be due to the fact that reserve depletion is expected in the very near future in China and South Korea. In other words, even if the number of live births increases, it will take a certain period of time before they become insured, and if the reserve is depleted in the near future, the effect of changes in the number of live births will not appear in the near term. In Japan, on the other hand, the long-term soundness of the population means that the impact of population changes on reserves can be clearly recognized.

In countries with declining birthrates and aging populations as well as increasing longevity, public pensions are indispensable systems that financially support people in their retirement years. Periodic verification of the health of public pension systems, such as actuarial valuation, is likely to become increasingly important in each country, and differences in assumptions about population will be important in confirming that the health of these systems is maintained over the long term.

Keywords: actuarial valuation, reserve, population projection, insured