

# Report on Master Thesis

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

<b>Student:</b>	<b>Lukáš Rečka</b>
<b>Advisor:</b>	<b>Milan Ščasný</b>
<b>Title of the thesis:</b>	<b>Shadow Price of Air Pollution Emissions in the Czech energy sector – Estimation from Distance Function</b>

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

Master thesis by Lukáš Rečka aims at deriving the shadow price of undesirable product, specifically airborne pollutants of Czech energy sector, by using theoretically sound approach. His thesis is not only well executed, but it is the first application of this kind, which has been so far done in CEE region.

The thesis starts with a review of possible approaches to estimate shadow prices of undesirable products, i.e. airborne pollutants in this case, and then continue with theoretical-sound methods to do so. It covers approaches based on distance function - the input, the output, and the directional output distance function - and contrasts them to another theoretically sound alternative that is an approach using the cost function as well as to the engineering studies. This description is well done and introduces as into the problem as into relevant economic theory. Chapter 3 reviews applications that derive shadow prices of pollutants based on the distance function, while next chapter describes his model, data and results and last one concludes.

I would only encourage author in his next work to pay more attention for documenting and interpreting his results. For instance, IDF is used to derive the shadow prices for Sample A (hard coal) and Sample B (brown coal) separately, however, tables 15 reports results for each firm from both samples. One can just ask which firm belong to which sample, it becomes to be more unclear however when one likes to interpret the results of Table 13 and Table 14. Are medians computed for both samples, or only for sample A? I would also appreciate detailed look at key player, i.e. ČEZ (#1). Interestingly enough, its shadow prices are comparable with marginal abatement costs estimated by CGE GEM-E3 for SO<sub>2</sub> and NO<sub>x</sub>, but the shadow price for PM are in ČEZ much smaller than in GEM-E3 that might indicate on exploring cheaper option in the past and requiring more expensive one in future (as in GEM-E3).

I recommend „excellent“(1) and suggest considering this thesis for one of the awards.

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

<b>CATEGORY</b>	<b>POINTS</b>
<i>Literature</i> (max. 20 points)	20
<i>Methods</i> (max. 30 points)	30
<i>Contribution</i> (max. 30 points)	28
<i>Manuscript Form</i> (max. 20 points)	18
<b>TOTAL POINTS</b> (max. 100 points)	<b>96</b>
<b>GRADE</b> (1 - 2 - 3 - 4)	<b>1</b>

**NAME OF THE REFEREE:** *Milan Ščasný*

**DATE OF EVALUATION:** *September, 7<sup>th</sup>, 2011*

---

*Referee Signature*

