Report on Bachelor / Master Thesis

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

Student:	Matej Kourilek
Advisor:	Jozef Barunik (Josef on a title page of the thesis)
Title of the thesis:	The Impact of German Renewable Electricity on Czech Electricity Spot Prices

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

Please provide your assessment of each of the following four categories, summary and suggested questions for the discussion. The minimum length of the report is 300 words.

Contribution This is a nice Master Thesis, I liked it and I enjoyed reading it. It would deserve elaboration into a good journal article. This Master Thesis contributes to the active literature on merit order effect (MOE) estimation. Interesting and novel feature of this paper is the key consideration of foreign RES production as a source of domestic MOE. As highlighted in the Suggested Questions section, the author should focus on clear and detailed structural and institutional explanation of a link between German solar/wind production and Czech spot market electricity prices.

From the literatue review it looks like only Haxhimusa (2018) is dealing with cross-border effect in MOE, however it look like his approch is better structurally defined (considering cross border flows, exports).

The issue of extraordinary high exports of Czech electricity and issues of cross border flow of electricity deserve more attention in Czech MOE estimations literature.

Methods Out of the relevant literature, IES thesis Tuma (2015) is close to this thesis. Author should address the methodological value added of this thesis as compared to Tuma (2015).

On page 8 author nicely explains important institutional change which makes Czech data from January 2015 onwards better relevant for true MOE estimation. This explains rather limited data coverage (why the data starts only in 2015).

Literature The Master Thesis covers relevant literature like Cludius et al. (2014) or Lunackova et al. (2017). However IES Master Thesis Ladislav Tůma Does solar energy have a future in Central Europe? (2015) is missing. List of references contains a number of mistakes, both plain typos and Latex defficiencies.

Manuscript form While the paper contains some typos and stylistical deficiencies, it is in general nicely readable.
While the author seems to be familiar and well up-to-date with relevant German legislature, the references to EU 20-20-20 goals are somehow outdated. The relevant 2030 frameworks is expressed in the Clean Energy for All Europeans Package (European Commission, 2016 – I apologise for not bothering with properly citing these EU documents). The adoption of this Package by the Council of the European Union in 2018 set two targets for the EU for 2030: a binding renewable energy target of at least 32% and an energy efficiency target of at least 32.5% - with possible upward revision in 2023. Full implementation of these policies will lead to steeper emission reductions for the EU than anticipated – about 45% by 2030 relative to 1990, as opposed to the existing target of a 40% reduction (European Council, 2014). These 2030 EU targets are accompanied by reform of the EU Emissions Trading System (ETS) for the 2021-2030 period (EU Directive 2018/410) and by a complex set of measures in the framework of the EU Energy Union (European Commission, 2017).

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While the author does a good job in explaining relevant institutional features of European electricity markets, the section 2.1 Liberalization of Energy Markets could be written more clearly. Both from the stylistic and logical content points of view.

On page 4, I do not see transformers in Fig. 2.1.

On page 6, the definitions of peak load and base load could be more clear. Is a peak load an addition (on the top of) a base load? Is Off peak = total load – base load – peak load? A picture of base, peak, off-peak loads over the hours of the week could be helpfull here.

On page 10 ,,Due to its weather conditions, the Czech Republic is not suitable for RES." Why and how are weather conditions substantially different for onshore wind and for solar in CR and other European countries, especially Germany? My understanding is that for photovoltaics the CR should not be significantly worse than German average. For wind, I am personally wondering if the prevalence of onshore wind in Germany as opposed to Czech Republic (and even more for Slovakia) is just a policy decision or if there are some significant geographical and wind pattern differences between these countries? (maybe large windy flat areas on the North of Germany and Poland are significantly better suitable for onshore wind than Czech/Slovak terrain?) It would be nice to see results of some rigorous study of this topic.

On page 10, if RES defined as solar+onshore wind+offshore wind, then offshore wind is last and least (not: ,,last but not least").

Page 13, line 1: why is ,,amount of energy generated" included in MO definition?
(also, it would be better to strictly use electricity, not energy, when electricity is concerned).

Page 19 Wind offshore no 0 observation statement does not agree with the table 4.1 on page 20.

Summary and suggested questions for the discussion during the defense

The discussion of structural connection between German renewable production and Czech spot price of electricity should be done during the defence. Also the methodological contribution of this new Master Thesis with respect to Tuma (2015) thesis could be covered during the defence.

Benefit-Cost analysis on page 51 should be elaborated during the discussion. And the proper computation of MOE should be clearly explain. While the direct MOE for Czech RES is standard and straightforward, the main concern is with proper consideration of German effects.

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

CATEGORY		POINTS
Contribution	*(max. 30 points)*	25
Methods	*(max. 30 points)*	28
Literature	*(max. 20 points)*	15
Manuscript Form	*(max. 20 points)*	16

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TOTAL POINTS	*(max. 100 points)*	84
GRADE	(A – B – C – D – E – F)	B

NAME OF THE REFEREE: Karel Janda

DATE OF EVALUATION: May 23, 2019

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Referee Signature

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*

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*

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*

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	GRADE
91 – 100	A
81 - 90	B
71 - 80	C
61 – 70	D
51 – 60	E
0 – 50	F