

Efficient decumulation strategy with long-term care insurance and guaranteed minimum death benefit

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Abstract

With the global shift from defined benefit to defined contribution pension systems, retirement planning is now fully borne on individuals elevating their exposure to longevity, health, and market risks. This transition has prompted more precautionary saving behaviour, as retirees become more conservative in fully consuming their wealth. This research proposes a decumulation strategy which combines long-term care insurance (LTCI) and guaranteed minimum death benefit (GMDB) purchased at retirement with a withdrawal-then-rebalance investment approach. Within this framework, the retirement fund is modelled using a regime-switching structure, while a target volatility strategy detects asset allocation to smooth wealth dynamics and reduces likelihood of extreme losses. The LTCI covers late-life healthcare costs, whereas the GMDB secures a minimum bequest, thereby supporting both consumption confidence and legacy objectives. Numerical experiments compare consumption patterns under this strategy with default account-based pension drawdown strategies. Results reveal that the proposed strategy provides smoother long-term consumption and better resilience to adverse financial shocks. Sensitivity analyses exploring variations in insurance allocation ratios, health state transitions, and target volatility levels are performed. Preliminary results suggest that moderate volatility targets strike an effective balance between risk and sustainability, and that the strategy remains robust across different health scenarios.

Keywords: Decumulation, Defined contribution scheme, Long-term care, Guaranteed minimum death benefit.

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