

The thesis focuses on the stochastic mortality models in the context of actuarial risks. In the theoretical part, the thesis defines five mortality models with approaches to prediction. After that, it follows the description of selected actuarial risks in the context of mortality. Hedging of longevity risk is obtained through a financial instrument called a longevity bond. Pricing of that bond is delivered via the Wang transformation approach. In the empirical part of the thesis, there are carried out estimates, interpretations, and comments for models based on the Czech mortality data. Later, prediction tests are executed for an individual model, both sex and two chosen ages. The last part of the empiric section deals with the data driven pricing of longevity bond and the price of risk.