Opponent's Report to Diploma Thesis

Title: Efficiency Analysis of Selected Banks Using DEA Models

Student: Bc. Wenmeng Hu

Topic and Aim of Thesis:
Topic of diploma theses is focused on evaluation of effectiveness, resp. efficiency within bank branch, i.e. of selected banks with the help of Data Envelopment Analysis (DEA) – one of multicriteria decision making methods. Theses, resp. its theme is thus closely linked to issues of performance and evaluation of organizational performance and microeconomic performance (with respect to the fact that definition or organizations are generic and flexible). Performance has two dimensions – efficiency (input-output relations) and effectiveness (output-outcome relations). In diploma theses, banks are evaluated based on their ability to transform inputs into outputs, i.e. level of efficiency – topic of diploma theses is thus defined in correct form because DEA is based on input-output relations. Sometimes, it has happened that many researchers, authors etc. make no differences between efficiency and effectiveness, but effectiveness is linked with broader social-economic aspects and impacts of activities which are not measurable by DEA method. From this reason, using of DEA method seems to be a suitable way how to measure efficiency of banks. Nowadays, activities of enterprises in the market are linked especially with their ability to survive, thrive and gain advantage – what is in conditions of increasing global competition much more demanding. For this reason, search for better and more efficient ways of organizing and structure of sources are one of the most important tasks of management of each company, i.e. also of banks within the financial sector as one of the most important sector globally. In this context, choice of thesis topic with using of DEA method is topical, useful and meaningful.

The aim of thesis is to analyse the efficient situation of banks by DEA model. In terms of chosen structure and content of thesis, it is possible to say the goal was met. I think that content side and results fully correspond with options of topic, whose potential has been fulfilled. Results of thesis were described in many aspects and detailed and specifically developed, what is implied, with respect to thesis focus.

Structure, Processing Method:
The structure is clear and logical. The theses is divided into three substantive chapters, which are contiguous and accompanied by introduction and conclusion. In the first theoretical chapter, student engaged the financial statement of the banks and described input and outputs indicators to subsequent application of DEA method. The second theoretical chapter is devoted to definition and description of DEA. In this chapter are especially described CCR and SBM model used in empirical part of thesis. Third, empirical section and main part of theses, contains an application of selected DEA models. Firstly, analysis of financial statement of selected bank is made, then CCR and SBM model, resp. extension of SBM model applied to problematic. In the last part of this chapter, some changes are made to get much more realistic results about bank sector.

Individual chapters are logically connected and serves as a comprehensive picture of solved problems by basic theoretical knowledge and practical aspects. By theses processing, student has used citation apparatus based on list of references. I do not think so, references/literature potential hasn’t been fully utilized. Wide range of appropriate and available literature (both from theoretical as well as field of application) exist and is not fully utilized.
Formal Adjustment:
Formal aspects of theses is at a good level. Theses did not reveal serious errors or deficiencies. The text of theoretical parts is in analytical part completed by number of tables that are handled transparently and in a unified graphical format. Notes on literature are cited.

Comments, Suggestions for Discussion:
I have no serious comments to thesis. Within the defence discussion, I suggest the student should concentrate on answering the following questions:

1. The first used DEA model is CCR (Charnes-Cooper-Rhodes) model assuming constant returns to scale (CRS) – why does student use this model, resp. these orientation of returns to scale (RTS) and didn’t make an estimation for RTS orientation?

2. Based on CCR and SBM (Slacks-Based Measure) model, several units are evaluated as efficient, i.e. coefficient of efficiency equals to one, but on these conditions (several efficient units) is impossible to make comparison of evaluated group and say which unit is the most efficient. What is the solution (e.g. by DEA method) to deal with this issue and order all units in sample?

3. Student has used in thesis static DEA models for one time period, but is there any dynamic DEA approach, which would evaluate the efficiency of units across time? If so, what is this model, resp. are these models, and what would determine their use on problematic of thesis?

Thesis Conclusions and Contribution:
Within the diploma thesis, I appreciate using of DEA models and thus approach of bank efficiency evaluation not only by one basic DEA model, but with the help of several different approaches to problematic and description of their results, advantages and disadvantages with respect to topic. Theses gives a comprehensive view of problem and adequately describes the development efficiency of selected banks in two compared countries, especially based on combination information of financial analysis, DEA results and improvement/projection for each bank.

I recommend the diploma thesis to defence.

Ostrava, May 14, 2015

[Signature]
Ing. Michaela Staněčková, Ph.D.
Department of European Integration
Faculty of Economics
VŠB – TU Ostrava