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NOTES ON FOREIGN ACTUARIAL JOURNALS

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CZECHOSLOVAKIA

Aktuárské Vědy, Vol. VIII, 1948–49, Part 3

K. PETR. *Sur le calcul effectif des nombres de Bernoulli*, pp. 89–94. A practical method of calculating the successive Bernoulli numbers is developed.

A. ZELENKA. *Rentrée en validité dans l'assurance-invalidité*, pp. 95–114. Extension of the results of a preceding note (*J.I.A.* Vol. LXXV, p. 246) to interest functions with a numerical example illustrating the effect of recovery on disability annuities. The author concludes that simple methods of approximation are adequate in practice.

J. BILY. *Solution of a system of linear equations with large coefficients in the diagonal*, pp. 114–127. An extension of the Gauss-Seidel method.

SCANDINAVIA

Skandinavisk Aktuarietidskrift, 1949, Parts 1–2

G. ALBERS and G. KÖHLER. *Summarische Berechnung der Prämienreserve ohne Gruppenbildung*, pp. 1–6. By entering three constants on the valuation cards, viz.

$$H_1=\frac{\ddot{a}_{x_0:\overline{n+x-x_0}|}}{\ddot{a}_{x\overline{n}|}},\quad H_2=\frac{1}{\ddot{a}_{x\overline{n}|}}\frac{\partial}{\partial x_0}\ddot{a}_{x_0:\overline{n+x-x_0}|}\quad\text{and}\quad H_3=\frac{1}{\ddot{a}_{x\overline{n}|}}\frac{\partial^2}{\partial x_0^2}\ddot{a}_{x_0:\overline{n+x-x_0}|},$$

per unit sum assured (where x and n have obvious meanings and x_0 is the age attained in 1955, say), the total sum at risk (i.e. sum assured less reserve) of a mixed portfolio in the year y can be written

$$\Sigma H_1+(y-1955)\,\Sigma H_2+\tfrac{1}{2}(y-1955)^2\,\Sigma H_3.$$

The numerical results for the few endowment assurances chosen are good, but the method seems to require a complete recalculation of the fixed constants every 10–15 years if it is to be reasonably exact.

E. FRANCKX. *Sur les probabilités d'arrivée des événements en nombre infini*, pp. 7–14. States and proves a theorem on the probability of an infinity of successes or failures, respectively, in an infinite series of events.

C.-O. SEGERDAHL. *A table of the interest intensity function for interest intervals of 0·01 % from 0 % to 7 %*, pp. 15–20. Table of $10^3\,\delta$ to six decimal places corresponding to $100i=0{\cdot}00(0{\cdot}01)7{\cdot}00$.

N. ARLEY. *On the 'birth-and-death' process*, pp. 21–26. An alternative method of solution of the general 'birth and death' differential equation.

E. S. ANDERSEN. *On the number of positive sums of random variables*, pp. 27–36. A generalization of Erdös and Kac's theorem relating to the limiting probability distribution of the relative number of sums of n random variables which are positive in sign.

H. BERGSTRÖM. *On the central limit theorem in the case of not equally distributed random variables*, pp. 37–62. An extension of results obtained in two earlier papers (see *J.I.A.* Vol. LXXIII, pp. 153 and 441).

A. WINTNER. *Factorial moments and enumerating distributions*, pp. 63–68. A contribution to the problem of moments.

H. RUCH. *Ein grundsätzlicher Beitrag zum Verhältnis des prospektiv und retrospektiv gerechneten Deckungskapitals*, pp. 69–73. Investigates the conditions under which the prospective and retrospective methods of calculation of gross premium reserves give the same result.

H. RUCH. *Die Gewinnbeteiligung bei hohen Versicherungssummen*, pp. 74–81. The dividend-earning power of policies with large sums assured is investigated with due regard to the incidence of reassurance costs and the fact that some office expenses are constant per policy. No numerical examples.

B. ÅKERBERG. *On premium calculation in the case of a temporary life insurance for a varying amount*, pp. 82–95. Rules for determining the duration to which uniform premium payments on decreasing term assurances must be limited if the policy value is never to be negative.

Nordisk Försäkringstidskrift

April 1949

Includes papers by F. SEJERSTED on the settlement of war losses and moveables in Norway; H. P. RASMUSSEN on recent mortality analyses in the Danish State Life Insurance Office; K-G. HAGSTROEM, a lecture on actuarial research to the Swedish Actuarial Society; and A. JUNNILA on private initiative and free competition within the insurance industry—their value to the individual and to society.

October 1949

Contains a lecture by O. GRUDER on the development and results of international co-operation in the sphere of under-average life assurance.

SWITZERLAND

Mitteilungen der Vereinigung schweizerischer Versicherungsmathematiker, Vol. XLIX, 1949, Part II

H. RUCH. *Eine Variation der t-Methode*, pp. 165–169. Conclusion of an article commenced in the 1948 *Bulletin* (see *J.I.A.* Vol. LXXV, p. 115).

H. JECKLIN. *Grundsätzliche Bemerkungen zur t-Methode*, pp. 170–178. A description of the fundamentals of the t-method of valuing endowment assurances retrospectively with illustrations of the new method of weighting introduced by Ruch (see preceding review).

E. ZWINGGI. *Berechnung und Darstellung der abhängigen und unabhängigen Wahrscheinlichkeiten*, pp. 179–193. Develops (exact) infinite series, representations for dependent and independent decremental probabilities ('probabilities' and 'rates', respectively) in terms of observations. Expresses, also, the former in terms of the latter in an exact (infinite series) formula.

P. LEEPIN. *Über die Anwendung von Mittelwerten zur Reserveberechnung*, pp. 194–208. Shows that it is not possible to construct series of mortality rates which will make either Lidstone's Z- or Jecklin's *t*-methods of endowment assurance valuation exact instead of approximate.

H. L. SEAL. *The historical development of the use of generating functions in probability theory*, pp. 209–228. The invention of probability generating functions for discrete and continuous laws and their respective inversion formulas is due to De Moivre, Lagrange, Laplace, and Poisson, respectively.