Report on **Bachelor Thesis**

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

Student:	**Štěpán Havel**
Advisor:	**doc. PhDr. Jozef Baruník, Ph.D.**
Title of the thesis:	**Conditional quantile models for asset returns**

OVERALL ASSESSMENT

Contribution
The main result of the study is that the application of a regularised quantile regression on the estimation of value at risk brings simmilar (in some cases even better) results as the GARCH model. The study analyses an example of the S&P 500 index: 21 years and 212 stocks. The comparison of the two approaches is based on in-sample back-testing. As mentioned in the study, a out-of-sample backtest would have been fruitful, but I do not miss this as an essential feature.

Methods
The study is mostly above the scope of the bachelor-level courses since it uses estimation methods such as the GARCH model, quantile regression or regularisation. A clear and comprehensive description is provided for each one of them and nothing is missing in this regard. The student shows a good grasp of the theory used despite the fact it is mostly master-level.
I would have a comment regarding the application: by considering the stocks that were in the index for the full time period (21 years – p.24), survivorship bias may have been introduced in the study thus underestimating the value at risk since the bankrupt companies are taken out.

Literature
The literature for the theoretical part is well covered. On the other hand I am missing a separate literature overview section. The introduction provides a good part of what I would have expected there, however I am missing a view on the current strands in the research, comparison with other recent studies, simmilar approaches and maybe a few senteces/paragraphs justifying the contribution of the thesis.

Manuscript form
The thesis is well structured and reads well. The reader can deep dive into the topic without being disturbed by unclear explanations or incomprehensive structure. Except the missing separate literature overview seciton, I have no remarks regarding the format. The final review was apparently thorough. No evidence of significant text similarity with other sources have been found in the Urkund analysis.

Summary and suggested questions for the discussion during the defense
The overall impression of the study is very good. The student chose master-level approaches and managed to write a thesis that reads well. The requirements for a bachelor thesis at IES, Faculty of Social Sciences, Charles University are in my view fully met, I therefore recommend it for the defense and suggest a grade B. For the defence I suggest the two following points:
- Do you think survivorship bias is really affecting your sample for the QR? If yes, can you think of a way how to mitigate it?
- A quick search showed that there are few papers estimating VaR using QR. Could you please stress out the contribution of the study in current strands of literature?

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

CATEGORY		POINTS
Contribution	*(max. 30 points)*	28
Methods	*(max. 30 points)*	25
Literature	*(max. 20 points)*	15
Manuscript Form	*(max. 20 points)*	20
TOTAL POINTS	*(max. 100 points)*	**88**
GRADE	**(A – B – C – D – E – F)**	**B**

NAME OF THE REFEREE: Nicolas Fanta

DATE OF EVALUATION: 28.8.2020

Digitálně podepsáno (1.9.2020):
Nicolas Fanta

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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