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OPTIMAL HEDGING STRATEGIES IN EQUITY-LINKED PRODUCTS

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Abstract. Equity-linked insurance policies are one of the most widespread insurance products. In many cases such contracts have guarantees like a minimum return over the lifetime of the policy. Liabilities arising from such guarantees must be hedged by suitable investments. There are restrictions on hedging strategies in many jurisdictions but with the more flexible regulatory framework of Solvency 2 there are alternative ways to hedge certain guaranteed products using derivative securities. In this paper we investigate when it is optimal to switch to hedging liabilities with derivative securities in the framework of the Cox-Ross-Rubinstein model. This leads to optimal stopping problems that can be solved explicitely. Mortality is also incorporated in the model. The results may indicate the level of reserves necessary to meet obligations with the desired level of confidence. In particular the strategy may be applicable in adverse market conditions.

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