NOTE ON THE PAPERS BY J. HOLTAN AND
BY J. LEMAIRE & H. ZI

According to the editorial rules of treating discussion situations in the ASTIN Bulletin the paper by J. LEMAIRE & H. ZI being somewhat a discussion on Holtan's paper was sent to the author of the original paper, who was given the opportunity to make an additional comment. The editors then received the following note by JON HOLTAN:

In this note I want to give some general comments on the papers by LEMAIRE & ZI (1994) and HOLTAN (1994).

Interpret henceforth a bonus-malus (BM) principle as consisting of two basic components:

(a) The BM design.
(b) The BM tariff parameters.

Traditional actuarial literature has basically been preoccupied with component (b). Or more precisely, the tariff parameters of an *initial accepted* BM design have usually been mathematically optimized within different criteria of succes like e.g. high efficiency and financial balance. In my opinion, however, this strategy seems to be too narrow if the aim is to construct a BM principle which is *totally* optimized in favour of both the insurer and the insured. In our strive for maximizing BM advantages and minimizing BM disadvantages, actuarial BM research should instead simultaneously focus on both components (a) and (b). The construction of the High-Deductible System (HDS) in HOLTAN (1994) is an example of this strategy. However, as pointed out in LEMAIRE & ZI (1994) (see Section 1 and 4) and HOLTAN (1994) (see Section 3, 5 and 6), a HDS compared with existing BM systems *both eliminates and generates* important disadvantages which are linked to component (a). Based on some mathematical model assumptions, LEMAIRE & ZI moreover concludes (see Section 3 and 5) that this two-sided conclusion is in principle also valid within some mathematical criteria of success linked to component (b). These complex, and perhaps confusing, conclusions make it difficult for us to decide whether to prefer the existing BM systems or the HDS. However, the solution to this problem of decision seems to be naturally dependent on some strategic questions like: What kind of BM advantages and what kind of BM disadvantages will be the most important to focus on in the future automobile insurance market? In what way will new financial market structures and new electronic technology moderate the stated criticism of HDS, and hereby make room for creative insurance poducts like HDS? The answers to these questions are of course by now not obvious, and hence a continuous prospective assessment of the questions will probably be the most suitable way to proceed within the evaluating of HDS. In addition, and as mentioned in Section 5 in LEMAIRE & ZI (1994), the design of HDS may also be improved by further research. For instance, a traditional BM system may be combined with a HDS such that all policyholders within the

traditional system who attain a specific high rate of bonus discount are offered a separated (comprehensive insurance) HDS on a permanent basis. In the first place this modified HDS obviously moderates a great deal of the stated criticism of the pure HDS, while it in the second place gives the offered customers a customer-friendly choice between two different product alternatives.

In the immediate future the automobile insurance industry seems to meet market demands which are even more customer-orientated than today. Under the circumstances, and as initimated above, it seems to be a must for actuarial research within BM principles to be more orientated towards both the components (a) and (b). Or, in other words, more orientated towards an optimal combination of insurance market BM criteria and traditional actuarial BM methods.

REFERENCES

HOLTAN, J. (1994) Bonus Made Easy. *ASTIN Bulletin* **24**, (this volume).
LEMAIRE, J. and ZI, H. (1994) High Deductible instead of Bonus-Malus: Can it work? *ASTIN Bulletin* **24**, (this volume).

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