Advisor's Report on Dissertation Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University
Opletalova 26, 110 00 Praha 1, Czech Republic
Phone: +420 222 112 330, Fax: +420 222 112 304

Author:	**Matěj Nevrla**
Advisor:	Doc. PhDr. Jozef Baruník Ph.D. (IES)
Title of the Thesis:	Essays on Tail Risks, Asymmetries, and Cross-Section of Asset Returns
Type of Defense:	**DEFENSE**
Date of Pre-Defense	January 3, 2024

Address the following questions in your report, please:

a) Can you recognize an original contribution of the author?
b) Is the thesis based on relevant references?
c) Is the thesis defendable at your home institution or another respected institution where you gave lectures?
d) Do the results of the thesis allow their publication in a respected economic journal?
e) Are there any additional major comments on what should be improved?
f) What is your overall assessment of the thesis? (a) I recommend the thesis for defense without substantial changes, (b) the thesis can be defended after revision indicated in my comments, (c) not-defendable in this form.

(Note: The report should be at least 2 pages long.)

The thesis under review is a collection of three papers, all of which make original contributions to the literature on asset pricing in finance. Matej's main focus is on understanding non-linear risks arising from tail risks and asymmetries, which is one of the key issues in the financial literature. This is an important task, as we have long recognised the importance of such risks without properly understanding their impact on the everyday decisions of agents operating in financial markets. One of the reasons for this is that the literature lacks appropriate methods for measuring such risks. In his work, Matej develops such methods, introduces new ways of thinking about risk, introduces new asset pricing models and tests them empirically. From this perspective, the work is timely and constitutes an original contribution to the literature with the potential to be of wide general interest and impact.

The originality and usefulness of the results can be also seen by the fact that they have been published or considered for publication (under review) in leading journals in the field, such as Journal of Financial Econometrics, including top journals such as Review of Finance. The results have also been cited and recognised by top researchers in their research published in top journals such as Journal of Financial Economics. Let me briefly discuss the contribution of the papers separately.

The first paper contributes to the literature studying downside risk by introducing a new measure of risk that captures new features of the data not previously considered in the literature. In particular, the new measure of quantile spectral beta allows to identify the dependence between asset return and risk factor in a specific part of the distribution with a specific persistence. In turn, researchers can obtain heterogeneously persistent tail risk. The paper also documents this type of behaviour in empirical asset pricing exercises, highlighting the importance of such thinking.

The second paper presents a new asset pricing model based on common idiosyncratic quantile risk. The main innovation is that the model captures commonalities in quantiles of the cross-sectional distribution of asset returns and explores them as a potential risk factor. Importantly, the paper shows how to extract such a factor from the data and also documents important implications for expected returns. In particular, the paper documents a new type of information by proposing to infer tail risk from the entire distribution of stocks.

Finally, in the third paper, Matej studies the important question of how systematic asymmetric risk measures relate to linear factor models, which are the current state of the art in the literature. As Matej's last paper is solo authored, this paper is also the most mature and contributing one. It looks at a number of measures that capture various non-linear features of stock returns and discusses the importance of risk premia associated with these measures.

In conclusion, the thesis contributes to the field of finance with a number of excellent ideas that advance our current understanding and open up new avenues of research. The thesis proposes novel and potentially important concepts for measuring non-linear tail and asymmetric risk. The work is original, contributory, rigorously executed and nearly complete. The thesis is undoubtedly defensible at any prestigious international institution as it contains excellent results of general interest with great potential. Therefore, my overall assessment of the thesis is: (a) The thesis can be defended without substantial changes.

Date:	29.2.2024
Advisor's Signature	D t l d 16:35:09 +01'00'
Advisor's Affiliation	Doc. PhDr. Jozef Barunik Ph.D. (IES)