Report on **Master Thesis**

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

Student:	**Bc. Jana Procházková**
Advisor:	**PhDr. Boril Šopov, MSc., LL.M.**
Title of the thesis:	**Stability of the Financial System: Systemic Dependencies between Bank and Insurance Sectors**

OVERALL ASSESSMENT *(provided in English, Czech, or Slovak):*

Jana in her thesis deals with a challenging topic of correlations and dependence amongst banks and insurance companies. The thesis applies advanced methods of multivariate extreme value theory, which not only exceeds master level thesis at our institute. Jana gathered wide, unique data sample consisting of stock prices of 20+20 entities. Such results have not, to the reviewer's best knowledge, been published anywhere else. These methods are applied on historical pair-returns of banks and insurance companies. Such an analysis is my knowledge original and has not been publish yet, thus is master thesis has a strong publishing potential.

Following introduction, Chapter 2 goes into detail of different relationships amongst entities in scope. Chapter 3 opens with a literature survey and states motivation of the following research. Given quite a narrow aim of this thesis, the survey reviews additionally wider scope of literature, which gives a reader good introduction.

Chapter 4 describes methodological background, which various measures of dependence are based on. Jana reviews standard measures (as correlation) and then proceeds to more exotic ones. Subchapter 4.3 lays ground for statistical analysis and presents math-heavy foundations for bi-variate extreme value theory. The chosen estimator "suggests" what is the probability of a bank failing given that one (the other) bank has already failed; ie. conditional probability of a banking failure. Chapter 5 further describes Extreme value methodology and presents the empirical estimators employed and the data. This chapter also presents a simulation showing the estimator behavior under some scenarios; ie. with different distribution assumption.

Subchapter 5.6 presents empirical results. I appreciate the diligence this part has been prepared with – note the high number of pairs, which needed to be matched date-wise for each pair individually – see Appendix for detailed pair-wise results. Jana did a very good job. I would like to draw reader's attention to this part as it really shows Jana's thorough understanding as well as the large amount of work she did.

The results are in line with common sense (which should be the first check even when using EVT methods) and show some interesting high dependencies for various pairs – especially pairs of local leaders (eg. ING–Aegon; Allianz-AXA etc.). Chapter 6 concludes in a clear and lucid manner. Moreover, splitting the sample into two datasets (pre- and after crisis) brings interesting insight.

In conclusion, this thesis is well written, of high typographical quality and easy to read. I praise that the most important parts of the thesis are "readable" by non-professionals. The level of both contribution and difficulty exceeds a good master thesis, and a shortened version should be prepared to submitted for IES working paper series. **Having considered all above mentioned, I award grade 1.**

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

CATEGORY		POINTS
Literature	*(max. 20 points)*	17
Methods	*(max. 30 points)*	28
Contribution	*(max. 30 points)*	27
Manuscript Form	*(max. 20 points)*	18
TOTAL POINTS	*(max. 100 points)*	**90**
GRADE	**(1 – 2 – 3 – 4)**	**1**

NAME OF THE REFEREE: PhDr. Boril.Šopov, MSc., LL.M.

DATE OF EVALUATION: 7th August 2014

**LITERATURE REVIEW:** *The thesis demonstrates author's full understanding and command of recent literature. The author quotes relevant literature in a proper way.*

Strong	*Average*	*Weak*
20	*10*	*0*

**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.*

Strong	*Average*	*Weak*
30	*15*	*0*

**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.*

Strong	*Average*	*Weak*
30	*15*	*0*

**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.*

Strong	*Average*	*Weak*
20	*10*	*0*

**Overall grading:**

TOTAL POINTS	GRADE		
81 – 100	1	= excellent	= výborně
61 – 80	2	= good	= velmi dobře
41 – 60	3	= satisfactory	= dobře
0 – 40	4	= fail	= nedoporučuji k obhajobě