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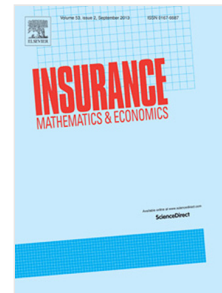
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# A unisex stochastic mortality model to comply with EU Gender Directive\*

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## Abstract

EU Gender Directive ruled out discrimination against gender in charging premium for insurance products. This prohibition prevents the use of the standard actuarial fairness principle to price life insurance products. According to current actuarial practice, unisex premiums are calculated with a simple weighting rule of the gender-specific life tables. This procedure is likely to violate portfolio fairness principles. Up to our knowledge, in the actuarial literature there is no unisex mortality model that respects the unisex fairness principle. This paper is the first attempt to fill this gap. First, we recall the notion of unisex fairness principle and the corresponding unisex fair premium. Then, we provide a unisex stochastic mortality model for the mortality intensity that is underlying the pricing of a life portfolio of females and males belonging to the same cohort. Finally, we calibrate the unisex mortality model using the unisex fairness principle. We find that the weighting coefficient between the males' and females' own mortalities depends mainly on the quote of portfolio relative to each gender, on the

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