Report on Bachelor / Master Thesis

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

Student:	**Bc. Vendula Letovska**
Advisor:	**prof. Ing. Karel Janda M.A., Dr., Ph.D.**
Title of the thesis:	**Structural Modelling of Impact of Ethanol on U.S. Gasoline Prices**

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

Please provide a short summary of the thesis, your assessment of each of the four key categories, and an overall evaluation and suggested questions for the discussion. The minimum length of the report is 300 words.

Short summary
Vendula Letovska's master's thesis delves into the complex relationship between ethanol policies and gasoline prices in the United States. The research employs a multi-model approach, utilizing both partial and general equilibrium frameworks to examine the effects of ethanol blending mandates and tax credits on consumer fuel prices.

By analyzing data spanning from 2009 to 2022, Letovska simulates various policy scenarios, focusing on different ethanol blend rates and the now-expired Volumetric Ethanol Excise Tax Credit (VEETC). The study's findings challenge the initial hypothesis, revealing that higher ethanol blend rates tend to correlate with lower fuel prices at the pump. Additionally, the research suggests that reintroducing ethanol tax credits could lead to notable savings for consumers.

Letovska extends her analysis into the future, projecting potential outcomes through 2030. These forecasts indicate that the trend of lower fuel prices associated with higher ethanol blend rates may continue, offering valuable insights for policymakers and industry stakeholders.

Contribution
The thesis makes several valuable contributions to the existing literature on biofuel economics and policy impacts:

1. It provides a thorough replication and verification of three established microeconomic models, demonstrating their validity and applicability.
2. The author derives adjusted fuel price models based on the original frameworks, enabling direct analysis of fuel price impacts.
3. The empirical analysis offers comprehensive simulations and projections of blended fuel prices under various policy scenarios, providing insights for both historical (2009-2022) and future (2023-2030) periods.
4. The findings challenge some prevailing assumptions about ethanol blending impacts on fuel prices, potentially informing future policy decisions.
5. The long-term forecasts could be particularly valuable for policymakers and industry stakeholders in understanding potential market dynamics.

While not revolutionary in its theoretical approach, the thesis demonstrates excellent technical skills and provides a significant update to existing research in the field of biofuel economics. The author's comprehensive replication and extension of established models, coupled with the application to an extended and more recent dataset, offers valuable insights into the current state of ethanol policies and their impact on fuel prices. The derivation of adjusted fuel price models, while building on existing frameworks, shows analytical creativity and enhances the practical applicability of these models to current market conditions.

Methods
The methodological approach is sound and well-executed. The author demonstrates a strong grasp of the underlying economic models and applies them appropriately to the research questions. The use of

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multiple models (both partial and general equilibrium) strengthens the analysis by providing different perspectives.

The data sources are reputable and relevant. The author's approach to forecasting, using projections from authoritative sources like the EIA and USDA, is appropriate for long-term analysis.

However, there are some areas where the methodology could be strengthened:

1. The lack of confidence intervals or robustness checks for the model results is a notable omission. This makes it difficult to assess the statistical significance of the differences between model outputs.
2. More discussion on the limitations of the models and potential biases would enhance the critical analysis.
3. I miss the overall discussion section, where the author would contrast her results with other papers (not just with authors of models she used).

Literature

The literature review is comprehensive and well-structured. The author demonstrates a thorough understanding of the relevant academic discourse surrounding biofuels, ethanol policies, and their economic impacts. The review effectively contextualizes the research within the broader field and justifies the choice of models and research questions.

Manuscript form

The thesis is well-written and logically structured. The use of tables and figures effectively supports the presentation of data and results. The language is clear and appropriate for academic writing, and the formatting is consistent throughout the document.

Overall evaluation and suggested questions for the discussion during the defense

In my view, the thesis fulfills the requirements for a master's thesis at IES, Faculty of Social Sciences, Charles University. I recommend it for defense and suggest a grade A.

The results of the Turnitin analysis do not indicate significant text similarity with other available sources.

Suggested questions for the defense:

1. On page 30, you state: "Theoretically, the wholesale price of ethanol could be effectively reduced by implementation of **a government subsidy which would decrease the cost** of ethanol production and hence encourage producers to make more ethanol." Could you elaborate on this assumption? How might this differ from agricultural subsidies in the EU for food production, and what factors could complicate this seemingly straightforward relationship between subsidies and production? What type of subsidies you have on mind?

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2. Your analysis uses three different models but lacks confidence intervals or robustness checks. How confident are you that the results from these models are significantly different from each other? What methods could you employ to strengthen the statistical validity of your comparisons?
3. Your projections suggest continued benefits from increased ethanol blending through 2030. What potential technological, economic, or policy changes might alter these projections, and how could your model be adapted to account for such shifts?

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

CATEGORY		POINTS
Contribution	*(max. 30 points)*	27
Methods	*(max. 30 points)*	25
Literature	*(max. 20 points)*	20
Manuscript Form	*(max. 20 points)*	20
TOTAL POINTS	*(max. 100 points)*	**92**
GRADE	*(A – B – C – D – E – F)*	A

NAME OF THE REFEREE: Matěj Opatrný

DATE OF EVALUATION: 8/8/2024

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Referee Signature

<u>**EXPLANATION OF CATEGORIES AND SCALE:**</u>

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.*

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.*

LITERATURE REVIEW: *The thesis demonstrates author's full understanding and command of recent literature. The author quotes relevant literature in a proper way.*

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.*

<u>*Overall grading:*</u>

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