

Report on Bachelor/Master Thesis

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

Student:	Tomáš Adam
Advisor:	PhDr. Petr Švarc
Title of the thesis:	The Use of Artificial Stock Markets in Financial Research

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

In his work author develops and examines an agent-based multi-assets model of financial market with the aim to replicate the observed characteristics of real financial markets like fat-tailed distribution of assets returns, volatility clustering, autocorrelation of absolute returns etc. The model was created as an extension of the existing GASM - Genoa Artificial Stock Market model published by Cincotti et al. (2003) in Physica A. Both the fundamental assumptions of the model (like institutional framework of the market, price setting mechanism etc.) and the terminology of the Cincotti et al. paper were adopted by the author of the thesis to be able to compare the behavior of the extended model to the original one.

While the original GASM model is able to replicate several characteristics of real markets many of them loose on magnitude when larger number of sophisticated traders are added to the model. This can be seen as a shortcoming of the original model. Author tried to find a remedy by introducing a new behavioral rule that relates the amount of cash invested on the market to the risk aversion of the traders. Two versions of such rule were developed by the author in IES Market 1 and 2 and these two modifications partially resolved the drawbacks of the GASM model. Additionally, the modifications resulted in the ability of the model to replicate another important characteristic of real markets – interdependence of assets returns which was not presented in the original model. **The extended versions of the model presented in the thesis of Tomas Adam can be consider as an important contribution to the ongoing research on financial markets.**

Personally, I consider the bachelor thesis of Tomáš Adam as an exceptional and highly above the standard of bachelor thesis defended at IES and **suggest to evaluate it EXCELLENT (1)**. And I would like to highlight several points why **the thesis should be consider for the Dean Award for an extraordinarily good bachelor thesis:**

- 1. The methodology and the literature used for the thesis go far beyond the IES bachelor program and were used by the author with great level of sophistication.**
- 2. As an advisor I really appreciate the diligence and enthusiasm with which Tomáš Adam approached the work on the thesis during the whole year. I wish all advisors have an opportunity to work with such a great student.**
- 3. The manuscript is of a high quality and as I have already mentioned, the final thesis is highly above the standard of bachelor thesis and can be even considered as a very well done research paper. The modified version of the thesis is now being seriously considered for the publication in the special econophysics issue of AUCO Czech Economic Review.**

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

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

NAME OF THE REFEREE: PhDr. Petr Švarc

DATE OF EVALUATION: 11. 6. 2009

Referee Signature