

Stochastic Processes in Life Insurance

Assignment 2

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1 Stochastic processes

[Norberg, page 215] To describe the evolution of a random phenomena over some time interval $[0, T]$, we introduce a family \mathcal{F} of sub-sigmaalgebras of. A stochastic process is said to be adapted to filtration \mathcal{F} , if at any time the current state of the process is fully known if we are currently provided with the information \mathcal{F} . An adapted process is said to be predictable if its value at any time is entirely determined by its history in the strict past. In this case predictable processes are either left-continuous or deterministic.

2 Martingales

[Norberg, page 215] An adapted process with finite expectation is a martingale. Any integrable Y induces a martingale

References

- [1] Jesper Lund Pedersen. *Stochastic Processes in Life Insurance: The Dynamic Approach*. Department of Mathematical Sciences.