REVIEW OF THE MASTER'S THESIS
EXTERNAL REVIEWER

Student's name: Marcel Vrobel

Thesis title: MICRO-MODEL FOR RESERVING IN NON-LIFE INSURANCE WITH THE USE OF GENERALIZED LINEAR REGRESSION MODEL EXTENSIONS

Name of the thesis external reviewer: Michal Gerthofer

	1	2	3	4
Assessment of the topic itself (irrespectively of the student):				
1.1 To what extent is the topic current and significant?	☒	☐	☐	☐
1.2 How challenging is the topic in respect of theoretical knowledge?	☐	☒	☐	☐
1.3 How challenging is it in respect of practical experience or fieldwork?	☐	☒	☐	☐
1.4 How difficult is it to get background materials?	☐	☒	☐	☐
2. Evaluation of the thesis structure and logical cohesion:				
2.1 To what extent is the thesis structure logical and transparent?	☐	☒	☐	☐
2.2 To what extent does the author use current/ suitable sources?	☒	☐	☐	☐
2.3 How properly did the author select methods in respect of the topic?	☒	☐	☐	☐
2.4 How sufficiently and functionally did the author use in the thesis original charts, tables, data, annexes, etc.?	☐	☒	☐	☐
2.5 What is the compatibility level for the thesis basic line elements: topic – thesis assignment – objective – structure – conclusions?	☐	☒	☐	☐
3. Assessment of the thesis text quality:				
3.1 How well – in terms of depth and quality – did the author analyze the topic?	☐	☒	☐	☐
3.2 Did the author formulate the thesis objective clearly and with logical structure?	☐	☒	☐	☐
3.3 Did the author fulfill the defined thesis objective and approved assignment of the thesis that contains the objective?	☐	☒	☐	☐
3.4 How well – in terms of depth and quality – did the author cover the theoretical part of the thesis?	☐	☐	☒	☐
3.5 How well – in terms of depth and quality – did the author cover the practical/ analytical part of the thesis?	☐	☒	☐	☐
3.6 To what extent are the thesis conclusions logically structured and show quality, and what is their added value?	☐	☒	☐	☐

Instructions for the review:
Note: Classification method: 1 = exceptional, 2 = very good, 3 = good, 4 = failed.

4. Assessment of the thesis form and style:

4.1 What is the formal layout of the thesis?   ☒ ☐ ☐ ☐

4.2 What is the quality of citations and references? Are sources identifiable?   ☐ ☒ ☐ ☐

4.3 What is the stylistic level of the thesis, particularly the use of correct economic terminology?   ☐ ☒ ☐ ☐

5. Overall assessment:

The thesis deals with a current topic. Order of the sections is well balanced. Text, language and form of the thesis are on high level. However, mathematical notation contains mistakes (e.g. index in equation (3.5), sign and notation within equation (6.11), notation (Pr(>Chi)<0.001) is not correct etc.). There was incorrect usage of the term ANOVA instead of the sub-model test (F-test). Work described wide range of the models but theory description lacked depth and details. On the other hand, data analysis was performed very carefully and author shown understanding of the claim reserving problem and underlying data. Practical part of the work is well structured and contains back-test as well as validation of the models, however, results for aggregated model seems to be incorrect (see table 35) and should be described in more details. Overall, the thesis was worked out very well but some parts were too detailed at the expense of other parts, for instance theory.

6. Questions and remarks to the defense:

Did figures in tables 33, 34, 35 contain part of the reserve corresponding to development of the open claims?

Can you explain, why the MSE and RMSE for aggregate model is so high?

Did you use logarithmic link function in GLM, HM and ZIM?

Did you use same model matrix for the hurdle component and the truncated component of the HM?

Proposed grade: 2

Date: 28.5.2018

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Signature of the Thesis External Reviewer