

## HABILITATION THESIS REVIEWER'S REPORT

### Masaryk University

**Applicant**

Ing. Vilém Pařil, Ph.D.

**Habilitation thesis**

The sustainable transport system and policy design in metropolitan context: environment facing transport or vice versa?

**Reviewer**

Assoc. Prof. Ari Krisna Mawira Tarigan, Ph.D.

**Reviewer's home unit, institution**

Faculty of Science and Technology,  
University of Stavanger

### Summary

The habilitation thesis explains the challenges of economic policy reflecting long-term transformations of sustainable transportation systems in Central European cities, focusing on economic and environmental context. The research is divided into five main topics.

- 1) Topic one discusses what is the so-called metropolisation process in Central European cities. This study introduces a typology of metropolitan and large-scale cities of Central Europe. The study later analyses the attraction and connection between Prague and Brno to the Central European cities.
- 2) Topic two discusses the environmental cost of suburbanisation based on municipal expenditure on protecting the environment in Czechia. The results show that municipalities with the most outstanding water protection expenses per capita are exposed to a suburbanisation burden and are situated in neighbourhoods of Czech metropolitan centers. Disparities between municipalities clearly show that less populous municipalities' water protection costs per capita are three times those in bigger towns.
- 3) Topic three discusses the cost of PM10 due to intense traffic activities in the main motorway network of Czech. The study observed three EU data and explained the effects of air pollution on several health-related parameters and its costs.
- 4) Topic four discusses the competition in long-distance transport. It explores different entry regulations' effects on company conduct and mobility behaviour. The study reflects three railway markets with significantly other entry policies using data on prices and frequencies and a survey conducted to obtain revealed preferences. The results have revealed low price variation across the rail and bus markets, suggesting low monopoly power for the monopolised incumbent and its uniform price strategy across markets with different entry regulations. Also, it shows high price sensitivity among travellers, confirming the intramodal competition's substance.
- 5) Topic five explains the consequences of discounts and free fares for long-distance travel. The results show that policies significantly increased ridership and the modal share of railways. The mobility of the targeted groups was significantly affected, and the share of

young and elderly riders increased. The study argues that the policies were costly and had some undesirable side effects that could have been prevented by better policy design.

### **Reviewer's questions for the habilitation thesis defence:**

1. Can the candidate explain briefly the connection between topics 1,2, 3, 4, and 5?
2. What are the most important topics across the five topics presented in the study to address better sustainable transport in Central Europe?
3. What are the novelty of this research that is useful for the scientific communities?
4. What possible recommendations are to policymakers/practitioners based on findings from the five topics to address sustainable transport in Central Europe, and Czech in particular?
5. Why does the topic of research focus on metropolitan cities only? Why are small and medium-scale cities not included in the study?
6. In topic one, the gravity model is introduced. The model has been used for many years, while new methods have been introduced over the last ten years in research to explain how a city attracts other cities. Has the candidate considered other methods? If yes, what are the strengths of the gravity model compared to the other methods?
7. In topic two, can the candidate indicate the expenditures of environmental protections by local governments in Czech since tax incomes drive the public expenditure? Metropolitan cities like Prague and Brno can spend more on public expenditures on environmental protection. The split is often based on political interest rather than the need for specific sectors to address the problems through public investment. Therefore, it can be misleading to interpret the split of public expenditures on different environmental projects as the efforts of environmental protection. Can the candidate explain how we can connect the findings from topic two with these discussions?
8. Topic three is very interesting. In Figures 4, 5, and 6, EEA data differs quite from the data from HEIMTSA and HEATCO. HEIMTSA and HEATCO are quite consistent. Does the candidate know why they are quite different?
9. Intramodal and intermodality alternatives are discussed in topic four. Can the candidate explain possible examples and how the two can influence the competition in the railway sector, like the case of three Czech lines?
10. Based on topic five, please clarify why discounted and free fare transport are costly. Compared to what? It may be possible that the overall cost (direct and indirect cost) of subsidised public transport is cheaper than non-subsidised public transport. What are the policy designs that ensure the overall cost will be lower?

### **Conclusion**

The habilitation thesis entitled *The sustainable transport system and policy design in metropolitan context: environment facing transport or vice versa?* by Ing. Vilém Pařil, Ph.D. **fulfils** the requirements expected of a habilitation thesis in the field of Economic Policy.

Date: 10.09.2023

Signature: