Title: Econometric systems of simultaneous equations in life insurance

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Abstract: In present work we deal with theoretical and practical issues related to econometric systems of (linear) simultaneous equations. In the first chapter we introduce to theoretical aspects of this problem. We devote considerable space to estimation procedures and comparisons of their properties, mention questions of identification, an inconsistency of OLS-estimates for the simultaneous modeling, tests of hypotheses specific to this area, dynamic systems and constructions of forecasts in models. In the second chapter we introduce selected basic concepts relevant to life insurance. In the third chapter we show the practical application of theoretical knowledge in the event of an econometric model of financial flows in the life insurance company operating on the Czech market. We compare ordinary estimation procedures (2SLS and 3SLS approach), perform some tests, which serve us to verify selected information on the studied model. We show the possibility of using residual bootstrap, including examples of use in the construction of confidence intervals. Finally we analyze several predictions of the estimated model of the life insurance company for predetermined scenarios for the development of selected variables, which is very important from practical point of view.

Keywords: econometric models, econometric systems of simultaneous equations, model of life insurance company, residual bootstrap.