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Pricing Long Term Insurance Contracts

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ABSTRACT

Insurance companies are faced with the problem of pricing Long Term Care (LTC) insurance contracts. An LTC contract provides the insured benefits should he become in need of care. We consider several models describing the changes in the needs of the insured for care over time. Some models are more conservative than others, some are based on ADL's and one assumes alternating periods of activity and disability. A quite general Markovian multistate model is also analyzed. A basic concept needed for pricing LTC contracts is the r.v. Discounted Value of Future Benefits (DVFB). Using the expected DVFB termed net single premium we find the annual premiums for all the models. The methods used to price the contracts include Markov chain analysis, potential theoretic approach backward induction and dynamic programming.