

Report on Bachelor Thesis

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

Student:	Daniel Ondruška
Advisor:	Doc. PhDr. Ladislav Křišťoufek, Ph.D.
Title of the thesis:	Interplay between Bitcoin price and its mining difficulty

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.

The thesis analyzes the interaction between Bitcoin and Ethereum prices and their mining difficulties, or more precisely, hashrates of their networks. The intuitive idea is rather simple – when the prices increase, the mining revenues increase as well which gravitates more miners into the system which in turn increases the hashrate. What is not completely clear is the effect towards the other direction, i.e. whether the increased mining hashrate and thus also mining costs have some effect on the price itself, potentially forming spiraling dynamics. As it turns out, the latter is not the case.

Contribution

Most of the financial cryptocurrency literature focuses on trading strategies, stylized facts, and other practically purely financial topics whereas the topic of mining remains much less studied. The contributions are thus pretty much given just by this. Even though the presented results confirm what one might expect, it is certainly nice to see that the market dynamics works according to the economic intuition even for cryptocurrencies markets, which are often labelled as irrational and nonsensical.

Methods

The applied methods are standard for the given specification, i.e. the cointegration framework. It is well presented but a more detailed treatment of the cointegration type selection could have been given.

Literature

The literature review is fine but some of the most current papers are not covered.

Manuscript form

I have some issues with the form mainly with respect to the tables which could have been given more time. Some of them are even not needed in the main text (such as the full VAR/VECM tables). In addition, there are some tiny issues such as having Appendix A twice.

Summary and suggested questions for the discussion during the defense

The thesis presents a very interesting topic understanding of which needs a focused interest into the cryptocurrency markets which is certainly not a part of the standard curriculum. Overall, I suggest the B grade for the defense. In case of a very strong defense, I would lean towards A. Possible question for the defense: Does it make sense that the hashrates of BTC and ETH are related?

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

CATEGORY	POINTS
<i>Contribution</i> (max. 30 points)	28
<i>Methods</i> (max. 30 points)	28
<i>Literature</i> (max. 20 points)	17
<i>Manuscript Form</i> (max. 20 points)	16
TOTAL POINTS (max. 100 points)	89
GRADE (A – B – C – D – E – F)	B(+)

NAME OF THE REFEREE:

doc. PhDr. Ladislav Krištoufek, Ph.D.

DATE OF EVALUATION: 30.5.2019

Referee Signature