

PhD in Business Economics (VUB)/ Doctor of Management and Economics (Ulm University)

Optimal Financial Investment: Insights Beyond Retirement Planning

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Abstract

This dissertation focuses on optimal financial portfolio planning for investors. In this context, we also discuss how optimal financial investment and risk-sharing mechanisms may be combined to offer innovative solutions for retirement planning.

These issues are highly relevant as an increasing number of individuals invest in financial markets, and governments worldwide seek to leverage market potential to stabilize pension systems strained by unfavorable demographic trends. Against this backdrop, this thesis comprises four research papers. The first paper studies the optimal payoff choice in a static setting for an investor who displays smooth ambiguity preferences that allow differentiation between the investor's ambiguity attitude and ambiguity beliefs. We derive the optimal payoff explicitly and rationalize it via an investor with classical subjective expected utility. The second research paper considers an investor who maximizes a payoff's Sharpe ratio in a static setting under constraints that limit its downside potential. In particular, we show the equivalence of Sharpe ratio maximization and the maximization of a specific concave distortion risk measure by using the concept of cost-efficient payoffs. The third research paper deals with the optimal payoff choice for an investor with a general state-dependent utility who assigns different utility functions to the states of survival and death in a static setting. As our main contribution, we explicitly derive her general optimal life-contingent payoff—a financial payoff complemented with some life-insurance component—under the assumption that actuarially fair premiums for mortality risk are charged. Finally, the fourth research paper proposes a novel collective defined contribution scheme (CDC) that guarantees at least a target benefit as a lump sum upon retirement via a pre-determined linear intergenerational risk sharing (IRS) rule. As our main contribution, we demonstrate via a simulation-based study that it is beneficial for all generations to join the CDC and that this incentive is resilient under adverse market and demographic conditions.