

Report on Bachelor Thesis

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

Student:	Daniel Benčík
Advisor:	Lukáš Vácha, PhD.
Title of the thesis:	Modeling financial markets using heterogeneous agent models

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

Submitted thesis is an original contribution to the Heterogeneous Agent Modeling (HAM) literature in finance. Author builds the thesis on the basis of the framework developed by Brock and Hommes (1998) and further extended by proposition of the smart traders by Barunik, Vacha and Vosvrda (2009). In his research, author optimized the simulation algorithm substantially, which allowed him to provide answers to hypothesis asked by the previous research. During the work author showed strong quantitative skills and went far beyond the requirements for the standard bachelor thesis.

The structure of the thesis is logical. Author begins with literature overview and description of current state of the art. After the proper introductions of the model, he introduces the methodology used for simulation. He discusses the original extensions of large simulations done during this research and finally discusses the results.

The main contribution of the work is study of the stock markets with so-called "smart traders". As original Brock and Hommes model contains chartists and fundamentalists in their market, this thesis studies the market behaviour in the presence of the "smart traders" having additional knowledge based on a very simple forecasting rule. The aim is to show what will happen with the dynamics of the stock market when advanced traders will enter it. Very extensive simulation study shows interesting results - it shows how the behaviour of the market changes with changing heterogeneity of market participants. Interesting is also the "limit situation" where only "smart traders" are present in the market.

It is not a common practice that research in bachelor thesis contributes to the current research by its original results. Therefore I consider thesis to be an outstanding piece of work.

I fully recommend this bachelor thesis for the defence with grade **excellent** ("výborne" -1).

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

CATEGORY	POINTS
<i>Literature</i> (max. 20 points)	20
<i>Methods</i> (max. 30 points)	30
<i>Contribution</i> (max. 30 points)	30
<i>Manuscript Form</i> (max. 20 points)	20
TOTAL POINTS (max. 100 points)	100
GRADE (1 – 2 – 3 – 4)	1

NAME OF THE REFEREE:

Jozef Barunik

DATE OF EVALUATION: 29.8.2010

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