Deciding the sale of a life policy: Implications on the individual welfare

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In this paper we present an economic model that allows a terminally ill insured to decide whether to sell or not to sell the policy on the viatical settlement market. The viatical settlement market emerges in the late 1980s in response of the AIDs epidemic. Nowadays it is part of the large US market on life settlements. The policies traded on the viatical market are those of terminally ill policyholders expected to die within the next two years (for a description of viatical and life settlement markets see Bhuyan, V. (2009)).
The model is discrete and considers only the next two periodes (years) since this is the maximum life expectancy of the policyholder. The decisor has an initial wealth and has to share it between his own consume and the bequests leaves to his heirs. We first introduce the expected utility function of our decisor and next we use dynamic programming to deduce the strategy (non viaticate/viaticate at time zero/viaticate at time one) that gives higher utility. The optimum depends on the value of the viaticated policy and on the preference parameter for consumption/bequests. We find an analitical expression for the optimal strategies and perform a sensitivity analysis.
Bhattacharya et al. (2004) considers a similar problem in a different context, regulated and non-regulated secondary markets. Our model improves the discount valuation of the variables involved (consumption and bequests) and allows a wider range of possible decisions since it is formulated in terms of dynamic programming.

Keywords: Viaticals, expected utility, dynamic programming.

References

[1] Bhattacharya, J., Goldman, D.P. and Sood, N. (2004). Price regulation in secondary insurance markets. *The Journal of Risk and Insurance.* 71 (4), 643-675.

[2] Bhuyan, V.B. (2009).*Life Markets: Trading mortality and longevity risk with life settlements and linked securities.* Wiley.

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