

Report on Bachelor Thesis

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

Student:	František Kaláb
Advisor:	Mgr. Michal Paulus
Title of the thesis:	Cost and Usage of Medical Devices in the Czech Republic

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

The thesis analyses regional disparities in healthcare spending. It first describes healthcare spending, overall spending per capita and the spending and usage of three selected healthcare devices - foam dressings askina DresSil, simple cholecystectomy and individually made standard orthosis. Then a regression model is estimated and a partial regression model for specific devices follows. The regression analysis aims to explain regional variations discovered in the first part of the thesis.

Spending, both total and per capita, and usage of the devices analyzed is dispersed both region- and district-wise. No clustering of regions was found. It suggests that the people travel to consume healthcare both between regions as well as districts. However, I assume that some portion is also caused by the fact that the people live elsewhere than where they are actually registered as residents. The regression analysis uncovered some reasons for the regional disparities, but a large portion still remains unexplained.

The thesis is a classical exercise for an undergraduate thesis. And the author copes adequately well. However, as a reader, I would prefer clearer explanations at some parts. Some parts were too extensive (verbal description of descriptive statistics on pages 21-24), some parts were totally missing (description of variables and hypotheses upon them). Some parts were not sufficiently clarified (figures 14-15). Based on the methodological part, I would also expect the author to devote more effort to the discussion of bias (unexplained portion of variations) in the results section.

Besides, I recognize one major drawback in the thesis and I suggest it should be asked as a **question during the defense**:

- A. The regression model uses 29 covariates in the final model and only 77 and 14 observations (in two different analyses) are analyzed. The covariates are just controls. I understand that the author is interested only in the coefficient of the quintile dummies. The author himself says, that the parsimonious principle is not followed here because of the above-stated reason, however using so many explanatory variables significantly decreases degrees of freedom (DoF) of the model. Explanatory power of the model is thus hampered. Why does the author believe that the model is correct despite low DoF?

The remaining comments are just minor:

1. List of references, figures and abbreviations should be at the beginning of the thesis for easier orientation of the reader.
2. p. 5. „Medical practice variation“ - Even though no definition exists, the reader expects at least some explanation. Similar on p. 24 „small area analysis“.
3. p. 10 careful fixed fee for hospital stays was abolished on January 1, 2014. They are not charged anymore.
4. p. 13 „Together with the list there is also a methodology, which sets specific conditions and exact procedures for reimbursement in each subgroup of medical devices. The HIF reimburses medical devices in the economically least demanding configuration with specific conditions of individual's OOP contributions“. An example would clarify the statement. What conditions are these?
5. p. 13 „The disadvantage of this data is that despite being quite extensive, it is not an individual-level representative sample. Therefore, we have to aggregate the data to the level of districts or regions – 77 and 14 observations respectively.“ Incomprehensible, needs more clarification

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6. p.16 Second paragraph is rather a background description than data actually used.
7. p. 25 What is „A“ in the first equation? Number the equations. Variables of the equations should be more clarified
8. p. 25 „We proceed similarly to the descriptive part“. It is just a filler and confuses the reader. Delete.
9. p. 25 „... and thus we will not introduce it here“ Again a filler, delete.
10. p.26 Table 6: Are these coefficient values? Why is it in the methodological section, not results? Confusing.
11. p.38 „... we add cumulatively each set of independent variables one by one.“ What does cumulatively mean? Should this mean that the author adds all demographic, health, healthcare supply, economic and environmental variables as groups? Why not one by one variable?
12. p.39 what is depicted on y axis in figure 13? I do not understand the information provided by the bars. Is this the sum of all coefficients of the demographic variables, etc.? The figure deserves more explanation.
13. p.41 The author tests assumptions of the model and claims that reverse causality is a problem only with time series data, not in cross sectional samples. But what about a specification problem?
14. p.45 I do not quite understand the statement:“... Nevertheless, it is not usual in the literature to mention on what grounds the results are based on how hypothesis testing is justified.“ How does it fit into the context? It just makes the reader suspicious of the analysis that some assumptions are broken.

Despite the comments I have, I suggest **grade 1 (excellent)**.

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

CATEGORY	POINTS
Literature (max. 20 points)	19
Methods (max. 30 points)	26
Contribution (max. 30 points)	26
Manuscript Form (max. 20 points)	13
TOTAL POINTS (max. 100 points)	84
GRADE (1 – 2 – 3 – 4)	1

NAME OF THE REFEREE: *Jana Votápková*

DATE OF EVALUATION: *May 24, 2015*

Jana Votápková

Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

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

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

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

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 POINTS	GRADE		
81 – 100	1	= excellent	= výborně
61 – 80	2	= good	= velmi dobře
41 – 60	3	= satisfactory	= dobře
0 – 40	4	= fail	= nedoporučuji k obhajobě