Report on **Bachelor / Master Thesis**

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

Student:	**Hana Štefanová**
Advisor:	**Mgr. Lukáš Vácha, Ph.D.**
Title of the thesis:	**Financial markets modeling - experimental and agent based approach**

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

The thesis examines the problem of financial modeling from the perspective of experimental economics. Two approaches are used: an experiment with human traders and agent-based simulation. The thesis consists of three main parts. After a motivating introduction, Agent-based models and experimental economics are introduced. In the second part (The Model) Hana describes the double auction environment, which is a key tool for the experiment. Next, the original model of Gode and Sunder is fully explained. The last part (The Experiment) describes how the experiment is carried out. The experiment is based on ideas from Gode and Sunder, who investigate how much is the market efficiency influenced by intelligence and profit motivation of the human traders. Finally the results from a human subject experiment and a computer simulation are compared.

The results show that markets with human traders evolve over time: price volatility decreases and allocative efficiency rises with later markets. This demonstrates human rationality and ability to learn from past decisions. Further, when a set of market rules and budget constraints are imposed on non-intelligent behavior then this can create very effective market which is similar to the human one.

The thesis is well structured so the reader is able to understand the motivation of the thesis and the main results of the experiments and simulations. Hana clearly demonstrates she understands the topic and uses relevant literature. The results brought by this bachelor thesis are valuable. Further I would like to emphasize that caring out such experiments is very demanding and it goes far beyond the requirements for the bachelor thesis.

Since we have discussed the experiments and simulations and the results many times, I have no additional questions. I recommend the bachelor thesis of Hana Štefanová for the defense with grade **excellent** ("**výborně" - 1**). As I consider the work to be excellent at the level of a Bachelor student, I kindly recommend the board of examiners to award the thesis with "distinction for an extraordinarily good bachelor‘s thesis".

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

CATEGORY		**POINTS**
Literature	*(max. 20 points)*	19
Methods	*(max. 30 points)*	30
Contribution	*(max. 30 points)*	29
Manuscript Form	*(max. 20 points)*	29
TOTAL POINTS	*(max. 100 points)*	**97**
GRADE	**(1 – 2 – 3 – 4)**	**1**

NAME OF THE REFEREE: Mgr. Lukáš Vácha, Ph.D.

DATE OF EVALUATION: 3.9.2014

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