

# Report on Bachelor Thesis

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

<b>Student:</b>	<b>Markéta Pěnkavová</b>
<b>Advisor:</b>	<b>Prof. PhDr. Ladislav Křišťoufek, Ph.D.</b>
<b>Title of the thesis:</b>	<b>Dynamics of Bitcoin mining profitability and its break-even electricity costs</b>

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

*Please provide your assessment of each of the following four categories, summary and suggested questions for the discussion. The minimum length of the report is 300 words.*

### **Contribution**

The thesis studies a very interesting and dynamic topic of Bitcoin mining. Recently, this has become even more important as Bitcoin halving (that happens approx. every 4 years) took place recently. From the perspective of cryptocurrency/cryptoassets research, the most frequently studied topics are very financial, i.e., usually standard tools of financial econometrics or networks applied to these specific datasets. The topic of mining is in a way marginal, probably due to the fact that you actually need to understand what is going on in the topic. The author has shown that she understands the technical background of mining and the results are quite interesting. In a way, the thesis is a replication and extension of my paper in Energy Economics (published 2020) and as such, it provides new insights into the topic. I believe the paper is contributive enough that it deserves publishing in a peer-reviewed journal.

### **Methods**

Standard vector autoregressive and cointegration (error-correction models) are applied correctly and all necessary tests have been taken. Note that these are covered at the master's level at IES. We have discussed the empirical part quite frequently and I see no problematic parts.

### **Literature**

Methodological papers are well covered. I could imagine better coverage of the crypto-papers but that is marginal.

### **Manuscript form**

The manuscript is well structured and it reads fine, no problems found here. As always, one can imagine nicer figures, but again, marginal.

### **Summary and suggested questions for the discussion during the defense**

Overall, this is a very nice thesis and for a bachelor's thesis, it is well above average and I believe it would be defended as a master's thesis as well. As noted above, the results should be published in a peer-reviewed journal. We will work on that after the defense.

The document has been checked by Urkund with a total score of 2% with practically no overlays with other texts.

For the defense, I have one question: What do the results imply for the mining in general? Is it profitable? What does it imply about possible "dumping mining" or illegal electricity usage?

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

<b>CATEGORY</b>	<b>POINTS</b>
<i>Contribution</i> (max. 30 points)	28
<i>Methods</i> (max. 30 points)	30
<i>Literature</i> (max. 20 points)	18
<i>Manuscript Form</i> (max. 20 points)	19
<b>TOTAL POINTS</b> (max. 100 points)	<b>95</b>
<b>GRADE</b> (A – B – C – D – E – F)	<b>A</b>

### **NAME OF THE REFEREE:**

**prof. PhDr. Ladislav Křišťoufek, Ph.D.**

**DATE OF EVALUATION: 1. 9. 2020**

*Digitálně podepsáno (1. 9. 2020):  
Ladislav Křišťoufek*

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**Referee Signature**