Report on **Master Thesis**

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

Student:	**Bc. Josef Štefl**
Advisor:	**Mgr. Petr Polák, MSc., Ph.D.**
Title of the thesis:	**High Frequency Price Index of Construction Materials: Nowcasting of Producer 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
In hir thesis, Josef Štefl The thesis addresses an important and timely topic by focusing on the nowcasting of producer prices using a high-frequency price index for construction materials (CMPI) derived from web-scraped data. The research covers a period from October 2021 to June 2024 and offers novel insights into inflation forecasting within the construction sector. Given the relative scarcity of literature in this niche, the study significantly contributes to both academic research and practical economic forecasting by developing a new price index and exploring its applicability in predicting official producer price indices.

Contribution
The thesis is based on a very unique dataset – the author collects the data by himself every week for the last 3 years. That is a very hard work to keep it running aside from the analysis. Nowcasting of anything is very relevant not only for businesses but also policy markers. Forecasting PPI as such is a very hard to do and every piece is helpful.

Methods
The methodology is robust and involves the compilation of the Construction Materials Price Index (CMPI) using web-scraped data from three major Czech e-shops with construction materials. The use of multiple econometric models such as ARIMA, ARIMAX, LASSO regression provide a strong foundation for the thesis. The decision to use only certain econometric models, while well-justified, could have been complemented with alternative approaches such as machine learning algorithms, which are increasingly used in nowcasting and big data analysis.

Literature
The work with the literature is proper and follows academic standards, when working with primary sources. The literature review is comprehensive and well-structured, presenting key studies on web scraping in economics, inflation forecasting, and econometric methods used in high-frequency data analysis. The author effectively situates his research within the broader academic field as studies focusing on PPI forecasting are rather limited.

Manuscript form
The thesis is nicely written and easy to follow. The layout and all the figures are both in a superb quality.

Overall evaluation and suggested questions for the discussion during the defense
I really like the topic and how Josef did his work. I am biased by the fact that I really admire the hard work behind the data collection and even if the attempts to link the index to the commodity prices were not successfull it at least did show, that price movement are possibly rather supply/demand nature and expectations and any following research should focus on that. The thesis could be also improved by employment of some machine learning techniques that are useful in situations when there is some change on the market as indentified by the thesis.

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Suggested Questions for Defense:
Do you think that changes made by CSZO are done properly based on your data and analysis? What your index captures better than CSZO and vice-versa?

What would you suggest for the follow up research as ways to improve the forecasting performance?

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

In my view, the thesis fulfills the requirements for a bachelor thesis at IES, Faculty of Social Sciences, Charles University, I recommend i:t for the defense and suggest a grade A.

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

CATEGORY		POINTS
Contribution	*(max. 30 points)*	30
Methods	*(max. 30 points)*	21
Literature	*(max. 20 points)*	20
Manuscript Form	*(max. 20 points)*	20
TOTAL POINTS	*(max. 100 points)*	**91**
GRADE	**(A – B – C – D – E – F)**	**A**

NAME OF THE REFEREE: Petr Polák

DATE OF EVALUATION: 8. 9. 2024

Digitally signed (8. 9. 2024)
Petr Polák

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Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

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.*

Overall grading:

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