Report on Bachelor / Master Thesis

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

Student:	**Bc. Petr Nový**
Advisor:	**Mgr. Michal Paulus**
Title of the thesis:	**Measuring the DRG classification system performance in the Czech Republic**

***OVERALL ASSESSMENT** (provided in English, Czech, or Slovak):*
The main topic of the thesis is the efficiency of the DRG payment mechanism used in the Czech Republic. To examine the efficiency author tries to explain length-of-stay (LOS) in hospital using DRG groups and other explanatory variables. The resulting R-square is then the measurement of the efficiency of the DRG, while it shows how much variance in the LOS can be explained by DRG groups or bases. The author computes several models and compares resulting R-square with other studies on DRG efficiency showing that Czech DRG system is quite efficient.

However, the author also examines other interesting topics such as concentration of most severe cases in faculty or large regional hospitals, efficiency of various trimming methods, efficiency of the DRG severity classification or regional differences in the LOS determination (this topic is inspired by medical practice variation literature).

In general, the thesis includes interesting results and appropriate methodology but the weakest part is the manuscript form. The thesis needs much more editing and proofreading. The state of the thesis is somewhere between draft and version to be submitted to defense. Taking into account the weight of the "manuscript form" category in the final exam and interesting results delivered by appropriate methodology I grade the thesis as **good**.

The detailed comments are below:

A) The thesis should be checked for grammar or typos.
E.g. author consistently in the whole thesis uses "CR" instead of "CZ" as an abbreviation for the Czech Republic (e.g. page 1).

Sometimes referencing is wrong. E.g. "…(Averill et al., 1998; Liu et al. (2001); Kožený et al., 2010)…" on page 1.

B) Some concepts are improperly defined or the term are inconsistently used.
Definition of the DRG
Author defines on page 17 casemix as "collection of hospitalization cases (hospitalized patients)". This definition implies a simple sum of hospitalization cases but this is wrong. Casemix is a sum of relative weights of the cases. However the concept of relative weights is not defined even though that the it is mentioned on page 23 without any explanation.

I would also welcome much clearer distinction between A) DRG as a general term for Diagnosis Related Group mechanism, B) DRG groups and C) DRG bases. Author uses the term DRG for A) and B) which is confusing (e.g. on page 22).

Czech health insurance system
In general, this chapter is confusing and should be revised.

Author should be also more careful while describing the Czech health insurance system. On page 18 we can find that:

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"In the Czech Republic, the Health Care system rests on Statutory (Social) Health Insurance (SHI) obliging every citizen to contribute to the health insurance fund, seven of such exist to the present day."

The sentence implies that there should be seven health insurance funds to which citizens contributes. However, the insurance payments are not directly transferred to insurance companies but at first gathered at one central "health insurance fund" and then according to mathematical algorithms redistributed between insurance companies.

I would also add (page 18) that some by author mentioned reforms made to boost efficiency has been reversed by contemporary government. Also the role of DRG is not strong as in time of former governments.

Author mentions on page 19 Reimbursement Directive without any explanation of the role of the act in the reimbursement system. The paragraph should have been deleted or extended otherwise a reader without prior knowledge of this legislative act is confused.

Last paragraph on page 18 is confusing. It starts with a sentence claiming that there were two payment mechanisms for hospitals in 1990s and 2000s but in the following sentences author talks about three or four mechanisms applied in that period. That should be clarified.

Description of data and results

I would recommend to lower the number of figures and tables especially in the data description part. They can be easily moved to appendix.

The description of the Table 27 may imply that the DRG groups´ coefficients are the same even after inclusion of the "other" explanatory variables. For proper understanding it should be stated whether author observed relevant differences or not.

The description of the last three columns of the Table 32 is missing. Some partly ambiguous clue can be found in the following paragraph.

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

CATEGORY		POINTS
Literature	*(max. 20 points)*	18
Methods	*(max. 30 points)*	23
Contribution	*(max. 30 points)*	23
Manuscript Form	*(max. 20 points)*	5
TOTAL POINTS	*(max. 100 points)*	**69**
GRADE	**(1 – 2 – 3 – 4)**	**2**

NAME OF THE REFEREE: Michal Paulus

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Referee Signature