Investment Risk-taking and Benefit Adequacy under Automatic Balancing Mechanism in Public Pension System in Japan

Kimura S., Kitamura T*. and Nakashima K.
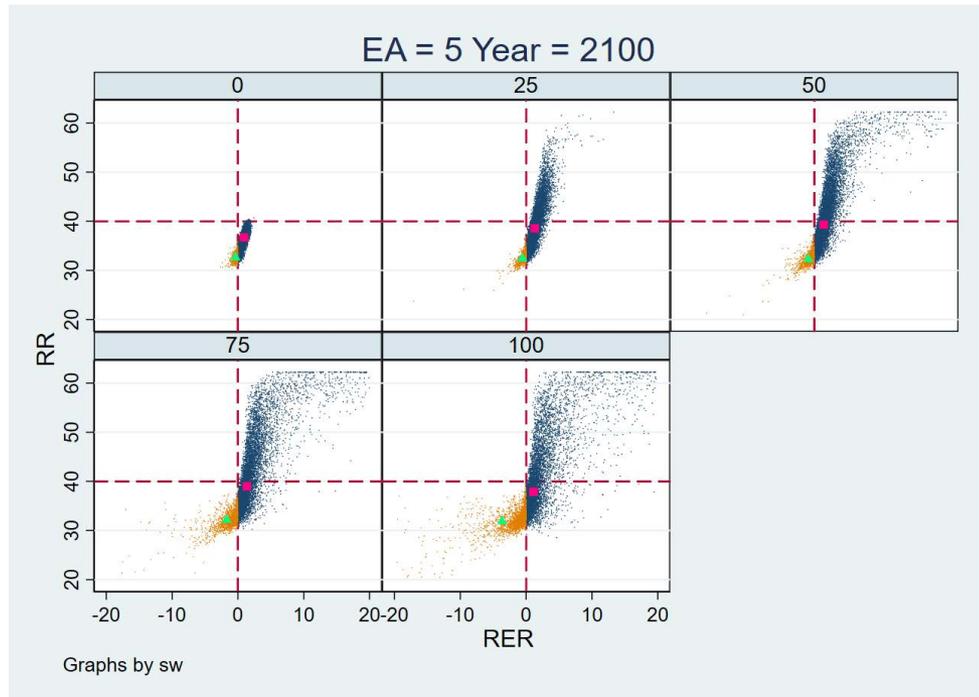
This study investigates future risk and return of the Japanese public pension system measured by the reserve-expense-ratio (**RER**) and replacement ratio (**RR**) according to stock weight (**SW**) in the reserve fund, under the automatic balancing mechanism and fixed premium.

Our 90,000 simulation results show the complicated tradeoff between return and risk of **RER** and **RR**: **a higher return and limited downside risk** going into the **red zone** (**RER** < 0 & **RR**< 40) for **SW = 25-75%**, by virtue of the automatic balancing mechanism.

Year = 2100

	SW	0	25	50	75	100
Return	**Median RER**	0.9	1.3	1.4	1.4	1.1
	Median RR	36.7	38.6	39.3	39.0	37.9
Risk	**Prob (Red zone)**	7%	10%	15%	20%	24%
	Mean RER in the **red zone**	-0.4	-0.6	-0.9	-1.7	-3.7
	Mean RR in the **red zone**	32.6	32.4	32.3	32.2	31.9

Higher return

Limited downside risk

EA = 5 Year = 2100

Graphs by sw

ASSA meeting 2022 * E-mail: PXL03406@nifty.com

Animation

Pink square represents the median RR and RER.
Green triangle represents the mean RR and RER in the red zone.