Report on Bachelor / Master Thesis

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

Student:	**Bc. Ivo Jánský**
Advisor:	**PhDr. Milan Rippel**
Title of the thesis:	**Value-at-risk forecasting with the ARMA-GARCH family of models during the recent financial crisis**

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

The thesis deals with technically demanding topic regarding different Value-at-Risk (VaR) specifications and their evaluation based on selected stock-indices data before and in the crisis period. The theoretical background of the thesis is strong, standard theory is appropriately described and explained. Thesis is competently written, has logical structure and neat form of the typeset.

Thesis demonstrates author's good understanding of the VaR concept and technical skills to empirically use advanced empirical methods. However, a few comments and possible limitations are mentioned below, which may be also used as the defence questions and potential inspiration for further author's research work on this topic.

Firstly, more references should be added and discussed in the first part of the thesis, where only Jorion (2007) is repeatedly mentioned. Also, the main results of the thesis should be better put in the confrontation with other authors´ studies and conclusions.

Secondly, the thesis employs advanced GARCH specifications and different distributions assumptions to make more precise VaR estimates. Therefore it seems incomplete not to re-estimate models dynamically with the only justification of high computational demands. I´m aware of technical demandingness of this application which may go beyond the scope of the master thesis, still, it could be done only for shorter time period for comparison, how results may differ. Also, the multiplication of needed computational time should be better discussed – increase from one to three days would be not the same issues as one to twenty days.

Further, the similar estimation-issue holds for maximum order of GARCH(2,2) specification. As the author argues that this may be the reason of not capturing underlying volatility process (page 42, 51) then it seems reasonable to estimate higher order specification for selected indices – even if normally used specification is GARCH(1,1).

Finally, just minor comments 1) pp. 9, num. of page is missing in the Jorion 2007 reference, 2) pp. 6, the sentence about recovery rate(RR) < 1 is not absolute true, in some cases, because of additional fees related to workout process, RR could rarely be >1, 3) pp. 12, I in ARIMA model, referred as parameter *d* is explained in unclear way and may be reformulated, 4) some short conclusion of results of chapter 3 should be added and main conclusion of the thesis shortened.

Based on abovementioned comments, I recommend the thesis for the defense with evaluation **Good,** however, because of the technical quality of the submitted thesis, the evaluation **Excellent** is also possible in the case of successful defence, as the awarded points are also on the boundary line.

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

CATEGORY		**POINTS**
Literature	*(max. 20 points)*	14
Methods	*(max. 30 points)*	23
Contribution	*(max. 30 points)*	25
Manuscript Form	*(max. 20 points)*	18
TOTAL POINTS	*(max. 100 points)*	**80**
GRADE	**(1 – 2 – 3 – 4)**	**2**

NAME OF THE REFEREE: PhDr. Jakub Seidler

DATE OF EVALUATION: January 24th, 2010

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Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

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