

Report on Bachelor / Master Thesis

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

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| Student: | Kristýna Coufalová |
| Advisor: | PhDr. Jiří Kukačka, PhD. |
| Title of the thesis: | Prospect Theory in the Cryptocurrency Market |

OVERALL ASSESSMENT:

Short summary

The thesis aims to show that the behaviour of investors in cryptocurrency markets can be better described by prospect rather than expected utility theory. It takes on quite a complicated task of investment behaviour analysis using capital asset pricing model, autoregressive model and linear regressions. Although such an ambition is admirable, the quality of the work slightly lags behind its ambitions.

The level of methodology used does not seem to be matching the complexity of the analysis at hand. But given this is a bachelor thesis, it can be considered an unfortunate choice of research question rather than any failure to deploy the appropriate research methods. The author demonstrates good command of bachelor-level analytical tools, shows a well-structured and critical thinking and most importantly, ambitious approach and scientific curiosity.

Contribution

The author builds on an existing body of investment decision-making research and attempts to replicate studies using a different set of data and also trying to use innovative approach in data analysis. The author demonstrated critical thinking and ability to draw conclusions based on the knowledge of relevant theory and empirics.

Methods

There are two points I would like to make about methodology.

Firstly, as part of the analysis, the author deployed autoregressive model using standard OLS. However, there is no test for stationarity. In case the time-series are non-stationary, the results cannot be considered reliable and might be misleading.

Secondly, the research hypothesis #2 is either poorly explained or based on misunderstanding of basic mathematics. Hypothesis #2 reads as follows: „*Hypothesis #1 holds not only for the decimal form of cryptocurrencies' return but also for the percentage form.*“ However, I struggle to see the difference between decimal and percentage form as they seem to be equivalent representation of the same. The entry 75 % simply means 0,75. The author suggests that the value 75 % should be plugged into the prospect theory value function as 75 (instead of 0,75) but that is simply a different value (arbitrarily multiplied by 100). If anything, using absolute rather than relative (percentage) differences would probably make some sense.

Literature

The thesis is supported by a reasonable amount of literature which is also cited properly. The literature review is thorough and logically well-structured. It enumerates relevant studies and clearly summarizes their methods and findings. The author demonstrates profound understanding of the research area.

Manuscript form

The thesis is well-structured and written in decent English. The text is concise, well-formatted, and easy to follow.

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Overall evaluation and suggested questions for the discussion during the defense

In the work the author writes: „*In contrast [to weighting function], the value function and its parameters were derived from experiments with monetary payoffs and losses. The first ambiguous thing is that sometimes parameters were estimated from experiments based on payoffs in EUR, other times from experiments based on payoffs in USD and many other currencies. Therefore, it is clear that when the exchange rates are not equal to one, the estimated parameters of the value function will be different.*“
Please explain why do you think the currencies used in experinemts are relevant for parameter estimation.

Please explain what you meant by the difference between percentage and decimal form that you referred to in hypothesis #2 (as discussed in the ‚Methods‘ section of this report).

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 C.

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

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

| CATEGORY | POINTS |
|---|---------------|
| <i>Contribution (max. 30 points)</i> | 25 |
| <i>Methods (max. 30 points)</i> | 12 |
| <i>Literature (max. 20 points)</i> | 20 |
| <i>Manuscript Form (max. 20 points)</i> | 20 |
| TOTAL POINTS (max. 100 points) | 77 |
| GRADE (A – B – C – D – E – F) | C |

NAME OF THE REFEREE: *Tomáš Kučera*

DATE OF EVALUATION: *3.6.2023*

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 |