Opponent's Report on the Submitted Dissertation by Michal Mravec entitled "The Road to Efficient Liberalization of the EU Energy Markets: Some Obstacles and Consequences"

The topic of the three chapters of this dissertation was inspired by the legislative directives of the European Union introduced in the years 1998, 2003 and 2009. These directives were concerned with market liberalization in the gas and electricity industry. The issues considered in this dissertation involve the degree of success, if any, of making the markets competitive as intended by the legislation. Two of the chapters are theoretical and one is empirical.

The first chapter deals with the natural gas market in the Czech Republic, a country characterized by absence of domestic production and limited foreign competition. The market opening in 2005 was, contrary to expectations, followed by an increase in gas prices, and the market keeps on being dominated by the RWE group. The author's models are based on extending the standard Cournot oligopoly model to reflect this kind of situation. The models demonstrate how import dependency and limited foreign competition inhibit efficient market liberalization. The survey of the literature related to this topic is comprehensive and shows that the relevant market studies do not provide a clear comparison of the regulated and liberalized situations which the author addresses in this chapter. The models presented are well categorized and clearly explained. The comparison of the pre-liberalization and post-liberalization scenarios reveals obstacles, such as long term contracts and similar, on the way to efficient market structure,

The second chapter introduces the role of storage in the liberalization process. Since natural gas storage is an important part of the supply chain, it is also affected by the

structure of the market in the context of the Czech Republic. The basis of the analysis is the development of successive oligopoly models of the first chapter. Much of the relevant literature is the same as in the preceding chapter, as is the categorization of the models which, by now, are enriched by the introduction of the storage factor. Of special significance is the distinction between the situation in which storage is controlled by RWE and one in which the storage operator is a separate monopolist. The results of the analysis indicate a need for a mechanism that would prohibit the storage operator from monopolizing the market.

The third chapter deals with the effect ownership unbundling in the entire European electricity market. The crucial point is the separation of the energy production and supply from the transmission networks. The issue here is whether ownership unbundling promotes competition or not. The attempted answer is based upon an empirical investigation of the price equations for industrial customers and for households. The specified explanatory variables are the regulatory reform variables and the relevant control variables. These two equations are treated as seemingly unrelated regressions whose disturbances are—reasonably—assumed to be correlated. The panel data used come from different sources and comprise the years 2000 through 2008.

The major criticism of the work on this dissertation relates to the econometrics of the third chapter. Specifically, equation (3), which is artificially constructed as a combination of equations (1) and (2), contains no new information and is absolutely redundant. It certainly makes no sense in including it as a part of the system of SUR equations in the process of estimation. It is of very marginal use and should be moved to Section 3.7.1 as

a part of sensitivity analysis. Further, since the main purpose of the third chapter is to test hypotheses about the effectiveness of regulatory measures, it should include a more rigorous statement of the null and of the alternative hypotheses.

In addition to the tests regarding the values of the individual coefficients (i.e., t-tests), the author should also carry out test of joint hypotheses involving all ten coefficients in the marketing opening group and, separately, all ten coefficients in the unbundling group (i.e., F-tests). The interaction coefficients should be similarly tested. (Incidentally, the footnote on page 78 is an excellent reminder of cautiousness in interpreting the results.)

Minor comments and corrections

Page 1, second paragraph: (a) Is the "failure of competition" in the European energy markets so well known that it needs no documentation?
(b) The term "upstream" (along with "downstream" used later) deserves an explanation for readers not specializing in IO.
(c) What is meant by "improper structure"?

Page 2, lines 8-10 from the bottom: The typical barriers to entry are low prices (as a result of economies of scale or due to price wars) and not high prices as stated. An explanation would be helpful.

Page 3, middle of the second paragraph: The only way I can interpret "good institutional quality" is by a low level of corruption, which should lead to lower—not higher—prices as stated.

Page 12, last paragraph: Constant marginal cost implies a linear cost function (as noted in the middle of page 20) and thus the reference to a "linear production function" is confusing.

Page 20, line 7: "(t)his chapter" should read "this section".

Page 21, middle: It would be helpful to show the "comparison" in a tabular form as on page 19.

Page 24, near top: ditto!

Page 61, line 16: "…under which the it is possible". English?

Page 64, line 14: The reference to Fiorio (2007) is not shown in the bibliography!

Page 65, line 16: "…separation of at least accounts." English?

Page 69, line 2: Isn't the country effect also present in the equation for industrial customers?

Page 69, line 2 from the bottom: The sentence starting with "The approach…" goes on for 7 lines of text!

Page 85, last line: What does it mean "the estimate cannot be…representative"? "Representativeness" is not listed as any of the desirable properties (such as unbiasedness, consistency, etc.) in any econometric text!

Page 96, second and third paragraphs: The specification and notation of the two equations is completely unclear. If the alphas and betas represent parameters, then their values are never known. If they are estimates, then they should be crowned with tildes and related to the estimates of the two equations on page 68.

Page 98, line 13: It might be worth mentioning that these conclusions are based on the estimates of the interaction effects that are included as extra explanatory variables in the equations (1) and (2) .

Evaluation

This dissertation is, on the whole, an excellent piece of work. It is extremely well organized, the presentation of the material, particularly that in tabular forms, is exemplary and the writing is very clear and smooth. The results are definitely new and contribute to our knowledge of the energy markets. The weaknesses as noted are mostly minor and should be easily rectified. When that is done, I have no hesitation in strongly recommending the award of a doctorate.

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