Report on **Bachelor / Master Thesis**

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

Student:	**Jakub Láža**
Advisor:	**Jan Šíla**
Title of the thesis:	**How Does Bitcoin React to Economic Uncertainty Volatility Shocks?**

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

Short summary

The thesis investigates the role of Bitcoin as a hedge against Economic Policy Uncertainty (EPU), as it was one of the original motivation for creating it. It considers three different EPU indicies and evaluates the risk transmission between them and Bitcoin using a novel methodology of Dynamic Networks. It describes the dynamic of volatility shocks' transmission within the system and discusses how it is influenced by specific events and economic periods. The topic contributes to a relevant economic discussion.

Contribution

The thesis is an empirical investigation of the transmission of risk, in the form of EPU, and Bitcoin. Firstly it discusses how to handle the EPU Index so that it is meaningful to use it in a time-series analysis. Also it shows how to derive a series of uncertainty from Google trends, thus introducing the EURQ index (as labeled in the thesis) with daily granularity.
But mainly it estimates a Dynamic Network system, which is a generalization of the standard approach literature and it enables new insights into the spillover dynamics.
The topic is well motivated and introduced in the first chapter, which reads exceptionally well.

Methods

The Dynamic Networks methodology is an advanced model, definitely for a BSc level, and the thesis shows a good understanding of the theory as well as interpretation of the results. The work discusses in good detail how to estimate the model and how to calibrate the parameters. Jakub shows good understanding of method and discusses its outputs well.

Literature

Chapter 2 discusses the current findinds and Jakub builds on recent and relevant results. In my opinion, the review is a little separated and I believe a reader would benefit from better connected parts and links to the motivation of the paper. It is also partly written as methodology, or quite technically; for example the first part of the Literature Review describes how Bitcoin actually works, rather than how literature discusses its place as EPU hedge. In my opinion, the link to the motivation is a little weaker and the methodological paragraphs are not necessary here. But my reservations pertain to the form, rather than the content, which is appropriate and covers the current literature well.

Manuscript form

The text is logical, well organized and concisely written. The manuscript itself attains a high academic quality and the outputs are well readable and have individual notation. There are occasional typos and typographical errors, but not excessively. The results section would probably also benefit from a little clearer explanation of the main results, sometimes I was a little lost in the text. The intro to Results should answer the main question from the Introduction, which I am missing. I would suggest dissecting the main result and additional results in sections, as they were already used and so that the main

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result and discussion on it is clear and accompanied by all the necessary outputs. Also, when directly referring to a figure in the main text, it should not be in the Appendix.

Overall evaluation and suggested questions for the discussion during the defense

Overall, I enjoyed reading the thesis and it shows a great deal of diligent work on the part of the student. In my opinion, this thesis attains the highest standard of BSc work at IES and I would be delighted to see it develop further in MSc thesis or an academic work.

Suggested questions for a defense:

- Did you consider any other factors for the model? Or do you conclude the system as is is fully defined?
- In the discussion about the horizon decomposition, you say the long term component surpasses the short-term. But their confidence intervals overlap, do they not?
- Do you see a difference in the nature of the EPU indices and then their interpretation? EPU Index itself, could be forward-looking, as journalist might warn ahead, then I would think that perhaps Google searches reflect the current reality, rather than expectations like EPU Index or VIX. Do you see any differences there?

1. *In my view, the thesis fulfills the requirements for a bachelor thesis at IES, Faculty of Social Sciences, Charles University, I recommend it for the defense and suggest a grade A*
2. *The results of the Urkund analysis do not indicate significant text similarity with other available sources.*

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

CATEGORY		POINTS
Contribution	*(max. 30 points)*	30
Methods	*(max. 30 points)*	30
Literature	*(max. 20 points)*	16
Manuscript Form	*(max. 20 points)*	15
TOTAL POINTS	*(max. 100 points)*	**91**
GRADE	**(A – B – C – D – E – F)**	**A**

NAME OF THE REFEREE: Jan Šíla

DATE OF EVALUATION: 28.8.2022

Digitally signed (28.8.2022)
Jan Šíla

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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**