

Appropriate Structures and Mechanisms of Risk-Sharing in a Nursery Plan: Challenges for the Occupational Pension System of Japan¹

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Abstract

Japan is now looking for appropriate risk-sharing designs to be introduced in the occupational pension system, paying attention to the desirability of benefits from the viewpoint of ensuring adequate income security and the sustainability of the plan that can endure economically unfavourable periods.

A Nursery plan, which sequentially combines a collective defined contribution (CDC) plan during the accumulation phase and a defined benefit (DB) plan during the withdrawal phase, may be one of the convincing candidates of new risk-sharing designs in Japan. However, a Nursery plan requires sensible considerations with regard to the accompanying inherent particularities. For instance, participants are vulnerable to the market shocks close to the annuity conversion and to the interest rate risk at the annuity conversion. Whereas some generations might have accumulated assets sufficient to ensure adequate income after retirement, other generations might not have been so lucky.

This paper analyses the risk structure of a stylised Nursery plan and proposes several measures to mitigate the risks and drawbacks of this DC-like hybrid plan. Especially, this paper introduces a levelling off function of the imbalances of the accumulation status among generations. This paper also proposes a mechanism of reallocating investment returns assuming a relationship of virtual borrowing and lending among generations. Furthermore, this paper devises the optimal age from which *personal* longevity risk is pooled, through quantitative evaluation of both *the pros and cons* of annuitisation.

From these considerations it is suggested that well-designed inter/intra-generational risk-sharing can make good the inherent shortcomings of DC-like hybrid plans to some extent and thus enhance the welfare of participants without exposing each generation to unaffordable risks. If we expect DC-like hybrid plans to play a reliable role in the overall old-age income security system, it is indispensable that these plans are equipped with appropriate inter/intra-generational risk-sharing structures and mechanisms.