Report on **Master Thesis**

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

Student:	**Martin Žofka**
Advisor:	**Jozef Barunik**
Title of the thesis:	**Modelling Durations Using Artificial Neural Networks**

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

The thesis proposes a new framework for modeling financial durations using neural networks. Financial durations measure the time elapsed between various financial market events related to transations arrivals, price fluctuations, hence their proper understanding is useful for measuring and predicting instantaneous volatility and may aid volatility trading and risk management. Current models which has been proposed by literature do not capture properties of the durations fully. On the other hand, neural networks due to their universal approximation ability, are able to capture complex nonlinenear properties. From this perspective, the thesis is an original work contributing to the financial econometrics literature by proposing a new methodology for modeling financial durations.

The text is logical, well written, motivates the economic importance of understanding durations and the current state of the lietarature, as well as describes the methodology of neural networks to the reader. During the work, Martin showed a strong quantitative skills as he developed the demanding algorithm for the neural networks. We have discussed the results on the regular basis, hence I have no questions to the defence.

In conclusion, I believe that the thesis is sound and rigorous analysis contributing to the literature of financial durations. Thus I fully recommend the thesis of Martin Žofka to be defended with grade excellent – 1.

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)*	26
TOTAL POINTS	*(max. 100 points)*	**96**
GRADE	**(1 – 2 – 3 – 4)**	**1**

NAME OF THE REFEREE: Jozef Barunik

DATE OF EVALUATION: 22.1.2014

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Referee Signature