

# Claims Reserving in Non-life Insurance in the Presence of Annuities

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## Abstract

Compensation for personal injury is to a large extent paid as annuities in Denmark, Sweden and Finland. This means that the claimant gets a monthly amount paid either until retirement age or until death. The actual annuity reserve is calculated based on the original annual compensation, mortality, assumptions about future indexing of the annuity and finally discounted with a relevant market rate. Since the annuities are discounted, the present reserve will never be sufficient to cover the payments on a nominal level. This creates some challenges when the annuities are part of an IBNR calculation. We will examine four ways of dealing with the annuities when estimating outstanding claims reserve, and the purpose of this project is to evaluate the pros and cons of each method. We will find that a simple adjustment will be sufficient to significantly improve the accuracy of the traditional method. In addition, three methods for calculating the reserve, Chain-Ladder, Double Chain-Ladder and the Separation Method, will be examined in this thesis with regards to how well they can cope with changing inflation and increasing number of claims.

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