

Quantifying Employment Contingencies in UK Personal Injury Damages: An Actuarial Perspective

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Abstract

Compensation for personal injuries and fatal accidents arising from wrongful acts is determined primarily through legal principles, but the underlying valuation methods draw heavily on actuarial science. The UK has one of the most developed personal injury litigation frameworks, supported by standardised calculation approaches and actuarial tables—the Ogden Tables [?]. Traditionally, UK compensation is awarded as a lump sum intended to cover future losses such as lost earnings and ongoing care costs. Calculating these losses requires assumptions about life expectancy and work-life expectancy, as well as inflation, investment returns and taxation.

In this research, we focus on contingencies other than mortality by estimating work-life expectancies and expressing them as employment probabilities. Using Markov models, we develop what we call *third-generation reduction factors*. We first examine how alternative definitions of disability affect estimated employment probabilities. We then extend work-life expectancy estimation beyond a single point estimate by describing its full distribution. We compare these updated reduction factors with the *second-generation* factors published in the eighth edition of the Ogden Tables and discuss the implications for personal injury compensation.

Finally, we consider extending the modelling framework to incorporate disability transitions alongside employment transitions. This would require a four-state Markov model capturing joint employment–disability dynamics. We explore whether such an approach could provide a practical foundation for the next generation of reduction factors.

References

- [1] Government Actuary's Department (2022). *Ogden Tables: Actuarial Tables for Use in Personal Injury and Fatal Accident Cases, 8th Edition*. Available at: <https://www.gov.uk/government/publications/ogden-tables-actuarial-compensation-tables-for-injury-and-death>.