Report on Bachelor / Master Thesis

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

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

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

The thesis examines the medical practise variation of medical devices. Author explores the variation in spending and usage of three often used devices. The thesis combines descriptive analysis of the variation and regression analysis. He reveals significant regional variation in Czech data.

The thesis contributes to the "medical practise variation" (MPV) literature represented e.g. by OECD (2014). Author exceeds the demand on bachelor theses because he contributes to the present literature in two relevant aspects. At first he presents first study on Czech data analysing medical devices using regression analysis. As a second contribution I regard the inclusion of environmental variables in this type of regression model related to the MPV literature.

The thesis also combines up-to-date methodological approaches in MPV literature. Author not only provides us with descriptive analysis (e.g. the study of OECD (2014) can be nice example) but he also uses regression model. Author has chosen very interesting and uncommon approach of Zuckerman et al. (2010) who present a method investigating geographical variation which is able to cope with the potential endogeneity in the regression. Even though that author faces data limitation compared to Zuckerman et al. (author had only regionally aggregated data, Zuckerman et al. used individual level data) and therefore low degrees of freedom he succeeded in the OLS estimation with all necessary control tests. To decrease the dimensionality of the dataset author also experimented with the Principal Component Analysis.

Regarding the critical comments I would stress following minor issues:

- Author could emphasize his hypotheses more in the text. Then his research agenda would be clearer.
- There is a potential to skip the subchapter describing district economic or geographical variables. Authors provide us with description on regional level. Hence the district description can be skipped if the thesis would be too long.
- At the beginning of the chapter 4.2. author states that: "we built several ordinary least squares (OLS) regression models to **explain** the variation". I would be more careful with the word "explain", because the model is based on the work of Zuckerman et al. (2010) who do not in fact explain the variation but they are trying to find unexplained variation. In other word they are not able to state which factors are the explanatory ones because of the potential endogeneity.
- Another stylistic comment would be about the conclusion. I would personally put the paragraph summarizing the contribution as the second one – not to the end.

Generally I regard the thesis as excellent because the author not only empirically contributes to the contemporary literature but he was also able to combine various statistical approaches. As a supervisor I would also stress his approach to the elaboration of the thesis because the cooperation was excellent.

Cited literature

OECD (2014). *Geographic Variations in Health Care: What Do We Know and What Can Be Done to Improve Health System Performance?* OECD Health Policy Studies, OECD Publishing

Zuckerman, S., Waidmann, T., Berenson, R., & Hadley, J. (2010). Clarifying sources

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of geographic differences in Medicare spending. *The New England journal of medicine*, 363 (1), 54–62.

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

CATEGORY		POINTS
Literature	*(max. 20 points)*	18
Methods	*(max. 30 points)*	30
Contribution	*(max. 30 points)*	30
Manuscript Form	*(max. 20 points)*	15
TOTAL POINTS	*(max. 100 points)*	**93**
GRADE	**(1 – 2 – 3 – 4)**	**1**

NAME OF THE REFEREE: Michal Paulus

DATE OF EVALUATION: 6.6.2015

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Referee Signature