Report on Bachelor / Master Thesis

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

Student:	**Bc. Miriama Tóthová**
Advisor:	**PhDr. Zuzana Havránková, Ph.D.**
Title of the thesis:	**Using Model Averaging Techniques to Examine Determinants of Stock Returns**

***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.

Contribution

Although Bayesian model averaging has already been applied to measuring the determinants of stock returns, the presented thesis is the first empirical work to tackle model uncertainty in this literature systematically, using several sets of priors for BMA and also frequentist model averaging (specifically, Mallows model averaging). Model uncertainty is important here because dozens of determinants have been suggested in the literature, and it is not clear which ones should be included in the model (of course, if redundant variables are included, the fit of the model as a whole suffers). The following determinants, among others, are found to be important across various models in both the Bayesian and frequentist setting: dividend yield, payout ratio, and default risk premium. Therefore, I believe the thesis presents an important contribution and could be published in an abridged form in a peer-reviewed journal in finance or financial economics.

Methods

The author uses up-to-date methods to address model uncertainty. BMA has long been used in economics, but many applications feature only one specification with a given set of priors – even though the technique has been shown to be sensitive to prior specification in many cases. So here I appreciate, among other things, the additional use of hyper-g prior, which tends to be more robust to outliers. This thesis is one of the few applications in economics or finance that use Mallows model averaging – for feasibility, the author employs the clever approach of Amini and Parmeter (2012) who suggest orthogonalization of covariate space to slash the number of estimated models. As far as I know, these techniques are not taught at the Institute of Economic Studies, so the author had to learn them by herself, which I appreciate.

Literature

The thesis includes a detailed literature survey in the second chapter. I am convinced that all important relevant studies have been properly cited.

Manuscript form

The thesis is written and typeset very well. The only formal problems I found concerned the initial submission to the Student Information System in pdf/a, which resulted in the loss of formatting for some equations. Unfortunately, the pdfa/a format is not suited well for

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economics theses written in LaTeX (especially when they contain graphics imported from statistical software, such as R or Stata), but that's a formal problem on the side of Charles University, which enforces this format, not on the side of the author of this thesis.

Summary and suggested questions for the discussion during the defense

This is a superb thesis that combines the following elements: 1) clear contribution, 2) competent execution using up-to-date methodology, and 3) competent style. In my eyes, it's a clear A, and the committee may consider awarding this important work.

I have the following set of questions for thesis defense: Could you identify the single most important limitation of your study? Is it the linearity assumption? What interactions between the various determinants could matter?

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

CATEGORY		POINTS
Contribution	*(max. 30 points)*	28
Methods	*(max. 30 points)*	29
Literature	*(max. 20 points)*	19
Manuscript Form	*(max. 20 points)*	18
TOTAL POINTS	*(max. 100 points)*	**94**
GRADE	**(A – B – C – D – E – F)**	**A+**

NAME OF THE REFEREE: PhDr. Zuzana Havránková, Ph.D.

DATE OF EVALUATION: 7.8.2018

Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

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*

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*

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*

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	GRADE
91 – 100	**A**
81 - 90	**B**
71 - 80	**C**
61 – 70	**D**
51 – 60	**E**
0 – 50	**F**