

## Risk Sharing within Pension Schemes

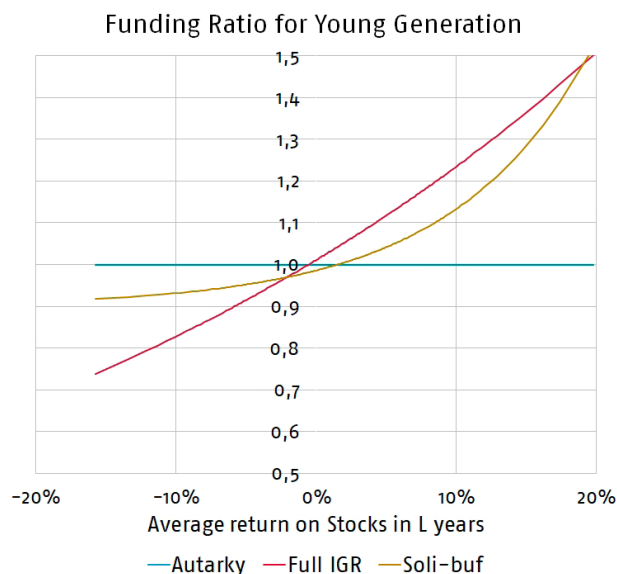
“Buffer fund optimises risk sharing and mitigates downside risk”

Anne Balter<sup>1</sup>, Frank de Jong<sup>1</sup> and Antoon Pelsser<sup>2,3</sup> – <sup>1</sup> TiU, <sup>2</sup> UM, <sup>3</sup> UVA

Many countries are reforming their pension systems to facilitate economic and demographic changes. New systems seek to mitigate risks by allocating surpluses to a buffer fund that smooths fluctuations in investment returns and between pension generations. This paper explores optimal risk sharing and assesses the welfare effects of the current Dutch pension proposal against theoretical optimal risk sharing arrangements. We show that a solidarity buffer with sufficiently risky investment provides optimal risk sharing while mitigating negative welfare effects.

### Principal Findings

- “Unconstrained” intergenerational risk sharing is implemented by “pre-investing” for future generations. This however creates downside risk of underfunding for younger generations entering the fund when financial markets have performed poorly during the pre-investment period.
- A solidarity buffer with sufficiently risky pre-investment can achieve results close to “unconstrained” intergenerational risk sharing, and also mitigate the downside risk for the younger generation entering the pension fund.
- These utility gains can be achieved without increasing the risk level of pension returns for the generation closest to retirement.



The figure shows the funding ratio of the young generation entering the pension fund. In autarky (blue line) there is no pre-investment, and the ratio of the present value of pension contributions and pension capital at retirement is always equal to 1.0. For “unconstrained” intergenerational risk sharing (red line) after a pre-investment period of L years, this ratio can fall below 1.0 when financial markets experience a negative average return during this period. The other line shows a pre-investment of L years with a “solidarity buffer” where the ratio can never fall below 0.9, thus limiting the downside risk for the young generation. The utility gains of the other line are almost the same as for the red line.

### Key Takeaways for the Industry

- The new Dutch pension system should incorporate a solidarity buffer to optimise risk sharing and manage the downside risk for younger generations.
- Such an approach will minimise negative welfare effects on both younger participants and participants approaching retirement.



Want to know more? Read the paper

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