Report on Bachelor / Master Thesis

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

Student:	**Jinggang Jiang**
Advisor:	**doc. Mgr. Tomáš Holub, Ph.D.**
Title of the thesis:	**The Principle and Economic Analysis of Bitcoin**

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
The submitted thesis tries to analyze the foundations of bitcoin from the economic perspective. The majority of the thesis is devoted to a description of historical development of cryptocurencies and Bitcoin specifically. In the empirical part, the author analyzes the properties of the Bitcoin time series and its relation to selected macroeconomic variables. The author finds that the price of bitcoin is weakly correlated with changes in macroeconomic indicators and that bitcoin has a high degree of investability.

Contribution
The contribution of the thesis is very limited, if any. In the section 1.2 p.12, the author claims that „the impulse response and variance decomposition are used to determine the interaction relationship between variables and the degree of influence.", unfortunately, no such analysis is presented in the text. Moreover, in section 1.4 author claims that he „study the technical principles of Bitcoin, and dig into the economic principles behind Bitcoin through a deep technical study of Bitcoin", however, the thesis does not provide such analysis, or at least I was not able to find it. Furthermore, at the very beginning of the thesis author provide us with very confusing definition of cryptocurrencies (see footnote 1 on p.8) and author claims that „stablecoins" are not cryptocurrencies! Given that I strugle to find any clear contribution of the thesis.

Methods
Methods used in the empirical part of the thesis are not described at all.

The author starts with variable selection and claims that these variables can be downloaded from hk.investing.com. Looking at the website, tickers mentioned in the text such as BPI, EX, ... do not refer to data that the author is using. I do not understand why standard BTC abbreviation is not used for Bitcoin, but instead, BPI is used.

The title of section 5.1 is interesting , i.e. „Bitcoin Price Volatility and Macroeconomic Linkages", however, the rest of the section contains only description of the data source and descriptive statistics. In this section we thus learn nothing what was promised by its title.

Next, the author does not finish the sentence with a description how the variables are transformed to percentage change on the bottom of p.39. Furthermore, the author claims that he is using weekly data from 2013 to 2018 (p. 39)– in that case, it does not add up to have „sample size of a single variable is 1473" as stated on p.40. In the subsequent part author further transforms the data by natural logarithm making the analysis even more confusing – are we looking at prices or returns, or something else?

On p.41 author concludes that volatility of BPI is much higher than other financial assets – is this conclusion based purely on descriptive statistics?

The VAR is not defined at all and eq. 5.1 is not the VAR equation. The author later identify cointegration among all variables but the concept of cointegration is not explained. I also highly doubt that BTC is cointegrated with S&P 500 index, Gold COMEX futures or other variables used in thesis. Description of tests (such as JJ test) used in the thesis are not provided, nor their results are properly interpreted.

Report on Bachelor / Master Thesis

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

Student:	**Jinggang Jiang**
Advisor:	**doc. Mgr. Tomáš Holub, Ph.D.**
Title of the thesis:	**The Principle and Economic Analysis of Bitcoin**

Literature
The literature review provided by the author is very limited, and many important studies are missing. To illustrate, section „2.4 Empirical studies related to Bitcoin" reviews 5 studies. The author is also referencing to some video lecture in section 6.3, but the link to that lecture is not provided.

Manuscript form
The manuscript form of the thesis is not of a good quality. The non-exhaustive list of manusript problems:

- very long abstract
- several types of text formating, e.g. p.6 third line in the table of contents
- intoduction starts at third level of numbering (same for section 5)
- some sentences are repeatedly used in the text right one after each other: p.13 „*... and discussing the interrelationship and degree of influence of the variables through impulse response and variance decomposition. The interrelationship between the variables and the degree of influence are discussed by impulse response and variance decomposition."*
- what is supposed to be a footnote actually is not a footnote (e.g. footnote 1 on p.7 and p.8)
- in many cases, there is missing punctuation
- many very long (e.g. more than 5 lines) sentences
- randomly joined sentences, e.g. p.18 „*Financial intermediaries are needed to act as third parties to achieve a fair transaction, and to solve such problems, financial institutions charge a fee.*"
- different formating of p. 21 and p. 39
- Figures of poor quality, source of figures almost always missing
- word „Bitcoin" used in various forms e.g. Bitcoin, bitcoin, BitCoin
- given previous point it seems to me like the text was not written by single author – „BitCoin" appears only in p.28; more importantly, the quality of text varies considerably throughout the thesis, for example, section 1.1.1 vs 3.2.3

Overall evaluation and suggested questions for the discussion during the defense
Overall, the thesis aims to analyse Bitcoin from the economic point of view by means of traditional time series analysis (i.e. VAR, impulse response, variance decomposition etc), however, the author fails to provide such analysis. Furthermore, the description of the methods intended to be used in the thesis as indicated by introduction is missing completely. Moreover, the results of the empirical analysis are not adequately commented or are not commented at all. The author's work with literature is very limited, many important papers on the empirical properties of Bitcoin are missing and some sources used in the thesis are not cited and are not included in the list of references. The text of the thesis should be carefully revised because some parts are hard to read/understand and there are quite a lot of typos, inconsistencies in formatting, etc. Therefore, in my view, this thesis does not fulfill the requirements for a master thesis at IES, Faculty of Social Sciences, Charles University. I do not recommend it for the defense and suggest a grade F.

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

Report on Bachelor / Master Thesis

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

Student:	**Jinggang Jiang**
Advisor:	**doc. Mgr. Tomáš Holub, Ph.D.**
Title of the thesis:	**The Principle and Economic Analysis of Bitcoin**

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

CATEGORY	POINTS
Contribution *(max. 30 points)*	3
Methods *(max. 30 points)*	3
Literature *(max. 20 points)*	3
Manuscript Form *(max. 20 points)*	5
TOTAL POINTS *(max. 100 points)*	**14**
GRADE (A – B – C – D – E – F)	**F**

NAME OF THE REFEREE: František Čech

DATE OF EVALUATION: 24.5.2021

Frantisek Cech

Digitally signed by Frantisek Cech
Date: 2021.05.24 14:30:05 +02'00'

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**