

Report on Bachelor / Master Thesis

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

Student:	Bc. Radek Bulva
Advisor:	MRes PhDr. Jan Zápál
Title of the thesis:	Heavy Tails and Market Risk Measures: the Case of Czech Stock Market

OVERALL ASSESSMENT:

Diploma thesis of Bc. Radek Bulva investigates a hypothesis that distribution of stock market yields in Czech Republic does not come from approximately normal distribution but from a distribution with higher occurrence of extreme events, or in other words from a distribution with heavy tails.

The thesis starts with a description of data used. Those are changes in daily value of the PX index published by Prague Stock Exchange and cover 1994 to 2010 period. In the same section one, some preliminary results concerning heavy tailness of those data are presented.

Section 2 which follows can be regarded as a main contribution of the thesis. It presents three families of methods designed to estimate extent of heavy tailness of a given distribution. Those are Mandelbrot's sample moment method, parametric approaches (Block Maxima and Peaks over Threshold) and semi-parametric approaches (Hill estimator with its modifications). Each method is first rigorously described and then applied to the data, both for the left tail of the PX distribution (loses) and for right tail (gains). Section 2 also includes short literature survey which compares results of the thesis to those in a literature and summary part which clearly compares different estimates presented.

Finally, section 3 focuses on risk management. More specifically, it looks at two measures of market risk and implication of heavy tailness of distribution of market returns on their performance. While section 2 can be regarded as a main contribution from technical and statistical perspective, section 3 does the same from economic point of view.

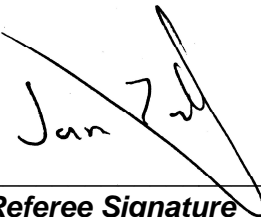
Overall, the thesis is well researched and written. It focuses on a single, well defined and narrow topic and uses current state of the art methods to provide not a single, but multiple answers, providing credibility to the conclusions reached. Final proofreading of the thesis has also been done with considerable care and it satisfies all the non-substantive formal requirements expected. **For all those reasons I believe master thesis of Bc. Radek Bulva deserves best of possible marks.**

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

CATEGORY	POINTS
Literature (max. 20 points)	15
Methods (max. 30 points)	30
Contribution (max. 30 points)	28
Manuscript Form (max. 20 points)	17
TOTAL POINTS (max. 100 points)	90
GRADE (1 – 2 – 3 – 4)	1

NAME OF THE REFEREE: Jan Zápál

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Referee Signature