

Report on Bachelor / Master Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University in Prague

Student:	Bc. Barbora Chochláčová
Advisor:	MUDr. Ing. Daniel Hodyc, Ph.D.
Title of the thesis:	Improvement of Risk Adjustment Model to Strengthen the Competition among Health Insurance Companies in Slovakia

OVERALL ASSESSMENT (provided in English, Czech, or Slovak):

Please provide your assessment of each of the following four categories, summary and suggested questions for the discussion. The minimum length of the report is 300 words.

Contribution

The author is trying to propose the improvement for a risk adjustment model for premiums used in Slovakia. Her effort focuses on chronically ill patient. She is trying to find better and fairer way to allocate scarce health system resources to chronically ill patients. Currently, the model called PCG uses 181 daily defined doses as a threshold to include an insuree into the PCG group for a specific chronic disease and allocate more resources to cover necessary health care costs of this insurees. The threshold 181 was set so high, as the author correctly explains to prevent gaming of health insurance companies. However, several chronic diseases have several stages of disease – e.g. diabetes is usually preceded by pre-diabetes. PCG model should motivate health insurance companies to pay more attention to improving quality and organization of health care for chronically ill. However, this threshold focuses their attention to only more serious patients – those using more than 181 doses. They might neglect earlier stages of diseases = patients consuming less than 181, in spite of the fact that focusing on these patients can slow down on-stage of the chronic disease or maybe even prevent it from developing fully. This leads to higher health care costs. As the population is ageing and our life style is more sedentary, chronic diseases are becoming serious problem in our societies. Finding ways how to motivate health insurance companies to prevent it and deal with it is of a big contribution to health care research. Thus, the intention of this thesis is very useful.

Methods

The topic and methodology of calculating risk adjustment models is very complex. Nevertheless, the author was able to study it in detail and understand it quite thoroughly. There is still some scope for improvement in methodology in several parts of the thesis. For example, the author made an assumption that the results of analysis on Slovak data are relevant for the Czech republic. But the detail comparison of the risk adjustment system, highlighting differences that may prevent and comparing risk indices in the countries is missing. I would also recommend to the author to publish more details about the methodology – for example, it is not clear, how she calculated Profit and loss. Moreover, the work is sometimes missing detail analysis of the results. For example Table 16 – calculating relative and absolute differences in risk indices would help interpretation of the results.

Literature

The author made a very good job in the literature review – especially chapter 4 about overcompensation, multiple year high costs and outlier is very useful for the thesis. However, the work is missing the application of these information – e.g. the author could have try to estimate what should be the overcompensation for CHO group to improve risk adjustment model. Some parts of the literature review are redundant – e.g. the work contains too many details about Netherlands and Czech republic. Sometimes, the literature on which important conclusions are made is outdated – e.e. „it is confirmed by the theory that the risk equalization models are not able to predict more than 20% of the variation in people's health care costs (van Vliet 1992).“ This should have been

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validated cause current models are under good calibration able to predict far more than 20% of the variation in health care costs.

Manuscript form

The thesis is quite easily to read. But the form of the thesis could be significantly improved. Some pages need more proof reading and improved formatting – e.g. page 11 and 12. And the quality of tables and graphes is very varying and sometimes poor – e.g. figure 5 is missing description of Y axis and the graph would be easier to understand if risk indices were sorted; figure 6 in this form does not provide much usefull information. Usually it is recommended not to use tables and schemes as pictures from the source but to rewrite them. It looks much professional.

Summary and suggested questions for the discussion during the defense

On the overall, the student has done good job in understanding a very complex topic. The choice of the topic is very relevant for the current problems of health systems with ageing of the population and the results of the thesis could be used for the risk adjustment model improvements. The work could use some improvements in methodology and formatting.

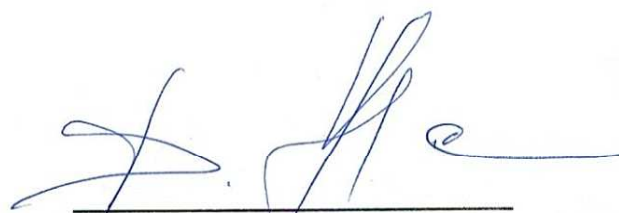
- How do you explain such a small change in MAPE and MARE between initial and modified model? Is not it caused by the fact that CHO has one of the lowest risk indices which means that the difference from the average population costs is actually very low?
- How did you calculate Profit and Loss? If the income is estimated from the total costs for the year t , it can be expected that the result in Table 20 and 21 for the whole population should be equal to 0. How do you explain that is different from 0 and negative?

SUMMARY OF POINTS AWARDED (for details, see below):

CATEGORY	POINTS
Contribution (max. 30 points)	27
Methods (max. 30 points)	25
Literature (max. 20 points)	17
Manuscript Form (max. 20 points)	14
TOTAL POINTS (max. 100 points)	83
GRADE (A – B – C – D – E – F)	B

NAME OF THE REFEREE: DANIEL HODYC

DATE OF EVALUATION: 15.9.2018



Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

CONTRIBUTION: *The author presents original ideas on the topic demonstrating critical thinking and ability to draw conclusions based on the knowledge of relevant theory and empirics. There is a distinct value added of the thesis.*

Strong	Average	Weak
30	15	0

METHODS: *The tools used are relevant to the research question being investigated, and adequate to the author's level of studies. The thesis topic is comprehensively analyzed.*

Strong	Average	Weak
30	15	0

LITERATURE REVIEW: *The thesis demonstrates author's full understanding and command of recent literature. The author quotes relevant literature in a proper way.*

Strong	Average	Weak
20	10	0

MANUSCRIPT FORM: *The thesis is well structured. The student uses appropriate language and style, including academic format for graphs and tables. The text effectively refers to graphs and tables and disposes with a complete bibliography.*

Strong	Average	Weak
20	10	0

Overall grading:

TOTAL	GRADE
91 – 100	A
81 - 90	B
71 - 80	C
61 – 70	D
51 – 60	E
0 – 50	F