Report on **Bachelor Thesis**

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

Student:	Daniel Štancl
Advisor:	Doc. PhDr. Ladislav Krištoufek, Ph.D.
Title of the thesis:	Predicting Financial Market Crashes using Log-periodic Oscillation and Critical Slowing Down

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 aim of this thesis is to compare two competing but also contradictory approaches towards modeling of market crashes – log-periodic models of Didier Sornette and co-authors and critical slowing down motivated by natural processes. The contradictory properties lay mainly in the fact that the LPPL models imply faster oscillations closer to the critical event while the CSD theory expects slower oscillations (hence the name).

Contribution

The contribution of the thesis lays mainly in its comparative component – utilizing two contradictory approaches towards the same dataset, which has not been done before, even though the connection between the two methods seems obvious. Even though the results are not clear-cut, the LPPL models seem to prevail. In retrospect, it might have been more contributive to focus more on LPPLs as these provide more testable framework. Yet, this should not be held against the author.

Methods

The methods connected mainly to the LPPLs specifications are very advanced and certainly out of scope of the bachelor's thesis. The author has had to show advanced coding skills and understanding of the underlying concepts.

Literature

Relevant literature is well covered, I see no issues here.

Manuscript form

The thesis is logically structured and it reads well. The figures and tables are informative.

Summary and suggested questions for the discussion during the defense

Overall, this is an excellent bachelor's thesis and I believe it would not take much effort to convert it into successful master's thesis. As such, **I confidently suggest the A grade.** During the defense, the author could talk about possible extensions for future research and practical utility of catastrophe models in finance.

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

CATEGORY	POINTS
Contribution (max. 30 points)	29
Methods (max. 30 points)	30
Literature (max. 20 points)	19
Manuscript Form (max. 20 points)	20
TOTAL POINTS (max. 100 points)	**98**
GRADE (A – B – C – D – E – F)	**A**

NAME OF THE REFEREE:
doc. PhDr. Ladislav Krištoufek, Ph.D.

DATE OF EVALUATION: 30.5.2019

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Referee Signature