Report on **Bachelor / Master Thesis**

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

Student:	**Tomáš Šembera**
Advisor:	**František Čech**
Title of the thesis:	**The Volatility Patterns and Correlation of Cryptocurrencies: Overcoming the Bitcoin's primacy**

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

Contribution

The thesis contributes to the literature devoted to analysis of the new phenomenon called cryptocurrencies. Author provides us with detailed description of the theoretical concept of cryptocurrencies - besides well-known Bitcoin several alternatives to it are described. The main part of the thesis consists of volatility analysis of the cryptocurrencies. In the empirical application main result is that cryptocurrencies are interconnected and in some cases highly correlated.

Methods

Methods used in the thesis are standard in time series literature. Besides traditional univariate ARMA analysis combined with several variants of GARCH model author also performs correlation analysis using BEKK multivariate extension of GARCH. The methods and concepts used throughout the thesis are described carefully and applied in a correct way.

Literature

Cryptocurrencies are relatively new topic in economics and there is only limited amount of relevant literature. From my point of view author was able to select the most important studies to describe cryptocurrencies as such. Generally, author shows good knowledge of the literature and his interest in the topic. There is also one drawback concerning the work with literature – author is referencing to model documentation (GARCH Documentation, EGARCH Documentation,…) in the description of the models. It would be certainly better to work with original scientific articles only.

Manuscript form

Manuscript form is the weakest part of the thesis. There are quite a few typos in the text, use of „ibid“ is not standard in economic literature and sometimes might be confusing, there is missing reference in Bibliography for work of Bollerslev, Engle and Wooldridge (1988) although it was cited in text (p.23), VECH-GARCH is multivariate extension of GARCH and not generalization of GARCH (p.23). In the section Data there are mentioned 2 sources of the data - cryptocompare.com and Poloniex , however in section 5.1.1. web page coinmarketcap.com is presented as a data source for Bitcoin.

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

CATEGORY		**POINTS**
Contribution	*(max. 30 points)*	27
Methods	*(max. 30 points)*	27
Literature	*(max. 20 points)*	16
Manuscript Form	*(max. 20 points)*	14
TOTAL POINTS	*(max. 100 points)*	**84**
GRADE	**(1 – 2 – 3 – 4)**	**1**

NAME OF THE REFEREE: František Čech

DATE OF EVALUATION: 3.9.2017

Čech

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Datum: 2017.09.03 12:23:54 +02'00'

Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

LITERATURE REVIEW: *The thesis demonstrates author's full understanding and command of recent literature. The author quotes relevant literature in a proper way.*

Strong	*Average*	*Weak*
20	*10*	*0*

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.*

Strong	*Average*	*Weak*
30	*15*	*0*

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.*

Strong	*Average*	*Weak*
30	*15*	*0*

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.*

Strong	*Average*	*Weak*
20	*10*	*0*

Overall grading:

TOTAL POINTS	**GRADE**		
81 – 100	**1**	= excellent	= výborně
61 – 80	**2**	= good	= velmi dobře
41 – 60	**3**	= satisfactory	= dobře
0 – 40	**4**	= fail	= nedoporučuji k obhajobě